

THE PORT AUTHORITY OF NY & NJ

**PROCUREMENT DEPARTMENT
4 WORLD TRADE CENTER
150 GREENWICH STREET, 21ST FLOOR
NEW YORK, NY 10007**

**INVITATION FOR BID
BID INFORMATION
ISSUED DATE: 12/17/2015**

**TITLE: SUPPLY AND DELIVERY OF AIRCRAFT RESCUE FIRE FIGHTING
(ARFF) VEHICLES FOR VARIOUS PORT AUTHORITY AIRPORTS
LOCATED IN NEW YORK AND NEW JERSEY**

This Contract may be funded in whole or in part by the Federal Aviation Administration (FAA). Accordingly, the attached "Federal Aviation Administration Required Contract Provisions," shall be made a part of the Contract.

BID NO.: 44733

BID DUE DATE: 1/18/16

TIME: 11:00 AM

BUYER NAME: SHANTA NELSON

PHONE NO.: (212) 435-4661

FAX NO.: (212) 435-4697

EMAIL: SNELSON@PANYNJ.GOV

**BIDDER INFORMATION
(TO BE COMPLETED BY THE BIDDER)
(PLEASE PRINT)**

(NAME OF BIDDING ENTITY)

(ADDRESS)

(CITY, STATE AND ZIP CODE)

(REPRESENTATIVE TO CONTACT-NAME & TITLE

(TELEPHONE)

(FEDERAL TAX I.D. NO.)

(FAX NO.)

____ BUSINESS CORPORATION _____ PARTNERSHIP _____ INDIVIDUAL

____ OTHER (SPECIFY): _____

INVITATION FOR BID

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- PART II – CONTRACT SPECIFIC INFORMATION FOR BIDDERS
- PART III – CONTRACT SPECIFIC TERMS AND CONDITIONS
- PART IV – SIGNATURE SHEET, NAME AND RESIDENCE OF PRINCIPALS AND PRICING SHEET(S)
- PART V – SPECIFICATIONS
- STANDARD CONTRACT TERMS AND CONDITIONS

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PART I - STANDARD INFORMATION FOR BIDDERS

1. General Information: The Port Authority of New York and New Jersey

The Port Authority of New York and New Jersey (the “Port Authority” or the “Authority”) is an agency of the States of New York and New Jersey, created and existing by virtue of the Compact of April 30, 1921, made by and between the two States, and thereafter consented to by the Congress of the United States. It is charged with providing transportation, terminals and other facilities of trade and commerce within the Port District. The Port District comprises an area of about 1,500 square miles in both States, centering about New York Harbor. The Port District includes the Cities of New York and Yonkers in New York State, and the cities of Newark, Jersey City, Bayonne, Hoboken and Elizabeth in the State of New Jersey, and over 200 other municipalities, including all or part of seventeen counties, in the two States. The Port Authority manages and/or operates all of the region’s major commercial airports (Newark Liberty International, John F. Kennedy International, Teterboro, LaGuardia, Atlantic City International, and Stewart International Airports), marine terminals in both New Jersey and New York (Port Newark and Elizabeth, Howland Hook and Brooklyn Piers); and its interstate tunnels and bridges (the Lincoln and Holland Tunnels; the George Washington, Bayonne, and Goethals Bridges; and the Outerbridge Crossing), which are vital “Gateways to the Nation.”

In addition, the Port Authority operates the Port Authority Bus Terminal in Manhattan, the largest facility of its kind in the world, and the George Washington Bridge and Journal Square Transportation Center bus stations. A key link in interstate commuter travel, the Port Authority also operates the Port Authority Trans-Hudson Corporation (PATH), a rapid rail transit system linking Newark, and the Jersey City and Hoboken waterfronts, with midtown and downtown Manhattan. A number of other key properties are managed by the agency including but not limited to a large satellite communications facility (the Teleport) in Staten Island, and a resource recovery co-generation plant in Newark. Prior to September 11, 2001, the Port Authority’s headquarters were located in the World Trade Center, and that complex is still owned and being partially redeveloped by the Authority.

2. Federal Aviation Administration Requirements

This Contract may be funded in whole or in part by the Federal Aviation Administration (FAA). Accordingly, the attached “Federal Aviation Administration Required Contract Provisions,” shall be made a part of the Contract.

3. Form and Submission of Bid

The Bidder shall review carefully every provision of this document, provide all the information required, and sign and return one entire copy to the Port Authority in accordance with the instructions on the Cover Sheet and Part II – Contract Specific Information for Bidders. The Bidder should retain one complete duplicate copy for its own use. The “Signature Sheet” contained herein must be completed and signed by the

Bidder. The Pricing Sheet(s) contained herein must also be completed. The Bid shall be sealed in the enclosed self-addressed envelope conspicuously marked with the Bidder's name, address, and Vendor Number, if available. In addition, the outside of the package must clearly state the Bid Title, the Bid Collective Number and the Bid Due Date. Failure to properly label submissions may cause a delay in identification, misdirection or disqualification of the submissions. In submitting this bid, the Bidder offers to assume the obligations and liabilities imposed upon it herein and expressly makes the representations and warranties required in this document.

All Bids must be received by the bid custodian on or before the due date and time specified on the cover page, at which time they will be publicly opened and read. Bids are only accepted Monday through Friday, excluding Port Authority holidays, between the hours of 8:00 a.m. and 5:00 p.m., via (1) regular mail, (2) express delivery service (e.g. UPS), or (3) hand delivery.

Express carrier deliveries by commercial vehicles can be made via vendors approved by Silverstein Properties, the 4 World Trade Center (4WTC) Property Manager, through the Vehicle Security Center (VSC). Presently, UPS is the only delivery vendor with approved recurring delivery times.

There is extensive security at the World Trade Center Site. Individuals must present a valid government-issued photo ID to enter 4 WTC. If a Bid is to be hand-delivered or if an individual is planning to attend the formal bid opening, please note that only individuals with valid photo identification will be permitted access to the Port Authority's offices. Individuals without valid identification shall be turned away and their packages not accepted. Individuals without packages or carrying small packages or boxes that can be conveyed by hand or on a hand truck may enter through the lobby. All envelopes, packages and boxes may be subject to additional security screening.

There is no parking available at 4 WTC/150 Greenwich Street, and parking in the surrounding area is extremely limited.

Bids that are not received by the bid custodian by the scheduled bid opening date will be considered late.

4. Vendor Profile

To ensure maximum opportunities, it is vitally important that Bidders keep their vendor profiles up to date with an appropriate e-mail address, as this will enable their firm to receive timely notice of advertisements, reminders, solicitations and addenda. Bidders may update their vendor profile or register as a Port Authority Vendor by accessing the online registration system at <https://panynjprocure.com/VenLogon.asp>.

5. Acknowledgment of Addenda

If any Addenda are posted or sent as part of this Bid, the Bidder shall complete, sign and include with its Bid the addenda form(s). In the event any Bidder fails to conform to these instructions, its Bid will nevertheless be construed as though the Addenda had been acknowledged.

If the Bidder downloaded this solicitation document, it is the responsibility of the Bidder to periodically check the Port Authority website at <http://www.panynj.gov/business-opportunities/bid-proposal-advertisements.html> and download any addenda that might have been issued in connection with this solicitation.

6. Firm Offer

The Bidder offers to provide the Port Authority of New York and New Jersey the services and to perform all Work in connection therewith required under this Contract, all as specified by the terms and conditions of the Contract, based on the Pricing Sheets provided herein.

EXCEPTIONS TAKEN OR CONDITIONS IMPOSED BY A BIDDER TO ANY PORTION OF THE CONTRACT DOCUMENTS WILL RESULT IN REJECTION OF THE BID.

7. Acceptance or Rejection of Bids

The acceptance of a Bid will be by a written notice signed by an authorized representative on behalf of the Authority. No other act of the Port Authority, its Commissioners, officers, agents or employees shall constitute acceptance of a Bid. The Port Authority reserves the unqualified right, in its sole and absolute discretion, to reject any or all Bids or to accept any Bid, which in its judgment will best serve the public interest and to waive defects in any Bid. No rights accrue to any Bidder unless and until its Bid is accepted.

8. Bidder's Questions

Any questions by prospective Bidders concerning the Work to be performed or the terms and conditions of the Contract may be addressed to the Contracts Specialist listed on the Cover Sheet of this document. The Contracts Specialist is only authorized to direct the attention of prospective Bidders to the portions of the Contract. No employee of the Port Authority is authorized to interpret any portion of the Contract or to give information in addition to that contained in the Contract. When Contract interpretation or additional information as to the Contract requirements is deemed necessary by the Port Authority, it will be communicated to all Bidders by written addenda issued under the name of the Manager, Commodities & Services Division, Procurement Department of the Port Authority and may be posted on the Port Authority website. Addenda shall be considered part of the Contract.

9. Additional Information To and From Bidders

Should the Authority require additional information from the Bidder in connection with its bid, such information shall be submitted within the time frame specified by the Port Authority.

If the Bidder is a corporation, a statement of the names and residences of its officers should be submitted on the Name and Residence of Principals Sheet, directly following the Signature Sheet.

10. Union Jurisdiction

All prospective Bidders are advised to ascertain whether any union now represented or not represented at the Facility will claim jurisdiction over any aspect of the operations to be performed hereunder and their attention is directed to the paragraph entitled “Harmony” in the Standard Contract Terms and Conditions.

11. Assessment of Bid Requirements

The Bidder should carefully examine and study the entire contents of these bid documents and shall make its own determinations as to the services and materials to be supplied and all other things required to be done by the Contractor.

12. Bidder’s Prerequisites

Only Bids from Bidders that can satisfactorily demonstrate meeting the prerequisites specified within Part II hereof at the time of bid submission will be considered. By furnishing this document to the Bidder, the Port Authority has not made a determination that the Bidder has met the prerequisites or has otherwise been deemed qualified to perform the services. A determination that a Bidder has met the prerequisites is no assurance that it will be deemed qualified in connection with other bid requirements included herein.

13. Qualification Information

The Port Authority may give oral or written notice to the Bidder to furnish the Port Authority with information and to meet with designated representatives of the Port Authority relating to the Bidder’s qualifications and ability to fulfill the Contractor's obligations hereunder. The requested information shall be submitted no later than three (3) days after said notice unless otherwise indicated. Matters upon which the Port Authority may inquire may include, but may not be limited to, the following:

a. The Bidder may be required to demonstrate that it is financially capable of performing this Contract, and the determination of the Bidder's financial qualifications will be made by the Port Authority in its sole discretion. The Bidder shall submit such financial and other relevant information as may be required by the Port Authority from time to time including, but not limited to, the following:

1. (i) Certified financial statements, including applicable notes, reflecting the Bidder's assets, liabilities, net worth, revenues, expenses, profit or loss and cash flow for the most recent calendar year or the Bidder's most recent fiscal year.

(ii) Where the certified financial statements set forth in (i) above are not available, then either reviewed or compiled statements from an independent accountant setting forth the aforementioned information shall be provided.

(iii) Where neither certified financial statements nor financial statements from an independent accountant are available, as set forth in (i) and (ii) above, then financial statements containing such information prepared directly by the Bidder may be submitted; such financial statements, however, must be accompanied by a signed copy of the Bidder's most

recent Federal income tax return and a statement in writing from the Bidder, signed by an executive officer or their authorized designee, that such statements accurately reflect the present financial condition of the Bidder.

Where the statements submitted pursuant to subparagraphs (i), (ii) or (iii) are dated prior to forty-five (45) days before the bid opening, then the Bidder shall submit a statement in writing, signed by an executive officer of the Bidder or their designee, that the present financial condition of the Bidder is at least as good as that shown on the statements submitted.

2. Bidder's statement of work on hand, including any work on which a bid has been submitted, and containing a description of the work, the annual dollar value, the location by city and state, the current percentage of completion, the expected date for completion, and the name of an individual most familiar with the Bidder's work on these jobs.

3. The name and address of the Bidder's banking institution, chief banking representative handling the Bidder's account, the Bidder's Federal Employer Identification Number (i.e., the number assigned to firms by the Federal Government for tax purposes), the Bidder's Dun and Bradstreet number, if any, the name of any other credit service to which the Bidder has furnished information, and the number, if any, assigned by such service to the Bidder's account.

- b. Information relating to the Bidder's Prerequisites, if any, as set forth in this document.
- c. If the Bidder is a corporation: (1) a copy of its Certificate of Incorporation and, if applicable, all Amendments thereto with a written declaration signed by the Secretary of the Corporation with the corporate seal affixed thereto, stating that the copy furnished is a true copy of the Certificate of Incorporation and any such Amendments as of the date of the opening of the bid and (2) if the Bidder is not incorporated under the laws of the state in which the service is to be performed, a certificate from the Secretary of State of said state evidencing the Bidder's legal qualification to do business in that state.
- d. A statement setting forth the names of those personnel to be in overall charge of the service and those who would be exclusively assigned to supervise the service and their specific roles therein, setting forth as to each the number of years of experience and in which functions and capacities each would serve.
- e. Information to supplement any statement submitted in accordance with the Standard Contract Terms and Conditions entitled "Contractor's Integrity Provisions."
- f. In the event that the Bidder's performance on a current or past Port Authority or Port Authority Trans-Hudson Corporation (PATH) contract or contracts has been rated less than satisfactory, the Manager, Purchasing Services Division, may give oral or written notice to the Bidder to furnish information demonstrating to the satisfaction of such Manager that, notwithstanding such rating, such performance was in fact satisfactory or that the circumstances which gave rise to such unsatisfactory rating have changed or will not apply to performance of this Contract, and that such performance will be satisfactory.

g. The Bidder recognizes that it may be required to demonstrate to the satisfaction of the Port Authority that it in fact can perform the services as called for in this Contract and that it may be required to substantiate the warranties and representations set forth herein and the statements and assurances it may be required to give.

Neither the giving of any of the aforesaid notices to a Bidder, the submission of materials by a Bidder, any meeting which the Bidder may have with the Port Authority, nor anything stated by the Port Authority in any such meeting shall be construed or alleged to be construed as an acceptance of said Bidder's Bid. Nothing stated in any such meeting shall be deemed to release any Bidder from its offer as contained in the bid documents.

14. Contractor's Integrity Provisions

By submitting a Bid, Bidders shall be deemed to have made the certifications contained in the clauses entitled "Certification of No Investigation (criminal or civil anti-trust), Indictment, Conviction, Debarment, Suspension, Disqualification and Disclosure of Other Information," and "Non-Collusive Bidding, and Code of Ethics Certification, Certification of No Solicitation Based On Commission, Percentage, Brokerage, Contingent or Other Fees" contained within the Standard Terms and Conditions within these bid documents. If the Bidder is unable to make the certifications contained therein the Bidder shall submit a statement with its Bid explaining why any such certification(s) cannot be made. Such a submission shall be submitted in a separate envelope along with your Bid, clearly marked "CERTIFICATION STATEMENT."

15. Facility Inspection

Details regarding the Facility inspection for all parties interested in submitting a bid are stipulated in Part II hereof. All Bidders must present company identification and photo identification for access to the Facility.

16. Available Documents - General

Certain documents, listed in Part II hereof, will be made available for reference and examination by Bidders either at the Facility Inspection, or during regular business hours. Arrangements to review these documents at a time other than the Facility Inspection may be made by contacting the person listed in Part II as the contact for the Facility Inspection.

These documents were not prepared for the purpose of providing information for Bidders upon this Contract but they were prepared for other purposes, such as for other contracts or for design purposes for this or other contracts, and they do not form a part of this Contract. The Port Authority makes no representation or guarantee as to, and shall not be responsible for, their accuracy, completeness or pertinence, and, in addition, shall not be responsible for the inferences or conclusions to be drawn there from.

17. Pre-award Meeting

The lowest qualified Bidder may be called for a pre-award meeting prior to award of the Contract.

18. Price Preference

A price preference may be available for Minority/Women Business Enterprises (MBE/WBEs) or Small Business Enterprises (SBEs) as set forth in the Standard Contract Terms and Conditions.

19. MBE/WBE Subcontracting Provisions

Bidders shall use every good-faith effort to provide for participation by Port Authority certified Minority Business Enterprises (MBEs) and Port Authority certified Woman-owned Business Enterprises (WBEs) in all purchasing and subcontracting opportunities associated with this Contract, including purchase of equipment, supplies and labor services, in accordance with the “MBE/WBE Subcontracting Provisions” contained within Part III, and the section of the Standard Terms and Conditions entitled “MBE/WBE Good Faith Participation.”

20. Certification of Recycled Materials

Bidders are requested to submit, with their bid, a written certification entitled “Certified Environmentally Preferable Products / Practices” attached hereto as “Attachment I-A”, attesting that the products or items offered by the Bidder contain the minimum percentage of post-consumer recovered material in accordance with the most recent guidelines issued by the United States Environmental Protection Agency (EPA), or, for commodities not so covered, the minimum percentage of post-consumer recovered materials established by other applicable regulatory agencies. The data submitted by the Bidder in Attachment I-A is being solicited for informational purposes only.

Recycling Definitions:

For purposes of this numbered section, the following definitions shall apply:

- a. “Recovered Material” means any waste material or by-product that has been recovered or diverted from solid waste, excluding those materials and by-products generated from, and commonly reused within, an original manufacturing process.
- b. “Post-consumer Material” means any material or finished product that has served its intended use and has been discarded for disposal or recovery having completed its life as a consumer item. “Post-consumer material” is included in the broader category of “Recovered Material”.
- c. “Pre-consumer Material” means any material or by-product generated after the manufacture of a product but before the product reaches the consumer, such as damaged or obsolete products. Pre-consumer Material does not include mill and manufacturing trim, scrap, or broken material that is generated at a manufacturing site and commonly reused on-site in the same or another manufacturing process.
- d. “Recycled Product” means a product that contains the highest amount of post-consumer material practicable, or when post-consumer material is impracticable for a specific type of product, contains substantial amounts of Pre-consumer Material.

e. "Recyclable Product" means the ability of a product and its packaging to be reused, reconditioned for use, or recycled through existing recycling collection programs.

f. "Waste Reducing Product" means any product that will result in less waste generated due to its use rather than another product designed to serve the same function with an greater waste generation rate. This shall include, but not be limited to, those products that can be reused, refilled or have a longer life expectancy and contain a lesser amount of toxic constituents.

21. City Payroll Tax

Bidders should be aware of the payroll tax imposed by the:

- a. City of Newark, New Jersey for services performed in Newark, New Jersey;
- b. City of New York, New York for services performed in New York, New York; and
- c. City of Yonkers, New York for services performed in Yonkers, New York.

These taxes, if applicable, are the sole responsibility of the Contractor. Bidders should consult their tax advisors as to the effect, if any, of these taxes. The Port Authority provides this notice for informational purposes only and is not responsible for either the imposition or administration of such taxes. The Port Authority exemption set forth in the Paragraph headed "Sales or Compensating Use Taxes", in the Standard Contract Terms and Conditions included herein, does not apply to these taxes.

22. Automated Clearing House Enrollment

The Port Authority of New York and New Jersey is transitioning to an all electronic method of paying its vendors and contractors via an Automated Clearing House (ACH) funds transfer. The Contractor must complete the Port Authority's "Authorization Agreement For Direct Deposits And Direct Payments (ACH Credits)" form, which is available at <http://www.panynj.gov/business-opportunities/pdf/ach-authorization-form.pdf>, in order to receive payment. To avoid delays in payments for commodities and services provided, vendors and contractors must be enrolled in ACH. **Printed accounts payable checks will not be issued.** The Authorization Agreement shall remain in full force and effect until the Port Authority has received written notification from the Contractor of its termination in such time and in such manner as to afford the Port Authority and the depository financial institution(s) a reasonable opportunity to act on it. Any questions on this initiative may be directed to the ACH Enrollments contact line at 201 216-6002 or emailed to ACHENROLLMENT@PANYNJ.GOV.

23. Additional Bidder Information

Prospective Bidders are advised that additional vendor information, including but not limited to, forms, documents and other information, including protest procedures, may be found on the Port Authority website at: <http://www.panynj.gov/business-opportunities/become-vendor.html>

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PART II - CONTRACT SPECIFIC INFORMATION FOR BIDDERS

The following information may be referred to in other parts hereof, or further detailed in other parts hereof, if applicable.

1. Service(s) Required

The Purchase of Aircraft Rescue And Firefighting Vehicles. These specifications cover the furnishing of Twenty-four (24) latest production model Aircraft Rescue and Firefighting (ARFF) vehicles for John F. Kennedy (JFK), Newark Liberty International (EWR), LaGuardia (LGA) and Teterboro (TEB) Airports as well as the Port Authority's Rescue Training Center (RTC).

2. Location(s) Services Required

John F. Kennedy International (JFK), Newark Liberty International (EWR), LaGuardia (LGA) and Teterboro (TEB) Airports as well as the Port Authority Rescue Training Center (RTC) located at John F. Kennedy Airport.

3. Expected Date of Commencement of Contract

On or about March 1, 2016.

4. Contract Type

Unit Price.

5. Duration of Contract

Duration of the Contract is dependent on the delivery schedules of the twenty-four (24) vehicles. It is anticipated that this will take approximately three (3) years. Parts to be available for ten (10) years as specified in Part V.

6. Specific Bidder's Prerequisites

- a. The Bidder shall have had at least five (5) year(s) of continuous experience immediately prior to the date of submission of its Bid in supplying Aircraft Rescue and Firefighting (ARFF) Vehicles utilizing High-Reach Extendable Turret (HRET) and during that time shall have actually engaged in providing said or such services to commercial or industrial accounts under Contract. The Bidder may fulfill this prerequisite if the Bidder can demonstrate to the satisfaction of the Port Authority that the persons or entities owning and controlling the Bidder have had a cumulative total of at least five (5) year(s) of experience immediately prior to the date of the submission of its Bid in the management and operation of a business actually engaged in providing these services to commercial or industrial accounts under Contract during that time, or have owned and controlled other entities which have actually engaged in providing the above described services during that time period.
- b. During the time period stated in (a) above, the Bidder, or persons or entities owning and controlling the Bidder, shall demonstrate satisfactory supplying of at least two (2) units of each type as specified in Part V.

- c. The Bidder shall demonstrate that it has earned gross revenues of at least five million dollars (\$5,000,000) in any single year of the last five (5) fiscal or calendar year(s) from the sale of vehicles specified in the Pricing Sheet contained in Part III required under this Contract.
- d. In the event a bid is submitted by a joint venture the foregoing prerequisites will be considered with respect to such Bid as follows: The prerequisite in subparagraph (a) and (b) above, will be considered satisfied if the joint venture itself, or any of its participants individually, can meet the requirements. The prerequisite in subparagraph (c) above, will be considered satisfied if the gross income of the joint venture itself meets the prerequisite or the gross income of the participants in the joint venture cumulatively meets the prerequisite. If a joint venture which has not been established as a distinct legal entity submits a bid, it and all participants in the joint venture shall be bound jointly and severally and each such participant in the joint venture shall execute the bid and do each act and thing required by this Invitation for Bid. On the original bid and wherever else the Bidder's name would appear, the name of the joint venture Bidder should appear if the joint venture is a distinct legal entity. If the Bidder is a common law joint venture, the names of all participants should be listed followed by the words "acting jointly and severally". All joint venture Bidders must provide documentation of their legal status

Proof that the above prerequisites are met should be submitted with the Bid.

7. Background Qualification Questionnaire (BQQ)

The Bidder shall submit a completed Background Qualification Questionnaire (BQQ), required for itself and all subcontractors and vendors known to the Bidder at the time of bid submission. This document and instructions for submitting the completed BQQ to the Authority's Office of Inspector General can be obtained at the Authority's website through the following link:

http://www.panynj.gov/wtcprogress/pdf/PANYNJ_OIG_WTC_BQQP.zip

8. Contractor Staff Background Screening

The Contractor awarded this contract may be required to have its staff, and any subcontractor's staff working under this Contract, authorize the Authority or its designee to perform background checks. Such authorization shall be in a form acceptable to the Authority. The Contractor (and any subcontractors) may also be required to use an organization designated by the Authority to perform the background checks. The cost for said background checks for staff that pass and are granted a credential shall be reimbursable to the Contractor (and its subcontractors) as an out-of-pocket expense. Costs for staff that are rejected for a credential for any reason are not reimbursable.

As of January 29, 2007, the Secure Worker Access Consortium (S.W.A.C.) is the only Port Authority approved provider to be used to conduct background screening, except as otherwise required by federal law and/or regulation. Information about S.W.A.C., instructions, corporate enrollment, online applications, and location of processing centers can be found at <http://www.secureworker.com>, or S.W.A.C. may be contacted directly at (877)522-7922.

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PART III – CONTRACT SPECIFIC TERMS AND CONDITIONS

1. General Agreement

Subject to all of the terms and conditions of this Contract, the undersigned (hereinafter called the “Contractor”) hereby offers and agrees to provide all the necessary supervision, personnel, equipment, materials and all other things necessary to perform the Work required by this Contract as specified in Part II, and fully set forth in the Part V, (the “Specifications,”) at the location(s) listed in Part II and as more fully set forth in the Specifications, and to do all other things necessary or proper therefor or incidental thereto, all in strict accordance with the provisions of the Contract Documents and any future changes therein; and the Contractor further agrees to assume and perform all other duties and obligations imposed upon it by this Contract.

In addition, all things not expressly mentioned in the Specifications but involved in the carrying out of their intent and in the complete and proper execution of the matters referred to in and required by this Contract are required by the Specifications, and the Contractor shall perform the same as though they were specifically delineated, described and mentioned therein.

2. Order of Precedence and Incorporation of Federal Aviation Administration Required Contract Provisions

This Agreement is anticipated to be funded in whole or in part by the Federal Aviation Administration (“FAA”).

Anything to the contrary herein notwithstanding, all Contract Specific Terms and Conditions shall be deemed to control in the event of a conflict with the Standard Terms and Conditions contained in this Contract. Anything to the contrary herein notwithstanding, all FAA-mandated terms shall be deemed to control in the event of a conflict with other provisions contained in this Contract. The Contractor shall not perform any act, fail to perform any act, or refuse to comply with any Authority requests that would cause the Authority to be in violation of the FAA terms and conditions.

All federal laws and regulations applicable to the receipt of FAA grants shall be deemed to be inserted herein and the Contract shall be read and enforced as though it were included herein. If any provision of this Contract shall be such as to effect non-compliance with any FAA requirement, such provision shall not be deemed to form part hereof, but the balance of this Contract shall remain in full force and effect.

3. Duration

- a) The initial term of this Contract (hereinafter called the “Base Term”) shall commence on or about the date specified in Part II hereof, on the specific date set forth in the Port Authority’s written notice of bid acceptance (hereinafter called the “Commencement Date”), and unless otherwise terminated, revoked or

extended in accordance with the provisions hereof, shall expire as specified in Part II hereof (hereinafter called the “Expiration Date”).

- b) If specified as applicable to this Contract and set forth in Part II hereof, the Port Authority shall have the right to extend this Contract for additional period(s), either through an extension or an option (hereinafter collectively referred to as the “Option Period(s)”) following the Expiration Date, upon the same terms and conditions subject only to adjustments of charges, if applicable to this Contract, as may be hereinafter provided in the paragraph entitled “Price Adjustments”. If the Port Authority shall elect to exercise the Option(s) to extend this Contract, then, no later than thirty (30) days prior to the Expiration Date, the Port Authority shall send a notice that it is extending the Base Term of this Contract, and this Contract shall thereupon be extended for the applicable Option Period. If the Contract provides for more than one Option Period, the same procedure shall apply with regard to extending the term of this Contract for succeeding Option Periods.
- c) Unless specified as not applicable to this Contract in Part II hereof, the Port Authority shall have the absolute right to extend the Base Term for an additional period of up to one hundred and twenty (120) days subsequent to the Expiration Date of the Base Term, or the Expiration Date of the final exercised Option Period (hereinafter called the “Extension Period”), subject to the same terms and conditions as the previous contract period. The prices quoted by the Contractor for the previous contract period shall remain in effect during this Extension Period without adjustment. If it so elects to extend the term of Contract, the Port Authority will advise the Contractor, in writing, that the term is so extended, and will stipulate the length of the extended term, at least thirty (30) days prior to the expiration date of the previous contract period.

4. Payment

Subject to the provisions of this Contract, the Port Authority agrees to pay to the Contractor and the Contractor agrees to accept from the Port Authority as full and complete consideration for the performance of all its obligations under this Contract and as sole compensation for the Work performed by the Contractor hereunder, a compensation calculated from the actual quantities of services performed and the respective prices inserted by the Contractor in the Pricing Sheet(s), forming a part of this Contract, exclusive of compensation under the clause hereof entitled “Extra Work”. The manner of submission of all bills for payment to the Contractor by the Port Authority for Services rendered under this Contract shall be subject to the approval of the Manager in all respects, including, but not limited to, format, breakdown of items presented and verifying records. All computations made by the Contractor and all billing and billing procedures shall be done in conformance with the following procedures:

- a) Payment shall be made in accordance with the prices for the applicable service (during the applicable Contract year) as they appear on the Pricing Sheet(s), as the same may be adjusted from time to time as specified herein, minus any deductions for services not performed and/or any liquidated damages to which

the invoice may be subject and/or any adjustments as may be required pursuant to increases and decreases in areas or frequencies, if applicable. All Work must be completed within the time frames specified, or as designated by the Manager.

- b) Payment shall be made after delivery upon receipt of an invoice and all other required documents, and acceptance by the Engineer. The Port Authority will advance to the Contractor, within thirty (30) days, a payment of an amount equal to the unit price as set forth in the Part IV, Pricing Sheet. The invoice must show the Contractor's Federal Tax Identification Number. Cost for approved "Extra Work" shall be invoiced separately, accompanied by the written approved authorization by the Engineer and subject to any monetary deductions, as determined solely by the Port Authority Engineer.

The invoice and documents required to be submitted for each vehicle are as follows:

- i.) The invoice for the delivered vehicle, which shall indicate a full description of the vehicle, the cab-chassis' make and model, the vehicle identification number, and the Port Authority number.
- ii) A certificate of origin fully completed transferring title and ownership to the Port Authority of New York & New Jersey.
- iii) Three (3) test booklets for each vehicle, one original and two (2) copies, sent to Engineer, as specified in Appendix A, paragraph 47 entitled "VEHICLE TESTS AND CERTIFICATES DOCUMENTATION."

The above invoice and certificate of origin shall serve to pass title of each complete vehicle to the Port Authority, free of liens, third party claims, or any other security interests.

- c) No certificate, payment, acceptance of any Work or any other act or omission of any representative of the Port Authority shall operate to (1) release the Contractor from any obligation under or upon this Contract, or to (2) estop the Port Authority from showing at any time that such certificate, payment, acceptance, act or omission was incorrect or to (3) preclude the Port Authority from recovering any monies (a) paid in excess of those lawfully due or (b) to which the Port Authority may be entitled on account of and any damage sustained by the Port Authority.
- d) In the event an audit of received invoices should indicate that the correct sum due the Contractor for the relevant billing period is less than the amount actually paid by the Port Authority, the Contractor shall pay to the Port Authority the difference promptly upon receipt of the Port Authority's statement thereof. The Port Authority may, however, in its discretion elect to deduct said sum or sums from any subsequent monthly payments payable to the Contractor hereunder.

“Final Payment”, as the term is used throughout this Contract, means the final payment made for services rendered in the last month of the Base Term or any extended term. However should this Contract be terminated for any reason prior to the last month of the Base Term or any extended term, then Final Payment shall be the payment made for services rendered in the month during which such termination becomes effective. The Contractor's acceptance of Final Payment shall act as a full and complete release to the Port Authority of all claims of and of all liability to the Contractor for all things done or furnished in connection with this Contract and for every act and neglect of the Port Authority and others relating to or arising out of this Contract, including claims arising out of breach of contract and claims based on claims of third persons. No payment, however, final or otherwise shall operate to release the Contractor from any obligations in connection with this Contract.

The acceptance by the Contractor, or by anyone claiming by or through the Contractor, of the Final Payment hereunder shall be, and shall operate as, a release to the Port Authority of all claims and of all liability to the Contractor for all things done or furnished in connection with the Contract and for every act and neglect, of the Authority or others relating to or arising out of the Contract including claims arising out of breach of Contract and claims based on claims of third persons.

The Contractor's agreement as provided in the immediately preceding paragraph above shall be deemed to be part of the consideration forming part of this Contract as a whole and not to be gratuitous; but in any event even if deemed gratuitous and without consideration, such agreement as provided in the immediate preceding paragraph above shall nevertheless be enforceable. Such release shall include all claims, whether or not in litigation and even though still under consideration by the Authority. Such release shall be effective notwithstanding any purported reservation of rights by the Contractor to preserve such claim. The acceptance of any check designated as “Final Payment” or bearing any similar designation shall be conclusively presumed to demonstrate the intent of the Contractor that such payment was intended to be accepted as final, with the consequences provided in this numbered clause.

The Contractor agrees that he shall not be entitled to, and hereby waives any right he might otherwise have to, and shall not seek any judgment whether under this Contract or otherwise for

any such final payment or for an amount equivalent thereto or based thereon, or for any part thereof, if such judgment would have the effect of varying, setting aside, disregarding or making inapplicable the terms of this numbered clause or have the effect in any way of entitling the Contractor to accept such final payment or an amount equivalent thereto or based thereon or any part thereof other than the same fashion as a voluntary acceptance of a final payment subject to all the terms of this Contract including this numbered clause, unless and until the Contractor should obtain a judgment on any claim arising out of or in connection with this Contract (including a claim based on breach of Contract) for an amount not included in said final payment. In any case in which interest is allowable on the amount of the final payment, such interest shall be at the rate of six percent (6%) per annum for the period, if any, in which such interest is due.

5. Liquidated Damages

- a) The Contractor's obligations for the performance and completion of the Work within the time or times provided for in this Contract are of the essence of this Contract. In the event that the Contractor fails to satisfactorily perform all or any part of the Work required hereunder in accordance with the requirements set forth in the Specifications (as the same may be modified in accordance with provisions set forth elsewhere herein) then, inasmuch as the damage and loss to the Port Authority for such failure to perform includes items of loss whose amount will be incapable or very difficult of accurate estimation, the damages for such failure to perform shall be liquidated as follows:
 - i. The sum of one thousand dollars (\$1,000.00) per calendar day per vehicle for each day (including Saturdays, Sundays, and holidays) that the Contractor fails to meet the final date established for delivery of such vehicle, or within such times as extended in accordance with the terms of this agreement, as set forth in Appendix A, Paragraph 37, PRODUCTION PLAN.
- b) The Manager shall determine whether the Contractor has performed in a satisfactory manner and their determination shall be final, binding and conclusive upon the Contractor.
- c) Failure of the Manager or the Port Authority to impose liquidated damages shall not be deemed Port Authority acceptance of unsatisfactory performance or a failure to perform on the part of the Contractor or a waiver of its remedies hereunder.

6. Insurance Procured By The Contractor

The Contractor shall take out, maintain, and pay the premiums on Commercial General Liability Insurance, including but not limited to premises-operations, products-completed operations, and independent Contractors coverage, with Contractual liability language covering the obligations assumed by the Contractor under this Contract and, if vehicles are to be used to carry out the performance of this Contract, then the Contractor shall also take out, maintain, and pay the premiums on Automobile Liability Insurance covering owned, non-owned, and hired autos in the following minimum limits:

Commercial General Liability Insurance - \$ 5 million combined single limit per occurrence for bodily injury and property damage liability.

Automobile Liability Insurance - \$ 5 million combined single limit per accident for bodily injury and property damage liability.

Garagekeepers' Legal Liability - \$2 million per location in the Comprehensive Form

In addition, the liability policy (ies) shall name **The Port Authority of NY and NJ, its related entities, their commissioners, directors, officers, partners, employees and agents, The City of New York, AFCO AvPorts Management LLC.** as additional insured, including but not limited to premise-operations, products-completed operations on the Commercial General Liability Policy. Moreover, the Commercial General Liability Policy shall not contain any provisions for exclusions from liability other than provisions for exclusion from liability forming part of the most up to date ISO form or its equivalent unendorsed Commercial General Liability Policy. The liability policy (ies) and certificate of insurance shall contain cross-liability language providing severability of interests so that coverage will respond as if separate policies were in force for each insured. These insurance requirements shall be in effect for the duration of the Contract to include any warrantee/guarantee period.

The certificate of insurance and liability policy (ies) must contain the following endorsement for the above liability coverages:

“The insurer(s) shall not, without obtaining the express advance written permission from the General Counsel of the Port Authority, raise any defense involving in any way the jurisdiction of the Tribunal over the person of the Port Authority, the immunity of the Port Authority, its Commissioners, officers, agents or employees, the governmental nature of the Port Authority, or the provisions of any statutes respecting suits against the Port Authority.”

The Contractor shall also take out, maintain, and pay premiums on Workers' Compensation Insurance in accordance with the requirements of law in the state(s) where work will take place, and Employer's Liability Insurance with limits of not less than \$1 million each accident.

Each policy above shall contain a provision that the policy may not be canceled, terminated, or modified without thirty (30) days' prior written notice to the Port Authority of NY and NJ, Att: Facility Contract Administrator, at the location where the work will take place and to the General Manager, Risk Financing.

The Port Authority may at any time during the term of this agreement change or modify the limits and coverages of insurance. Should the modification or change results in an additional premium, The General Manager, Risk Financing for the Port Authority may consider such cost as an out-of-pocket expense.

Within five (5) days after the award of this agreement or Contract and prior to the start of work, the Contractor must submit an original certificate of insurance, to the Port Authority of NY and NJ, Facility Contract Administrator, at the location where the work will take place. This certificate of insurance MUST show evidence of the above insurance policy (ies), stating the agreement/Contract number prior to the start of work. The General Manager, Risk Financing must approve the certificate(s) of insurance before any work can begin. Upon request by the Port Authority, the Contractor shall furnish to the General Manager, Risk Financing, a certified copy of each policy, including the premiums.

If at any time the above liability insurance should be canceled, terminated, or modified so that the insurance is not in effect as above required, then, if the Manager shall so direct, the Contractor shall suspend performance of the Contract at the premises. If the Contract is so suspended, no extension of time shall be due on account thereof. If the Contract is not suspended (whether or not because of omission of the Manager to order suspension), then the Authority may, at its option, obtain insurance affording coverage equal to the above required, the cost of such insurance to be payable by the Contractor to the Port Authority.

Renewal certificates of insurance or policies shall be delivered to the Facility Contractor Administrator, Port Authority at least fifteen (15) days prior to the expiration date of each expiring policy. The General Manager, Risk Financing must approve the renewal certificate(s) of insurance before work can resume on the facility. If at any time any of the certificates or policies shall become unsatisfactory to the Port Authority, the Contractor shall promptly obtain a new and satisfactory certificate and policy.

The requirements for insurance procured by the Contractor shall not in any way be construed as a limitation on the nature or extent of the Contractual obligations assumed by the Contractor under this Contract. The insurance requirements are not a representation by the Authority as to the adequacy of the insurance to protect the Contractor against the obligations imposed on them by law or by this or any other Contract. **CITS #4803N**

7. Increase and Decrease in Areas or Frequencies

The Manager shall have the right, at any time and from time to time in their sole discretion, to increase or decrease the frequencies of all or any part of the services required hereunder and/or to add areas not described herein in the Specifications or to remove areas or parts of areas which are hereunder so described. In the event the Manager decides to change any frequencies or areas such change shall be by written notice given to the Contractor not less than thirty (30) days prior to the effective date of said changes, said changes to be effective upon the date specified in said notice.

In the event of an increase or decrease in areas or frequencies, the Contractor's compensation will be adjusted to reflect such change in areas or frequencies utilizing the applicable Unit Price for such services (for the applicable Contract year) as set forth on the Pricing Sheet(s).

Where no specific Unit Price has been quoted for the type of services to be increased or decreased, the Manager shall have the right to negotiate the compensation to reflect such change, whether an increase or decrease in areas or frequencies, which, in the opinion of the Manager, are necessary to complete the work, by multiplying the increased or decreased amount by the negotiated rate.

In the event of a decrease, the Contractor shall not be entitled to compensation for Work not performed.

No such change in areas or frequency will be implemented which results in a total increase or decrease in compensation that is greater than fifty percent (50%) of the Total Estimated Contract Price for the Base Term or, if changes are to be implemented during an Option Period, fifty percent (50%) for that Option Period.

Any increases in frequencies or areas shall not constitute Extra Work and, as such, shall not be limited by the Extra Work provisions of this Contract.

8. Extra Work

The Contractor is required to provide separate materials, supplies, equipment and personnel for Extra Work when such is deemed necessary by the Engineer. "Extra Work" as used herein shall be defined as work that differs from that expressly or impliedly required in the Specifications in their present form.

The Contractor is to supply the amount of materials, supplies, equipment and personnel required by the Engineer within twenty-four (24) hours following receipt of written or verbal notice from the Engineer or, in the case of an emergency as determined by the Engineer, within twenty-four (24) hours following his receipt of the Engineer's written or oral notification.

Compensation for such Extra Work shall be determined by mutual agreement between the Engineer and the Contractor. However, should the parties fail to reach such an agreement, the Contractor's compensation shall be increased by the following amounts and such amounts only:

In the case of Extra Work performed by the Contractor itself, an amount equal to the actual net cost in money of (a) labor required for such Extra Work, plus ten percent (10%) of such net cost, (b) materials required for such Extra Work plus five percent (5%) of such net cost, and (c) such rental for equipment (other than small tools) required for such Extra Work as the Engineer deems reasonable.

In the case of Extra Work performed by a subContractor, an amount equal to the sum of (a), (b) and (c) above, plus an additional five percent (5%) provided that any such SubContract has been approved, in advance, by the Engineer.

As used in this numbered clause:

"Labor" means laborers and supervisors directly employed at the Site of the Work subject to the Engineer's authority to determine what employees of any category are required for "Extra Work" and as to the portion of their time allotted to Extra Work; and "cost of labor" means the wages actually paid to and received by such employees plus a proper proportion of (a) vacation allowances and union dues and assessments which the employer actually pays pursuant to Contractual obligation upon the basis of such wages, and (b) taxes actually paid by the employer pursuant to law upon the basis of such wages. "Employees" as used above means only the employees of one (1) employer.

"Materials" means temporary and consumable materials as well as permanent materials; and "cost of materials" means the price (including taxes actually paid by the Contractor pursuant to law upon the basis of such materials) for which such materials are sold for cash by the manufacturers or producers thereof, or by regular dealers therein, whether or not such materials are purchased directly from the manufacturer, producer or dealer (or if the Contractor is the manufacturer or producer thereof, the reasonable cost to the Contractor of the manufacture and production), plus the reasonable cost of delivering such materials to the Site of the Work in the event that the price paid to the manufacturer, producer or dealer does not include delivery and in case of temporary materials, less their salvage value, if any. The cost of all Extra Work performed by the Contractor shall not exceed six percent (6%) of the Estimated Total Contract Price of this Contract unless otherwise expressly authorized in writing by the Engineer. These funds shall be used only when necessary and are not routinely spent as part of the Contract.

The Contractor shall submit all reports, records and receipts as are requested by the Engineer so as to enable him to ascertain the time expended in the performance of Extra Work, the quantity of labor and materials used therein and the cost of said labor and materials to the Contractor.

The provisions of this Contract relating generally to Work and its performance shall apply without exception to any Extra Work required and to the performance thereof. Moreover, the provisions of the Specifications relating generally to the Work and its performance shall also apply to any Extra Work required and to the performance thereof, except to the extent that a written order in connection with any particular item of Extra Work may expressly provide otherwise.

9. DISADVANTAGED BUSINESS ENTERPRISE PROGRAM (DBE)

A. POLICY

It is the policy of The Port Authority of New York and New Jersey (the “Port Authority” or the “Authority”) and its related entities, including Port Authority Trans-Hudson Corporation (“PATH”) that Disadvantaged Business Enterprises (“DBEs”) are provided the opportunity to participate in the performance of this Contract. Each proposer shall take all necessary and reasonable steps to ensure that its proposal includes DBE participation and performance of work on this Contract, when awarded. This Contract is subject to the United States Department of Transportation (“USDOT”) regulations on “DBEs” contained in Part 26 of Title 49 of the Code of Federal Regulations.

The Proposer shall not discriminate on the basis of race, color, national origin, creed/religion, sex, age or handicap/disability in the performance of this contract. The Contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of USDOT-assisted contracts. Failure by the Contractor or subcontractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the PANYNJ deems appropriate.

B. GOAL

The Port Authority Office of Business Diversity and Civil Rights (“OBDCR”) has established a goal for DBE participation on this Contract, which the proposer will be required to show how it will meet, if awarded this Contract. This goal, expressed as a percentage of the total contract price, including change orders issued pursuant to the changes provision of the contract, is:

DBE Participation Goal: 1%

for firms owned and controlled by socially and economically disadvantaged individuals (as defined in C.5 below) and certified as DBEs by the Authority. Eligible DBE firms are listed on the following Uniform Certification Programs (“UCPs”) websites:

New York UCP – <http://www.nysucp.net/>

New Jersey UCP – <http://www.njucp.net/>

In the event the successful proposer’s proposed level of DBE participation is less than this prescribed level of DBE participation, to remain eligible for contract award, the successful proposer must satisfy the good faith efforts requirements set forth in paragraph I.3 below

OBDCR is responsible for determining compliance by the proposer with DBE Program requirements established for this solicitation and in this Contract. The proposer shall make all DBE Program submissions required by this solicitation to the Port Authority Procurement Department contact with a copy to OBDCR. Once

awarded, the successful proposer (Contractor) will make all DBE Program submissions to OBDCR at the following address and email address:

Contract Number:

Name: Robert K. Foreman

Email: rforeman@panynj.gov

Telephone No.: (201) 395-3939

Address: The Port Authority of NY & NJ

2 Montgomery Street, 2nd Fl.

Jersey City, NJ 07302

C. DEFINITIONS

1. To avoid undue repetition, the following terms, as used in this Agreement, shall be construed as follows: **Bidder or Proposer** can be used interchangeably and **Consultant or Contractor** can be used interchangeably.
2. **Certification** means the process by which a business demonstrates to OBDCR or to a New York State Unified Certification Program Certifying Partner ("NYSUCP") or to a New Jersey Unified Certification Certifying Partner ("NJUCP") that it meets the requirements to be a DBE under USDOT regulations set forth in 49 C.F.R. Part 26.
3. **Disadvantaged Business Enterprise or DBE** is a for-profit small business concern (a) that is at least fifty-one percent (51%) owned by one (1) or more individuals who are both socially and economically disadvantaged or, in the case of a corporation, in which at least fifty-one percent (51%) of the stock is owned by one (1) or more such individuals; and (b) whose management and daily business operations are controlled by one or more of the socially and economically disadvantaged individuals who own it.
4. **New York State Unified Certification Program Certifying Partners** include the Port Authority of New York & New Jersey, Metropolitan Transportation Authority, the Niagara Frontier Transportation Authority and the New York State Department of Transportation.
5. **New Jersey Unified Certification Program Certifying Partners** include the Port Authority of New York & New Jersey, New Jersey Transit and the New Jersey State Department of Transportation.
6. **Socially and economically disadvantaged individual** means any individual who is a citizen (or lawfully admitted permanent resident) of the United States and who is:
 - a. Any individual OBDCR or a NYSUCP or NJUCP Certifying Partner finds to be a socially and economically disadvantaged individual on a case-by-case

basis.

- b. Any individual in the following groups, members of which are rebuttably presumed to be socially and economically disadvantaged:
 1. Black Americans which includes persons having origins in any of the Black racial groups of Africa;
 2. Hispanic Americans which includes persons of Mexican, Puerto Rican, Cuban, Dominican, Central or South America or other Spanish or Portuguese culture or origin, regardless of race;
 3. Native Americans which includes persons who are American Indians, Eskimos, Aleuts or Native Hawaiians;
 4. Asian-Pacific Americans which includes persons whose origins are from Japan, China, Taiwan, Korea, Burma (Myanmar), Vietnam, Laos, Cambodia (Kampuchea), Thailand, Malaysia, Indonesia, the Philippines, Brunei, Samoa, Guam, the U.S. Trust Territories of the Pacific Islands (Republic of Palau), the Commonwealth of the Northern Marianas Islands, Macao, Fiji, Tonga, Kiribati, Juvalu, Nauru, Federated States of Micronesia, or Hong Kong;
 5. Subcontinent Asian Americans which includes persons whose origins are from India, Pakistan, Bangladesh, Bhutan, the Maldives Islands, Nepal or Sri Lanka;
 6. Women; and
 7. Any additional groups whose members are designated as socially and economically disadvantaged by the Small Business Administration ("SBA"), at such time as the SBA designation becomes effective.

D. THE DBE PROGRAM

The Port Authority has established a Disadvantaged Business Enterprise (DBE) program in accordance with applicable United States Department of Transportation (USDOT) regulations in 49 CFR Part 26. The Port Authority receives Federal financial assistance from the Department of Transportation, and as a condition of receiving this assistance, the Port Authority has signed an assurance that it will comply with these regulations. It is the policy of the Port Authority to ensure that DBEs, as defined in 49 CFR Part 26, have an equal opportunity to receive and participate in USDOT-assisted contracts. It is also Port Authority policy:

1. *To ensure nondiscrimination in the award and administration of USDOT-assisted contracts;*

2. *To create a level playing field on which DBEs can compete fairly for USDOT-assisted contracts;*
3. *To ensure that the DBE program is narrowly tailored in accordance with 49 CFR Part 26;*
4. *To ensure that only firms that fully meet regulatory eligibility standards as outlined in 49 CFR Part 26 are permitted to participate as DBEs;*
5. *To help remove barriers to the participation of DBEs in USDOT-assisted contracts; and,*
6. *To assist the development of firms that can compete successfully in the market place outside the DBE program.*

The Director of OBDCR has been delegated as the DBE Liaison Officer. In that capacity, the Director of OBDCR is responsible for implementing all aspects of the DBE program. Implementation of the DBE program is accorded the same priority as compliance with all other legal obligations incurred by the Port Authority in its financial assistance agreements with the USDOT.

The Port Authority has disseminated this policy statement to the Board of Commissioners and all the components of our organization. We have disseminated this statement to DBE and non-DBE business communities that perform work for us on USDOT-assisted contracts through posting on the OBDCR website: <http://www.panynj.gov/business-opportunities/supplierdiversity.html>

E. DBE OBLIGATION

The proposer agrees to take all necessary and reasonable steps to ensure that DBEs have the opportunity to compete for and perform work under this Contract, if awarded. (Note: If the total contract price is increased as a result of change orders, the Contractor shall make a good faith effort to achieve a commensurate increase in DBE participation). Submission of the proposal constitutes a certification and representation by the proposer that good faith efforts will be made to satisfy the DBE goal requirement in paragraph B during contract performance.

Furthermore, the Proposer will ensure that the following clause is placed in every contract or subcontract resulting from this Contract:

“The Contractor or subcontractor shall not discriminate on the basis of race, color, national origin, creed/religion, sex, age or handicap/disability, in the performance of this contract. The Contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of USDOT-assisted contracts. Failure by the Contractor or subcontractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the PANYNJ deems appropriate.”

F. SUBMISSION OF DBE UTILIZATION PLAN

By submitting a bid or proposal for this Contract, the proposer assures the Authority that it will meet the foregoing goal and shall submit the DBE Goals Statement form (Appendix A1) with its Proposal. If the proposer determines it cannot make this assurance, it may nevertheless submit a bid or proposal, but in such event, it shall note on the DBE Goals Statement form the percentage of DBE participation it anticipates, including documentation supporting the good faith efforts made to achieve the goals set forth in the Contract.

The proposer shall submit, with its Proposal, the DBE Participation Plan and Affirmation Statement (Appendix A2) for each DBE firm it intends to use on this Contract. The DBE Participation Plan and Affirmation Statement shall provide the name and address of each DBE firm, a description of the work to be performed, the dollar value of each DBE subcontract and the signature affirmation from each DBE firm participating in this Contract.

The bidder shall submit with its Proposal the completed Information on Solicited Firms form (Appendix A3), listing every firm that provided a quotation to the bidder for any subcontract to be performed under this Contract, whether the firms are DBE certified and whether the firms' quotes were included in the final Proposal.

Bidders who are utilizing trucking firms to meet their DBE goal are directed to complete the "Pre-Award DBE Trucking Commitment Form" (Appendix A4) and submit the form with their Proposals for each DBE used on this Contract.

Bidders who are utilizing materials suppliers to meet their DBE goal are directed to complete the "DBE Regular Dealer Verification Form" (Appendix A5) and submit the form with their Proposals for each DBE used on this Contract.

1. By listing a firm on its DBE Participation Plan and Affirmation Statement (Appendix A2) the proposer is representing the following:
 - a. It intends to use the firm for the work specified in the DBE Participation Plan and Affirmation Statement (Appendix A2) to perform the work specified.
 - b. The firm is a certified DBE in the states of either New York or New Jersey and is technically and financially qualified to perform the work specified and that the firm is available to perform the work.
 - c. If it is awarded the contract, it will enter into a subcontract with such DBE (or an approved substitute), subject to the terms and conditions of this contract, for the work described and at the price set forth in the DBE Participation Plan and Affirmation Statement (Appendix A2).

- d. It will not substitute a DBE firm listed in its DBE Participation Plan and Affirmation Statement (Appendix A2) unless the Port Authority provides prior written approval in accordance with Paragraph below.

G. PROMPT PAYMENT AND RETAINAGE PROVISION

The Contractor agrees to pay each subcontractor under this prime contract for the satisfactory performance of its contract, no later than ten (10) days from the receipt of each payment the Contractor receives from the Authority. The Contractor agrees further to return all retainage, if any, owed to a subcontractor within ten (10) days after the subcontractor's work is satisfactorily completed. Any delay or postponement of payment from the above referenced time-frame may occur only for good cause following written approval from the Port Authority. This clause applies to both DBE and non-DBE subcontractors. Failure to comply with this section may constitute a breach of contract, entitling the Port Authority to remedies provided herein, in addition to any other available remedy.

H. CREDIT TOWARD DBE GOAL

No credit toward meeting the DBE goal will be allowed unless OBDCR or a NYSUCP or NJUCP Certifying Partner has certified the DBE firm as eligible. Only the value of the work actually performed by the DBE will be counted toward the DBE goal. The DBE shall verify payments on the DBE Payment Request Certification Form attached to all invoices. The Authority will use the following guidelines to determine the amount to be counted toward the DBE goal:

1. OBDCR will credit the entire amount of fees or commissions charged by a DBE firm for providing a bona fide service, such as professional, technical, consultant, or managerial services, or for providing bonds or insurance specifically required for the performance of a USDOT-assisted contract, toward DBE goals, provided OBDCR determines the fee to be reasonable and not excessive as compared with fees customarily allowed for similar services.
2. When a DBE subcontracts part of the work of its contract to another firm, the value of the subcontracted work may be counted toward DBE goals only if the DBE's subcontractor is itself a certified DBE. Work that a DBE subcontracts to a non-DBE firm does not count toward DBE goals.
3. Joint ventures between DBEs and non-DBEs may be counted toward the DBE goal in proportion to the total dollar value of the contract equal to the distinct, clearly defined portion of the work of the contract that the DBE performs with its own forces. Please contact the Office of Business Diversity and Civil Rights at (201) 395-3958 for more information about requirements for such joint ventures.

4. OBDCR will credit expenditures to a DBE subcontractor toward DBE goals, only if the DBE is performing a commercially useful function on the contract.
5. Commercially Useful Function
 - A. A DBE is considered to perform a commercially useful function when it is responsible for the execution of a distinct element of work on a contract and carries out its responsibilities by actually performing, managing and supervising the work involved in accordance with normal industry practice. Regardless of whether an arrangement between the Contractor and the DBE represents standard industry practice, if the arrangement erodes the ownership, control or independence of the DBE or in any other way does not meet the commercially useful function requirement, that firm shall not be included in determining whether the DBE goal is met and shall not be included in DBE reports. If this occurs with respect to a firm identified as a DBE, the Contractor shall receive no credit toward the DBE goal and may be required to backfill the participation. A DBE does not perform a commercially useful function if its role is limited to that of an extra participant in a transaction or contract through which funds are passed in order to obtain the appearance of DBE participation. A DBE may rebut a determination by the Authority that the DBE is not performing a commercially useful function to the United States Department of Transportation (USDOT) funding agency (for example, FAA, FTA or FHWA).
 - B. Work Force. The DBE must employ a work force (including administrative and clerical staff) separate and apart from that employed by the Contractor, other subcontractors or their affiliates. This does not preclude the employment by the DBE of an individual that has been previously employed by another firm involved in the Contract, provided that the individual was independently recruited by the DBE in accordance with customary industry practice. The routine transfer of work crews from another employer to the DBE shall not be allowed.
 - C. Supervision. All Work performed by the DBE must be controlled and supervised by the DBE without duplication of supervisory personnel from the Contractor, their affiliates and other subcontractors performing Work on the Contract. This does not preclude routine communication between the supervisory personnel of the DBE and other supervisors necessary to coordinate the Work.
 - D. Equipment. DBE subcontractors may supplement their equipment by renting or leasing additional equipment in accordance with customary industry practice. If the DBE obtains equipment from the Contractor, other contractors or their affiliates, the DBE shall provide documentation to the Authority demonstrating that similar equipment and terms could not be obtained at a lower cost from other customary sources of equipment. The required documentation shall

include copies of the rental or leasing agreements, and the names, addresses, and terms quoted by other sources of equipment.

- E. If a DBE does not perform or exercise responsibility for at least 30 percent of the total cost of its contract with its own work force, or the DBE subcontracts a greater portion of the work of a contract than would be expected on the basis of normal industry practice for the type of work involved, OBDCR will presume that it is not performing a commercially useful function.

6. Counting DBE Participation

When a certified DBE firm is awarded the Contract, the DBE goals shall be deemed to have been met.

The value of the Work performed by a DBE, including that of a DBE prime contractor, with its own equipment, with its own forces, and under its own supervision, will be counted toward the DBE goal, provided the utilization is a commercially useful function. Work performed by DBEs will be counted as set forth below. If the Authority determines that some or all of the DBE's work does not constitute a commercially useful function, only the portion of the work considered to be a commercially useful function will be credited toward the DBE goal.

- A. Subcontractors. One hundred percent (100%) of the value of the Work to be performed by a DBE subcontractor will be counted toward the DBE goal. The value of such Work includes the cost of materials and supplies purchased by the DBE, except the cost of supplies or equipment leased from the Contractor, other subcontractors or their affiliates will not be counted. When a DBE subcontracts part of the work of its contract to another firm, the value of the subcontracted work may be counted toward DBE goals only if the DBE's subcontractor is itself a DBE. Work that a DBE subcontracts to a non-DBE firm does not count toward DBE goals.
- B. Manufacturers/Fabricators. One hundred percent (100%) percent of the expenditure to a DBE manufacturer or fabricator will be counted towards the DBE goal.
- C. Material Suppliers. Sixty percent (60%) of the expenditure to a DBE material supplier will be counted toward the DBE goal. Packagers, brokers, manufacturer's representatives, or other persons who arrange or expedite transactions are not material suppliers within the meaning of this paragraph.
- D. Brokers/Manufacturer's Representatives. One hundred percent (100%) of fees or commissions charged for assistance in the procurement of the materials and supplies, or fees for transportation charges for the delivery of materials or supplies provided by a DBE broker/manufacturer's representative will be counted toward the DBE goal, provided they are determined by the Authority

to be reasonable and not excessive as compared with fees customarily allowed for similar services. The cost of the materials and supplies themselves will not be counted.

- E. Services. One hundred percent (100%) of fees or commissions charged by a DBE for providing a bona fide service, such as professional, technical, consultant, or managerial services, or for providing bonds or insurance specifically required for the performance of the Work will be counted toward the DBE goal, provided the fee is reasonable and not excessive as compared with fees customarily allowed for similar services.
- F. Trucking Operations. The DBE trucking firm of record is the firm that is listed on the DBE Participation Plan. The DBE trucking firm shall own and operate at least one registered, insured and fully operational truck used for the performance of the Work and shall be responsible for the management and supervision of the entire trucking operation on a particular contract, and there cannot be a contrived arrangement for the purpose of meeting the DBE goal. The DBE trucking firm of record shall control the day-to-day DBE trucking operations for performance of the Work, and shall be responsible for (1) negotiating and executing rental/leasing agreements; (2) hiring and terminating the work force; (3) coordinating the daily trucking needs with the Contractor; and (4) scheduling and dispatching trucks.
 - 1. DBE Owned/Leased Trucks. One hundred percent (100%) of the value of the trucking operations the DBE provides for the performance of the work using trucks it owns and trucks that are registered, insured and operated by the DBE using drivers it employs, will be counted toward the DBE goal.
 - 2. DBE Leased Trucks. The DBE may lease trucks from another DBE, including an owner/operator who is certified as a DBE. One hundred percent (100%) of the value of the trucking operations that the lessee DBE provides will be counted toward the DBE goal.
 - 3. Non-DBE Trucks. The DBE may lease trucks from non-DBE firms and owner-operators. The value of these trucking services will be counted toward the DBE goal up to the value of services performed by the DBE trucks used on the Contract. DBE participation can be counted for the value of the services of non-DBE trucks that exceed the value of the services performed by DBE trucks only in the amount of the fee or commission a DBE receives as a result of the lease agreement.
- G. Joint Venture. Joint ventures between DBEs and non-DBEs will be counted toward the DBE goal in proportion to the total dollar value of the Contract equal to the distinct, clearly defined portion of the Work of the Contract that the DBE performs with its own forces. The joint venture agreement is

therefore subject to review by OBDCR, a copy of which is to be furnished by the firm to be awarded the Contract before execution of the Contract.

7. If a firm is not currently certified as a DBE in accordance with 49 CFR Part 26 at the time of the execution of the Contract, OBDCR will not credit the firm's participation toward any DBE goals, except as provided for in 49 CFR Section 26.87(i).
8. When a firm loses its DBE certification, OBDCR will follow the applicable regulations in 49 CFR Section 26.87(j).
 - a. If a contract or subcontract has not been executed with the firm prior to notification of its ineligibility, any participation by the ineligible firm will not be counted toward the contract or overall goal. OBDCR will direct the Contractor to meet the contract goal with an eligible DBE firm or demonstrate good faith efforts to do so.
 - b. If a contract or subcontract has been executed with the firm prior to notification of its ineligibility, the Contractor may continue to receive credit toward its DBE goal for the firm's work.
9. OBDCR will not credit toward the DBE goal the participation of a DBE subcontractor until the amount being counted toward the goal has actually been paid to the DBE, as evidenced by submission of the Statement of Payments to DBE Subcontractors / Lessors / Suppliers and the DBE Payment Request Certification Form.

I. CONTRACT AWARD

1. Only proposers who submit proposals that meet the DBE goal or who demonstrate good faith efforts to meet the DBE goal, as herein provided will be eligible for award of the Contract.
2. If the successful proposer does not reach the DBE goal, the proposer shall nevertheless remain eligible for award of the contract if it can demonstrate to the satisfaction of OBDCR that it has made a good faith effort to meet the DBE goal. In making such a determination, OBDCR shall consider, among other things, the criteria set out in subparagraph 3 below.
3. Demonstration of Good Faith Efforts

To demonstrate a good faith effort to meet the DBE contract goal, a proposer shall submit with the DBE Goals Statement form (Appendix A1) a list of the steps it has taken to obtain DBE participation, together with documentation supporting those steps. Such efforts may be demonstrated by showing the following:

- a. That the proposer attended any pre-solicitation or pre-bid meetings that were scheduled by the Port Authority to inform DBEs of contracting and subcontracting opportunities;
- b. That the proposer advertised in general circulation, trade association, and minority-focus media, at least fifteen (15) days before proposal due date, to request DBE subcontract performance on the specific project;
- c. That the proposer provided written notice to a reasonable number of specific DBEs that their interest in the contract was being solicited, in sufficient time to allow the DBEs to participate effectively;
- d. That the proposer followed up initial solicitations of interest by contacting DBEs to determine with certainty whether the DBEs were interested in participating in the project;
- e. That the proposer selected portions of the work to be performed by DBEs in order to increase the likelihood of meeting the DBE goal (including where appropriate, breaking down contracts into economically feasible units to facilitate DBE participation);
- f. That the proposer provided interested DBEs with adequate information about the plans, specifications and requirements of the contract;
- g. That the proposer negotiated in good faith with interested DBEs, not rejecting DBEs as unqualified without sound reasons based on a thorough investigation of their capabilities. Documented efforts of negotiations with DBEs must include at a minimum:
 1. The names, addresses and telephone numbers of DBEs that were considered;
 2. A description of the information provided to DBEs regarding the plans and specifications for portions of the work to be performed;
 3. A statement explaining why agreements with the DBEs could not be reached.
- h. That the proposer made efforts to assist interested DBEs in obtaining bonding, lines of credit, or insurance required by the Port Authority or Consultant;
- i. That the proposer made efforts to assist interested DBEs in obtaining necessary equipment, supplies, materials, or related assistance or services; and
- j. That the proposer effectively used the services of available minority/women

community organizations; minority/women contractor's groups; local, state and federal minority/women business assistance offices; and other organizations that provide assistance in the recruitment and placement of DBEs.

4. Reconsideration of Good Faith Efforts Determination

In determining whether a proposer has demonstrated good faith efforts, the Port Authority will look at all efforts that the proposer has made. If OBDCR determines that the successful proposer has failed to make good faith efforts to meet the DBE goal, that firm's submission may be deemed non-responsive. The non-responsive firm will have an opportunity for administrative reconsideration, in accordance with the Port Authority's Protest Procedures. In accordance with the Protest Procedures, as part of this reconsideration, the proposer will have the opportunity to provide written documentation or argument concerning the issue of whether it met the goal or made adequate good faith efforts to do so. In accordance with the Protest Procedures, a written decision will be sent to the proposer explaining the basis for finding that the proposer did or did not meet the goal or make adequate good faith efforts to do so.

J. DBE MODIFICATIONS

In the event that a proposer wishes to modify its DBE Participation Plan and Affirmation Statement (Appendix A2) after its submission or after a contract is awarded, then the proposer must request approval for the modification from OBDCR in writing. A proposer may not, without OBDCR's prior consent, terminate a DBE subcontractor approved under this contract and then perform the work of the contract with its own forces or those of an affiliate. A modification includes any change to items of work, material, services, subcontract value or DBE firms, which differ from those identified on the approved DBE Participation Plan and Affirmation Statement (Appendix A2). When a DBE subcontractor is terminated or fails to complete its work for any reason, the Contractor must make good faith efforts to find another DBE subcontractor to substitute for the original DBE. These good faith efforts must be directed at finding other DBEs to perform at least the same amount of work under the contract as the former DBE to the extent needed to meet the contract goal. The Contractor must provide OBDCR with any and all documents and information as may be requested with respect to the modification. If OBDCR determines that the Contractor failed to make good faith efforts, the Port Authority may consider such failure a breach of contract, entitling the Port Authority to remedies provided herein, in addition to any and all other available remedies.

K. EEO/NON-DISCRIMINATION

During the performance of this Contract, the Contractor hereby agrees that no person on the ground of race, color, national origin, creed/religion, sex, age or handicap/disability shall be excluded from participation in, denied the benefits of, or

be otherwise subjected to discrimination in the furnishing of goods or services or in the selection and retention of subcontractors and/or vendors under this Contract. Contractor shall also ascertain and comply with all applicable federal, state and local laws, ordinances, rules, regulations, and orders that pertain to equal employment opportunity, affirmative action, and non-discrimination in employment, including 49 CFR Part 26.

L. OFFICE OF THE INSPECTOR GENERAL

The Port Authority Office of Inspector General (OIG) is responsible for investigating fraud and misconduct by Port Authority contractors, subcontractors, consultants, suppliers and others, including the DBE Program. Depending upon the dollar value of the construction project, and regulatory requirements, the OIG might engage the services of an Integrity Monitor who reports to the OIG and assists in monitoring compliance governing the DBE program.

The OIG and its Integrity Monitors may perform on-site investigations and payment verifications, review relevant consultant, contractor, subcontractor and supplier documents, including but not limited to financial records, certificates and licenses, certified payroll reports, and employee sign-in sheets. They may also interview officers and employees of these firms either on-site, at their offices, or at any other location the OIG determines is in the best interest of the Port Authority.

All consultants, contractors, subcontractors, suppliers and others who are participating in the DBE Program in any manner, shall cooperate fully with the Port Authority OIG and shall provide all requested documents immediately upon request. The failure to cooperate may be considered a breach of contract, entitling the Port Authority to remedies provided herein, in addition to any other available remedy.

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PART IV – SIGNATURE SHEET, NAME AND RESIDENCE OF PRINCIPALS SHEET AND PRICING SHEET(S)

1. SIGNATURE SHEET

OFFER: The undersigned offers and agrees to furnish to the Port Authority of New York and New Jersey the services and/or materials in compliance with all terms, conditions, specifications and addenda of the Contract. Signature also certifies understanding and compliance with the certification requirements of the standard terms and conditions as contained in the Standard Contract Terms and Conditions. This offer shall be irrevocable for one hundred twenty (120) days after the date on which the Port Authority opens this bid.

ONLY THE COMPANY NAMED AS THE BIDDING ENTITY BELOW WILL RECEIVE PAYMENT. THIS MUST BE THE SAME NAMED COMPANY AS INDICATED ON THE COVER SHEET

Bidding Entity _____

Bidder's Address _____

City, State, Zip _____

Telephone No. _____ FAX _____

Email _____ EIN# _____

SIGNATURE _____ Date _____

Print Name and Title _____

ACKNOWLEDGEMENT:

STATE OF: _____

COUNTY OF: _____

On this ___ day of _____, 20____, personally came before me, _____, who duly sworn by me, did depose that (s)he has knowledge of the matters herein stated, that they are in all respects true and that (s)he has been authorized to execute the foregoing offer and statement of irrevocability on behalf of said corporation, partnership or firm.

Notary Public

NOTE: If a joint venture is bidding, duplicate this Signature Sheet and have each party to the joint venture sign separately and affix to the back of this Signature Sheet.

Bidder attention is called to the certification requirements contained in the Standard Contract Terms and Conditions, Part III. Indicate below if a signed, explanatory statement in connection with this section is attached hereto.

If certified by the Port Authority as an SBE or MWBE: _____ (indicate which one and date).

2. NAME AND RESIDENCE OF PRINCIPALS SHEET

Names and Residence of Principals of Bidder. If general or limited partner, or individual, so indicate.

NAME	TITLE	ADDRESS OF RESIDENCE (Do not give business address)
------	-------	--

3. PRICING SHEET(S)

Entry of Prices

- a. The prices quoted shall be written in figures, in ink, preferably in black ink where required in the spaces provided on the Pricing Sheet(s) attached hereto and made a part hereof. Prices must be quoted in United States Dollars. All figures inserted will be interpreted as being quoted in United States Dollars.
- b. All Bidders are asked to ensure that all charges quoted for similar operations in the Contract are consistent.
- c. Prices must be submitted for each Item required on the Pricing Sheet(s). Bidders are advised that the Items on the Pricing Sheet(s) correspond to the required services set forth in the Specifications hereunder.
- d. Bidders must insert all figures as required and verify all computations for accuracy. The Port Authority in its sole judgment reserves the right to: (1) reject Bids without checking them for mathematical errors or omissions, (2) reject Bids that contain or appear to contain errors or omissions, and (3) supply corrections to Bids that contain or appear to contain mathematical errors and omissions, and in this case the Port Authority reserves the right to recompute the Total Estimated Contract Price based upon the Unit Prices inserted by the Bidder, which amount shall govern in all cases.
- e. In the event that a Bidder quotes an amount in the Total column but omits to quote a Unit Price for that amount in the space provided, the Port Authority reserves the right to compute and insert the appropriate Unit Price.
- f. The Total Estimated Contract Price is solely for the purpose of facilitating the comparisons of Bids. Compensation shall be in accordance with the section of this Contract entitled "Payment".
- g. The Total Estimated Contract Price shall be obtained by adding the unit prices described in items A, B and C by the total number of vehicles for each type.

ARFF PRICING SHEET

	# of Units	Unit Price	Total
A. CLASS IV 4X4 TRIPLE AGENT VEHICLE	8 X	\$ _____ =	\$ _____
B. CLASS V 6X6 SINGLE AGENT VEHICLE	7 X	\$ _____ =	\$ _____
C. CLASS V 6X6 TRIPLE AGENT W/ HRET VEHICLE	9 X	\$ _____ =	\$ _____
D. TEN (10) HALOTRON 1 RECHARGING KITS	10 X	\$ _____ =	\$ _____
E. TEN (10) ADDED OPERATOR TRAINING SESSIONS	10 X	\$ _____ =	\$ _____
F. TEN (10) ADDITIONAL MAINTENANCE TRAINING	10 X	\$ _____ =	\$ _____

G. ESTIMATED COST OF TEN (10) YEAR REPAIR PARTS COSTS:

Bidder shall insert a percentage to be applied off the latest published price list(s) and all subsequent published parts lists commencing on delivery of the first unit. The quoted percentage shall remain firm for ten (10) years following delivery of the first unit.

	Contractor %		
Estimated Ten (10) Year Cost	Mark-up Fee Plus, Minus or at Cost	Total Ten (10) Year Estimated Cost	

$$\$1,600,000 \times \pm \text{ _____\% } = \$ \text{ ______ } + \$1,600,000 = \$ \text{ ______ }$$

H. TOTAL CONTRACT PRICE \$ _____
(SUM OF A+B+C+D+E+F+G)

BIDS WILL BE EVALUATED BASED ON THE LOWEST PRICE FOR UNITS CONFORMING TO SPECIFICATIONS AS NOTED IN PART V.

THE NUMBER OF UNITS QUOTED IN ITEMS A-G ABOVE ARE ESTIMATES. THE PORT AUTHORITY RESEVES THE RIGHT TO PURCHASE THAT AMOUNT, MORE, LESS, OR NONE OVER THE COURSE OF THIS CONTRACT. UNIT PRICES QUOTED IN LINES A, B, C, D, E, F, H, AND I ARE BINDING.

I. OPTIONAL WARRANTIES

<u>OPTIONAL WARRANTIES</u>	<u>MONTHS</u>	<u>MILES</u>	<u>COST/VEHICLE</u>
1.			
2.			
3.			

OPTIONAL ITEMS RECOMMENDED OR AVAILABLE

ITEM NAME:

ITEM DESCRIPTION:

ITEM APPLICABLE TO WHICH UNITS:

ITEM PRICE /UNIT:	\$
-------------------	----

SHEET MAY BE DUPLICATED AS NEEDED. ONE ITEM PER SHEET

SHEET _____ OF _____

NOTE: BIDS WILL BE EVALUATED BASED ON THE LOWEST PRICE FOR UNITS CONFORMING TO THESE SPECIFICATIONS. HOWEVER, VENDORS ARE ENCOURAGED TO SUBMIT DETAILS AND PRICING ON OPTIONAL ITEMS RECOMMENDED OR AVAILABLE WHICH THEY MAY OFFER, AND THE PORT AUTHORITY MAY ELECT TO INCLUDE ANY OR ALL SUCH ITEMS IN THE FINAL CONTRACT. PLEASE COMPLETE THE FOLLOWING SHEET FOR EACH SUCH ITEM. SHEET MAY BE DUPLICATED AS NEEDED.

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1 INTENT

1.1 GENERAL:

1.1.1 Guiding Standards:

- 1.1.1.1 These specifications cover the furnishing of twenty four (24) of the latest FAA Advisory Circular AC 150/5220-10E and NFPA 414 latest edition Class IV & V production Aircraft Rescue and Fire Fighting (ARFF) vehicles.

1.1.2 Design Criteria:

- 1.1.2.1 The vehicles shall be designed and constructed for rapid response to the emergency site with effective agent discharge, maximum safety for its crew, ease of operation, reliability and ease of personnel to perform maintenance. They shall have a single rear mounted diesel engine, a fully automatic transmission and be capable of operation both on road and off.

1.1.3 Principles of Design:

- 1.1.3.1 Every effort is to be taken by the manufacturer to assure that the principles of human Engineering and ergonomics are designed into the functional controls of the vehicle.
- 1.1.3.2 Every effort shall be made to mount the heaviest system components as low as possible and as close to the centerline of the body as possible to lower the center of gravity of the vehicle.
- 1.1.3.3 Minor component failures shall not disable the vehicle or restrict its primary functions. Adequate redundancy must be built into all critical systems to assure that a major failure is the only thing that will prevent the vehicle from responding.
- 1.1.3.4 All exterior controls, handles, and operating devices normally used in the ARFF operation shall be designed to allow use by an operator wearing typical firefighting gloves.
- 1.1.3.5 All controls shall be adequately identifiable as to correct positioning by logic of operation or clear indications.
- 1.1.3.6 Valves shall be suitably marked as to open and closed positions, and whenever feasible, valves shall open when the control handles are in line with the pipe or valve.
- 1.1.3.7 All low-positioned drain valves shall have their operating handles in a horizontal attitude when in a "closed" position.
- 1.1.3.8 All fluid capacities checked during pre-inspections, such as water compartment level, foam compartment level, antifreeze and diesel fuel level shall be visibly observable without the use of tools and without requiring ladders, flashlights, or other equipment in order to visually observe the levels.
- 1.1.3.9 All piping shall be routed with long smooth bends without the use of tight elbows where possible to minimize associated pressure losses.

- 1.1.3.10 All switches and controls shall provide positive tactile feedback as to the position of the switch or control.
 - 1.1.3.11 Pilot lights or indicators for all controls or switches shall be used to provide positive indication of system operation to the operator.
 - 1.1.3.12 Warning lights or pilot lights shall be color-coded to maximize operator's cognizance. Red indicators shall indicate a serious malfunction only. Amber pilot lights or indicators shall be used to indicate a nonstandard operating condition. Purely informative indicators, such as pilot lights to indicate a switch has been turned on, shall be of blue or green color.
 - 1.1.3.13 Systems shall have fail safe designs which fail to an on or off position that will impact least on the on primary functions.
 - 1.1.3.14 Redundant systems shall be used for critical operational controls such as Power Take Off (PTO) engagement to assure operational capability of the vehicle following minor system deficiencies. Wherever feasible, the redundant mode shall be a mechanical means. If mechanical means are not practical, the redundant mode shall incorporate not more than one system and shall be less complex than the primary operating system. Redundancy shall, also include lines between the actuator and the control.
 - 1.1.3.15 Contrasting paint colors shall be used at all service points to ease the identification of dipsticks, service caps, adjustment points, etc.
 - 1.1.3.16 The units must be designed to operate with commonly available, non-proprietary service fluids. The diesel engine shall be certified and tuned for operation using ASTM B20 bio diesel fuel. Anti-freeze, crankcase and gear oils, greases, automatic transmission fluid, and hydraulic oils shall be as per current Society of Automotive Engineers, American Petroleum Institute (API), or American Society for Testing and Materials (ASTM) specifications.
- 1.1.4 Vehicle Types:
- 1.1.4.1 These specifications cover three (3) vehicle types described by the following distinct features and options:
 - 1. FAA Vehicle Class
 - 2. Fire Fighting Agents
 - 3. High Reach Extendable Turret (HRET)
 - 4. Elevated Light Tower
 - 1.1.4.2 Table 1.1 gives the breakdown of the quantity ordered for each vehicle type and details which features those vehicles are to be equipped with.

Table 1.1			VEHICLE TYPES AND FEATURES								
Vehicles			Water & Fire Fighting Agent Types Minimum Quantities				Vehicle Options				
Qty	FAA Class	Agent Qty	Water (gal)	AFFF (gal)	Dry Chemical (lbs)	Halotron (lbs)	Light Mast	Ladder Mast	Roof Turret (Agents)	Bumper Turret (Agents)	HRET (Agents)
Eight (8) Triple Agent	IV	3	1500	210	450	500	Yes	Yes	AFFF	AFFF Dry Chem Halotron	No
Seven (7) Single Agent	V	1	3000	420	No	No	Yes	Yes	AFFF	AFFF	No
Nine (9) Triple Agent	V	3	3000	420	450	500	No	No	No	AFFF Dry Chem	AFFF Dry Chem Halotron

Specifications unique to each vehicle class can be found in sections 3, 4 & 5.

2 SPECIFICATIONS PERTAINING TO: ALL VEHICLES

2.1 PERFORMANCE - FULLY LOADED

2.1.1 Vehicle Performance:

- 2.1.1.1 Demonstrate side slope stability of thirty (30°) degrees.
- 2.1.1.2 Negotiate a two hundred (200') foot diameter circle at a speed of twenty-two (22) mph without oversteer or understeer.
- 2.1.1.3 Minimum angle of approach and departure of thirty (30°) degrees.
- 2.1.1.4 Minimum interaxle clearance of twelve (12°) degrees.
- 2.1.1.5 Underbody clearance of eighteen (18") inches.
- 2.1.1.6 Underaxle clearance of thirteen (13") inches at their differential bowls.
- 2.1.1.7 Diagonally opposite wheel travel of fourteen (14") inches without any wheels bottoming out or coming off the ground.
- 2.1.1.8 Maximum wall-to-wall turning diameter of three (3) times the vehicle length.
- 2.1.1.9 Minimum top speed of seventy (70) mph.
- 2.1.1.10 Service brakes must hold on a fifty (50%) percent grade.
- 2.1.1.11 Emergency brakes must hold on a twenty (20%) percent grade.
- 2.1.1.12 Stop within two hundred and eighty-eight (288') feet from forty (40) mph using their Emergency brakes.
- 2.1.1.13 Perform an evasive maneuver as detailed in NATO Doc. AVTP 03-16W at a minimum of twenty-five (25) mph.

2.1.1.14 Perform a “J” turn within a circle of three hundred (300’) feet diameter at a minimum of thirty (30) mph.

2.1.2 Fire Fighting System Performance: All firefighting systems must meet the requirements set forth in NFPA 414.

2.2 WEIGHTS, DIMENSIONS AND CAPACITIES

2.2.1 Weights:

2.2.1.1 The gross weight of the vehicle fully staffed, loaded with all of the equipment and with all fluid and fire fighting agent tanks filled, shall not exceed the manufacturer’s Gross Vehicle Weight Rating (GVWR) nor shall the weight on any axle exceed the Gross Axle Weight Rating (GAWR) for that Axle.

2.2.1.2 The weight shall be distributed over the axles and tires of the fully loaded vehicle so that the difference in weight between tires on the same axle shall not exceed five (5%) percent of the average tire weight of that axle, that the difference in weight between any two (2) axles shall not exceed ten (10%) percent of the weight of the heaviest axle if the heaviest axle is a rear axle and five (5%) percent if the heaviest axle is the front axle.

2.2.2 Dimensions:

2.2.2.1 A vehicle body must be no wider than one hundred and thirty-two (132”) inches at its widest point and no taller than one hundred and fifty-four (154”) inches measured at its highest point. See “Dimensions” in sections 3-5 for vehicle specific lengths.

2.2.3 Capacities:

2.2.3.1 All fluids and chemical capacities as well as their types used in each system shall be clearly labeled on the exterior of the vehicle and visible at ground level located between the water fill suction inlet and the door for the engine compartment. See “Sections 3.2.2, 4.2.2, and 5.2.2 for vehicle specific capacities of water, Aqueous Foam Forming Fluid (AFFF), dry chemical, Halotron and propellants, as applicable.

2.3 CHASSIS

2.3.1 Frame:

2.3.1.1 The chassis frame shall have adequate strength and bracing to carry the gross vehicle weight specified in off-road service. The section modulus of the frame shall be furnished by the Contractor on the Contractors detail sheet, together with the tensile strength and type of the frame steel, its resistance to bending in pound inches, and the factor of safety. The Contractor shall submit a shear and bending moment diagram at the pre-production meeting. Frame reinforcement shall not be accepted. Chassis frame shall have a lifetime warranty against failure, fatigue, cracking or corrosion failures.

2.3.2 Suspension:

- 2.3.2.1 The vehicle's suspension shall allow for smooth high speed vehicle operations over undulations in the unpaved portions of an air field.
- 2.3.2.2 The vehicle's suspension shall reduce body roll and stabilize the vehicle while performing maneuvers over undulations in the unpaved portions of the airfield.
- 2.3.2.3 The vehicles suspension systems shall be fitted with positive stops in both the up and down positions including bump cushions to effectively reduce stresses when wheel travel is at the allowable extremes.

2.3.3 Bumpers:

- 2.3.3.1 The vehicle shall be equipped with channel type structural steel front and rear bumpers providing protection to the full width of the vehicle. The bumpers shall be installed in adequate distance behind any sheet metal or body parts to allow pushing the vehicle without damaging the body.
- 2.3.3.2 The bumpers shall have means to protect all bumper mounted equipment such as the turret and lights in the event the area of the vehicle scrapes while approaching or departing obstacles and when its required to knock down breakaway fences, small trees or bushes.

2.3.4 Towing Connections:

- 2.3.4.1 Air connections, glad hands with quarter turn shut off valves, and an SAE J560B covered seven (7) pin female connector shall be provided at the front of the vehicles to allow a towing vehicle to control its service and parking brakes, and its brake/signal lights. Location to be approved by the Engineer.
- 2.3.4.2 The vehicle shall be capable of being flat towed on level ground with hookup points at both its front and rear. The hookup point shall be connected directly to the frame and shall not be damaged or cause damage to any other part of the vehicle when used.

2.3.5 Vehicle Lifting Mechanism:

- 2.3.5.1 Four (4) lifting eyes shall be provided on the roof of the ARFF vehicles to facilitate lifting of the vehicle by a crane. When properly lifted using these lifting eyes the vehicle must be capable of being lifted and suspended with no permanent damage due to flexing or bending.

2.3.6 Automatic Greasing System (AGS):

- 2.3.6.1 The vehicles shall be furnished with centralized automatic lubrication system to provide periodic lubrication. The system shall be provided by Vogel Lubrication Incorporated of Newport News, Virginia, Groeneveld USA Incorporated of Brunswick, OH, or approved equal.
- 2.3.6.2 The system shall have an electric gear pump, grease reservoir, control module, and distribution lines and fittings, properly installed in the vehicle as per the manufacturer's recommendations.

- 2.3.6.3 The systems shall be designed to utilize lubricants of Grades NLGI 00 or NLGI 000, and to lubricate all points requiring periodic greasing, except those where rotation or other dynamic considerations preclude automatic lubrication.
- 2.3.6.4 The system shall be mounted in a location to facilitate maintenance and observation of grease reservoir level.

2.4 BODY:

2.4.1 Body Type:

- 2.4.1.1 The body shall be constructed of materials that provide the lightest weight consistent with the strength necessary for off-pavement operation over rough terrain and when exposed to excess heat. The body may be unitized with chassis rigid structure type or it may be flexibly mounted on the vehicle chassis. It shall also include front and rear fenders or wheel wells. Body panels are to be removable where necessary to provide access to the interior of the vehicle.

2.4.2 Access Doors, Compartments and Equipment Locations:

- 2.4.2.1 Access doors shall be provided for those areas of the interior of the vehicle which must be frequently inspected or serviced. In particular, access doors of sufficient size and number shall be provided for access to:

1. Engine
2. Fluid reservoirs
3. Pump
4. Foam system
5. Battery storage

Other areas requiring access for inspection or maintenance shall either be open, or have removable panels.

- 2.4.2.2 The engine/transmission compartment shall allow for routine maintenance to be performed by personnel safely and with enough space to inspect all major components. For major services to the engine transmission there shall be a removable body section to allow full access. If the engine/transmission access uses a powered system there must be a redundant method of lifting the body section off that is a separate mechanical system that can be operated in the event the powered system fails.

- 2.4.2.3 Suitable, lighted compartments shall be provided for convenient storage of equipment and tools to be carried on the vehicle. See Section 2.19.12 for compartment lights specifications.

- 2.4.2.3.1 The location of all components and equipment within compartments shall be approved by the Engineer in conjunction with the PANYNJ Aviation Department at the pre-manufacturing meeting. Equipment lists detailing what equipment goes on which vehicle are to have their location section completed by the Contractor. Compartments shall be identified by side of the vehicle and location starting from the front ie., 1R, 2R, 3R, 1L, 2L, 3L. See "Body" in Sections 3.3, 4.3, and 5.3 for vehicle specific equipment lists.

- 2.4.2.3.2 All equipment mounted within compartments must be securely fixed in dedicated positions to the structure of the compartment or to tray in which they are stored to prevent them from shifting during operation.
- 2.4.2.4 If access to system controls, equipment or components that could require maintenance lie within a compartment mounted more than five (5') feet from the ground a non-slip step shall be integrated into the design of the compartment or an adjacent compartment with a hand hold positioned to aid in stabilizing crew members while using the step.
- 2.4.2.5 Compartment doors shall be of the slatted roll-up type operable for hands covered with typical firefighting gloves. For compartment doors handles located higher than seven (7') feet from the ground when in the rolled up position a pull strap shall be provided. A sensor shall be integrated into all compartment doors that illuminate a warning light on the dash when a compartment door is left open.
- 2.4.2.6 Compartments shall be sealed weather-tight, be self draining and have grading where possible to keep equipment elevated and off of the compartment floors.
- 2.4.2.7 Mechanisms for pull out drawers and reels shall be overrated for the function and operate smoothly. The draws and swing out trays shall have the ability to lock in the stowed position. All mechanisms shall be constructed from corrosion resistant materials to prevent binding and failure. The mechanisms shall be sealed or have the ability to be greased through the automatic greasing system where feasible.
- 2.4.3 Handrails, Ladders, Steps and Walkways:
 - 2.4.3.1 All handrails, ladders, steps and walkways shall be OSHA and NFPA-414 compliant.
 - 2.4.3.2 Handrails or bulwarks shall be provided where necessary for the safety and convenience of the crew. Rails and stanchions shall be constructed of chrome plated metal or stainless steel and be strongly braced.
 - 2.4.3.3 Steps or ladders shall be provided for access to the roof top water and foam fill area.
 - 2.4.3.4 Steps and the lower section of the rear ladder may extend below the angle of departure if they are designed to swing up. All other steps and portions of the ladder shall be rigidly constructed and have non-skid grating.
 - 2.4.3.5 All areas on the rooftop work deck are to be covered by a slip resistant grating from the rear ladder to the roof access hatch in the cab, around the water and AFFF tank fill locations and around all equipment. Openings in the work deck are permissible around the fill cover, overflow, and other service points. Edges and cutouts shall have OSHA compliant toe boards.
 - 2.4.3.5.1 The perimeter of the rooftop work deck shall have OSHA compliant handrails or an approved OSHA compliant fall restraint system.

2.5 ENGINE & ENGINE SYSTEMS

2.5.1 General Engine:

- 2.5.1.1 The vehicle shall be powered by a rear mounted, turbocharged, four (4) cycle, (six) 6 or (eight) 8 cylinder, diesel engine certified by the manufacturer for use in this application. A copy of the engine manufacturer's application certification must be presented with the bid.
- 2.5.1.2 The Engine must be certified to meet the latest Environmental Protection Agency (EPA) requirements. The manufacturer must provide the proof of their compliance with this specification.
- 2.5.1.3 The engine must have sufficient power to consistently meet the performance standards set for acceleration and maximum speed for the class of vehicle it is installed in. All fluid filters including the fuel system, transmission, steering, cooling etc. in a common area assessable from the ground level. The filter area shall have an easily removable catch basin that positively locks into place. A placard with the part numbers of the filters in the filter change area shall be displayed.
 - 2.5.1.3.1 All hoses and plumbing to the dedicated filter area shall be routed through areas that do not interfere with the ability of the vehicles systems to be serviced. Plumbing to the filter area should be through hard metal corrosion resistant lines for as long as it is feasible and adequately braced to the vehicles chassis.
- 2.5.1.4 There shall be warning indicators in the operators' line of site in the cab for excessive engine coolant and oil temperatures as well as low fluid levels. The engine shall not de-rate or go into a limp mode during such conditions so that the operator can continue to operate the vehicle and its systems until failure.

2.5.2 Intake:

- 2.5.2.1 The engine's air intake system shall be equipped with, and filtered by, a dual element air filter. The system shall be equipped with a restriction indicator that shall illuminate a warning light on the dashboard in the cab of the vehicle when the filter is clogged beyond the engine manufacturer's recommendation.

2.5.3 Cooling:

- 2.5.3.1 The engine shall be equipped with a heavy-duty cooling system with an automatic thermostat capable of maintaining coolant temperatures between within the engine manufacturer's range at all ambient temperatures up to and including one hundred and twenty (120°) degrees Fahrenheit.
- 2.5.3.2 The engine shall be fitted with an appropriately sized immersion type coolant system (block) heater or approved equal to minimize the time it takes to bring the engine up to operating temperatures and aid in cold weather starting. The heater shall be regulated by a thermostat and is not to exceed fifteen hundred (1500) watts, at one hundred and twenty (120) vac and be wired into the vehicles Line Power or Shore Power electrical system.

- 2.5.3.3 The engine shall be equipped with a system to allow a vehicle returning to the garage to run its engine for up to five (5) minutes to stabilize engine temperatures before automatic shut off. The system should have the ability to be immediately shut down in an emergency
- 2.5.4 Exhaust:
- 2.5.4.1 If a Diesel Particulate Filter (DPF) is used in the exhaust system it must have the ability to delay the regeneration cycle without de-rating the power until after an emergency response. The Contractor must provide one (1) spare filter cartridge for every three (3) vehicles.
- 2.5.4.2 The engines exhaust shall include a muffler to reduce engine noise. The exhaust shall pass through the roof of the engine compartment at the rear left corner of the vehicle. It shall be capable of being positioned vertically so that it can be fitted with a Plymo-Vent compatible tip or a rain cap, or at an angle with an angled tip to prevent rain from entering its outlet from the vertical direction. If the Manufacturer wishes to supply an alternate method for capturing diesel exhaust while operating inside a building, it shall be presented as an alternate.
- 2.5.4.3 The engine exhaust system shall be heat shielded to prevent injury to ARFF personnel, mechanics or ground ignition during off road operations or in ARFF fire fighting activities. Engines that produce high temperature exhaust regeneration cycles shall be equipped with a diffuser to lower exhaust temperatures through mixing with ambient air.
- 2.5.5 Fuel System:
- 2.5.5.1 The fuel system shall be approved by the engines manufacturer and be equipped with a heated fuel filter and fuel water separator(s) Turbine model produced by Parkers Racor Division of Haverhill, MA, or approved equal. The fuel filter separator shall be mounted in the engine filter area detailed in Section 2.5.1.3.
- 2.5.5.2 The fuel system shall be shielded from damage during off road operation, from ground fires and excessive heat from the engine's exhaust system.
- 2.5.5.3 The fuel system shall be protected from vapor lock and have a self-priming system independent from the systems fuel pump that is either electrically or pneumatically operated.
- 2.5.5.4 The fuel filler cap shall be safety chained to prevent loss. The safety chain shall not be welded, riveted or bolted to the tank.
- 2.5.5.5 The tank filler cap, neck and a six by six (6" x 6") inch square around the filler neck or the complete tank shall be painted green. A permanent one and one-half (1-1/2") inch high, green label with white lettering stating "DIESEL FUEL ONLY" shall be installed as close as practical to the fuel filler neck.
- 2.5.5.6 The fuel tank shall have the capacity to provide a minimum of thirty (30) miles of travel at a speed of fifty-five (55) mph plus two (2) hrs of pumping at a full rate of discharge and an additional four (4) hours of operation of each accessory item that uses the vehicles main fuel tank as its common source.

- 2.5.5.6.1 The Fuel tank shall have a drain that is assessable from the bottom of the fuel tank(s). The fuel tanks shall be installed so that gravity feeding is not possible.
- 2.5.5.7 If an engine requires a boost pump to assure adequate fuel flow to the engine, a pressure-operated switch with an in-cab warning light shall be furnished to warn the operator of low boost pump pressure. The boost pump should be installed to shut off when the engine is turned off, or to have an emergency shutoff switch or circuit breaker located near the light to allow the operator to shut off the boost pump in the event of fuel leakage downstream of the boost pump.
- 2.5.5.8 Engines that require the use of Diesel Exhaust Fluid (DEF) shall have a tank(s) for the DEF that contains at least the amount of DEF for two complete diesel fuel capacities. DEF tanks shall be as close as practical to the diesel tank, be plainly labeled for DEF, and shall have a blue cap and fill area with the words "DEF ONLY" or similar near the fill. Cap shall be attached to prevent loss.

2.6 DRIVETRAIN

2.6.1 Drivetrain General:

- 2.6.1.1 The transmission, differentials and transfer cases shall be capable of maintaining optimal operating temperatures during continuous operation in ambient temperatures from minus ten (-10°) degrees Fahrenheit to one hundred and twenty (120°) degrees Fahrenheit.

2.6.2 Transmission:

- 2.6.2.1 The vehicles must meet FMVSS 102 for transmission shift lever sequence, starter interlock and transmission braking effect.
- 2.6.2.2 The transmission shall be fully automatic utilizing a torque converter and multispeed geartrain with a minimum of six (6) forward speeds and reverse, be approved for this application by its manufacturer and be rated to work within the power output of the engine. A copy of the transmission manufacturer's application certification must be presented with the bid.
 - 2.6.2.2.1 The transmission shall shift smoothly into and out of gear as well as between gears so that undue shock is not applied to the drivetrain.
 - 2.6.2.2.2 The vehicle shall be equipped with a momentary switch assessable by the driver in the seated position that automatically selects first gear of the transmission through a failsafe mechanism so that the vehicle can be moved out of harm's way in the event the vehicles transmission fails.
- 2.6.2.3 If the transmission is equipped with a remote filtration package it shall be installed in accordance with the manufacturer's recommendations and be located with other filters described in Section 2.5.1.3.

2.6.2.4 The transmission shall be capable of transferring power to devices connected through its power takeoffs while traveling at any speed and in any gear. The transmission shall be capable of maintaining power to the main fire fighting pump while shifting from forward to reverse and reverse to forward with pump pressure remaining constant.

2.6.3 Differentials:

2.6.3.1 Positive drive to each wheel by means of a fully locked driveline and cross differential lock shall be provided in order to maximize traction on low friction surfaces.

2.6.3.2 All traction increasing devices including cross differential locks shall be manually selectable by the seated driver, while the vehicle is in motion, by use of a single control.

2.6.3.2.1 If available, the single control shall also allow disconnecting positive drive to the front axle for on-pavement operations.

2.6.4 Axles:

2.6.4.1 The Gross Axle Weight Rating (GAWR) of the fully loaded vehicle must not be exceeded for any axle.

2.7 BRAKES

2.7.1 General Brakes:

2.7.1.1 Vehicles shall be equipped with a dual circuit air brake system fully complying with FMVSS 121 as though these vehicles were on-highway vehicles subject to this standard. All performance requirements of FMVSS 121 are applicable to these units.

2.7.1.2 The brake system shall feature dual air actuators at each wheel for the service and emergency brake systems. All brake chambers shall be mounted so that no part of the brake chamber projects below the axle.

2.7.1.3 There shall also be a parking brake system which must act on both wheels of an axle and there must be parking brakes on fifty percent (50%) of the vehicle's axles. There shall be a warning light along with an audible signal to alert the driver when the parking brake is engaged and the vehicle is in motion.

2.7.1.4 The brake system shall be equipped with an overheat detection system to provide visual and audible warning to the driver of a brake overheat condition. The overheat detection system must provide warning to the driver early enough to prevent brake damage and provide indication as to which wheel(s) are overheating. The brake overheat detection system must also report to the Monitoring And Data Acquisition and Storage (MADAS) system the overheat condition including wheel(s) start and end time of the overheat condition.

2.7.2 Air System:

2.7.2.1 The vehicle shall have air brakes supplied by an engine driven air compressor.

The compressor shall have the capacity for quick build up of tank pressure from zero (0) psi to the pressure required to release the spring brakes. This build up to brake release pressure shall be accomplished within fifteen (15) seconds.

- 2.7.2.2 Air reservoirs shall be sized appropriately for the amount and size of the service brake chambers supplied by that reservoir. Each reservoir shall be equipped with a automatic heated drain valve model DV2 produced by Bendix Commercial Vehicle Systems Llc of Elyria, Ohio or approved equal.
- 2.7.2.3 The air system shall be equipped with an air dryer model AD-IS with Everflow Assembly manufactured by Bendix Commercial Vehicle Systems LLC of Elyria, OH or approved equal.
- 2.7.2.4 The air system's leakdown rate shall be no more than ten (10) psi in a four (4) hour period.
- 2.7.2.5 The air system shall be designed to build up air pressure to the various subsystems in the following order of priority:
 - 1. Air throttle
 - 2. Spring brake release
 - 3. Service brakes
 - 4. Auxiliary air
- 2.7.2.6 There shall be a pressure protection valve mounted at the air reservoir tank to maintain air pressure in the brake system when the auxiliary air system is run during use.
- 2.7.2.7 An air connection with quarter turn shut off valve to allow service vehicles to charge the air system of the vehicle and shall be provided at a location to be approved by the Engineer. The connection shall be a 0.375in female quick coupling automotive type fitting. The connection shall include a pressure protection valve to assure air brake priority at all times.
- 2.7.3 Shore Power Air System:
 - 2.7.3.1 The truck air system is to be maintained at normal operating pressure by a one hundred and twenty (120) V AC sixty (60) hz high pressure air compressor Model #091-9HP manufactured by Kussmaul Electronics of Sayville, NY of or approved equal. The compressor shall have the following ratings:
 - 1. Adjustable differential range of twenty (20) PSI to a maximum rating of one hundred and twenty (125) PSI
 - 2. Output: 1.4 CFM, Open Flow, one hundred and twenty (125) PSI Max
 - 3. Rating: one hundred and twenty (120) volt AC at three and a half (3.5) amps
 - 2.7.3.2 The compressor and control system shall be wired to the shore line power electrical system. A large low air warning light shall be installed near the pull-away connector and prominently labeled "low air." the warning light shall be red and shall operate from the vehicles electrical system.

- 2.7.3.3 A pressure switch shall regulate operation and shall automatically sense low air pressure in the brake system and restore the proper pressure. Pre-set at eighty (80) PSI “ON” and one hundred (100) PSI “OFF”.
- 2.7.3.4 The auxiliary air system shall have no interference with the vehicle’s engine mounted air compressor and be designed for horizontal mounting.
- 2.7.3.5 The auxiliary compressor shall have sealed bearings and a liquid filled dampening type pressure gauge.

2.8 STEERING

2.8.1 Steering General:

- 2.8.1.1 The chassis shall be equipped with power assisted steering with direct mechanical linkage from the steering wheel to the steered axle(s) to permit the possibility of one man manual control in the event of power assist failure.
- 2.8.1.2 The power steering shall have sufficient capacity to allow turning the tires stop to stop with the vehicle stationary on a dry level, paved surface and fully loaded, with no more than fifteen (15) pounds of pull force needed on the steering wheel’s rim.
- 2.8.1.3 The wall to wall turning diameter of the fully laden vehicle shall be less than three (3) times the vehicle length.

2.9 WHEELS AND TIRES:

2.9.1 General Wheels and Tires:

- 2.9.1.1 The vehicles must meet FMVSS 120 for tire selection and rims for motor vehicles other than passenger cars.
- 2.9.1.2 Each tire and wheel shall have a rated carrying capacity at least equal to the gross road normally imposed on it by the evenly and fully loaded vehicle. The load rating capacity of the tires shall be in conformance with practices of the Tire and Rim Association, Inc.
- 2.9.1.3 All wheel nuts shall have Wheel Checks affixed in a highly visible contrasting color that will allow them to visually stand out from the color of wheels.

2.9.2 Wheels:

- 2.9.2.1 A spare wheel with mounted tire shall be provided for each vehicle. Spare wheels and tires shall be shipped separately.

2.9.3 Tires:

- 2.9.3.1 The vehicles must meet FMVSS 119 for new pneumatic tires for vehicles other than passenger cars
- 2.9.3.2 All tires including the spare shall be Michelin 24R21 XZL radials or approved equal. All tires and wheels are to be interchangeable and of the same size.

- 2.9.3.3 Tires shall have a certificate approving the application by the tire manufacturer for the speed and load ratings of these vehicles. The load rating of the tires shall not be exceeded.

2.10 FIRE FIGHTING SYSTEMS:

2.10.1 General Fire Fighting System:

- 2.10.1.1 The location of all fire fighting systems accessible from exterior compartments must be approved by the Engineer in conjunction with the PANYNJ Aviation Department. Their locations can be detailed in drawings and or photos. The details of their location can be combined with the details of the equipment and their locations in “Body” for Sections 3.3, 4.3, and 5.3 pertaining to vehicle specific equipment.
- 2.10.1.2 All intake and discharge outlets shall have National Standard Threads (NST). Thread adapter couplings shall be provided for all intake and discharge outlets and discussed at the pre-manufacturing meeting. The position of all discharge and intake outlets shall allow for adapters to be affixed while allowing adequate clearance for the connection of their respective hoses as required by hand or with a tool as well as the closing of all cabinet door without requiring the removal of the adaptors.
- 2.10.1.3 Concise identification, directions and warnings on placards for operating all fire fighting systems from the ground shall be placed in the respective compartments of that system. Directions shall include the fill instructions off all agent tanks, flushing of agents from their respective systems, valve operations, etc.
- 2.10.1.4 Pump and piping shall be in weather-protected enclosures to prevent freezing at ambient temperatures as low as zero (0°) degrees Fahrenheit for eight (8) hrs. If necessary, supplemental heater(s) shall be installed in the pump and piping areas to prevent freezing and positioned so that they are accessible for periodic maintenance. The heaters shall be sized accordingly and be an Airtronic model produced by Espar of Michigan of Commerce Twp., MI or approved equal.
- 2.10.1.5 Supplemental heater(s) shall be controlled by a thermostat in the compartment it is located in. The heater(s) shall run off of the vehicles main fuel tank with its line connected after the fuel filter and dryer. It shall have its control mounted in the cab on the fire cluster with an indicator lights that illuminates when the heater(s) is operating and when it is in need of service. The controls shall have a switch to activate the system on with preset run times and continuous run options. When the heater is activated, it shall come on when the ambient temperature in the area approaches freezing and to automatically turn off at temperatures above forty (40°) degrees Farenheit.

2.10.2 Water Discharge Pump:

- 2.10.2.1 The water pump shall be constructed of corrosion resistant metal and shall be single or multiple stage centrifugal type, designed for dependable emergency service. Fire pump must deliver one hundred (100%) percent of the vehicles carrying water capacity while on level ground, eighty-five (85%) percent of their capacity while on a twenty (20%) percent grade side slope and eighty-five (85%) of their capacity while ascending or descending a thirty (30%) grade.
- 2.10.2.2 The pump shall be gravity primed from the vehicle's water tank. The pump and piping system shall be designed to eliminate the entrapment of air.
- 2.10.2.3 When operating from the water tank, it shall be capable of discharging at a rate equal to or exceeding total requirements of primary turrets, hand line nozzles, and under truck nozzles discharging simultaneously at designed pressures.
- 2.10.2.4 The pump shall be driven by a fully modulating power divider that can be activated from the cab. The power divider shall be capable of being activated by all methods while the engine is running and activation while the vehicle is in motion shall possible from the cab for pump-and-roll operation.
- 2.10.2.5 The pump engagement shall have redundant actuation systems so that the pump can engage even when some vehicle systems are inoperable. The preferred backup system shall be a manual override
- 2.10.2.6 The pump drive system shall be capable of absorbing the maximum torque delivered by the engine to the pump and withstand the engagement of the pump at all engine speeds and under all operating conditions.
- 2.10.2.7 During pump-and-roll operation the power divider shall permit operation of the pump and simultaneous operation of the vehicle through the foot throttle. While engine rpm is maintained at the optimal governed power for pumping, the foot throttle shall modulate power to the vehicles drive train. The pump shall not be affected by changes in transmission ratios in the vehicle drive.
 - 2.10.2.7.1 The design of the drive system and controls shall prevent damage to the drive and minimize lurching of the vehicle when the vehicle drive is engaged while pumping operations are in process. While pumping at rated capacity, the drive shall permit controlled vehicle operation at speeds from one (1) mph to ten (10) mph.
- 2.10.2.8 The pump drive shall have sufficient power capacity to provide rated pump discharge while the vehicle is being propelled under all operating conditions where a fire fighting capability is required. The suction system shall be designed for efficient flow at the pumping rates specified.
- 2.10.2.9 The pump suction line shall be of large diameter and shortest length consistent with the most suitable pump location.

- 2.10.2.10 There shall be one (1) or more single control multiport drain valve(s) at the lowest point for draining all of the liquid from the pumping system when desired produced by Waterous of South Saint Paul, Minnesota, Hale, a division of IDEX Corp., of Lake Forest, IL or approved equal. The line and valves shall be constructed of metal suitable for the service. The control valve must drain all critical water piping so that in the event of freezing there is no damage to the water system.
- 2.10.2.11 To protect against the pump overheating a churn line shall be provided from the water pump discharge and, if applicable, from the foam pump discharge to prevent overheating of the pump while engaged and operating at zero discharge. The line shall have automatic valve control.
- 2.10.2.11.1 In addition to the churn line the pump shall be equipped with an overheat detection system to provide visual and audible warning to the driver. The overheat detection system must provide warning to the driver early enough to prevent pump damage. The overheat detection system must also report to the MADAS system the overheat condition including start and end time of the overheat condition.
- 2.10.3 AFFF Proportioning System:
- 2.10.3.1 The proportioning system shall provide a method of controlling the ratio of AFFF to the quantity of water with the foam solution capable of being discharged from all orifices normally used for aircraft fire fighting operations. The system shall have controls in the cab as well as at the pump panel. All foam discharged from the vehicle must meet the quality standards specified in NFPA-412 for foam produced by ARFF vehicles.
- 2.10.3.1.1 The proportioning system shall be preset to accurately discharge finished foam at a nominal three (3%) percent solution of foam concentrate to water. When the vehicle is turned off the system must return to the preset ratio. The permitted range of foam to water solution shall be zero (0%) percent to eight (8.0%) percent which shall be adjustable from the cab or pump panel. The system shall provide accurate ratio to all discharge locations at their maximum rate. The proportioning system must automatically adjust for increases or decreases in flow.
- 2.10.3.1.2 The system shall be designed to work with United States Military Specification compliant three (3%) percent AFFF. The system must also be capable of being easily modified to produce foam proportions with all types of commercially available AFFF concentrates used in fire fighting. Parts list shall identify required components that would require changing if a different concentrate is used. Within the maintenance manuals shall be a section which details the necessary procedures to calibrate the proportioning system.
- 2.10.3.1.3 The foam proportioning system shall be easily accessible and adjustable using normal hand tools. It shall be capable of being locked or safety wired to prevent loss of adjustment after calibration.

- 2.10.3.2 A remote controlled shut-off valve shall be provided in the foam liquid piping that will allow the turret operator to selectively discharge water-only when required. The foam shut-off valve shall have a manual override back-up to allow the valve to be opened in the event of a failure in the remote control system.
- 2.10.4 Piping, Couplings Valves and Adaptors:
- 2.10.4.1 All piping, couplings and valves shall be sized for required flow with minimum restriction and pressure loss. Material for all piping, couplings and valves shall be selected to avoid corrosive and/or galvanic action.
- 2.10.4.2 Piping shall be securely mounted and provided with flexible couplings to minimize stress. Victaulic type couplings shall be provided where required to facilitate removal of piping.
- 2.10.4.3 All valves shall be one-fourth (1/4) turn full flow ball type as selected for ease of operation and freedom from leakage. They shall be of the bolted-end dropout center type for ease of servicing.
- 2.10.4.4 A pressure relief valve with pilot shall be fitted to protect and ensure optimum performance of the system. The relief valve shall be provided by Waterous of Saint Paul, MN or approved equal and shall return to suction side of pump.
- 2.10.4.5 All water system piping shall be tested on the suction side of the pump to detect possible leakage. All water and solution discharge piping shall be tested at fifty (50%) percent above system operating pressure.
- 2.10.4.6 All threaded connections and adaptors shall be fitted with 0.25inch mesh strainers and appropriate caps chained to their respected opening capable of fully protecting the threaded connections.
- 2.10.4.7 The tools for all connections and adaptors shall be positively mounted at a location near the connection.
- 2.10.5 Pump Panel:
- 2.10.5.1 A minimum of two (2), two and one half (2.5") inch NST water/AFFF discharge outlets shall be provided, one on each side of the vehicle. The discharge outlets shall be controlled by the pump panel with full control over flow. The pump panel shall be weatherproof, have the ability to override settings in the cab as well as be locked out from the cab. The pump panel shall not be capable of operation unless the vehicles parking brake is turned on. See Section 2.13.7.3 for specifications pertaining to pump panel gauges and controls.
- 2.10.6 Water and Foam Storage Tanks
- 2.10.6.1 The tanks are to be designed for use in this application and constructed from Polypropylene material with internal baffles and anti swirl plate.
- 2.10.6.2 The tanks are to be separate and distinct from the body and easily removable. They shall be mounted according to the manufacturer's specifications in a manner which limits transfer of the torsional strains of off-pavement driving from the chassis frame to the tank.

- 2.10.6.3 The tanks must be provided from the manufacturer fitted with lifting rings or eyes to facilitate tank install and removal.
- 2.10.6.4 Baffles shall be positioned in the tanks to prevent the sloshing of their liquid both longitudinally and transversely while permitting the flow of both water and air between compartments and maximum flow both in and out of the tanks.
- 2.10.6.5 The tanks shall have a lifetime warranty against leaking, cracking, seam failure, delamination, or any other tank failure. The warranty shall cover the cost of labor and materials for needed repairs.
- 2.10.6.6 The rated capacity of the tanks must be equal to the usable capacity which can be pumped from the tank while the vehicle is parked on level ground (-0%, +5%) for the water tank and (-0%, +10%) for the foam tank.
- 2.10.6.7 The water tank shall have a minimum sixteen (16") inch self-closing and latching manhole with a ten (10") inch fill opening over the tank discharge and must permit visual inspection of the tank suction outlet and any tank mounted anti-swirl baffles by maintenance staff. It shall also have a removable panels or manhole in its top to permit access to all baffled components. The manhole shall be designed to provide overpressure protection to the tank. The manhole cover shall lift to provide additional overflow before the tank is damaged at maximum tank filling rates with suction connection pressures up to one hundred and twenty-five (125) psi.
- 2.10.6.8 The AFFF tank shall have a minimum sixteen (16) inch self closing and latching manhole with a ten (10) inch fill opening over the tank equipped with a removable stainless steel one fourth (1/4") inch mesh screen with pail openers to permit emptying of 5 gallon foam liquid concentrate pails into the storage tank at a rapid rate regardless of tank level. The strainer shall be removable by hand to allow cleaning and visual inspection of the fluid level.
- 2.10.6.9 Overflow pipes shall be provided for both AFFF & water tanks. They shall extend externally approximately six inches from the bottom of tank. The overflow pipes shall extend through the top of the tank and make a one hundred and eighty (180°) degree u-bend turn and enter the tank on the top. The pipe openings shall be welded flush with the internal top of tank and the top of the turns shall not exceed eight (8") inches from top of tank.
 - 2.10.6.9.1 The overflows shall be located in positions where the head is at a maximum. The outlets must not be over any vehicle component and must not discharge in front of any wheel.
- 2.10.6.10 The tanks shall be adequately vented to atmosphere to permit rapid and complete filling without pressure build up and to permit agent discharge at the maximum flow rate without danger of tank collapse.
- 2.10.6.11 Tank level sensors shall be a Series 500 for the water tank and a Series 2000 for the foam tank, provided by MC Products Inc., Smithtown, NY or approved equal.

2.10.7 Water Tank Fill Connections:

2.10.7.1 Water tank fill connections shall be provided at each side to permit the filling of the water tank in two (2) minutes at a nominal hydrant pressure of eighty (80) psi at the tank connection however tank filling shall be possible at pressures up to one hundred and twenty-five (125) psi without damage to the tank or piping system. The fill connections shall be easily assessable from the ground and shall not protrude past the overall width of the vehicle. Each side of the vehicle must have a four and a half inch (4.5") intake within the compartment pointing down at a thirty (30°) degree angle from the horizontal. The space shall be sufficient to allow the installation of a five (5") inch storz adapter without impeding the ability of the compartment door to be closed. The connection(s) shall be provided with a one fourth (1/4") inch mesh strainer and shall have a ball valve positioned so that water will not be lost from the tank when connections are made or broken.

2.10.8 AFFF Storage Tank Fill Connections:

2.10.8.1 A tank connection shall be provided in a position where it can be easily reached from the ground to permit the pumping of foam-liquid concentrate into the storage tank from an independent "on-board" foam pump powered by the vehicle's one hundred and twenty (120) V electrical system and protected by a resettable circuit breaker. The pump shall be rated at a twenty (20) gpm minimum and shall be designed with an internal diverter valve so that it can be used either to fill or to empty the foam tank. The piping shall be one and a half (1.5") inch and allow for adaptation without impeding the ability of the compartment door to be closed.

2.10.8.1.1 The foam storage tank shall be capable of being filled or emptied from the ground by an external pump.

2.10.8.1.2 The connection(s) shall be provided with a one fourth (1/4") inch mesh strainer and shall have a ball valve positioned so that foam will not be lost from the tank when connections are made or broken. A clear six (6') foot hose with the appropriate connection to the AFFF fill inlet shall be provided with a storage location within the compartment of the foam fill inlet.

2.10.9 Turrets:

2.10.9.1 Turrets shall be fixed to the vehicle with nozzles optimized for water/AFFF agent discharge. The nozzles shall be capable of straight stream and dispersed patterns selectable from the firefighting instrument and control cluster in the cab. See "Firefighting Systems" in Sections 3.4, 4.4, and 5.4 for vehicle specific turret types.

2.10.9.2 Each turrets shall have at a minimum, two (2) flow settings for fifty (50%) percent and one hundred (100%) percent of their water/AFFF discharge capacities. The turrets shall automatically adjust to optimize their discharge pattern for changes in flow.

- 2.10.9.3 All turrets shall have the maximum amount of movement permissible before hitting an obstruction in both the horizontal and vertical directions. Limits shall be pre programmed and have the ability to be easily re-programmed into the turrets control system so that the turrets or any device mounted on the turret is not allowed to crash into itself or the vehicle. The turrets shall become operational for movement as soon as the vehicle is started without the requirement for the system to recalibrate, find its home position or reset its limits.
- 2.10.9.4 All turrets shall have the ability of being manually overridden at the device by a crew member in the case that the electric motor drives fail. When the turrets are manually operated the driver shall still be capable of discharging all agents from that turret. The turret when being operated manually shall not require forces in excess of fifty (50) pounds.
- 2.10.10 Firefighting Hose Reels:
- 2.10.10.1 Hose reels shall be positioned inside cabinets so that they easily accessible for use on swing out trays to allow deployment at a minimum range one hundred and twenty (120°) degrees along the sides of the vehicle. The swing out mechanism shall be capable of locking in the stowed position during transport and rewind. The reel shall have guards for all potential pinch points in its mechanism. The reels shall be installed so that the position and alignment of the reel can be easily adjusted, access to greasing bearings and for maintenance.
- 2.10.10.2 Hose reels shall be multi-wrap type hose reels. The reels shall be the latest manufacturer's models with a capacity to hold one hundred and fifty (150') feet of dual agent hose. The reels shall have drums adequately sized for the hose and capable of withstanding a pressurized hose when wound on the reel. Stainless steel rollers shall be provided as required to protect the hose from chafing
- 2.10.10.3 The reels shall be equipped with heavy-duty explosion proof electric or air motors..
- 2.10.10.4 The motor shall drive the reel through a speed reducer and chain drive to rewind the hose. The reel drum shall be equipped with a friction brake and position lock. Also each reel shall be equipped an auxiliary crank rewind that has a clutch with handle that can be used to disengage the motor and manually rewind the hose from the operating position.
- 2.10.10.5 Each reel motor shall be actuated by an individual rewind switch adequately rated for the application. If the motor is electric the switch shall be installed in a sealed enclosure and wired through a relay. The switches shall be the momentary push-button type, rewinding the hose when activated and automatically shutting off when released. The switches shall be on the reel in an accessible locations where the crew member can position the house on the reel as he presses the button.

- 2.10.10.6 All wiring shall be installed in conduit with watertight fittings. Each hose reel motor and connecting wiring shall be protected by manual reset circuit breakers of the manufacturer's recommended rating. All wiring shall be properly sized as recommended by the reel manufacturer. All wiring shall be installed in accordance with National Electrical Code requirements.
- 2.10.10.7 All internal piping in the reels shall be of corrosion resistant material and with low friction fittings. The outlet piping shall have a bolting flange with an o-ring groove at the drum opening. The outlet piping shall extend above the drum so that sufficient clearance is provided between the hose connection assembly and the drum. Also, a clamp shall be provided to prevent the last eighteen (18") inches of hose from being unwound from the reel.
- 2.10.10.8 The hose reel piping system, swivel, and shutoff valve shall be sufficiently rated for the application and have a minimum pressure rating of one and one half (1½) times its rated operating pressure. The firefighting agent flow shall be activated or deactivated at the reel by highly visible quick opening ball type valve. The valve shall have the ability to be manually operated or remotely operated from the cab through a switch on the firefighting cluster.
- 2.10.11 Discharge Lines:
 - 2.10.11.1 All fire hose shall meet NFPA-1961, 2007 and have a burst rating at a minimum of three times the maximum working pressure of the fire fighting system.
 - 2.10.11.2 The vehicle shall have two (2) pre-connected one and three quarter (1.75" inch" handlines, with one and a half (1.5") inch NST couplings, woven double jacket handlines and nozzles accessible from either side of vehicle. The handlines shall be a minimum of two hundred (200') feet in length. The nozzle shall have a pistol grip handle, a bail handle to control flow, and have an adjustable pattern for straight stream, dispersed and fog.
 - 2.10.11.2.1 The hoses shall have the capability of being activated by a single crew member from the fully deployed position by tugging on the line to activate a mechanism that will charge the line. The mechanism shall be easily reset by hand without the use of tools. All components of the mechanism shall be attached to the mechanism so that they will not be lost.
 - 2.10.11.2.2 A nozzle holder shall be provided inside the compartment for each handline mounted in a visible location and designed for quick deployment.
- 2.10.12 Undertruck and Ground Sweep Nozzles:
 - 2.10.12.1 A minimum of three (3) undertruck nozzles shall be mounted under the truck and controlled from the cab so as to protect the bottom of the vehicle and the inner sides of the wheels and tires with AFFF solution discharged in a spray pattern. Each under-truck nozzles must have a minimum flow rate of fifteen (15) gpm.

- 2.10.12.2 The vehicle shall also be equipped with two (2) ground sweep nozzles positioned as far forward on the vehicle as possible on both side capable of producing a flow rate between one hundred (100) and three hundred (300) gpm. The ground sweep nozzles shall be capable of reaching a far point of thirty (30') feet perpendicular to both sides of the vehicle and a dispersed width of twelve (12') feet.
- 2.10.12.3 If the undertruck and ground sweep nozzles are to be protected from debris and obstacles while the vehicle travels off road. The nozzles must have guards capable of absorbing impact or have the ability to breakaway to prevent damage and continue their operation.
- 2.10.13 Compressed Air Foam System (CAFS):
 - 2.10.13.1 CAFS systems capable of discharging from a handline as well as a system capable of discharging from the turrets shall be quoted as an option or options if multiple are available. How the system operates, its capabilities and limitations must be fully detailed.
 - 2.10.13.2 The system shall be optimized using three (3%) percent foam solution and work with all components of the other fire fighting systems. It must have the ability to be activated and deactivated by the same controls for the Foam proportioning system
- 2.10.14 Fire Fighting Compartment Climate Control System:
 - 2.10.14.1.1 A supplemental heater system shall be provided to regulate the temperature in the compartments of the vehicles fire fighting systems. The system shall be activated by thermostats in the compartments of fire fighting systems with its controller mounted in the cab on the fire-fighting cluster. The system shall be set to activate when the ambient temperature in the compartments the fire fighting systems are located in approach freezing and to automatically turn off at temperatures above forty (40°) degrees Fahrenheit.
 - 2.10.14.1.2 The system shall run off of the vehicles main fuel tank with the heater supply line designed to leave at least twenty five (25%) of the fuel available for the engine.
 - 2.10.14.1.3 The controller shall have indicator lights that illuminates when the heater(s) is operating and when it is in need of service.

2.11 ELECTRICAL

- 2.11.1 General Electrical System
 - 2.11.1.1 The electrical system is to be of the highest quality with wiring and lamps meeting highest automotive industry standards to assure long life and low maintenance throughout the life of the vehicle.
 - 2.11.1.2 All one hundred ten (110) VAC wiring shall conform to the National Electric Code and NYC electrical code requirements and be copper run through metal conduit or armored cable (BX).

- 2.11.1.3 If wires must be removed or disconnected in order to service certain portions of the vehicle and its components, such wires will be equipped with cannon type disconnect plugs designed for repeated connect/disconnects.
 - 2.11.1.4 All electrical components, wiring, connections etc, shall be rated to operate in the environment they are being used in and the conditions they are exposed to.
 - 2.11.1.5 Panels for fuses and relays shall be positioned so they are protected from damage while providing easy access to personnel to trouble shoot and replace their components. The quantity of panels shall be kept to a minimum with all fuses and relays common to a system located together in the same panel.
 - 2.11.1.6 All vehicle components and systems shall operate without being affected by interference damage or disruption including detrimental effects or interference to on-board computer modules from either vehicle generated noise, or stray Electromagnetic Frequency (“EMF”) or Radiomagnetic Frequency (“RMF”) fields encountered from any airport operations. EMF and RMF noise sources that may be generated by the vehicle, especially if such noise is detrimental to aircraft, Air Traffic Control, or air navigation equipment, shall be shielded. In the event a unit is found to create or encounter EMF or RMF problems, the Contractor will be responsible for remedying the problem to the satisfaction of the PA.
- 2.11.2 12 Volt DC Electrical System
- 2.11.2.1 A complete twelve (12) volt, negative ground electrical system including transistorized alternator(s) and fully transistorized voltage regulator(s) shall be furnished. Optionally, a twenty-four (24) volt DC or a transformer/rectifier 12/24 volt DC starting circuit is acceptable.
 - 2.11.2.2 All wiring shall be of the moisture & abrasion resistant Exane type and shall be of such gauge as to produce not more than a one (1) volt drop with rated load at a nominal twelve (12) volt source voltage.
 - 2.11.2.3 The vehicles electrical components shall be grounded in accordance with SAE J1908.
 - 2.11.2.4 Wires shall be properly routed through chassis and body components to avoid chafing and abrasion and will be properly anchored and secured with removable clips when necessary for servicing.
 - 2.11.2.5 All wire terminations shall end in suitable connectors or splices which shall be soldered not crimped and covered with appropriately sized heat shrink tubing to assure a waterproof connection.
 - 2.11.2.6 All circuits shall be protected by appropriately sized, manually resettable circuit breakers located in centrally located panels that are easily accessible by the operators without the use of tools.

- 2.11.2.7 Alternator(s) shall be sized to produce the minimum continuous electrical load required by the vehicle and its fire fighting systems defined in 2.11.2.8 at idle with a minimum of 20A reserve capacity for battery charging. An indicator shall be present in the drivers compartment alerting the driver should demand exceed alternator output. An electrical load analysis showing electrical demand and alternator output shall be provided with the bid.
- 2.11.2.8 The minimum continuous electrical load at idle shall consist of the total amperage required to simultaneously operate the following in a stationary mode during emergency operations.
1. The propulsion engine and transmission.
 2. All legally required clearance and marker lights, head lights, and other electrical devices except windshield wipers and four-way hazard flashers.
 3. The radio(s) at a duty cycle of ten (10) percent transmit and ninety (90) percent receive (for calculation and testing purposes, a default value of 5 A continuous).
 4. The lighting necessary to produce 2 fc (20 lx) of illumination on all walking surfaces on the apparatus and on the ground at all egress points onto and off the apparatus, 5 fc (50 lx) of illumination on all control and instrument panels, and fifty (50%) percent of the total compartment lighting loads.
 5. All of the vehicles optical warning devices simultaneously.
 6. The vehicles public address system or siren.
 7. The vehicles computer systems including the DEVS and MADAS.
 8. The continuous electrical current required to simultaneously operate any fire pumps, aerial devices, and hydraulic pumps.
- 2.11.2.9 Batteries shall be sealed deep cycle type. In the event of a single battery failure, remaining battery capacity shall be available to allow starting the engine.
- 2.11.2.10 Battery terminals shall be shielded with an insulating boot to prevent accidental shorting. Batteries shall be securely mounted and adequately protected against physical injury and vibration, water spray, and engine and exhaust heat. The batteries shall be mounted in a position that is easily serviceable. When an enclosed battery compartment is provided, it shall be adequately ventilated and the batteries shall be readily accessible for examination, replacement, testing and maintenance. A single polarized receptacle model 610245 produced by Associated Equipment Corp of St. Louis, MO or approved equal shall be provided for externally charging batteries and jump starting the vehicle. All receptacle locations are to be approved by the Engineer.
- 2.11.2.11 An onboard battery charger shall be wired to the one hundred and twenty (120) volt shore line power receptacle #1, model PD2140 produced by Progressive Dynamics of Inc. of Marshall, MI or approved equal.
- 2.11.2.12 The batteries shall be automatically and individually load tested by a Smart Gauge produced by Ballard Commercial Industries, Inc. (Balmar) of Arlington, WA. or approved equal. The gauge shall be mounted in the cab of the vehicle in view of the driver from the seated position.

2.11.3 110 Volt AC On-Board Electrical System

- 2.11.3.1 The unit shall be equipped with an on-board generator capable of supplying not less than ten (10)KW of one hundred ten (110) VAC at sixty (60) Hertz electrical power to scene lights, elevating light tower, corded electrical reel and truck mounted outlets. The generator shall be a weatherproof ten (10)KW Vanair Road Power unit from Vanair Manufacturing Inc. of Michigan City, IN or approved equal
- 2.11.3.1.1 The generator shall be powered by a hot shift power takeoff from the engine or transmission. The unit will come with all appropriate accessories and comply with the manufacturer's recommended installation instructions. Preferred drive is mechanical through a drive shaft to the generator, although a hydraulic drive system utilizing a close coupled hydraulic pump and hydraulic motor coupled to the generator is acceptable.
- 2.11.3.1.2 Regardless of drive system, the unit must be capable of producing power at a stable sixty (60) hertz at its rated power output while the vehicles engine is at the idle.
- 2.11.3.1.3 The generator shall have protections against over speed, short circuit, and Ground Fault Interruption (GFI).
- 2.11.3.1.4 The generator shall have the ability to be a turned on from the control panels mounted in both the cab, and in the compartment with the electrical reel. Both locations shall include an amp meter, frequency meter, voltmeter, generator on/off buttons and a PTO engaged warning light.
- 2.11.3.2 The vehicles on board generator shall power remote, appropriately rated NEMA distribution panel with a master breaker and separate installed breakers appropriately sized for the following:
1. Scene lights
 2. Elevating light tower lights
 3. Electrical cord reel
 4. Cab outlet
 5. Front driver side outlet
 6. Front passenger side outlet
 7. Rear driver side outlet
 8. Rear passenger side outlet
- 2.11.3.2.1 All wiring shall conform to the National Electric Code and NYC electrical code requirements. All one hundred and ten (110) VAC wiring shall be copper and run through metal conduit or armored cable (BX).
- 2.11.3.3 Electrical twenty (20)A GFI-rated receptacles with covers shall be provided at each corner of the vehicle and in the interior cab compartment.
- 2.11.3.4 A power rewind electrical reel with friction brake shall have a two hundred (200') feet 12/3cord. There shall be a minimum of three (3) lighted NEMA 5-15R receptacles permanently fixed at the end of the cord with reinforced one (1) foot octopus style whips.

2.11.3.4.1 The reel's rewind mechanism shall meet the specifications of Section 2.10.10 with its reel sized appropriately for two hundred (200') feet of 12/3 cord.

2.11.4 110 Volt AC Shore Line Power Electrical System

2.11.4.1 Two (2) auto eject receptacles rated for one hundred and twenty(120) VAC NEMA 5-20 plugs at twenty (20)A shall be mounted aft of the driver side door to the cab to provide shore line power to the vehicles one hundred and twenty (120)VAC shore power system. The plugs shall be model # 091-20WP-120 supplied by Kussmaul Electronics of Sayville, NY or approved equal.

2.11.4.1.1 The vehicles shore line power system shall power the vehicles on board air compressor, battery charger and engine coolant heater. Each auto eject receptacle shall be wired through an appropriately rated resettable circuit breakers for:

- On Board Air Compressor & Battery Charger
- Engine Coolant Heater

2.11.4.1.2 Receptacles shall auto eject their plugs when the engine's starter motor is engaged. If either auto eject receptacle does not auto eject its plug a red warning light and audible alarm shall sound in the cab.

2.11.4.1.3 Each auto eject receptacle shall have an amber colored light located at the receptacle indicating that the shore line power is on for that circuit along with placard indicating what that receptacle powers. The placards shall read as follows for each receptacle:

1.

SHORE POWER
"ON"
AIR COMPRESSOR
BATTERY CHARGER

2.

SHORE POWER
"ON"
ENGINE HEATER

2.12 CAB AND DRIVER COMPARTMENT

2.12.1 General Cab Description:

2.12.1.1 The cab shall meet FMVSS 201, 206, 208, 216 for protection against occupant interior impact protection, door locks and door retention components, occupant crash protection, roof crush resistance and flammability of interior materials respectively. The cab may be part of the unitized rigid body and frame structure or it may be a separate unit flexibly mounted on the main vehicle frame.

- 2.12.1.2 The cab shall be mounted on the forward part of the vehicle. It shall be a minimum four (4) man cab equipped with side-by-side seating for one (1) driver and one (1) instructor/fire system operator both with individual adjustable seats plus additional seating for at least two (2) or three (3) others. Additional seating positions above four (4) if available should be quoted as an option.
- 2.12.1.3 The cab shall be constructed from materials of adequate strength to ensure a high degree of safety for the crew under all operating conditions including excess heat exposure, and in the event of a vehicle rollover accident. The cab and cab mounting shall have a warrantee for the life of the vehicle against structural failure, permanent deformation and corrosion failure.
- 2.12.1.4 The cab shall be designed for maximum visibility for the driver and assisting operator providing adequate vision above, immediately in front and around to the sides of the vehicle.
- 2.12.1.5 The cab shall be weatherproof, and shall be fully insulated thermally and acoustically (not to exceed eighty-five (85) decibels under all operating conditions) with a fire resistant material.
- 2.12.1.6 There shall be sufficient room at all seating positions in the cab for crew members to both enter and exit donning their bunker gear, Self Contained Breathing Apparatus (SCBA) tanks and rang helmets. The cab floor shall be flat and unobstructed to allow for easy access to and egress from the central driver's seat.
- 2.12.1.7 The cab shall be provided with wide gutters with drains to prevent foam and water dripping on the windshield and side windows.
- 2.12.1.8 The cab shall have adequate space for all instrument controls and equipment specified without hindering the crew. Vehicle controls and indicators specific to the operation of the vehicle shall be positioned near the driver. The fire fighting system's controls and indicators shall be mounted between the driver and instructor / fire system operator and accessible to both.
- 2.12.2 Doorways & Hatch:
 - 2.12.2.1 Wide opening doors shall be provided on each side of the cab with necessary steps and handrails to provide rapid and safe entrance and exit from the cab.
 - 2.12.2.2 Cab doors shall be attached to the cab by full length stainless steel piano hinge with brass pins. The mountings on the door and pillar shall be adequately reinforced to provide required grip of the fasteners and allow for frequent door replacement without loss of effective strength of the fastener. If backing plates are used in either the door pillar or door assembly they must be welded securely to the component to prevent dropping or misalignment during door removal or installation.

- 2.12.2.3 Cab doors shall also be equipped with heavy-duty leather or other acceptable material door restraining straps to prevent springing or damage to the doors when caught by high winds or jet blast. Anchorage of each end of the restraining strap shall include backing plates of suitable size and thickness to prevent damage to the cab or door, and to allow for frequent replacement without loss of strength of the fasteners.
 - 2.12.2.4 Entry steps and grab rails shall conform to NFPA-414 and other relevant industry standards. There shall be a quick opening hatch of adequate size providing unrestricted and ready access of the roof area and roof mounted turret to a crew member donning full bunker gear. The latching mechanism must be capable of being operated from both the inside and outside of the cab. Grab handle(s) shall be located to aid a crew member while passing through the hatch in both directions.
- 2.12.3 Seating and Restraints:
- 2.12.3.1 Each seat position shall meet the requirements of FMVSS 207,209 and 210 for seating systems, seat belt assemblies and seat belt assembly anchorages respectively.
 - 2.12.3.1.1 The four (4) seating positions shall allow for a SCBA cylinder and its pack to be mounted in the back portion of the seats with cushioned vanity covers that are easily removable. The mounting must accommodate a 4500psi, 45min Carbon SCBA Cylinder model # 804722-01 and Air-Pak 75 model X3224022020302, both manufactured by Scott Safety of Monroe, NC or approved equal. The SCBA tanks shall be positively locked in place with a release mechanism easily assessable to crew members from the seated position while donning full bunker gear.
 - 2.12.3.2 A placard is to be visible to all occupants that reads:
 - 2.12.3.2.1 “OCCUPANTS MUST BE SEATED AND WEARING A SEAT BELT WHEN APPARATUS IN MOTION”
- 2.12.4 Cab Compartments and Equipment Mounting Positions:
- 2.12.4.1 A lockable compartment with provisions for holding a model Glock nineteen (19) firearm produced by Glock Inc of Smyrna, GA shall be provided in the cab. It shall be sized and rated to meet the ballistic requirements to withstand the discharge of hollow point ammunition.
 - 2.12.4.2 All equipment on the following list shall be securely mounted in the cab positioned to minimize the effect on crew member ability to ingress and egress the vehicle. The power sources position and mounting of all of cab mounted equipment shall be approved by the Engineer. All weights provided are estimates.

EQUIPMENT	QTY	Unit Weight (lbs)	Total Weight (lbs)
Cab:			340
Gun Safe	1	90	90
Binoculars	2	1.9	3.8
Seatbelt Cutters	4	0.16	0.64
Scott paks in cab seats	3	21.5	64.5
Full Scott SCBA's	3	29	87
Hearing protection	4	3	12
Flashlights (Mounted)	3	1.85	5.55
Thermal Imaging Camera (Mounted)	1	11.7	11.7
Infrared Thermometer	1	1.2	1.2
Thermal Imager (Mounted)	1	0.44	0.44
Multi-Gas Detector	1	3.8	3.8
Multi-Gas Detector (Mounted)	1	8.7	8.7
Emergency Response Guidebook	1	0.786	0.786
Digital Camera	1	0.35	0.35
Binder w/Reference Material	4	10	40
Accountability Tag Ring	1	1	1
Portable Radio Battery w/charger	3	2.2	6.6
Key Ring	1	0.04	0.04
Microsoft Surface Pro (Mounted)	1	1.76	1.76

2.12.5 Mirrors:

- 2.12.5.1 The vehicles must meet FMVSS 111 for Rearview Mirrors.
- 2.12.5.2 The left and right outside mirrors shall be the combination flat and convex type, electrically heated and motorized with controls accessible to the seated driver.
- 2.12.5.3 Mirrors on each side of the vehicle capable of providing the driver with a view of the blind spot immediately front of the vehicle shall be provided.

2.12.6 Windows:

- 2.12.6.1 The windshield shall conform to FMVSS 205 for glazing and 212 for windshield mounting. All other windows shall conform to FMVSS 205 for glazing materials. Reflections on cab windows, from outside light sources shall not cause visual difficulties during daylight or night operations. All windshield and window glass shall be of standard U.S thickness. All windows that open shall be electric power operated with controls assessable to both the driver and instructor / fire system operator. All power windows must meet FMVSS 118.
- 2.12.6.2 The upper portion of the windows shall have a solar shade that reduces sun glare while observing overhead operations. The vehicle shall also be provided with conventional sun visors for the front window to block the light when the sun is low on the horizon.

2.12.7 Windshield Wipers:

- 2.12.7.1 The vehicles must meet FMVSS 104 for windshield wiping and washing systems.
- 2.12.7.2 The wiper motor shall be directly mounted so that it powers the wiper blade directly, without remote linkage or transmission. Windshield wiper systems shall be produced by Sprague Devices, a division of CVG Alabama of Piedmont, AL or approved equal.

2.12.8 Windshield Washers and Deluge Systems:

- 2.12.8.1 The windshield washer system shall meet FMVSS 104. In addition to the standard windshield washers, a "deluge" type wash system shall be installed above the windshield and side windows. The deluge system shall not be fed from the windshield washer system. Any tank for the deluge system shall include a drain fitting and a filler cap that is easily accessible and can be opened and closed without the use of tools. A label shall be affixed close to the filler cap indicating the tank should be serviced with suitable deluge material only.

2.12.9 Climate Control & Defrosting:

- 2.12.9.1 The vehicles must meet FMVSS 103 for windshield defrosting and defogging systems as well as the minimum performance standard set forth SAE J382-2000 for windshield defrosting systems in trucks, buses, and multipurpose vehicles.
- 2.12.9.2 Vehicle shall be equipped with the manufacture's factory installed air conditioning and heating system, aftermarket or add on air conditioning is not acceptable.
- 2.12.9.3 The heating system must be able to maintain seventy (70°) degree Fahrenheit interior temperature with ambient temperatures of zero (0°) degrees with the engine at idle.
- 2.12.9.4 If sufficient heat is not provided by the engine coolant heating system a supplemental heater(s) must be provided. The heaters shall be an Airtronic model produced by Espar of Michigan of Commerce Twp., MI or approved equal, sized accordingly and positioned so that they are assessable for periodic maintenance.
 - 2.12.9.4.1 The supplemental heating system shall run off the vehicles main fuel tank with the heater supply line designed to leave at least twenty five (25%) percent of the fuel available for the engine.
 - 2.12.9.4.2 It shall have its control mounted in the cab located on the same part of the cluster as the standard climate controls. The control shall have indicator lights that illuminates when the heater(s) is operating and when it is in need of service. The controls shall have a switch to activate the system with preset run times and continuous run options. The controls shall also have a variable thermostat to set the heat at the desired temperature.

2.13 INSTRUMENTS, WARNING LIGHTS, CONTROLS AND SCREENS

2.13.1 General Instruments, Warning Lights and Controls:

- 2.13.1.1 The vehicles must meet FMVSS 101 for controls and displays.
- 2.13.1.2 All fire fighting system controls, light switches, controls for auxiliary equipment etc. that may be installed in the cab or at any other location on the unit shall be adequately identifiable by being correctly positioned and clearly marked with worded descriptions. Switches with symbols alone depicting what they control shall not be acceptable. All switches shall be "on" in the up position.
- 2.13.1.3 All instruments and controls shall be illuminated where practical with back lighting that is adjustable for intensity by the driver.
- 2.13.1.4 All audible alarms shall have the ability to be silenced by the driver and instructor / fire system operator. If the condition that caused the alarm is eliminated while the alarm is silenced, the alarm must reset. If additional audible alarms are triggered the alarms will sound until each condition is cleared or silenced. If multiple alarms are audible, it shall be possible to silence all with one action.
- 2.13.1.5 A diagram of the dashboard depicting the layout of all gauge clusters, control panels, switch locations, display screens etc., must be submitted to the Engineer for approval

2.13.2 Cab Mounted Controls:

- 2.13.2.1 The vehicles must meet FMVSS 124 for accelerator control systems.
- 2.13.2.2 The following controls shall be provided as a minimum with their positions designed for operation only by the driver in the seated position:
 - 1. Accelerator pedal
 - 2. Brake pedal
 - 3. Parking brake control
 - 4. Steering wheel, self canceling directional signal control and horn switch
 - 5. Transmission range selector
 - 6. Master electrical switch
 - 7. Ignition & starter shall not require a key
 - 8. Windshield wiper and washer controls
 - 9. Heat defrost controls
 - 10. Side view mirror controls

The following controls shall be provided as a minimum with their positions designed for operation by both the driver and the instructor/fire system operator in their seated positions:

- Siren control
- 1. Foam control
- 2. Primary turret controls
- 3. Bumper turret controls

4. Ground sweep valve control
5. Undertruck valve control
6. Scenelight switches
7. Dry chemical agent pressurization control
8. Halotron agent pressurization control
9. Windshield deluge system
10. Power windows, passenger side only for instructor
11. Sun visors, independent for driver and instructor
12. Interior lighting with variable intensity
13. Radios
14. FLIR camera
15. Handline charge control
16. Fire fighting system alarm silence

2.13.3 Cab Mounted Instruments:

- 2.13.3.1 Instruments, warning lights, and controls necessary for the operation of the vehicle chassis and fire fighting system shall be provided.
- 2.13.3.2 All chassis instruments, warning lights, and controls shall be grouped together in a cluster immediately in front of the driver.
- 2.13.3.3 All firefighting system instruments warning lights and controls shall be grouped together by function on a separate cluster between the driver and instructor / fire system operator so they are readily accessible and highly visible to both.
- 2.13.3.4 Gauges shall be electronic wherever possible to avoid routing of tubes or mechanical cables. Speedo-meter, tachometer, oil pressure, engine temperature, and transmission temperature gauges must be electronic.
- 2.13.3.5 Both the chassis and fire fighting system instrument, warning light, and control groupings shall be easily removable, as a unit or be on a panel hinged for maintenance and shall include quick disconnects fittings for all electrical, air, and hydraulic circuits.
- 2.13.3.6 The following instruments and warning lights shall be provided as a minimum in the chassis cluster on the dash and shall be clear and readable from the drivers seated position:
 1. Engine tachometer
 2. Speedometer
 3. Engine coolant temperature
 4. Dual air pressure gauge (brakes)
 5. Low air pressure warning light
 6. Engine oil pressure gauge
 7. Low oil pressure warning light
 8. Headlight beam indicator
 9. Fuel level gauge
 10. Low fuel level warning light
 11. Battery voltmeter
 12. Battery monitor system

13. Transmission oil temp warning light
14. Parking brake on warning light
15. Rollover lateral G indicator
16. Compartment door open

2.13.3.7 The following instruments and warning lights shall be provided as a minimum in the fire fighting cluster on the dash and shall be clear and readable from both the driver's and instructor / fire system operator's seated position:

1. Fire water pump overheat
2. Fire water pump discharge pressure
3. Water tank level
4. Foam tank level
5. Dry chemical agent discharge pressure
6. Dry chemical agent discharge level
7. Halotron agent discharge pressure
8. Halotron agent discharge level
9. All Cab mounted screens

2.13.3.8 The foam and water tank level gauges shall be Multi-Tank Water & Foam Level Monitors provided by MC Products Inc., Smithtown, NY or approved equal.

2.13.4 Cab Mounted Rollover Warning System:

2.13.4.1 Each vehicles shall be fitted with an LG Alert rollover warning system manufactured by Stability Dynamics of Campbellford, Ontario, Canada or approved equal to assist drivers in recognizing when they are approaching the limits of safe operation.

2.13.4.1.1 The system shall monitor 'g' forces exerted on the vehicle in all three (3) axes (lateral, axial and vertical). Data from the Rollover Warning System shall be recorded and used for analysis of driving technique and vehicle dynamics with the MADAS data acquisition system.

2.13.4.1.2 The display shall provide incremental visual and audible indications to the driver as lateral "g" forces on the vehicle increase, warning the driver of pending loss of control.

2.13.5 Cab Mounted Screens:

2.13.5.1 Screen(s) shall be positioned between the driver and instructor / fire system operator. Screen(s) and their control(s) should be accessible from the driver and instructor / fire system operator while in their seated positions.

2.13.5.1.1 The screens shall be angled with a brow to minimize glare from the sun or light from above. The screens shall be capable of showing the video feed from all cameras of section 2.15.2. Other systems requiring display screens or touch screen control panels shall also be combined into the function of these displays to reduce the need for excessive screens in the vehicle controls console if space is limited.

- 2.13.5.2 Screens shall be ten (10”) inches to fifteen (15”) inches measured diagonally, larger screens are preferred.
- 2.13.5.3 When the vehicle’s transmission has “reverse” selected the feed from the rear view camera of section 2.15.2.2 shall be displayed. The driver shall be capable of selecting video from the rear view camera at all times.
- 2.13.6 Exterior Mounted Instruments, Warning Lights and Controls:
 - 2.13.6.1 Exterior mounted water and foam level gauges are to be mounted high on the vehicle body on both of its sides. They shall large enough to be clearly visible to crew members when looking at the vehicle from two hundred (200)feet away and at a seventy (70°) degree angle to the perpendicular of the side of the vehicle.
 - 2.13.6.2 A gauge activated by a momentary switch shall be installed as close as possible to the vehicles battery tray viewable and assessable from the ground for determining the voltage available in the twelve (12) VDC system.
- 2.13.7 Exterior Compartment Mounted Pump Panel:
 - 2.13.7.1 The vehicle shall be equipped with a pump panel capable of controlling selected fire fighting systems on the vehicle. The pump panel shall be located on the driver’s side of the vehicle.
 - 2.13.7.2 The following operations shall be capable of being controlled from the pump panel:
 1. Pump discharge valve actuation, left and right side
 2. Engine RPM with presets to produce a desired pump pressure and idle
 3. Engine shut down
 4. AFFF On/Off
 5. AFFF concentration
 - 2.13.7.3 The following systems shall be capable of being monitored from the pump panel:
 1. Pump pressure
 2. Line pressure, left side
 3. Line pressure, right side
 4. Engine RPM
 5. Battery voltage
 6. Fuel level
 7. Engine temperature
 8. Water level
 9. AFFF level

2.14 RADIO SYSTEM & AUDILE WARNING DEVICES

2.14.1 General Radio System:

- 2.14.1.1 The vehicles shall be equipped with six (6) radio sets. The radio sets along with all components shall be installed by the vehicle manufacturer in compliance with the radio manufacturer's instructions and these specifications.
- 2.14.1.2 The mounting location of all radio system components must be depicting on the diagram of the vehicles controls in Section 2.13.1.5 for approval by the Engineer.
- 2.14.1.3 The radios will be programmed by the Port Authority's Radio Shop and shipped to the vehicle manufacturer as soon as possible after the purchase order is placed.
- 2.14.1.4 All components of the radio system shall be protected from the elements and easily accessible for servicing.
- 2.14.1.5 The vehicle shall have adequate radio interference suppressed to permit positive understandable voice radio communications under all operating conditions.

2.14.2 Radio Antennas:

- 2.14.2.1 Antenna location(s) for all radios must be approved by the Engineer.
- 2.14.2.2 Antennas shall be mounted to a flat metallic grounded surface with at minimum of twelve (12") inches around their bases'. Antennas shall be positioned at least eighteen (18") inches apart. If the antenna locations are to be mounted on a non metallic surface then a ground plane meeting the aforementioned requirement shall be installed on the surface by the manufacturer.

2.14.3 Radio Sets:

- 2.14.3.1 The radio sets shall be as follows, no equal:
 1. One (1) 800 Mhz (ARFF, Patrol, CPD, etc): M7300 manufactured by Public Safety and Professional Communications of Lynchburg, VA, a division of Harris Assured Communications.
 2. Two (2) ICOM (Ground & Tower): IC-A110 manufactured by Icom America Inc of Kirkland, WA.
 3. Three (3) UHF (OPS), VHF (NJ SPEN) and Descreet /Disaster: APX-6500 manufactured by Motorola Solutions, Inc of Schaumburg, IL.

Each set will be furnished with an individual handset with push to talk button and are to be mounted at their respective radio.

2.14.4 Intercom System:

- 2.14.4.1 Intercom master station unit MS-1600 manufactured by Setcom of Austin, TX, no equal, shall have all six (6) radios connected to it. Two (2) Remote station control RS-1600's manufactured by the same, no equal, shall be mounted and

assessable at the seated positions of the driver and instructor / fire system operator, as well as one (1) weatherproof unit located in the cabinet containing the pump panel mounted so that the crew member can monitor and speak over the radios while standing on the ground.

2.14.4.2 Each remote station shall have a corded radio transmit headset, two (2) model 6B-1600 produced by Setcom in the cab with a single ear muff, and one (1) weatherproof headsets model CSB-1600R produced by the same at the exterior pump panel with two ear muffs. Each headset shall have a plug type connector to connect to the remote station. A head set holder shall be positioned at each location as to not interfere with the operations of the vehicle while the headset is in the stored position. The headsets are to have coiled type heavy duty cords with one noise canceling earpieces. The headsets must have the ability to be worn by the crew while donning a fire helmet. The locations of the remote stations and their head set holders shall be approved by the Engineer.

2.14.5 Air Horn, Siren and Public Address System:

2.14.5.1 The vehicle shall be equipped with an air horn produced by Grover Products Company of Los Angeles, CA, or approved equal. The air horn shall be positioned at the front of the vehicle and is not permitted to be mounted on the roof area. If exposed to the elements the horn shall slightly face down to allow for the draining of water or be fitted with a weather shield. The horn shall be powered by the vehicles auxiliary air system detailed in Section 2.7.2

2.14.5.1.1 The horn shall be controlled by an electric switch in the center section of the steering wheel.

2.14.5.1.2 The instructor / fire system operator shall have a foot operated control for the horn.

2.14.5.2 The siren system shall be a model PA300-012 MSB NYPD produced by Federal Signal of University Park, IL or approved equal. The system shall be mounted in the cab of the vehicle so that it is assessable by the driver and trainer / fire system operator from the seated position. The instructor / fire system operator shall have a foot operated control for the siren capable of turning the siren on momentarily when depressed. The system must meet the standards of SAE J1849.

2.14.5.2.1 The siren system shall have a speaker(s) positioned to permit adequate forward sound projection so that they produce a sound output of not less than ninety-five (95) decibels at one hundred (100') feet directly ahead of the siren and not less than ninety (90) decibels at one hundred (100') feet measured at forty-five (45°) degrees on either side. All audible devices shall be appropriate for the location they are mounted on the vehicle with adequate protection from damage caused by weather or by the fire fighting systems. The speakers must be capable of having audible words clearly heard at the same decibel level as the vehicles siren.

2.14.5.2.2 The siren system shall be equipped with a transistorized dynamic noise cancelling type microphone model MNCT produced by the Federal Signal

of University Park, IL or approved equal. The microphone shall be mounted on the siren control unit.

- 2.14.5.2.3 Two (2) radios chosen by the PA shall have their auxiliary outputs wired to a switch to select which signal shall be sent to the auxiliary input of the siren system. The chosen radio signal shall then be broadcasted over the PA system. The location of the switch shall be as close as possible to the siren control and approved by the Engineer.

2.15 DRIVER ENHANCED VISION SYSTEM (DEVS) AND CAMERAS

2.15.1 DEVS:

- 2.15.1.1 The vehicles are to be equipped with EagleEye Driver Enhanced Vision System (DEVS) produced by Team Eagle Inc. of Tilton, New Hampshire. The system shall provide display screen with a moving map that reflects the facility and runway layouts of all the airports. A wireless data link to a server or cloud system shall allow critical information to be exchanged between a command center and the vehicles.
- 2.15.1.2 The moving map display shall be the control panel for the system with a touch screen interface. The display shall have the ability to zoom in and out on maps, aerial photos and drawings.
- 2.15.1.3 The GPS shall be Wide Area Augmentation System (WAAS) capable and active immediately upon vehicle startup and be able to connect to the service provider while the vehicle is parked in its garage.
- 2.15.1.4 The DEVS system shall have Runway Incursion Warning System capability at time of delivery.
- 2.15.1.5 The DEVS system shall be able to receive location information from other airport vehicles with their locations and direction of travel accurately depicted on the navigation map
- 2.15.1.6 The location and mounting of the DEVS is to be approved by the engineer.

2.15.2 Cameras:

- 2.15.2.1 The vehicle shall be equipped with a Forward Looking Infra-Red (FLIR) camera mounted on the brow of the cab so that it has an unobstructed view to the front of the vehicle with minimal interference of any kind from the emergency or off road driving lights mounted in same area. Final location to be approved by the Engineer. The camera shall provide thermal imaging to the screen(s) in the driver compartment and be capable of pan, tilt and zoom. The FLIR camera shall be fully operational immediately upon startup with little to no time before images are sent to the display screen in the cab.
 - 2.15.2.1.1 The FLIR camera shall have its controls positioned between the driver and trainer / fire systems operator.

- 2.15.2.2 The vehicle shall be fitted with a rear facing color low light camera, Camset Model 56 manufactured by Federal Signal of Oak Brook, IL or approved equal. Manufacturer approved wiring and brackets for durable installation in the specific application shall be used.

2.16 MONITORING AND DATA ACQUISITION SYSTEM (MADAS)

2.16.1 Data Recording:

- 2.16.1.1 Each ARFF shall include on-board MADAS for the collection of various performance measurements to monitor, as a minimum, the following:

1. Vehicle speed
2. Vehicle heading
3. Lateral acceleration
4. Vertical acceleration
5. Longitudinal acceleration and deceleration
6. Engine rpm
7. Throttle position
8. Steering input
9. Vehicle braking input (pedal position and brake pressure)
10. Fire Pump Overheat
11. Brake Overheat with specific wheel information
12. Date, time, and location for all data collected

- 2.16.1.2 The MADAS shall be capable of storing the measurements and the time intervals, starting at least one hundred and twenty (120) seconds before and ending at least fifteen (15) seconds after any serious incident.

- 2.16.1.3 The system shall be designed so that the recorded data will not be lost or overwritten after an incident, including the removal of power from the MADAS system.

- 2.16.1.4 Data must be protected so it can only be downloaded erased or overwritten by authorized personnel.

- 2.16.1.5 If the MADAS system is inoperative for any reason, a warning light shall indicate to the driver that the MADAS system is not working. If the system uses battery power either as a primary or backup power supply, a warning shall be displayed indicating the need to replace the battery.

- 2.16.1.6 Date, time and location will be updated at regular intervals to assure accuracy of saved data.

2.16.2 Video Recording:

- 2.16.2.1 The vehicle shall be equipped with a system for recording the images captured on the FLIR camera with a minimum recording time of two (2) hours.

2.17 EXTERIOR FINISHING:

2.17.1 General Paint Details

- 2.17.1.1 The Contractor shall rustproof all interior sheet metal panels including, but not limited to, cab, doors, wheelhouses, sills, rocker panels, etc. The Contractor shall undercoat all underbody sheet metal and structural members including, but not limited to, the frame, cross members, wheelhouses, splash pans, and floor pans.
- 2.17.1.2 The vehicles and all associated equipment shall be furnished with a quality commercial grade finish. All surfaces shall be free of dents, gouges, buckles, surface scaling, rust, corrosion, or other surface irregularities. Materials shall be cleaned and conditioned in accordance with the paint manufacturer's recommendations for the base material and final coating required by these specifications.
- 2.17.1.3 All components shall be painted in the finish color(s) including wheels, spare wheel(s), bumper(s), compartment interiors, ancillary equipment, etc. The only exception to this requirement shall be the brightwork (chrome plated parts), grill, or other parts specifically designated by the Engineer.
- 2.17.1.4 The vehicle shall be painted in conformance with FAA AC 150 5210-5d.
- 2.17.1.5 The Contractor shall provide left side, right side, top, front, and rear view drawings with a scale to be used in developing the final paint scheme and instructions as well as the decals of Section 2.17.4. The paint scheme is to be approved by the Engineer.
- 2.17.1.6 Inquiries regarding paint shall be addressed to the Engineer. Upon request by the Engineer, the Contractor shall supply a four (4") inches by six (6") inches paint sample for approval prior to painting.

2.17.2 Primer:

- 2.17.2.1 As soon as practical after preparation, the unit and all components shall be primed with two (2) coats of epoxy paint, Corlar 921S produced by Axalta Coating Systems of Glen Mills, PA or approved equal. Parts which mate or join and are inaccessible after assembly shall receive an additional coat of primer before assembly. Areas of the vehicle that are exposed to the spray that comes off of the tires shall also receive an additional coat of primer.

2.17.3 Basecoat & Topcoat:

- 2.17.3.1 The finish shall be of high gloss and uniform color and shall be free from sags, runs, orange peel, crazing, pitting, or other paint defects. The basecoat and topcoat paint used shall be Imron Elite Productive manufactured by Axalta Coating Systems of Glen Mills, PA or approved equal.

2.17.4 Decal Lettering & Striping:

- 2.17.4.1 All lettering and striping on the vehicles shall conform to all specifications in AC 150/5210-5D pertaining to ARFF vehicles for painting and markings of vehicles used on an airport. All decals shall be provided by the Port Authority.

- 2.17.4.2 Vehicle drawings with a scale of the front, back, sides and top views shall be submitted to the Engineer by the Contractor when the Contract is awarded for the final placement of the lettering and striping. Decal location must be approved by the Engineer in conjunction with the PANYNJ Aviation Department and detailed instructions for decals placement shall be included with the paint color and scheme instructions of section 2.17.1.4, 2.17.1.5, and 2.17.1.6 for the Contractor.
- 2.17.4.3 The vehicles must have a white reflective stripe of a minimum eight (8”) inch width running along the sides of the vehicle over the wheel wells and transitioning down along the bottom of the cab.
- 2.17.4.4 The roof (twenty-four (24”) inch lettering) with the base of the letters facing the front, and each side (sixteen (16”) inch lettering) of the vehicle shall be equipped with an interchangeable, securely-mounted frame to display the vehicle number per FAA AC 150 5210-5d. These numbers must be easily removable to allow for reassignment of vehicles without the need of tools.

2.18 EXTERIOR AND WARNING LIGHTS:

- 2.18.1.1 Lighting General: The vehicle will be equipped with all lights required of an on-highway vehicle specifically including the following:
 - 1. Approved headlight system of the two (2) or four (4) bulb variety providing high or low beam selection by the operator
 - 2. Clearance and identification lights
 - 3. Stop lights (two (2) on each side)
 - 4. Tail lights (two (2) on each side)
 - 5. Directional signals (two (2) on each side)
 - 6. Backup lights as per SAE J593, 2010 (one (1) on each side)
 - 7. Backup external audible alarm as per SAE J1741, 1999
 - 8. FMVSS 108 Class A Reflex reflectors (bolt on – not adhesive mount)
 - 9. Lighted license plate bracket at the rear on the left hand side
 - 10. All other lighting, reflectors or Conspicuity as required by FMVSS 108
- 2.18.1.2 All lights provided to meet FMVSS 108 shall be sealed, vapor-proof types as manufactured by the Warren Betz Manufacturing Company, Warren, Pennsylvania, Truck-Light Falconer, NY or approved equal.
- 2.18.1.3 All lights shall be mounted so that any holes that pass through the body are sealed protecting the inside of the body as well as any electrical connections from the elements. Water shall not be capable of being trapped between the lights and the body with provisions to readily drain if necessary.
- 2.18.1.4 All switches that operate lights mounted on the exterior of the vehicle shall be accessible by the driver in the seated position. The location of the lights on the vehicle as well as the respected switch that controls their operation shall be provided on detailed drawings to the Engineer for approval.

2.18.1.5 The vehicle is to be equipped with the following integral twelve (12)VDC illumination systems:

1. Fog lights
2. Forward facing flood lights for driving in dark open aeronautical areas as well as of road in the pursuit of the crash scene.
3. Off road driving lights
4. Emergency lights
5. Ground lights
6. Perimeter lights
7. Cab operated spot lights
8. Ladder, rooftop work deck and step lights
9. Turret spot lights
10. Interior cab lights
11. Cabinet lights

The location, type and mounting of all lights shall be depicted on drawings and shall be submitted to the engineer for approval.

2.18.2 Fog Lights:

2.18.2.1 The vehicle shall be equipped with two (2) 12VDC LED fog lights with lenses that project a spotlight forward and flood light to the sides of the vehicle, model H71020501 Optilux Spotlights produced by Hella Corporate Center USA Inc of Plymouth Twp., MI or approved equal. The fog lights shall be designed and mounted so that they project light as low to the ground as possible illuminating only the surface of the road and not above the bottom of drivers window to limit the amount of fog, show or rain that gets illuminated. (1.3A @ 12VDC each)

2.18.3 Off Road Driving Lights:

2.18.3.1 The vehicle shall be equipped with a LED light bar mounted on the front brow of the vehicle's cab, model H71020461 Optilux 60LED Light Bar produced Hella Corporate Center USA Inc of Plymouth Township, MI or approved equal. The lights shall be positioned and adjustable so that its illumination is projected as far as possible to the front of the vehicle when traversing darkened or off-highway areas. (15A @ 12VDC each)

2.18.4 Emergency and Ground Lights:

2.18.4.1 The vehicle shall be equipped with an emergency lighting system consisting of twelve (12)VDC flashing red LED lights visible from both the ground and from the air at any position three hundred and sixty (360°) degrees around the vehicle. The system is to be activated by a single switch assessable by both the driver and instructor / fire system operator from their seated positions. The systems total amperage draw is to be no more than forty (40) amps. Specific lighting is as follows.

2.18.4.2 Four (4) red LED beacon style lights shall be mounted on the flat section of the roof of the vehicle and cab as close as possible to its corners, model L21HRP produced by Whelen Engineering of Chester, CT, or approved equal.

- 2.18.4.3 Six (6) LED combination, flashing red emergency and steady white ground lights, shall be mounted on the sides of the vehicle at its corners and at or about its middle. The lights shall be at the same level no higher than the wheel fenders. The lights shall be model M6V2R produced by Whelen Engineering of Chester, CT or approved equal. The combination lights shall be on separate switches with the emergency lights wired with the lights of 2.18.4.2 and 2.18.4.3, and the lower ground lights wired in with the perimeter lights detailed in section 2.18.5. The lights shall not be mounted under any of the exterior cabinets or doors to the cab. Two (2) white lights at the front of the vehicle and two (2) red lights at the rear of the vehicle shall be capable of alternate flashing (wig-wag) and wired in with the emergency lights of 2.18.4.2 and 2.18.4.3. These lights shall be all LED type mounted as far apart as possible and at no more than seventy-two (72) inches from the ground.
- 2.18.5 Perimeter Lights:
- 2.18.5.1 A total of four (4) LED twelve (12)VDC perimeter lights (two (2) on each side) model PELCC produced by Whelen Engineering of Chester, CT or approved equal. They shall be mounted at the top of the side surfaces of the body of the vehicle so that their light illuminates the sides and the immediate area around vehicles cabinets containing the bulk of the firefighting equipment. The lights shall be flush mounted protruding slightly to allow the light to be angled down sufficiently to hit the body of the vehicle. Perimeter lights shall be wired with the ground lights in section 2.18.4.3.
- 2.18.6 Cab Operated Spotlights:
- 2.18.6.1 The cab of the vehicle shall be equipped with two (2) twelve (12)VDC LED spotlights mounted on the left and right sides of the cab as close as possible to the front corners of vehicle so that the lights can cross at the front of the vehicle. The lights are to be Model 335 with a U-8547 four (4°) degree spot bulb, both produced by OS Unity Manufacturing Co. of Chicago, IL or approved equal. The light shall have a telescoping pole mounts to allow operation by the driver and instructor / fire system operator from within the cab. The mounting locations and the length of the telescoping poles for these lights shall be agreed upon by the engineer. (Three (3)A @ twelve (12)VDC each)
- 2.18.7 Ladder, Rooftop Work Deck, Step and Ground Lights:
- 2.18.7.1 The perimeter of the roof top deck area shall be equipped with LED lighting spaced adequately both to illuminate all of the work areas on the roof as well as help distinguish its limits. Control panels, placards and instructions on the roof must also be illuminated. Rooftop lighting to be controlled by the vehicles light switch. Lights to be model 570036 produced by Warren Betz Manufacturing Company, Warren, Pennsylvania, or approved equal.
- 2.18.7.2 Each access step or area of entry to the truck shall be equipped with a suitably shielded and protected white light aimed downward to the ground to illuminate the area beneath the steps or stairwells. These lights shall be controlled by the vehicles light switch. Lights to be model 570036 produced by Warren Betz Manufacturing

Company, Warren, Pennsylvania, or approved equal.

2.18.8 Turret Spotlights:

- 2.18.8.1 Each turret shall be equipped with a spotlight mounted so that it illuminates the nozzles discharge area. It shall be mounted in a position where it will allow maximum movement of the turret without interfering with the vehicle's body when the turret is stowed. The turret spotlight shall be a twelve (12)VDC LED with white lights and lenses, model H71020501 Optilux Spotlights produced by Hella Corporate Center USA Inc of Plymouth Twp.,(1.3A @ 12VDC each)

2.18.9 Interior Cab Lights:

- 2.18.9.1 The cab shall be equipped with multiple twelve (12)VDC LED lights to illuminate its interior. The interior cab lighting shall be controlled with a switch to allow cab interior lights to illuminate when either cab door is opened, to be on at all times, or to be off at all times. Map lights shall be located at each seated position with their control assessable while in the seated position. Interior cab lights shall be model 60CREGCS produced by Whelen Engineering of Chester, CT or approved equal.

2.18.10 Cabinet Lights:

- 2.18.10.1 Cabinets shall be illuminated by frosted twelve (12)VDC LED strip or rope lights mounted on the inside of the cabinets along the tops and sides of the door as well as the underside of shelves if necessary so that the compartment and all of its systems within are fully illuminated. The lights shall be controlled by a proxy switch that turns the lights on when the cabinet is opened.

2.18.11 110VAC Flood Lights:

- 2.18.11.1 The vehicles shall be equipped with five (5), one hundred and ten (110)VAC flood lights for the illumination of the extended area around the vehicle. Flood lights shall be Pioneer Plus model PFP2AP provided by Whelen Engineering of Chester, CT or approved equal. The flood lights shall be pedestal mounted on the roof, two (2) on each side of the vehicle positioned above the perimeter lights detailed in section 2.18.5, and one (1) positioned as close as possible to center line of the vehicle at the rear. (1.3A @ 120VAC each)
 - 2.18.11.1.1 The lights shall be fully adjustable and capable of being pointed in any direction both up and down from horizontal and for three hundred and fifty (350°) degree of rotation. The lights shall have a knob for locking the lights in position and a handle for aiding in their positioning.
 - 2.18.11.1.2 The lights shall be operated by a push button switches for on and off, one (1) located in the cab on the fire fighting cluster, and one (1) in the exterior cabinet on or by the controls for the PTO generator. In both locations the button shall be clearly marked and MI or approved equal. illuminate when on.

3 SPECIFICATIONS PERTAINING TO: CLASS-IV 4X4 TRIPLE AGENT VEHICLES

3.1 PERFORMANCE FULLY LOADED

3.1.1 Vehicle Performance:

3.1.1.1 Accelerate from zero (0) to fifty (50) mph in twenty-five (25) seconds.

3.2 WEIGHTS DIMENSIONS AND CAPACITIES

3.2.1 Dimensions:

3.2.1.1 Vehicle length must be no longer than four hundred and thirty-three (433”) inches when measured from the furthest protruding component both front and rear.

3.2.2 Capacities:

3.2.2.1 Have a minimum fifteen hundred (1500) gallon water tank.

3.2.2.2 Have a minimum two hundred ten (210) gallon AFFF tank.

3.2.2.3 Have a minimum four hundred fifty (450) pound Dry Chemical tank.

3.2.2.4 Have a minimum five hundred (500) pound Halotron tank.

3.3 BODY

3.3.1 Compartments:

3.3.1.1 Compartments shall be identified by the side of the vehicle and location starting from the front i.e., 2L, 2R, 3L, 3R, 4L, 4R, 5L, 5R. Specific items to be mounted and carried in each compartment as well as their weights are as follows. All weights provided are estimates.

EQUIPMENT	QTY	Unit Weight (lbs)	Total Weight (lbs)	EQUIPMENT	QTY	Unit Weight (lbs)	Total Weight (lbs)
L2				R2			
Vehicle Chocks Mounted Below	1	1	1	Vehicle Chocks Mounted Below	1	1	1
Aircraft Wheel Chocks	1	45	45	200' 1.75" Handline	1	76	76
200' 1.75" Handline	1	76	76	Task Force Tip Nozzle	1	2	2
Task Force Tip Nozzle	1	2	2	Tray	1	20	20
Tray	1	20	20	Fire Axes	3	6	18
1.75" Hose Roll (50')	1	38	38	Halligan tool	1	11.9	11.9
4 1/2" fill hose (25 ft)	1	26	26	24" Bolt Cutter	1	5.55	5.55
2 1/2" fill hose (50 ft)	2	9	18	24" Cable Cutter	1	6.4	6.4
3" Double Female	1	2.35	2.35	36" Bolt Cutter	1	10.5	10.5
3" Double Male	1	2.35	2.35	4lb Sledge	1	4	4
1.75" Double Female	1	1.25	1.25	V knives	3	3	9
1.75" Double Male	1	1.25	1.25	shovel	1	5	5
FDNY Connections	4	3	12	Tool box (Set Non-Sparking Tools)	1	15	15
Spanner wrenches	2	1.2	2.4	Manhole cover hook	2	2.65	5.3
Hydrant wrenches	1	1.75	1.75	Crowbars	2	5.5	11
Spanner Wrenches Storz	2	1.1	2.2	Screwdriver set	1	9.2	9.2
2 1/2 m FDNY x 2 1/2" fNST Adapter	1	1	1	Vise Grip	1	1	1
2 1/2 fFDNY x 2 1/2"m NST Adapter	1	1.55	1.55	Crash Ax (small)	1	3	3
2 1/2 fFDNY x 1 1/2"m NST Adapter	1	1.13	1.13	Hack Saw	1	0.91	0.91
5" Storz x 4" Storz adapter	1	3	3	Socket Set (Non-Sparking)	1	6	6
4 1/2" hyd steamer to 5" Storz	1	3	3	Spanner wrenches	2	1.2	2.4
50' 1 3/4" hose w 1 1/2" NST couplings	1	17	17	Hydrant wrenches	1	1.75	1.75
50' 3" hose w 2 1/2" FDNY couplings	1	38	38	Spanner Wrenches Storz	2	1.1	2.2
15' 5" hose w 5" Storz Connections	1	20	20	24" Mini Halligan	1	8	8
4" Storz - 4" FDNY Adabpter	1	3	3	R3			
L3				Scott bottles	4	20.86	83.44
Metl-X extinguisher	2	55	110	R4			
Halotron extinguisher	2	15.5	31	Skin Penetrator/Agent Applicator	1	40	40
Dry Chem Extinguisher	1	20	20	Electric Power Reel	2	8	16
L4				R5			
Water Cooler	1	7.1	7.1	Medical Bag	1	4.8	4.8
Salvage Cover 12x14	1	35	35	Defibulator	1	4.4	4.4
L5				Medical O2	1	39.5	39.5
100' Utility Rope	1	0.5	0.5	Rear Mount:			
Rope Bag	1	1	1	Little Giant Ladder	1	47	47
Water Extinguisher	1	8.3	8.3				
Water Extinguisher	1	8.3	8.3				

3.4 FIRE FIGHTING SYSTEMS

3.4.1 Bumper Turret:

3.4.1.1 The primary bumper turret is to be a dual agent electronically controlled bumper turret with dry chemical or approved equal.

3.4.1.1.1 The turret must have minimum water/AFFF agent flow rate seven hundred and fifty (750) gpm with a straight stream minimum distance of one hundred and ninety (190') feet and a dispersed stream pattern with a minimum distance of sixty-five (65) feet and a minimum width of thirty-five (35) feet.

- 3.4.1.1.2 The turret shall be capable of discharging dry chemical agent at a minimum of sixteen (16) pounds per second at a distance of one hundred (100') feet and a width of seventeen (17') feet without the aid of water.
 - 3.4.1.1.3 The turret must be capable of hitting a near point with water/AFFF within thirty (30') feet of the front bumper at full stream.
 - 3.4.1.1.4 The turret shall have its ability to move in all directions maximized as to not crash into itself or the vehicle. At a minimum it must be capable of rotating a minimum of ninety (90°) degrees left and right of center, while being capable of hitting a target thirty (30') feet in front of the bumper and elevating up to forty-five (45°) degrees above the horizontal.
 - 3.4.1.1.5 The turret shall be capable of being operated with water/AFFF or dry chemical agent independently as well as together.
 - 3.4.1.1.6 All piping, system critical components as well as the turret itself shall be protected from ground debris, impacts with the terrain or obstacles that could be found at an airport crash scene. The turret shall also be protected in the event the vehicle needs to push down scrubs or small trees as well as a chain link fence to get to a crash scene.
- 3.4.2 Propellant System for Dry Chemical & Halotron Systems:
- 3.4.2.1 One (1) or more high pressure nitrogen and argon cylinders shall be used as the propellant for the dry chemical and Halotron systems, respectively. If multiple cylinders are used in the same system the system shall only use one bottle at a time and isolate any depleted bottles so that maximum pressure is available in the system.
 - 3.4.2.2 The Contractor shall submit a schematic of the propellant system, the Halotron system detailed in section 3.4.3 and dry chemical system detailed in section 3.4.2.14 including their piping and control system along with the with the bid. The schematic shall include pipe sizes, controls and their proposed locations, and all agent storage vessels.
 - 3.4.2.3 The propellant gas supply and its lines shall at a minimum be sized to allow all firefighting agents to be discharged simultaneously at the required rates until the agents are fully discharged as well as to adequately purge any agent remaining in the system after use.
 - 3.4.2.4 Cylinders shall be industry standard nominal three thousand (3,000) psi units with a nominal exterior diameter of nine (9") to ten (10") inches and a height of approximately fifty (50") inches. Cylinders shall be new with a minimum ten (10) year service life before required testing and recertification from the date the vehicle is placed in service.
 - 3.4.2.5 Bottles are to be positively secured in a vertical position in the vehicle with the floor below the bottles reinforced to for long service life under conditions of repeated pounding from the cylinders. The compartment containing the cylinders shall be vented both top and bottom to prevent the accumulation of gases.

- 3.4.2.6 To facilitate cylinder replacement, the vehicle shall be equipped with a mounted device or mechanism that provides removal and installation of the bottle(s) by one person using hand tools and not needing to exert a force greater than forty (40) pounds. The system shall be designed to eliminate pinch points or other hazards and shall enable ARFF staff to safely raise and lower the cylinders to and from the ground as well as hold the tank in place while they are being secured to the vehicle.
- 3.4.2.7 A cylinder safety cap to protect the shutoff valve and regulator from damage shall be provided for each cylinder for use whenever the cylinders are moved. A storage location with a positive locking mechanism for the safety cap for each cylinder shall be provided as close as practical to the cylinders mounting location on the vehicle.
- 3.4.2.8 The connections to the cylinders from the high pressure system are to be through flexible hose rated at the required pressure and capable of being cleared with enough room for the removal of the cylinders. The hose for the tank connection shall be long enough to allow a cylinder to be connected to the system on the ground in the vertical position. The connection to the cylinders shall be capable of being reconnected and disconnected throughout the life of the vehicle. The tanks shall also be capable of being filled from an external system while mounted on the vehicle.
- 3.4.2.9 The system is to be equipped with shut off valves and pressure bleed down provisions located in close proximity to the cylinders to enable the release of high pressure propellant in the system before the cylinders are disconnected. A pressure indicator shall be visible at the cylinder mounting location so the operator can see the amount of pressure in the system prior to disconnecting the cylinder from the system.
- 3.4.2.10 All Piping and fittings shall be stainless steel pipe or stainless steel tubing except where flexible connections are necessary, and in those instances, suitably rated hose may be used. Such hoses must include unions or similar mechanisms to enable replacement of the hose without further disassembly of the piping system. All connections, piping and hoses must be of the reusable type.
- 3.4.2.11 The lines of the system shall have provisions to prevent backflow. All valves which release pressure from the system for maintenance or servicing shall be clearly marked as to their proper operational position and have provisions to safety wire the valves in the proper position for discharging agent. All lines that contain dry chemical shall be removable for cleaning of caked chemical.
- 3.4.2.12 The system shall be designed so that anytime a branch or segment of the system operates at a lower pressure than the branch or segment feeding it, suitable relief valve(s) shall be installed to assure that in the event of pressure reducing control failure, the lower pressure system will not exceed design operating pressure. In addition, if any branch or segment of the system can be isolated through valve selection in such a way that that segment may over pressure, suitable relief protection shall be provided. All relief valves shall be piped to discharge at a location outside the vehicle.

- 3.4.2.13 With the activation of either the dry chemical or Halotron systems the propellant system will charge all portions of the system necessary for deployment of the agent. Upon activation of either system the windows of the cab shall automatically raise to the fully closed position. The automatic closing of any window shall be canceled by touching the window control switch for that particular window in either direction, and the windows shall remain fully operational.
- 3.4.2.14 The high pressure propellant system shall be used to purge all dry chemical and Halotron agent lines and valves after their use. Purging of both agent systems shall have the ability to be performed without depleting the agent.
- 3.4.3 Dry Chemical Agent System:
 - 3.4.3.1 The vehicle shall be equipped with a dry chemical system designed and tested in accordance with the provisions of NFPA-17 “Standard for Dry Chemical Extinguishing Systems”. The intended dry chemical agent to be used shall be a potassium based agent.
 - 3.4.3.2 The dry chemical storage tank shall be designed in accordance with ASTM’s boiler and pressure vessel code section VIII have an approximate storage capacity of four hundred and fifty (450) pounds. The tank shall have a means to ensure that the chemical fluidizes when the system is activated. The tank(s) and its installation shall to be designed so that the tank can be removed & replaced.
 - 3.4.3.2.1 The storage tank shall have a pressure gauge along with a pressure relief valve at the tank fill location rated to work with the dry chemical agent being stored. The gauge shall indicate the internal pressure of the tank.
 - 3.4.3.2.2 The storage tank shall be capable of being filled from the top of the vehicle with a removable cap that meets the ASTM’s specifications for this type of application and is chained to the vehicle. The fill system for the storage tank shall have an appropriate valve to seal and depressurize the system. The valve shall be approved for dry chemical service
 - 3.4.3.3 The dry chemical system shall have switches on the fire control panel to pressurize each discharge location independently as well as an indicator light for each to let the operator know that the agent is ready for discharge at that location.
 - 3.4.3.4 The dry chemical agent and water/AFFF agent systems shall supply a dual agent hose reel that meets the specifications of Section 2.10.10. The reel shall be sized to accommodate two (2) one hundred and fifty (150’) feet lengths of suitably sized and rated hose for the application and discharged rates.
 - 3.4.3.4.1 The two (2) hoses shall be connected together to prevent separation and be fitted with a pistol grip control nozzle capable of deploying either agent independently or together.
 - 3.4.3.4.2 The dry chemical handline shall discharge at a minimum rate of five (5) pounds per second at a minimum distance of twenty-five (25’) feet without the aid of water.

3.4.3.4.3 The water/AFFF handline shall discharge at a minimum rate of sixty (60) gpm with a straight stream distance of sixty-five (65') feet and a dispersed pattern of fifteen (15') feet at a distance of twenty (20') feet.

3.4.4 Halotron Agent System:

3.4.4.1 The vehicle shall be equipped with a Halotron system designed, manufactured and tested in accordance with the local system application provisions of NFPA 2001 "Standard on Clean Agent Fire Extinguishing Systems". The intended agent to be used is Halotron 1.

3.4.4.2 The Halotron storage vessel shall be constructed in accordance with the ASTM's boiler and pressure vessel code. It shall be sized appropriately to store approximately five hundred (500) lbs of Halotron 1. The tank(s) and its installation shall to be designed so that the tank can be removed & replaced.

3.4.4.2.1 The storage tank shall have a pressure gauge at the tank rated to work with Halotron. The gauge shall indicate the internal pressure of the tank.

3.4.4.3 Connections for replenishing the Halotron should be provided with their location and position to be approved by the Engineer. The connection shall be compatible with the supplied re-servicing kit and shall include a shutoff valve and appropriate plug or cap with chain to prevent loss. There shall be a check valve in the piping immediately prior to the shutoff valve of the connection to prevent the accidental loss of the agent through the fill connection. A total of ten (10) Halotron re-servicing kits shall be provided, two (2) for each airport and two (2) for the PA Rescue Training Center.

3.4.4.4 The system shall be constructed with valves and components appropriate for use with the Halotron agent in fire fighting at the pressures required. Valves shall be positioned to allow for depressurizing portions of the system for required maintenance.

3.4.4.5 The Halotron system shall have switches on the fire control panel to pressurize each discharge location independently as well as an indicator light for each to let the operator know that the agent is ready for discharge at that location.

3.4.4.6 The Halotron system shall supply dedicated hose reels located in forward compartments on both sides of the vehicle that meet the specifications of Section 2.10.10. The reel shall be sized to hold one hundred and fifty (150') feet of suitably rated fire hose with a pistol grip control nozzle. The hose and nozzle shall be sized so that the system can discharge the agent through these handlines at a minimum rate of five (5) pounds per second and with a range of twenty five (25') feet.

3.5 EXTERIOR LIGHTING AND WARNING DEVICES

3.5.1 Elevating Light Mast:

- 3.5.1.1 The vehicle shall be equipped with a non telescoping light mast model KL415A-FS produced Command Light of Fort Collins, CO or approved equal. The light tower shall be mounted centrally towards the front one-third (1/3) of the body of the vehicle. The light tower shall have the ability to fold to a compact stowed position close to the vehicles roof top surface. The light shall have the capability to extend upward with the elevation of its highest light being no less than seven (7) feet from the surface of the roof, and have the ability to rotate three hundred and sixty (360°) degrees continuously without limitations due to wiring.
 - 3.5.1.1.1 The light tower shall have six (6), one hundred and ten (110)V AC, three hundred (300)W, LED lights model PFP4 Pioneer Quad Series produced by Whelen of Chester, CT or approved equal. The lights shall be wired to the vehicles PTO one hundred ten (110)VAC generator.
 - 3.5.1.1.2 The movement of the light tower shall be powered by the vehicles twelve (12)V system with the ability to be controlled by both a control panel mounted in the cab and by a pendent located in the compartment with the electrical reel detailed in section 2.11.3.4 and be accessible from the ground. Alternate compartment locations may be approved by the Engineer,
 - 3.5.1.1.3 The pendant must be provided with a docking station that provides a positive lock when the pendent is inserted. The pendant shall be wired through a heavy duty coiled umbilical cord.
 - 3.5.1.1.4 When the light tower is deployed from its bedded position an indicator light on the fire panel in the cab shall illuminate.

3.6 ROOF LADDER GANTRY

3.6.1 Roof Ladder Gantry:

- 3.6.1.1 The vehicle shall have a roof mounted gantry capable of being deployed from the ground by a single crew member. The gantry must allow for the ladders and pike poles specified in the table below to be affixed and deployed when lowered to its lowest position with all fixing mechanisms assessable from the ground. All weights provided are estimates.

Ladder Gantry:			
Equipment	Qty	Weight (lbs)	Total Weight (lbs)
14 ft fixed ladder	1	86	86
24 ft extension ladder	1	52	52
Pike pole (6 ft)	1	2.5	2.5
Pike pole (8 ft)	1	8	8

4 SPECIFICATIONS PERTAINING TO: CLASS-V 6X6 SINGLE AGENT VEHICLES

4.1 PERFORMANCE FULLY LOADED

4.1.1 Vehicle Performance:

4.1.1.1 Accelerate from zero (0) to fifty (50) mph in thirty-five (35) seconds.

4.2 WEIGHTS DIMENSIONS AND CAPACITIES

4.2.1 Dimensions:

4.2.1.1 Vehicle length must be no longer than four hundred and seventy-eight (478) inches when measured from the furthest protruding component both front and rear.

4.2.2 Capacities:

4.2.2.1 Have a minimum three thousand (3000) gallon water tank.

4.2.2.2 Have a minimum four hundred and twenty (420) gallon AFFF tank).

4.3 BODY

4.3.1 Equipment Locations:

4.3.1.1 Compartments shall be identified by side of the vehicle and location starting from the front i.e., L1, R1, L2, R2, L3, R3, L4, R4, L5, R5. Specific items to be mounted and carried in each compartment as well as their weights are as follows. All weights provided are estimates.

EQUIPMENT	QTY	Unit Weight (lbs)	Total Weight (lbs)	EQUIPMENT	QTY	Unit Weight (lbs)	Total Weight (lbs)
L1:			63	R1:			62.58
Scott bottles	3	20.86	62.58	Scott bottles	3	20.86	62.58
L2:			339	R2:			234.61
Vehicle Chocks Mounted Below	1	1	1	Vehicle Chocks Mounted Below	1	1	1
Aircraft Wheel Chocks	1	45	45	200' 1.75" Handline	1	76	76
200' 1.75" Handline	1	76	76	Task Force Tip Nozzle	1	2	2
Task Force Tip Nozzle	1	2	2	Tray	1	20	20
Tray	1	20	20	Fire Axes	3	6	18
1.75" Hose Roll (50')	1	38	38	Halligan tool	1	11.9	11.9
4 1/2" fill hose (25 ft)	1	26	26	24" Cable Cutter	1	6.4	6.4
2 1/2" fill hose (50 ft)	2	9	18	24" Pipe Wrench	1	6	6
3" Double Female	1	2.35	2.35	24" Bolt Cutter	1	5.55	5.55
3" Double Male	1	2.35	2.35	36" Bolt Cutter	1	10.5	10.5
1.75" Double Female	1	1.25	1.25	32" D Handle Closet Hook	1	1.5	1.5
1.75" Double Male	1	1.25	1.25	4lb Sledge	1	4	4
FDNY Connections	4	3	12	V knives	3	3	9
Spanner wrenches	2	1.2	2.4	shovel	1	5	5
2 1/2 m FDNY x 2 1/2" fNST Adapter	1	1	1	Tool box (Set Non-Sparking Tools)	1	15	15
2 1/2 fFDNY x 2 1/2"m NST Adapter	1	1.55	1.55	Manhole cover hook	2	2.65	5.3
2 1/2 fFDNY x 1 1/2"m NST Adapter	1	1.13	1.13	Crowbars	2	5.5	11
5" Storz x 4" Storz adapter	1	3	3	Screwdriver set	1	9.2	9.2
4 1/2" hyd steamer to 5" Storz	1	3	3	Vise Grip	1	1	1
50' 1 3/4" hose w 1 1/2" NST couplings	1	17	17	Crash Ax (small)	1	3	3
50' 3" hose w 2 1/2" FDNY couplings	1	38	38	Hack Saw	1	0.91	0.91
15' 5" hose w 5" Storz Connections	1	20	20	Socket Set (Non-Sparking)	1	6	6
Hydrant wrenches	1	1.75	1.75	Spanner wrenches	2	1.2	2.4
Spanner Wrenches Storz	2	1.1	2.2	Hydrant wrenches	1	1.75	1.75
4" Storz - 4" FDNY Adabpter	1	3	3	Spanner Wrenches Storz	2	1.1	2.2
L3:			161	R3:			334
Metl-X extinguisher	2	55	110	Generator	1	57	57
Halotron extinguisher	2	15.5	31	Hydraulic spreader	1	25	25
Dry Chem Extinguisher	1	20	20	Hydraulic cutter	1	29	29
L4:			7	Hydraulic hose (orange)	1	27.5	27.5
Water Cooler	1	7.1	7.1	Hydraulic hose (blue)	1	0.22	0.22
L5:			10	Brake pedal cutter	1	9	9
100' Utility Rope	1	0.5	0.5	Portable light	1	11.69	11.69
Rope Bag	1	1	1	Hydraulic Combo tool	1	24	24
Water Extinguisher	1	8.3	8.3	Battery Powered Sawzall	1	8.2	8.2
				Electric Combo tool	1	41.4	41.4
				Salvage Cover 12x14	1	35	35
				Ajax Tool/Air Chisel	1	40	40
				1 hr SCBA cyl to use w air chisel	1	20	20
				Pneumatic Impact tool	1	6	6
				R4:			131
				Skin Penetrator/Agent Applicator	1	40	40
				PPV Fan	1	50	50
				Streamlight Portable Scene Light	1	25	25
				Electric Power Reel	2	8	16
				R5			49
				Medical Bag	1	4.8	4.8
				Defibulator	1	4.4	4.4
				Medical O2	1	39.5	39.5

4.4 FIRE FIGHTING SYSTEMS

4.4.1 Roof Turret:

- 4.4.1.1 The primary roof turret shall be an electronically controlled model 3480 Stream Master II produced by Akron Brass of Wooster, OH and fitted with a model 5177 Akromatic 1250 nozzle produced by the same or approved equal.
- 4.4.1.2 The turret shall must have minimum flow rate of twelve hundred and fifty (1250) gpm when used alone or a flow rate of one thousand (1000) gpm when used together with the bumper turret. Regardless, a straight stream minimum distance of two hundred and thirty (230') feet and a dispersed stream pattern with a minimum distance of seventy (70') feet and a minimum width of thirty-five (35') feet shall apply.
- 4.4.1.3 The system must be capable of rotating a minimum of ninety (90°) degrees left and right of center, while being capable of hitting a target thirty (30) feet in front of the bumper and elevating up to seventy-five (75°) degrees above the horizontal.
- 4.4.1.4 A warning light visible to the driver shall illuminate anytime the primary turret is raised from its stowed position.

4.4.2 Bumper Turret:

- 4.4.2.1 The secondary bumper turret shall be an electronically controlled turret with dry chemical or approved equal. The secondary turret shall have a minimum flow rate of twelve hundred and fifty (1250) gpm with a variable pattern producing a straight stream distance of one hundred and fifty (150') feet and a dispersed stream minimum distance of fifty (50) feet and a thirty (30') feet minimum width. The turret shall be controlled electronically to prevent bumper and roof turret from operating at high flow simultaneously.
 - 4.4.2.1.1 The turret shall be configured to have its ability to move in all directions maximized and programmed to not crash into itself or the vehicle. At a minimum it must be capable of rotating a ninety (90°) degree left and right of center, and be capable of elevating up to forty five (45°) degrees above the horizontal as well as hit a target no more than thirty (30) feet in front of the bumper with its agents at full output with a dispersed stream.
 - 4.4.2.1.2 All piping, system critical components as well as the turret itself shall be protected from ground debris, impacts with the terrain or obstacles that could be found at an airport crash scene. The turret shall also be protected in the event the vehicle needs to push down scrubs or small trees as well as a chain link fence to get to a crash scene.

4.4.3 Turret Controls:

- 4.4.3.1 The vehicle shall be equipped with controls for the primary roof and bumper mounted turrets. Controls shall be accessible by the driver and instructor / fire system operator. The controls shall have the ability to switch which turret it controls with an indicator light that alerts the operator which turret it is controlling. If one control malfunctions the other control shall not be affected.

4.5 EXTERIOR LIGHTING AND WARNING DEVICES

4.5.1 Elevating Light Mast: All specifications of section 3.5 shall apply.

4.6 ROOF LADDER GANTRY

4.6.1.1 Roof Ladder Gantry: All specifications of section 3.6 shall apply.

5 SPECIFICATIONS PERTAINING TO: CLASS-V 6X6 TRI AGENT VEHICLES WITH HIGH REACH EXTENDABLE TURRET

5.1 PERFORMANCE FULLY LOADED

5.1.1 Vehicle Performance:

5.1.1.1 Accelerate from zero (0) to fifty (50) mph in thirty-five (35) seconds.

5.2 WEIGHTS DIMENSIONS AND CAPACITIES

5.2.1 Dimensions:

5.2.1.1 Vehicle length must be no longer than four hundred seventy-eight (478) inches when measured from the furthest protruding component both front and rear

5.2.2 Capacities:

5.2.2.1 Have a minimum three thousand (3000) gallon water storage tank.

5.2.2.2 Have a minimum four hundred and twenty (420) gallon AFFF storage tank.

5.2.2.3 Have a minimum five hundred (500) lb Halotron storage tank.

5.2.2.4 Have a minimum four hundred and fifty (450) lb dry chemical storage tank.

5.3 BODY

5.3.1 Compartments:

5.3.1.1 Compartments shall be identified by side of the vehicle and location starting from the front i.e., L1, R1, L2, R2, L3, R3, L4, R4, L5, R5. Specific items to be mounted and carried in each compartment as well as their weights are as follows. All weights provided are estimates.

EQUIPMENT	QTY	Unit Weight (lbs)	Total Weight (lbs)	EQUIPMENT	QTY	Unit Weight (lbs)	Total Weight (lbs)
L1				R1			
Scott bottles	3	20.86	62.58	Scott bottles	3	20.86	62.58
L2				R2			
Vehicle Chocks Mounted Below	1	1	1	Vehicle Chocks Mounted Below	1	1	1
Aircraft Wheel Chocks	1	45	45	200' 1.75" Handline	1	76	76
200' 1.75" Handline	1	76	76	Task Force Tip Nozzle	1	2	2
Task Force Tip Nozzle	1	2	2	Tray	1	20	20
Tray	1	20	20	Fire Axes	3	6	18
1.75" Hose Roll (50')	1	38	38	Halligan tool	1	11.9	11.9
4 1/2" fill hose (25 ft)	1	26	26	24" Bolt Cutter	1	5.55	5.55
2 1/2" fill hose (50 ft)	2	9	18	24" Cable Cutter	1	6.4	6.4
3" Double Female	1	2.35	2.35	36" Bolt Cutter	1	10.5	10.5
3" Double Male	1	2.35	2.35	4lb Sledge	1	4	4
1.75" Double Female	1	1.25	1.25	V knives	3	3	9
1.75" Double Male	1	1.25	1.25	shovel	1	5	5
FDNY Connections	4	3	3	Tool box (Set Non-Sparking Tools)	1	15	15
Spanner wrenches	2	1.2	2.4	Manhole cover hook	2	2.65	5.3
Hydrant wrenches	1	1.75	1.75	Crowbars	2	5.5	11
Spanner Wrenches Storz	2	1.1	2.2	Screwdriver set	1	9.2	9.2
2 1/2 m FDNY x 2 1/2" fNST Adapter	1	1	1	Vise Grip	1	1	1
2 1/2 fFDNY x 2 1/2"m NST Adapter	1	1.55	1.55	Crash Ax (small)	1	3	3
2 1/2 fFDNY x 1 1/2"m NST Adapter	1	1.13	1.13	Hack Saw	1	0.91	0.91
5" Storz x 4" Storz adapter	1	3	3	Socket Set (Non-Sparking)	1	6	6
4 1/2" hyd steamer to 5" Storz	1	3	3	Spanner wrenches	2	1.2	2.4
50' 1 3/4" hose w 1 1/2" NST couplings	1	17	17	Hydrant wrenches	1	1.75	1.75
50' 3" hose w 2 1/2" FDNY couplings	1	38	38	Spanner Wrenches Storz	2	1.1	2.2
15' 5" hose w 5" Storz Connections	1	20	20	R3			
4" Storz - 4" FDNY Adabpter	1	3	3	Generator	1	57	57
L3				Hydraulic spreader	1	25	25
Metl-X extinguisher	2	55	110	Hydraulic cutter	1	29	29
Halotron extinguisher	2	15.5	31	Hydraulic hose (orange)	1	27.5	27.5
Dry Chem Extinguisher	1	20	20	Hydraulic hose (blue)	1	0.22	0.22
L4				Brake pedal cutter	1	9	9
Water Cooler	1	7.1	7.1	Portable light	1	11.69	11.69
L5				Hydraulic Combo tool	1	24	24
100' Utility Rope	1	0.5	0.5	Pneumatic Impact tool	1	6	6
Rope Bag	1	1	1	Salvage Cover 12x14	1	35	35
Water Extinguisher	1	8.3	8.3	Electric Combo tool	1	41.4	41.4
				Fuel Safety Can/Precanned Fuel	2	11.5	23
				K12 Rescue Saw w/blades	1	23	23
				Socket Adapters	1	0.14	0.14
				Cordless Drill	1	7.18	7.18
				R4			
				Skin Penetrator/Agent Applicator	1	40	40
				Electric Power Reel	2	8	16
				Streamlight Portable Scene Light	1	25	25
				R5			
				Medical Bag	1	4.8	4.8
				Defibulator	1	4.4	4.4
				Medical O2	1	39.5	39.5

5.4 FIRE FIGHTING SYSTEMS

5.4.1 High Reach Extendable Turret (HRET):

- 5.4.1.1 The vehicle shall be equipped with a HRET mounted so that the center of gravity of the vehicle is as low as possible maximizing stability and weight distribution. The system shall be designed so that it can extend while the vehicle is in motion approaching a fire without restricting the vehicles mobility. While in the bedded position the turret shall be located visible to the driver and instructor / fire system operator and have no restrictions to its operation.
- 5.4.1.2 The primary turret mounted on the end of the HRET's boom shall meet all NFPA-414 requirements for a primary turret while in the bedded position. The turret shall be an electronically controlled model 3480 Stream Master II produced by Akron Brass of Wooster, OH and fitted with a nozzle capable of deploying water/AFFF and dry chemical agent, model 4040 Akrochem Master Stream nozzle produced by the same or approved equal.
 - 5.4.1.2.1 The primary turret on the HRET shall discharge both water or water/AFFF at a minimum flow rate of twelve hundred and fifty (1250) gpm when used alone or a flow rate of one thousand (1000) gpm when used together with the secondary bumper turret. Regardless, a straight stream minimum distance of two hundred and thirty (230') feet and a dispersed stream pattern with a minimum distance of seventy (70') feet and a minimum width of thirty-five (5') feet shall apply.
 - 5.4.1.2.2 The primary turret on the HRET shall discharge dry chemical at a rate between twelve (12) and twenty-two (22) pounds/sec at a minimum distance of one hundred (100) feet and width of seventeen (17') feet without the aid of water.
 - 5.4.1.2.3 The turret's nozzle shall be capable of deploying both a water/AFFF solution as well as the dry chemical agent independently or together from all positions.
 - 5.4.1.2.4 The primary roof turret must be capable of rotating a minimum of ninety (90°) degrees left and right of center, while being capable of hitting a target thirty (30') feet in front of the bumper and elevating up to seventy-five (75°) degrees above the horizontal.
- 5.4.1.3 The HRET shall be equipped with a penetrating nozzle capable of piercing the skin of all passenger and freight aircraft, and administering water, water/AFFF or Halotron.
 - 5.4.1.3.1 The penetrating tip on the HRET shall discharge water/AFFF at the minimum rate of two hundred fifty (250)gpm. It shall also be capable of discharging the Halotron agent at the minimum rate of ten (10) pounds per second.
 - 5.4.1.3.2 The penetrating nozzle shall be capable of a downward pierce above the highest level of seats in the largest New Large Aircraft (NLA) that lands at any of the PA's airports (presently an Airbus A380). The tip and shaft of

the penetrating nozzle shall deploy water/AFFF in a fogging pattern inside and outside of the aircraft simultaneously.

- 5.4.1.4 The HRET shall have the ability to extend into an attack position forward, up and down below grade in the vertical plane. The HRET shall have the ability of rotating at its base in the horizontal plane a minimum of thirty (30) degrees both left and right of center so that the piercing tip can perform multiple pierces along a fuselage at a minimum of twenty-five (25') feet in both directions from center. All operations shall be achieved with not more than two (2) adjacent controls located between the driver and instructor / fire system operator. The system shall be programmed with limits so that the boom and both the penetrating nozzle and turret are prevented from crashing into the cab or itself during articulation, tilt and extension.
- 5.4.1.4.1 The controls shall have the ability to operate in manual mode or in an automated mode allowing for maximum speed to the following preset positions:
1. Bed: Boom returns to the bedded position.
 2. Low Attack: Boom extends and articulates down with the nozzle two (2) feet off and parallel to the ground.
 3. High Attack: Boom fully extends and positions the nozzle thirty (30') feet off and parallel to the ground.
- 5.4.1.4.2 During both manual and automated mode, the system shall be capable of multiple operations such as extending the boom and articulating the arm, at the same time. All automated movements shall be canceled and overridden with the movement of the HRET's boom controls'. While the boom is in automated mode traveling to a selected position and a different preset position is selected, the original selected position shall be canceled and the boom shall begin movement to the new selected position. Movement of the tilt of the turret nozzle or penetrating nozzle as well as the activation of any of the agents shall not cancel the automated movement of the boom. The HRET shall have the capability to travel and deploy agent in both the manual and automated modes with the activation of an agent not canceling any movement.
- 5.4.1.5 The size of the systems at the end of the boom shall be minimized so that it can fit inside an opened aircraft door. The turret nozzle shall have the ability to direct the fire fighting agent ninety (90°) degrees to both the left and right of center in reference to the boom to allow for the stream to be directed down the inside of the fuselage.
- 5.4.1.6 The HRET shall have the camera detailed in section 2.15.2 mounted so that it captures an image parallel to the HRET's piercing nozzle during piercing operations. The camera shall have minimal blocking of its image from other systems mounted at the end of the HRET.

- 5.4.1.7 The vehicle shall exhibit stability on a twenty (20%) percent side slope with the turret fully extended and the nozzle at full discharge on the horizontal plane pointing up hill. There shall be a warning or interlock system along with placards in full view of the driver detailing the operational limitations of the HRET in all methods of operation.
- 5.4.1.8 When the HRET leaves its bedded position a LED beacon at the end of the boom as well as a warning light in the cab visible to the driver in the seated position shall illuminate.
- 5.4.1.9 At the base of the HRET shall be controls for manual override and an emergency stop button for its operation. The controls shall allow for the return of the boom and its articulating arm to the bedded position in the event that the control system fails within the cab.
- 5.4.1.10 A backup twelve (12)V hydraulic pump shall be connected to the hydraulic system that powers the vehicles HRET. Activation of the backup pump shall be selectable from both the firefighting cluster in the cab and at the manual override controls at the base of the HRET. The pump shall be sized so that the boom of the HRET can be retracted to its bedded position in the case of the primary system's pump failure.
- 5.4.1.11 All grease points on the HRET must be connected to the AGS detailed in Section 2.3.6.
- 5.4.2 Secondary Bumper Mounted Turret: All specifications of section 3.4.1 shall apply.
- 5.4.3 Compressed Gas Propellant System: All specifications of section 3.4.2 shall apply.
- 5.4.4 Dry Chemical Agent System: All specifications of section 3.4.2 shall apply.
- 5.4.5 Halotron Agent: All specifications of section 3.4.3 shall apply.
- Turret Controls: All specifications of section 4.4 shall apply.

6 REPAIR PARTS

6.1 REPAIR PARTS AND PRICE LISTS

- 6.1.1 Repair Parts General:
 - 6.1.1.1 The Contractor agrees to furnish and deliver, on an as needed basis, to all Port Authority Auto Shops the Authority's requirements for genuine new ARFF truck repair parts. The furnishing and delivery shall be at the discount set forth in the pricing sheet and applied to the latest published price list(s) and all subsequent price lists commencing with the price list in effect at time of delivery of the first vehicle. The quoted percentage shall remain in effect for not less than ten (10) years following delivery of the first unit.
- 6.1.2 Price Lists:
 - 6.1.2.1 The pricing sheet discount shall be applied to all price lists and all future pricing lists for the service life of the vehicle. As new price lists become available, copies shall be furnished, at no cost, to the Authority.

Failure to provide current parts lists may result in payment delay, and old price lists shall remain in effect until new price lists are received by the Port Authority.

6.2 REPAIR PARTS ORDERS AND SHIPPING

6.2.1 Repair Parts Availability and Orders:

6.2.1.1 As these are critical emergency response units, repair parts should be available and shipped within forty-eight (48) hours of order.

6.2.1.2 If the parts are declared to be emergency items by the shop, they will indicate that at the time of order in which case they are to be shipped within twenty-four (24) hours of order with expedited shipping used to facilitate next day delivery. The Port Authority will pay for the expedited shipping.

6.2.2 Parts Orders for Parts That Are Unavailable:

6.2.2.1 If any part on an order is unavailable and cannot be shipped within forty-eight (48) hours, the shop that placed the order shall be notified immediately to determine if the items shall be shipped together or whether the shipment should be broken up into multiple shipments with parts that are available shipping within forty-eight (48) hours, and subsequent shipments as unavailable parts at the time of the initial order become available.

6.2.3 Shipping & Shipping Notifications:

6.2.3.1 When orders are placed the Contractor shall ask for the desired shipment method and the urgency of the need for the part.

6.2.3.2 The expected shipping date(s) will be sent to the shop by email as soon as possible from the time the order is placed. Notifications shall also be sent when the order or any part of the order is shipped. Updates as to the ship date of parts that were not available shall be emailed to the shop at least weekly until shipment.

7. ARFF Vehicle Simulator

7.1. The Manufacturer shall provide, as an option, an ARFF Vehicle Simulator for the Types of Vehicles Requested in this Bid with Individual Simulations Environments for JFK, EWR, LGA, and TEB Airports. If a mobile option is available, separate pricing and description should be provided. Proposed specifications should be appended to the description of this option.

**ATTACHMENT A
CONTRACTOR DETAIL SHEET**

THE PORT AUTHORITY OF NEW YORK AND NEW JERSEY
OPERATION SERVICES DEPARTMENT
CENTRAL AUTOMOTIVE DIVISION
241 ERIE STREET, ROOM 307
JERSEY CITY, NJ 07310-1397

Date: October 2015

Code: 031-3922-001

CONTRACTOR DETAIL SHEET

SPECIFICATIONS FOR:

AIRPORT RESCUE AND FIRE FIGHTING TRUCK

THE CONTRACTOR SHALL COMPLETE ALL APPLICABLE AREAS IN THE FOLLOWING SECTIONS.

Contractor _____

Address _____

Contact _____

Telephone # _____ Email _____

Parts Supplier _____

Address _____

Contact _____

Telephone # _____ Email _____

Technical Assistance _____

Address _____

Contact _____

Telephone # _____ Email _____

Delivery of first unit _____ days after receipt of order

Delivery of each additional unit _____ days between units

Final unit delivery _____ months

Recommended preventive maintenance schedule

_____ type* _____ hours _____

miles

_____ type* _____ hours _____

miles

_____ type* _____ hours _____

miles

* Attach detailed preventative maintenance requirements for each type indicated.

Estimated annual preventive maintenance _____ hours/unit/year

Estimated non-pm maintenance _____ hours/unit/year

Contractor Details Pertaining to all Vehicles

1. Cab-Chassis:

Make _____
Model _____
GVWR _____
Axle capacity: Front _____ Rear _____
Drive type _____
Top speed _____ mph
Acceleration: Zero (0) to Fifty (50) _____ sec

2. Weights

	Front (lb.)	Rear / Tandem (lb.)	Total (lb.)
Empty:	_____	_____	_____
With crew:	_____	_____	_____
Expendable payload:	_____	_____	_____
Total:	_____	_____	_____
Fully loaded per tire:	_____	_____	_____
@Tire pressure psi:	_____	_____	_____

3. Dimensions

Wheelbase: _____ in.
Overall length: _____ in.
Overall width (mirrors retracted): _____ in.
Overall width (mirrors extended): _____ in.
Overall height (Fully Loaded): _____ in.
Overall height (Empty): _____ in.
Under-axle clearance: Front _____ in.
Rear _____ in.
Under-chassis clearance: _____ in.
Angle of: Approach _____ degrees

Departure _____ degrees

Break over _____ degrees

Front bumper to center front wheels _____ in.

Rearmost wheel to rear bumper _____ in.

Distance between tandem axles _____ in.

4. Engine:

Make: _____ Model: _____ Location: _____

Number of cylinders: _____

Piston displacement: _____ in³

Emissions Certification: _____ On-road Off-road

NO_x: _____ PM: _____

Particulate trap: Yes/ No

Diesel exhaust fluid: Yes / No, If yes _____ gal

Maximum brake horsepower: Gross _____ @ _____ rpm

Net _____ @ _____ rpm

Maximum torque: Gross _____ @ _____ rpm

Net _____ @ _____ rpm

Governor: Make _____ Model _____ Type _____

Maximum governed speed: _____ rpm

Heated fuel/water separator: Make _____

Model _____

Access doors: Engine _____ approx. in

Pump _____ approx. in

Foam system _____ approx. in

Battery storage _____ approx. in

Power divider: Make _____ Model _____
Type _____

Describe Operation: _____

Clutch: Make _____ Model _____
Type _____

Rated torque capacity _____ lb-ft

Fluid coupling: Make _____ Model _____

Rated capacity _____ hp

Torque converter: Make _____ Model _____

Stall torque ratio _____ Rated capacity _____

5. Transmission:

Make: _____ Model: _____ Type: _____

Maximum rated input torque capacity _____ lb-ft

Number of speeds: Forward _____
Reverse _____

Speed	Gear ratio	mph* @ engine-governed rpm
1	_____	_____
2	_____	_____
3	_____	_____
4	_____	_____
5	_____	_____
6	_____	_____
Rev.	_____	_____
Rev.	_____	_____

Note: If multiple range transfer case is provided, mph is to be provided for each range.

6. Transfer Case:

Make: _____ Model: _____ Type: _____

Maximum rated input torque capacity _____ lb-ft

Gear ratio: high range _____

low range _____

Type drive to front and rear axles (bogie) _____

Center differential or compensating device:

Make: _____ Model: _____ Type: _____

Direct drive:

Type: _____

7. Front Drive Axle:

Make: _____ Model: _____ Gear Ratio: _____

Type drive: _____

GAWR _____

Reduction Single Double:

If double reduction: Final reduction _____ Type: _____

Steering drive ends:

Make: _____ Model: _____ Type: _____

Differential or compensating device:

Make: _____ Model: _____ Type: _____

Maximum rated input torque capacity _____ lb-ft

Maximum rated load on tires at ground _____ lb

Axle Tread _____ in.

8. Rear Drive:

Axle bogie: Yes No Wheelbase _____ in.

Make: _____ Model: _____ Gear Ratio: _____

Type drive: _____

GAWR _____

Reduction Single Double:

If double reduction: Final reduction _____ Type: _____

Steering drive ends:

Make: _____ Model: _____ Type: _____

Differential or compensating device:

Make: _____ Model: _____ Type: _____

Maximum rated input torque capacity _____ lb-ft

Maximum rated load on tires at ground _____ lb

Axle Tread _____ in.

9. Suspension:

Front:

Type _____ Capacity _____

Rear:

Type _____ Capacity _____

10. Wheels, Tires, and Rims:

Wheels, Type _____

Wheels, Construction _____

Rims, Type _____

Maximum load (lb) _____

Inflation pressure (psi) _____

Tire, type _____

Tire tread design _____

Tires:

Make: _____ Model: _____ Size: _____

Speed or distance restrictions _____

11. Electrical System:

Voltage: Vehicle System _____

Starting _____

Alternator:

Make: _____ Model: _____ Voltage: _____

Capacity rating at engine-governed speed _____ Amps

Capacity rating at idle _____ Amps

Capacity rating at high idle _____ Amps

Batteries:

Make: _____ Model: _____ Number: _____

Capacity, each _____ amp-hr @ 20-hr

Rate, each cold-cranking _____ amp @ 0°f (-17.8°c)

Starter:

Make: _____ Model: _____

On-board complementary battery charger:

Make: _____ Model: _____

On-board complementary compressor:

Make: _____ Model: _____

Battery Charging and Jump Starting Connection:

Make: _____ Model: _____

On-board Engine coolant heating:

Make: _____ Model: _____ Watts: _____

12. Fuel System:

Fuel pumps:

Mechanical, number _____ Location: _____

Electrical, number _____ Location: _____

Boost pump Yes No

Fuel tank capacity _____ Location _____

_____ Hours of operation after thirty (30) miles of travel at a speed of fifty-five (55) mph plus two (2) hrs of pumping at a full rate of discharge.

13. Exhaust System:

Muffler _____ Exhaust system material _____

Location of exhaust discharge _____

Plymovent compatibility (Explain) _____

14. Air System:

Compressor:

Make _____ Model _____

Capacity _____ CFM

Total air reservoir capacity _____ in³

Tanks: Quantity _____ Capacity (each) _____ in³

Quick buildup time _____ @ _____ psi

Air dryer:

Make _____ Model _____

Moisture drain valve

Make _____ Model _____

15. Service Brakes:

Make _____ Model _____

Type _____

Braking area _____ in²

Brake application system:

Make _____

Type _____

Stopping distance from twenty (20) mph _____

Stopping distance from forty (40) mph _____

16. Parking Brakes:

Make _____ Location _____

Number of wheels with spring brakes _____

Braking area _____ in²

Type _____

Stopping distance from forty (40) mph _____

Actuation type _____

17. Steering:

Steering gear: Make _____ Model _____

Power assist: Make _____ Model _____

Wall-to-wall turning diameter _____ ft.

18. Body:

Chassis construction _____

Frame material _____

Yield strength _____

Section modulus _____

Rbm _____

Body construction material _____

Location of steps or ladders to working deck _____

Type nonskid surface on steps, walkways _____

19. Cab:

Number of seats _____ Number of doors _____

Glazing:

Windshield: Make _____ Type _____

Side windows: Make _____ Type _____

Driver visibility: Horizontal _____ Vertical _____

Turret access hatch size _____

Insulation thickness/r value _____

Cab construction material _____

Maximum sound level at drivers position _____ dBa

Instrument panel _____

Cab interior dimensions:

Length (dash to rear bulkhead) _____

Width (door to door) _____

Height (floor to ceiling) _____

Cab volume _____ ft³

Gun Box dimensions _____ in

Heater capacity _____ Btu

Make _____ Model _____

Air conditioning capacity _____ Btu

Make _____ Model _____

Deluge system: Make _____ Model _____

Pump: Make _____ Model _____

Quantity of nozzles _____

Deluge tank capacity _____ gal Location _____

20. Pump(s) and Pump Drive:

Water Pump: Make _____ Model _____

Number of water pumps _____ Material _____

Total pump capacity _____ gpm @ _____ psi

Pump drive _____

Location of PTO _____

Is power transmission uninterrupted? Yes

PTO Clutch type _____

Torque capacity _____ lb-ft

Clutch actuation _____

Maximum engine speed at which p.t.o. Can be engaged _____ rpm

Tank to pump piping material _____

Tank to pump system low-point drain:

Type valve _____ Size _____ in

Pump discharge gate(s):

Number _____ Size _____ in. Location _____

Pump check valve(s):

Number _____ Size _____ in. Location _____

Type pressure relief device _____

Discharge piping material _____

Type valves _____ Type couplings _____

Churn line design _____

Location _____

Churn line valve control method _____

21. Water Tank:

Usable capacity _____ gal.

Dimensions:

Height _____ in. Length _____ in. Width _____ in.

Height of tank bottom above ground _____ in.

Construction material _____

Interior coating: Yes No

Coating material _____

Baffles:

Number transverse _____

Number longitudinal _____

Anti-swirl: Yes No

Top fill opening: Size _____ in.

Number _____ Type _____

Side fill connections: Size _____ in. Number _____

Thread type _____ Location _____

Filtration _____

Tank fill time _____ sec @ 80psi.

23. Foam-Liquid Concentrate Tank(s):

Location _____ Total usable capacity _____

Construction material _____

Top fill size _____ No. Of can openers _____

Side fill connections: size _____ in. Number _____

Thread type _____ Location _____

24. Foam Pumping and Proportioning System:

Type foam proportioning system _____

Foam-liquid concentrate percentage (%):

Variable from _____ to _____ percentage (%)

Foam-liquid concentrate pump:

Make _____

Model _____

Material _____

Capacity _____ gpm at _____ psi

Type pump drive _____

Foam-liquid concentrate piping material _____

25. Primary Turret Foam Nozzle:

Make _____

Model _____

Location _____
Type nozzle _____
Turret flow rate(s) _____ gpm
Manual override _____
Operating pressure _____ psi
Discharge stream _____
Range-straight stream, foam
Far point _____ ft.
Near point _____ ft.
Range-fully dispersed or spray, foam
Full width _____ ft. Far point _____ ft.
Near point _____ ft.
Turret control _____
Foam quality: expansion rate _____ to
Twenty-Five percent (25%) drainage time _____ min.

26. Hand Line(s) Water/Foam:

Number _____ Location _____
Length hose _____ ft. Size _____
Nozzle:
Make _____ Model _____
Liquid flow rate _____ gpm
Foam quality expansion ratio _____ to 1
Twenty-Five percent (25%) drainage time _____ min.
Foam pattern: width _____ ft. Range _____ ft.

27. Bumper Turret Nozzle:

Make _____ Model _____
Type _____
Turret flow rate(s) _____ gpm
Operating pressure _____ psi

Discharge:

Range-straight stream, foam

Far point _____ ft. Near point _____ ft.

Range-fully dispersed or spray, foam

Full width _____ ft. Far point _____ ft.

Near point _____ ft.

Turret control _____

Side rotation _____ degrees

Elevation range _____ degrees

Foam quality expansion rate _____ to Twenty-Five percent (25%) drainage time _____ min

28. Under-Truck Nozzle(s):

Number _____ Location _____

Liquid flow rate(s) _____ gpm

Control locations _____

29. Warning Devices:

Beacons: Make _____ Model _____

Location _____

Siren: Make _____ Model _____

Location _____

Control location _____

Horn type: _____

Backup alarm: Make _____ Model _____

30. Dry Chemical System:

Turret:

Type _____

Number _____ Location _____

Make _____ Model _____

Range _____ ft.

Discharge rate _____ lb./sec

Hand line:

Type _____

Number _____ Location _____

Length of hose per reel _____ ft.

Size _____ in.

Reel mounting _____

Height of reel top above ground _____ in.

Nozzle:

Make _____ Model _____

Range _____ ft.

Discharge rate _____ lb./sec

30. Halotron System:

Turret:

Type _____

Number _____ Location _____

Make _____ Model _____

Range _____ ft.

Discharge rate _____ lb./sec

Hand line:

Type _____

Number _____ Location _____

Length of hose per reel _____ ft.

Size _____ in.

Reel mounting _____

Height of reel top above ground _____ in.

Nozzle:

Make _____ Model _____

Range _____ ft.

Discharge rate _____ lb./sec

31. Instruments, Warning Lights and Controls:

Engine hour-meter: Make _____ Model _____

Engine tachometer: Make _____ Model _____

Speedometer: Make _____ Model _____

Engine temperature gauge: Make _____ Model _____

Transmission temperature gauge: Make _____ Model _____

Water tank gauge: Make _____ Model _____

Foam tank gauge: Make _____ Model _____

Fuel level gauge: Make _____ Model _____

Throttle control: Make _____ Model _____

32. Navigation System (devs):

Make _____

Model _____

33. Low Visibility Enhanced Vision System (FLIR):

Make _____

Model _____

34. Monitoring and Data Acquisition System (MADAS):

Make _____

Model _____

35. Lighting and Electrical:

FMVSS lighting:

Type _____

Make _____ Model _____

Cab spotlight:

Make _____ Model _____

Size _____

Turret spotlight:

Make _____ Model _____

Rear camera:

Make _____ Model _____

Lateral “g” alarm:

Make _____ Model _____

Scene lights:

Make _____ Model _____

Angle _____

Fog lights:

Make _____ Model _____

High intensity driving lights:

Make _____ Model _____

High intensity floodlights:

Make _____ Model _____

Map light:

Make _____ Model _____

36. Elevating Light Mast:

Make _____

Model _____

Elevation _____ Rotation _____

Lamps: Make _____ Model _____

Number _____ Wattage _____

37. Generator:

Make _____
Model _____
Type _____ Capacity _____

38. Electric Cable Reel:

Make _____
Model _____
Cable: Size _____ Type _____ Length _____
Four (4") inch ball stop _____ Qty of outlets _____

39. Emergency Warning Lights:

Make _____
Model _____
Front emergency warning lights:
Make _____
Model _____
Rear emergency warning lights:
Make _____
Model _____

40. Ground Ladders:

Extension:
Make _____

Model _____

Size _____

Roof:

Make _____

Model _____

Size _____

Little Giant

Vehicle must be equipped with all manufacturers' standard equipment.

Class-V 6x6 Single-Agent Vehicle

1. Cab-Chassis:

Make _____

Model _____

GVWR _____

Unladen Weight _____

Axle capacity:

Front _____ Rear _____

Drive type _____

Top speed _____ mph

Acceleration: Zero (0) to Fifty (50) _____ sec

2. Weights

	Front (lb.)	Rear / Tandem (lb.)	Total (lb.)
Empty:	_____	_____	_____
With crew:	_____	_____	_____
Expendable payload:	_____	_____	_____
Total:	_____	_____	_____
Average load per tire:	_____	_____	_____

3. Dimensions

Vehicle fully loaded @ _____ lb.

Tire inflation pressure: Front _____ lb. Rear _____ lb.

Wheelbase: _____ in.

Overall length: _____ in.

Overall width: _____ in.

Overall height: _____ in. (Fully Loaded)

Overall height: _____ in. (Empty)

Under-axle clearance: Front _____ in.; Rear _____ in.

Inter-axle clearance angle _____ degrees

Under-chassis clearance _____ in.

Angle of: Approach _____ degrees;
Departure _____ degrees;

Front bumper to center front wheels _____ in.

Center rear wheels to rear bumper _____ in.

4. Engine:

Make _____ Model _____ Location _____

Number of cylinders _____

Piston displacement _____ in³

Emissions Certification _____ On-road Off-road

NO_x: _____ PM: _____

Particulate trap: Yes/ No

Diesel exhaust fluid: Yes / No, If yes _____ gal

Maximum brake horsepower: Gross _____ @ _____ rpm

Net _____ @ _____ rpm

Maximum torque: Gross _____ @ _____ rpm

Net _____ @ _____ rpm

Governor: Make _____ Model _____ Type _____

Maximum governed speed _____ rpm

Heated fuel/water separator:

Make _____

Model _____

Access doors:

Engine _____

Pump _____

Foam system _____

Battery storage _____

5. Clutch, Fluid Coupling, Torque Converter:

Clutch: Make _____ Model _____

Type _____

Rated torque capacity _____ lb-ft

Fluid coupling: Make _____ Model _____

Rated capacity _____ hp

Torque converter: Make _____ Model _____

Stall torque ratio _____ Rated capacity _____ hp

6. Transmission:

Make _____ Model _____ Type _____

Maximum rated input torque capacity _____ lb-ft

Number of speeds: Forward _____ Reverse _____

SpeedGear ratio mph* @ engine-governed rpm

1 _____ _____

2 _____ _____

3 _____ _____

4 _____ _____

5 _____ _____

Rev. _____ _____

Rev. _____ _____

Note: if multiple range transfer case is provided, mph is to be measured with these components in high range.

7. Transfer Case:

Make _____ Model _____

Maximum rated input torque capacity _____ lb-ft

Gear ratio: high range _____ low range _____

Type drive to front and rear axles (bogie) _____

Center differential or compensating device:

Make _____

Model _____

Type _____

Direct drive:

Type: _____

8. Front Drive:

Axle:

Make _____ Model _____ Gear ratio _____

Type drive: _____

GAWR _____

If double reduction, type final reduction _____

Steering drive ends: Make _____ Model _____

Type: _____

Differential or compensating device:

Make _____ Model _____

Type _____

Maximum rated input torque capacity _____ lb-ft

Maximum rated load on tires at ground _____ lb

Axle Tread _____ in.

9. Rear Drive:

Axle bogie:

Make _____ Model _____ Gear ratio _____

Type drive _____

GAWR _____

If double reduction, type final reduction _____

Differential or compensating device:

Make _____ Model _____

Type _____
 Maximum rated input torque capacity _____ lb-ft
 Maximum rated load on tires at ground _____ lb.
 Axle tread _____ in. Bogie wheelbase _____ in.

10. Suspension:

Front:
 Type _____ Capacity _____
 Rear:
 Type _____ Capacity _____

11. Wheels, Tires, and Rims:

	Front	Rear
Configuration		
Singles	_____	_____
Wheels, Type	_____	_____
Wheels, Construction	_____	_____
Rims, Type	_____	_____
Rim size (in.)	_____	_____
Load/ply rating	_____	_____
Maximum load (lb)	_____	_____
Inflation pressure (psi)	_____	_____
Tire, type	_____	_____
Tire tread design	_____	_____
Tires:		
Make _____	Model _____	
Size _____		

12. Electrical System:

Voltage: Vehicle System _____ Starting _____
 Alternator: Make _____ Model _____ Voltage _____

Capacity rating at engine-governed speed _____

Capacity rating at fifty percent (50%) engine-governed speed _____

Batteries: Make _____ Model _____ Number _____

Capacity, each _____ amp-hr @ 20-hr

Rate, each cold-cranking amp @ 0°f (-17.8°c)

Starter: Make _____ Model _____

On-board complementary battery charger:

Make _____ Model _____

On-board complementary compressor _____ volts

External battery charging connection _____ volts

Engine coolant preheating connection _____ volts

13. Fuel System:

Fuel pumps: Mechanical, number _____

Electrical, number _____

Fuel tank capacity _____ Location _____

14. Exhaust System:

Muffler

Construction of system _____

Location of exhaust discharge _____

15. Air System:

Compressor:

Make _____ Model _____

Capacity _____ CFM

Total air reservoir capacity _____ in³

Tanks: Quantity _____ Capacity (each) _____

Quick buildup time _____ @ _____ psi

Air dryer: Make _____ Model _____

Moisture drain valve _____

16. Service Brakes:

Make _____ Model _____

Type _____

Braking area _____ in²

Brake application system:

Make _____

Type _____

Stopping distance from Twenty (20) mph _____

Stopping distance from Forty (40) mph _____

17. Emergency Brakes:

Make _____ Location _____

Braking area _____ in²

Type _____

Stopping distance from Forty (40) mph _____

Actuation type _____

18. Steering:

Steering gear: Make _____ Model _____

Power assist: Make _____ Model _____

Wall-to-wall turning diameter _____ ft.

19. Body:

Chassis construction _____

Frame material _____

Yield strength _____

Section modulus _____

Rbm _____

Body construction material _____

Location of steps or ladders to working deck _____

Type nonskid surface on steps, walkways _____

20. Cab:

Number of seats _____ Number of doors _____

Glazing:

Windshield: Make _____ Type _____

Side windows: Make _____ Type _____

Rear window: Make _____ Type _____

Driver visibility: Horizontal _____ Vertical _____

Turret access hatch size _____

Insulation thickness/r value _____

Cab construction material _____

Instrument panel _____

Cab interior dimensions:

Length (dash to rear bulkhead) _____

Width (door to door) _____

Height (floor to ceiling) _____

Cab volume _____ ft³

Heater capacity _____ Btu

Make _____ model _____

Air conditioning capacity _____ Btu

Make _____ Model _____

Deluge system: Make _____ Model _____

Pump: Make _____ Model _____

Quantity of nozzles _____

21. Pump(s) and Pump Drive:

Water pump(s):

Make _____

Model _____

Number of water pumps _____ Material _____

Total pump capacity _____ gpm at _____ psi
Pump drive _____

If separate engine(s) drive:

Engine make _____ Model _____

Location _____ Number cylinders _____

Piston displacement _____ in³

Maximum gross brake horsepower _____ @ _____ rpm

Voltage of ignition and starting system _____

Type clutch, if furnished _____

If power take-off drive:

Location of p.t.o. _____

Is power transmission uninterrupted? _____

P.t.o. Clutch type _____

Torque capacity _____ lb-ft

Clutch actuation _____

Maximum engine speed at which p.t.o. Can be engaged _____ rpm

Tank to pump piping material _____

Tank to pump system low-point drain:

Type valve _____ Size _____ in.

Pump discharge gate(s):

Number _____ Size _____ in. Location _____

Pump check valve(s):

Number _____ Size _____ in. Location _____

Type pressure relief device _____

Discharge piping material _____

Type valves _____ Type couplings _____

Churn line design _____

Location _____

Churn line valve control method _____

22. Water Tank:

Usable capacity _____ gal.

Dimensions:

Height _____ in. Length _____ in. Width _____ in.

Height of tank bottom above ground _____ in.

Construction material _____

Interior coating: Yes _____ No _____

Coating material _____

Baffles:

Number transverse _____

Number longitudinal _____

Anti-swirl: Yes _____ No _____

Top fill opening: Size _____ in.

Number _____ Type _____

Side fill connections: Size _____ in. Number _____

Thread type _____ Location _____

Filtration _____

Tank fill time _____ sec @ 80psi.

23. Foam-Liquid Concentrate Tank(s):

Location _____ Total usable capacity _____

Construction material _____

Top fill size _____ No. Of can openers _____

Side fill connections: size _____ in. Number _____

Thread type _____ Location _____

24. Foam Pumping and Proportioning System:

Type foam proportioning system _____

Foam-liquid concentrate percentage (%):

Variable from _____ to _____ percentage (%)

Foam-liquid concentrate pump:

Make _____

Model _____
Material _____
Capacity _____ gpm at _____ psi
Type pump drive _____
Foam-liquid concentrate piping material _____

25. Primary Turret Foam Nozzle:

Make _____
Model _____
Location _____
Type nozzle _____
Turret flow rate(s) _____ gpm
Manual override _____
Operating pressure _____ psi
Discharge stream _____
Range-straight stream, foam
Far point _____ ft.
Near point _____ ft.
Range-fully dispersed or spray, foam
Full width _____ ft. Far point _____ ft.
Near point _____ ft.
Turret control _____
Foam quality: expansion rate _____ to 1
Twenty-Five percent (25%) drainage time _____ min.

26. Hand Line(s) Water/Foam:

Number _____ Location _____
Length hose per reel _____ ft. Size _____
Reel mounting _____
Height of reel top above ground _____ in.
Nozzle:

Location _____

Control location _____

Horn type: _____

Backup alarm: Make _____ Model _____

30. Complementary Agent Nozzle(s):

Turret:

Type _____

Number _____ Location _____

Make _____ Model _____

Range _____ ft.

Discharge rate _____ lb./sec

Hand line:

Type _____

Number _____ Location _____

Length of hose per reel _____ ft.

Size _____ in.

Reel mounting _____

Height of reel top above ground _____ in.

Nozzle:

Make _____ Model _____

Range _____ ft.

Discharge rate _____ lb./sec

31. Instruments, Warning Lights and Controls:

Engine hour-meter: Make _____ Model _____

Engine tachometer: Make _____ Model _____

Speedometer: Make _____ Model _____

Engine temperature gauge: Make _____ Model _____

Transmission temperature gauge: Make _____ Model _____

Water tank gauge: Make _____ Model _____

Foam tank gauge: Make _____ Model _____

Fuel level gauge: Make _____ Model _____

Throttle control: Make _____ Model _____

Fuel pump pressure gauge: Make _____ Model _____

32. Navigation System (devs):

Make _____

Model _____

33. Low Visibility Enhanced Vision System (FLIR):

Make _____

Model _____

34. Monitoring and Data Acquisition System (MADAS):

Make _____

Model _____

35. Rechargeable Lights:

Make _____

Model _____

Candlepower _____ Dual Filament _____

36. Front Bumper and Grill Guard _____

37. Lighting and Electrical:

FMVSS lighting:

Type _____

Make _____ Model _____

Cab spotlight:

Make _____ Model _____

Size _____

Turret spotlight:

Make _____ Model _____

Rear camera:

Make _____ Model _____

Center of gravity audible alarm:

Make _____ Model _____

Scene lights:

Make _____ Model _____

Angle _____

Fog lights:

Make _____ Model _____

High intensity driving lights:

Make _____ Model _____

High intensity floodlights:

Make _____ Model _____

Map light:

Make _____ Model _____

38. Light Mast:

Make _____
Model _____
Extension _____ Rotation _____
Lamps: Make _____ Model _____
Wattage _____

39. Generator:

Make _____
Model _____
Type _____ Capacity _____

40. Electric Cable Reel:

Make _____
Model _____
Cable: Size _____ Length _____
Electric rewind _____
4" ball stop _____ Outlet box _____

41. Emergency Warning Lights:

Make _____
Model _____
Front emergency warning lights:
Make _____

Model _____

Rear emergency warning lights:

Make _____

Model _____

42. Ground Ladders:

Extension:

Make _____

Model _____

Size _____

Roof:

Make _____

Model _____

Size _____

43. Miscellaneous:

Twenty-Five (25')ft. of Four and one half (4½") inch

Hose _____

Spanner wrenches _____

Hydrant wrench _____

Scuba tanks:

Make _____ Model _____

Size _____

Wheel chocks _____ 100' utility rope _____

2. Class-V 6x6 Triple-Agent Vehicle

1. **Cab-Chassis:**

Make _____

Model _____

GVWR _____

Unladen Weight _____

Axle capacity:

Front _____ Rear _____

Drive type _____

Top speed _____ mph

Acceleration: Zero (0) to Fifty (50) _____ sec

2. **Weights**

	Front (lb.)	Rear / Tandem (lb.)	Total (lb.)
Empty:	_____	_____	_____
With crew:	_____	_____	_____
Expendable payload:	_____	_____	_____
Total:	_____	_____	_____
Average load per tire:	_____	_____	_____

3. **Dimensions**

Vehicle fully loaded @ _____ lb.

Tire inflation pressure: Front _____ lb. Rear _____ lb.

Wheelbase: _____ in.

Overall length: _____ in.

Overall width: _____ in.

Overall height: _____ in. (Fully Loaded)

Overall height: _____ in. (Empty)

Under-axle clearance: Front _____ in.; Rear _____ in.

Inter-axle clearance angle _____ degrees

Under-chassis clearance _____ in.
Angle of: Approach _____ degrees;
Departure _____ degrees;
Front bumper to center front wheels _____ in.
Center rear wheels to rear bumper _____ in.

4. Engine:

Make _____ Model _____ Location _____

Number of cylinders _____

Piston displacement _____ in³

Emissions Certification _____ On-road Off-road

NO_x: _____ PM: _____

Particulate trap: Yes/ No

Diesel exhaust fluid: Yes / No , If yes _____ gal

Maximum brake horsepower: Gross _____ @ _____ rpm

Net _____ @ _____ rpm

Maximum torque: Gross _____ @ _____ rpm

Net _____ @ _____ rpm

Governor: Make _____ Model _____ Type _____

Maximum governed speed _____ rpm

Heated fuel/water separator:

Make _____

Model _____

Access doors:

Engine _____

Pump _____

Foam system _____

Battery storage _____

5. Clutch, Fluid Coupling, Torque Converter:

Clutch: Make _____ Model _____

Type _____

Rated torque capacity _____ lb-ft

Fluid coupling: Make _____ Model _____

Rated capacity _____ hp

Torque converter: Make _____ Model _____

Stall torque ratio _____ Rated capacity _____ hp

6. Transmission:

Make _____ Model _____ Type _____

Maximum rated input torque capacity _____ lb-ft

Number of speeds: Forward _____ Reverse _____

Speed	Gear ratio	mph* @ engine-governed rpm
-------	------------	----------------------------

1	_____	_____
---	-------	-------

2	_____	_____
---	-------	-------

3	_____	_____
---	-------	-------

4	_____	_____
---	-------	-------

5	_____	_____
---	-------	-------

Rev.	_____	_____
------	-------	-------

Rev.	_____	_____
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Note: If multiple range transfer case is provided, mph is to be measured with these components in high range.

7. Transfer Case:

Make _____ Model _____

Maximum rated input torque capacity _____ lb-ft

Gear ratio: high range _____ low range _____

Type drive to front and rear axles (bogie) _____

Center differential or compensating device:

Make _____

Model _____

Type _____

Direct drive:

Type: _____

8. Front Drive:

Axle:

Make _____ Model _____ Gear ratio _____

Type drive: _____

GAWR _____

If double reduction, type final reduction _____

Steering drive ends: Make _____ Model _____

Type: _____

Differential or compensating device:

Make _____ Model _____

Type _____

Maximum rated input torque capacity _____ lb-ft

Maximum rated load on tires at ground _____ lb

Axle Tread _____ in.

9. Rear Drive:

Axle bogie:

Make _____ Model _____ Gear ratio _____

Type drive _____

GAWR _____

If double reduction, type final reduction _____

Differential or compensating device:

Make _____ Model _____

Type _____
 Maximum rated input torque capacity _____ lb-ft
 Maximum rated load on tires at ground _____ lb.
 Axle tread _____ in. Bogie wheelbase _____ in.

10. Suspension:

Front:
 Type _____ Capacity _____
 Rear:
 Type _____ Capacity _____

11. Wheels, Tires, and Rims:

	Front	Rear
Configuration		
Singles	_____	_____
Wheels, Type	_____	_____
Wheels, Construction	_____	_____
Rims, Type	_____	_____
Rim size (in.)	_____	_____
Load/ply rating	_____	_____
Maximum load (lb)	_____	_____
Inflation pressure (psi)	_____	_____
Tire, type	_____	_____
Tire tread design	_____	_____
Tires: Make _____ Model _____		
Size _____		

12. Electrical System:

Voltage: Vehicle System _____ Starting _____
 Alternator: Make _____ Model _____ Voltage _____
 Capacity rating at engine-governed speed _____
 Capacity rating at Fifty percent (50 %) engine-governed speed _____

Batteries: Make _____ Model _____ Number _____

Capacity, each _____ amp-hr @ 20-hr

Rate, each cold-cranking amp @ 0°f (-17.8°c)

Starter: Make _____ Model _____

On-board complementary battery charger:

Make _____ Model _____

On-board complementary compressor _____ volts

External battery charging connection _____ volts

Engine coolant preheating connection _____ volts

13. Fuel System:

Fuel pumps: Mechanical, number _____

Electrical, number _____

Fuel tank capacity _____ Location _____

14. Exhaust System:

Muffler

Construction of system _____

Location of exhaust discharge _____

15. Air System:

Compressor:

Make _____ Model _____

Capacity _____ CFM

Total air reservoir capacity _____ in³

Tanks: Quantity _____ Capacity (each) _____

Quick buildup time _____ @ _____ psi

Air dryer: Make _____ Model _____

Moisture drain valve _____

16. Service Brakes:

Make _____ Model _____

Type _____

Braking area _____ in²

Brake application system:

Make _____

Type _____

Stopping distance from Twenty (20) mph _____

Stopping distance from Forty (40) mph _____

17. Emergency Brakes:

Make _____ Location _____

Braking area _____ in²

Type _____

Stopping distance from Forty (40) mph _____

Actuation type _____

18. Steering:

Steering gear: Make _____ Model _____

Power assist: Make _____ Model _____

Wall-to-wall turning diameter _____ ft.

19. Body:

Chassis construction _____

Frame material _____

Yield strength _____

Section modulus _____

Rbm _____

Body construction material _____

Location of steps or ladders to working deck _____

Type nonskid surface on steps, walkways _____

20. Cab:

Number of seats _____ Number of doors _____

Glazing:

Windshield: Make _____ Type _____

Side windows: Make _____ Type _____

Rear window: Make _____ Type _____

Driver visibility: Horizontal _____ Vertical _____

Turret access hatch size _____

Insulation thickness/r value _____

Cab construction material _____

Instrument panel _____

Cab interior dimensions:

Length (dash to rear bulkhead) _____

Width (door to door) _____

Height (floor to ceiling) _____

Cab volume _____ ft³

Heater capacity _____ Btu

Make _____ model _____

Air conditioning capacity _____ Btu

Make _____ Model _____

Deluge system: Make _____ Model _____

Pump: Make _____ Model _____

Quantity of nozzles _____

21. Pump(s) and Pump Drive:

Water pump(s):

Make _____

Model _____

Number of water pumps _____ Material _____

Total pump capacity _____ gpm at _____ psi
Pump drive _____
If separate engine(s) drive:
Engine make _____ Model _____
Location _____ Number cylinders _____
Piston displacement _____ in³
Maximum gross brake horsepower _____ @ _____ rpm
Voltage of ignition and starting system _____
Type clutch, if furnished _____
If power take-off drive:
Location of p.t.o. _____
Is power transmission uninterrupted? _____
P.t.o. Clutch type _____
Torque capacity _____ lb-ft
Clutch actuation _____
Maximum engine speed at which p.t.o. Can be engaged _____ rpm
Tank to pump piping material _____
Tank to pump system low-point drain:
Type valve _____ Size _____ in.
Pump discharge gate(s):
Number _____ Size _____ in. Location _____
Pump check valve(s):
Number _____ Size _____ in. Location _____
Type pressure relief device _____
Discharge piping material _____
Type valves _____ Type couplings _____
Churn line design _____
Location _____
Churn line valve control method _____

22. Water Tank:

Usable capacity _____ gal.

Dimensions:

Height _____ in. Length _____ in. Width _____ in.

Height of tank bottom above ground _____ in.

Construction material _____

Interior coating: Yes _____ No _____

Coating material _____

Baffles:

Number transverse _____

Number longitudinal _____

Anti-swirl: Yes _____ No _____

Top fill opening: Size _____ in.

Number _____ Type _____

Side fill connections: Size _____ in. Number _____

Thread type _____ Location _____

Filtration _____

Tank fill time _____ sec @ 80psi.

23. Foam-Liquid Concentrate Tank(s):

Location _____ Total usable capacity _____

Construction material _____

Top fill size _____ No. Of can openers _____

Side fill connections: size _____ in. Number _____

Thread type _____ Location _____

24. Foam Pumping and Proportioning System:

Type foam proportioning system _____

Foam-liquid concentrate percentage (%):

Variable from _____ to _____ percentage (%)

Foam-liquid concentrate pump:

Make _____
Model _____
Material _____
Capacity _____ gpm at _____ psi
Type pump drive _____
Foam-liquid concentrate piping material _____

25. Primary Turret Foam Nozzle:

Make _____
Model _____
Location _____
Type nozzle _____
Turret flow rate(s) _____ gpm
Manual override _____
Operating pressure _____ psi
Discharge stream _____
Range-straight stream, foam
Far point _____ ft.
Near point _____ ft.
Range-fully dispersed or spray, foam
Full width _____ ft. Far point _____ ft.
Near point _____ ft.
Turret control _____
Foam quality: expansion rate _____ to 1
Twenty-Five percent (25%) drainage time _____ min.

26. Hand Line(s) Water/Foam:

Number _____ Location _____
Length hose per reel _____ ft. Size _____
Reel mounting _____
Height of reel top above ground _____ in.

Nozzle:

Make _____ Model _____

Liquid flow rate _____ gpm

Foam quality expansion ratio _____ to 1

Twenty-Five (25%) drainage time _____ min.

Foam pattern: width _____ ft. Range _____ ft.

27. Bumper Turret Nozzle:

Make _____ Model _____

Type _____

Turret flow rate(s) _____ gpm

Operating pressure _____ psi

Discharge:

Range-straight stream, foam

Far point _____ ft. Near point _____ ft.

Range-fully dispersed or spray, foam

Full width _____ ft. Far point _____ ft.

Near point _____ ft.

Turret control _____

Side rotation _____ degrees

Elevation range _____ degrees

Foam quality expansion rate _____ to Twenty-Five Percent (25%) drainage time _____ min

28. Under-Truck Nozzle(s):

Number _____ Location _____

Liquid flow rate(s) _____ gpm

Control locations _____

29. Emergency Warning Devices:

Flashing beacon: Make _____ Model _____

Location _____

Siren: Make _____ Model _____
Location _____
Control location _____
Horn type: _____
Backup alarm: Make _____ Model _____

30. Complementary Agent Nozzle(s):

Turret:
Type _____
Number _____ Location _____
Make _____ Model _____
Range _____ ft.
Discharge rate _____ lb./sec
Hand line:
Type _____
Number _____ Location _____
Length of hose per reel _____ ft.
Size _____ in.
Reel mounting _____
Height of reel top above ground _____ in.
Nozzle:
Make _____ Model _____
Range _____ ft.
Discharge rate _____ lb./sec

31. Instruments, Warning Lights and Controls:

Engine hour-meter: Make _____ Model _____
Engine tachometer: Make _____ Model _____
Speedometer: Make _____ Model _____
Engine temperature gauge: Make _____ Model _____
Transmission temperature gauge: Make _____ Model _____

Water tank gauge: Make _____ Model _____
Foam tank gauge: Make _____ Model _____
Fuel level gauge: Make _____ Model _____
Throttle control: Make _____ Model _____
Fuel pump pressure gauge: Make _____ Model _____

32. Navigation System (DEVS):

Make _____
Model _____

33. Low Visibility Enhanced Vision System (FLIR):

Make _____
Model _____

34. Monitoring and Data Acquisition System (MADAS):

Make _____
Model _____

35. Rechargeable Lights:

Make _____
Model _____
Candlepower _____ Dual Filament _____

36. Front Bumper and Grill Guard _____

37. Lighting and Electrical:

FMVSS lighting:

Type _____

Make _____ Model _____

Cab spotlight:

Make _____ Model _____

Size _____

Turret spotlight:

Make _____ Model _____

Rear camera:

Make _____ Model _____

Center of gravity audible alarm:

Make _____ Model _____

Scene lights:

Make _____ Model _____

Angle _____

Fog lights:

Make _____ Model _____

High intensity driving lights:

Make _____ Model _____

High intensity floodlights:

Make _____ Model _____

Map light:

Make _____ Model _____

38. Light Mast:

Make _____

Model _____

Extension _____ Rotation _____

Lamps: Make _____ Model _____

Wattage _____

39. Generator:

Make _____

Model _____

Type _____ Capacity _____

40. Electric Cable Reel:

Make _____

Model _____

Cable: Size _____ Length _____

Electric rewind _____

Four (4") inch ball stop _____ Outlet box _____

41. Emergency Warning Lights:

Make _____

Model _____

Front emergency warning lights:

Make _____

Model _____

Rear emergency warning lights:

Make _____

Model _____

42. Ground Ladders:

Extension:

Make _____

Model _____

Size _____

Roof:

Make _____

Model _____

Size _____

43. Miscellaneous:

Twenty-Five (25') ft. of Four and one half (4½") inch

Hose _____

Spanner wrenches _____

Hydrant wrench _____

Scuba tanks:

Make _____ Model _____

Size _____

Wheel chocks _____ 100' utility rope _____

**APPENDIX A -
AUTOMOTIVE PROCUREMENT STANDARD CONTRACT TERMS AND
CONDITIONS**

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PART I- GENERAL PROVISIONS

1. INTENT

These specifications cover the furnishing of twenty-four (24) of the latest production Airport Rescue and Fire Fighting (ARFF) Vehicles, and all equipment and components as described in these specifications. These Automotive Procurement Standard Contract Terms and Conditions are to be used in conjunction with Port Authority Standard Contract Terms and Conditions.

2. DEFINITIONS

Authority or Port Authority:

For the purposes of this agreement, the terms “Authority” or “Port Authority” mean The Port Authority of New York and New Jersey and/or the Port Authority Trans-Hudson Corporation (PATH), as applicable.

Agreement/Contract:

For the purposes of this agreement, the terms “Agreement” and “Contract” can be used interchangeably to mean the agreement entered into by the signatories of this document, and shall consist of the Specifications, this Appendix A, and any other appendices, attachments, exhibits or addenda, as outlined in the section entitled “Entire Agreement”.

Contractor/Contractor:

For the purposes of this agreement, the terms “Contractor” and “Contractor” can be used interchangeably to mean the entity entering into this Contract with the Port Authority of New York and New Jersey.

Chief Procurement Officer:

For the purposes of this agreement, Chief Procurement Officer means the Chief Procurement Officer of the Port Authority, or successor in duties, or his or her authorized representative.

Engineer:

As used in this agreement, the term "Engineer" means the Manager of the Central Automotive Division of the Port Authority, or his or her duly authorized representatives acting within the scope of the particular authority vested in them.

3. CONTRACTOR REQUIREMENTS

The Contractor must have or be closely associated with an adequate, as determined by the Engineer, service facility staffed by trained and experienced service personnel and a stock of repair parts suitable for a timely response to the Authority's vehicle

service requirements. All warranty work that requires more than one half a day (four (4) hours) must be performed at the Contractor's designated repair site. All costs of moving the vehicle to and from this repair site are to be at the Contractor's expense, and included in the warranty. Warranty work that requires less than one half day's work may be performed at the local automotive shop with permission from the shop supervisor, and prior notification and mutually agreeable scheduling. In such instances, Contractor staff must work cooperatively with Port Authority shop personnel in accordance with agency labor agreements.

4. ENGINEER'S AUTHORITY

In the performance of the Work hereunder, the Contractor shall conform to all orders, directions and requirements of the Engineer and shall perform the Work hereunder to the satisfaction of the Engineer at such times and places, by such methods and in such manner and sequence as he/she may require, and the Contract shall at all stages be subject to his/her inspection. The Engineer shall determine the amount, quality, acceptability and fitness of all parts of the Work and shall interpret the Specifications and any orders for Extra Work. The Contractor shall employ no equipment, materials, methods or staff or personnel to which the Engineer objects. Upon request, the Engineer shall confirm in writing any oral order, direction, requirement or determination.

The Engineer shall have the authority to decide all questions in connection with the Services to be performed hereunder. The exercise by the Engineer of the powers and authorities vested in him/her by this section shall be binding and final upon the Port Authority and the Contractor.

5. GENERAL REQUIREMENTS

The unit and associated equipment shall be furnished complete and ready for use, all as more fully required by the terms of the Specifications and in strict accordance therewith.

The unit and all equipment shall be the manufacturer's latest current published stock model(s), which meet the requirements of these specifications.

The Contractor shall submit with its bid all the brochures, drawings, and technical information necessary for a complete product evaluation.

6. TAX EXEMPTIONS AND INDEMNITY - CUSTOMS DUTIES

Sales to the Port Authority, as a governmental instrumentality of the states of New York and New Jersey, are exempt from taxation, either state or municipal, in those two states, and also from federal taxation, including excise taxes. Certificate of Registry for tax-free transactions under Chapter 32 of the Internal Revenue Code is No. 13-730079k. The Contractor therefore certifies that there are no such taxes included in the prices quoted herein. The Contractor should retain a copy of this agreement to substantiate the exempt sale. If, however, any sales tax, use tax, or excise tax imposed by congress, by a state or any political sub-division thereof is now or hereafter applicable to the sale of the units to the Port Authority, such taxes will be reimbursed by the Port Authority, subject to the provisions of the tax indemnity below. In addition, the Contractor shall bear all customs duties or imposts and all

export duties or imposts, if any, resulting from or in connection with the performance of this agreement.

7. TAX INDEMNITY

If any claim is made against the Contractor by a governmental Authority for the taxes as stated above, then the Port Authority will reimburse the Contractor in an amount equal to the amount of such tax required to be paid in accordance with the requirements of law, provided that:

The Contractor has complied with such rules and regulations as may have been promulgated relative to the claiming of any exemption from such taxes and has filed all the forms and certificates required by the applicable laws, rules, and regulations in connection therewith; and

The Port Authority is afforded the opportunity, before any payment of tax is made, to contest said claim in the manner and to the extent that the Port Authority may choose and to settle or satisfy said claim, and such attorney as the Port Authority may designate is authorized to act for the purpose of contesting, settling, and satisfying said claim; and

The Contractor gives immediate notice to the Port Authority of any such claim, cooperates with the Port Authority and its designated attorney in contesting said claim and furnishes promptly to the Port Authority and said attorney all information and documents necessary or convenient for contesting said claim.

If the Port Authority elects to contest any such claim, it will bear the expense of such contest.

8. OBLIGATION TO ORDER VEHICLE(S)

Upon award of Contract, the Contractor shall take all actions necessary to facilitate on-time delivery. The Contractor must submit written proof to the Engineer within fourteen (14) days after award of Contract that the vehicle(s) have been ordered. This proof shall consist of valid purchase order(s) or factory order and acceptance with production slot information from the factory. Failure of the Contractor to place a valid and binding order within the fourteen (14) days, or to ensure that its dealer places a valid and binding order within fourteen (14) days, shall be cause for the Authority to cancel the Contract without any further obligation to the Contractor.

9. PRE-MANUFACTURING MEETING

There shall be a pre-manufacturing meeting prior to building the vehicles. It shall take place at a Port Authority location and shall involve Contractor personnel that are directly involved with vehicle ordering/manufacturing. At this meeting, the Contractor shall give the Port Authority the appropriate phone numbers, email and contact person(s) at to enhance the communication during the construction process. At the meeting, they will discuss the operational systems in complete detail, placement of decals, radios, lights and various other items, as needed by the vehicle manufacturer to produce the vehicle in accordance with Port Authority operational needs.

10. TITLE TO UNITS

Upon delivery and payment for each vehicle, all portions of the vehicle and all components installed on the vehicle, which had not previously become Port Authority property under the provisions the section entitled "Final Payment" shall become the property of the Port Authority. The Contractor shall furnish to the Port Authority all such bills of sale and certificates of title or origin and other instruments as may be required, assuring the Authority of title to all materials free of liens and other encumbrances.

11. TIMES FOR PERFORMANCE

The Contractor shall complete the performance of the delivery and acceptance of all of the units, as described in the clause hereof entitled "Delivery." The Contractor's obligation for the performance within the times provided for in this agreement is of the essence of this agreement. The Contractor guarantees that he can and will complete such performance within the times hereinbefore stipulated or within the times as extended in accordance with the terms of this agreement.

12. INTELLECTUAL PROPERTY

The right to use all patented materials, appliances, processes of manufacture or types of construction, trade and service marks and copyrights, collectively hereinafter referred to as the "intellectual property rights" in the performance of the work shall be obtained by the Contractor without separate or additional compensation. The Contractor shall indemnify the Port Authority against and save it harmless from all loss and expense incurred as a result of any claims in the nature of intellectual property rights infringement arising out of the Port Authority's use, in accordance with the immediately preceding statement, of any protected intellectual property rights. The Contractor, if requested, shall conduct all negotiations with respect to and defend such claims. If the Port Authority be enjoined either temporarily or permanently from the use of any subject matter as to which the Contractor is to indemnify the Port Authority against infringement, then the Port Authority may, without limiting any other rights it may have, require the Contractor to supply temporary or permanent replacement facilities approved by the Engineer, and if the Contractor fails to do so the Contractor shall, at its expense, remove all such enjoined facilities and refund the cost thereof to the Port Authority or take such steps as may be necessary to insure compliance by the Port Authority with said injunction, to the satisfaction of the Port Authority.

13. CONTRACTOR'S WARRANTIES

The Contractor represents and warrants:

- A. That it is financially solvent, that it is experienced in and competent to perform the requirements of this Contract, that the facts stated or shown in any papers submitted or referred to in connection with its proposal are true, and, if the Contractor be a corporation, that it is authorized to perform this Contract;
- B. That it has carefully examined and analyzed the provisions and requirements of this Contract, and that from its own investigations it has satisfied itself as to the nature of all things needed for the performance of this Contract, the general and local conditions and all other matters which in any way affect this Contract or its

- performance, and that the time available to it for such examination, analysis, inspection and investigation was adequate;
- C. That the Contract is feasible of performance in accordance with all its provisions and requirements and that it can and will perform it in strict accordance with such provisions and requirements;
 - D. That no commissioner, officer, agent, or employee of the Authority is personally interested directly or indirectly in this Contract or the compensation to be paid thereunder;
 - E. That, except only for those representations, statements or promises expressly contained in this Contract, no representation, statement or promise, oral or in writing, of any kind whatsoever by the Authority, its commissioners, officers, agents, employees, or consultants has induced the Contractor to enter into this Contract or has been relied upon by the Contractor, including any with reference to: (1) the meaning, correctness, suitability, or completeness of any provisions or requirements of this Contract; (2) the nature, quantity, quality, or size of the materials, equipment, labor, and other facilities needed for the performance of this Contract; (3) the general or local conditions which may in any way affect this Contract or its performance; (4) the price of the Contract; or (5) any other matters, whether similar to or different from those referred to in (1) through (4) immediately above, affecting or having any connection with this Contract, the bidding thereon, any discussions thereof, the performance thereof or those employed therein or connected or concerned therewith.

14. RIGHTS OF THE PORT AUTHORITY

The Port Authority shall have the right to terminate this agreement and the rights of the Contractor hereunder without cause at any time upon five (5) days written notice to the Contractor and in such event the Contract shall cease and expire on the date set forth in the notice of termination. Such termination shall be without prejudice to the rights and obligations of the parties arising out of portions already performed but no allowance shall be made for anticipated profits.

If the Contractor is guilty of any breach hereof, the Port Authority shall be entitled:

- A. To withhold out of monies otherwise due such sums as the Engineer deems necessary to protect it from loss or delay and to apply such sums from the Contractor's account as the Engineer deems best to secure such protection.
- B. To have any work completed for the Contractor's account either itself or through others.
- C. To cancel this agreement as to all or any part of the uncompleted portion thereof.
- D. To obtain specific performance, an injunction or any other appropriate equitable remedy.
- E. To money damages
- F. To exercise any other appropriate right or remedy at law or in equity.

For the purpose of this agreement, breach shall include, but shall not be limited to, the following, whether or not the time has yet arrived for performance of an obligation under this agreement: a statement by the Contractor to the Authority indicating that it cannot or will not perform any one or more of its obligations under this agreement; any act or omission of the Contractor or any other occurrence which makes it improbable at the time that it will be able to perform any one or more of its obligations under this agreement; any suspension of or failure to proceed with any

part of the work by the Contractor which makes it improbable at the time that it will be able to perform any one or more of its obligations under this agreement; any false certification at any time by the Contractor as to any material item certified pursuant to the clauses of Part II hereof (Contractor's Integrity Provisions), or the willful or fraudulent submission of any signed statement pursuant to such clauses which is false in any material respect; or the Contractor's incomplete or inaccurate representation of its status with respect to the circumstances provided for in such clauses.

The enumeration in this numbered clause or elsewhere in this agreement of specific rights and remedies of the Authority shall not be deemed to limit any other rights or remedies which the Authority would have in the absence of such enumeration or act as a waiver of any other of its rights or remedies not inconsistent therewith or to stop it from exercising such other rights or remedies.

15. ASSIGNMENTS

The Contractor shall not delegate, assign, or otherwise transfer this Contract or any rights or obligations hereunder or any monies due or to become due hereunder without the express written consent of the Port Authority. The Contractor may, however, subcontract portions of the work to be performed provided that the Engineer expressly so permits in writing. No subcontractor shall have any rights against the Port Authority and all subcontractors shall be deemed the Contractor's agents.

No delegation of performance by the Contractor shall relieve the Contractor either of the duty to perform or of any liability for breach.

16. NO ESTOPPEL OR WAIVER

The Authority shall not be precluded or estopped by any acceptance, certificate or payment, final or otherwise, issued or made under this Contract or otherwise issued or made by it, the Engineer, or any officer, agent or employee of the Authority, from showing at any time the true amount and character of work performed, or from showing that any such acceptance, certificate or payment is incorrect or was improperly issued or made; and the Authority shall not be precluded or estopped, notwithstanding any such acceptance, certificate or payment, from recovering from the Contractor any damages which it may sustain by reason of any failure on his part to comply strictly with this Contract, and any moneys which may be paid to him or for his account in excess of those to which he is lawfully entitled.

Neither the acceptance of the work or any part thereof, nor any payment therefore, nor any order or certificate issued under this Contract or otherwise issued by the Authority, the Engineer, or any officer, agent or employee of the Authority, nor any permission or direction to continue with the performance of work, nor any performance by the Authority of any of the Contractor's duties or obligations, nor any aid lent to the Contractor by the Authority in his performance of such duties or obligations, nor any other thing done or omitted to be done by the Authority, its commissioners, officers, agents or employees shall be deemed to be a waiver of any provisions of this Contract or of any rights or remedies to which the Authority may be entitled because of any breach thereof, excepting only a resolution of its commissioners, providing expressly for such waiver. No cancellation, rescission or annulment hereof, in whole or as to any part of the work, because of any breach hereof, shall be deemed a waiver of any money damages to which the Authority may

be entitled because of such breach. Moreover, no waiver by the Authority of any breach of this Contract shall be deemed to be a waiver of any other or any subsequent breach.

17. COMPLIANCE WITH RULES AND REGULATIONS

The units shall comply with all the latest regulations and provisions of federal, State of New York, and State of New Jersey, ordinances, codes, rules, regulations, orders, permits, and licenses and with fire underwriter's requirements, which would be applicable if the Port Authority were a private corporation except that, where the requirements set forth in the specifications are more stringent, those specifications shall control.

In addition, the completed units shall comply with the latest published codes and regulations of the following:

- All applicable requirements set forth in 49CFR
- DOT (Department of Transportation), requirements
- FMVSS (Federal Motor Vehicle Safety Standards)
- Regulations of the States of New York and New Jersey
- ASME (American Society of Mechanical Engineers)
- SAE (Society of Automotive Engineers)
- National Electrical Code
- NFPA (National Fire Protection Association)
- National Fluid Power Association

Port Authority regulations entitled: "The Port Authority Airport Rules And Regulations." A copy of "The Port Authority Airport Rules And Regulations" may be obtained by calling Aviation Technical Services at (212) 435-3696 or a copy may be obtained from the websites:

www.panynj.gov/airports/pdf/Rules_Regs_Revision_8_04_09.pdf

The Ground Vehicle Specifications Appendix to the Air Terminal Rules and Regulations can be obtained from this website:

www.panynj.gov/airports/pdf/rr-appendix-b.pdf

- All other rules and regulations as required or used in standard industry practices that govern the design for the efficient and proper function of the vehicle

18. ERRORS AND OMISSIONS

If the Contractor discovers any errors or omissions in the specifications, in the drawings or in the work undertaken and executed by him, he shall immediately notify the Engineer and the Engineer shall promptly verify the same. If, with the knowledge of such error or omission and prior to the correction thereof, the Contractor proceeds with any work affected thereby, he shall do so at his own risk, and the work so done shall not be considered as work done under and in performance of this agreement unless and until approved and accepted.

19. MATERIALS AND WORKMANSHIP

All equipment furnished and the parts thereof shall be the manufacturer's latest listed and published stock models, except where modification is specifically permitted or required. The equipment and parts shall meet all the applicable requirements of the Specifications.

Wherever a particular brand or make or model of material or equipment is shown or specified on the Contract drawings or in the specifications (and whether or not the words "or approved equal", "similar", "equal to", or words of similar import are used), (except where specifically stated otherwise) any other brand or make and model may be substituted if, in the sole opinion of the Engineer, the equipment being substituted is equal to that shown or specified. The material or equipment may be substituted before or after acceptance of the Contractor's proposal, only after being submitted in writing to and expressly approved by the Engineer. Notwithstanding such approval, however, the Contractor assumes the risk that the substitute brand or make or model is not equal to that shown or specified. If at any time the substitute shall not appear to be so equal, the Contractor shall replace the substitute and reimburse the Authority for any loss occurring on account of the substitute failing to be so equal. Any such submission shall not imply or impose on the Engineer any obligation whatsoever to discuss, disclose, or justify the reasons for his opinion, approval, acceptance, or rejection. Furthermore, the acceptance of any other brand or make or model shall not in any way entitle the Contractor to additional compensation therefore, but the Authority may make such reduction in the Contractor's compensation as may be equitably warranted because of such acceptance in lieu of the standard.

All materials used shall be new unless otherwise specified. All design, workmanship, and materials shall at all times and places be subject to the inspection of the Engineer. Should they fail to meet his approval, they shall be forthwith made good, replaced, or corrected (as the case may be) by the Contractor at its own expense.

20. VEHICLE WARRANTIES

Each unit shall be furnished with a comprehensive bumper – to – bumper warranty covering the entire unit and all components for a period of thirty-six (36) months from the date of vehicle acceptance, or three thousand (3,000) drive engine hours, whichever comes first, other than defects or failures shown by the Contractor to have arisen solely from accident or abuse. The Contractor shall submit a detailed listing of all items excluded from this bumper – to – bumper warranty with their proposal submittal.

In addition, if at any time after the expiration of the above warranty periods any defects arise or are found in the design of the vehicles or related to additional warranties as expressed in the technical specifications, the Contractor shall inspect the causes in detail at the Port Authority facility, report its findings to the Engineer, and correct the defects as required and in agreement with the Engineer. All repairs shall be performed within twenty-four (24) hours of reporting a warranty repair item, and if a longer time is needed because of parts, redesign, or testing, additional time may be granted if the Contractor demonstrates that it is taking every possible step to resolve all issues and submits a letter indicating an estimated completion date. The Contractor shall be responsible for all costs (including parts, labor, vehicle

transportation charges, etc.) required to perform any warranty work or to correct any defects. If any warranty work or work required to correct any defects requires transporting the vehicle back to the Contractor's plant or to any other shop, the Contractor shall be responsible for all costs and making the proper arrangements in a timely manner. In addition, after delivery of each vehicle, if the vehicle is to be transported out of the any Port Authority facility, the Contractor shall be fully as responsible for each complete vehicle in his possession as he was prior to its receipt by the Authority and shall provide all vehicle liability insurance as required by the Port Authority, covering the vehicle(s) until re-delivery to and acceptance.

Notwithstanding the specific requirements of this agreement, any inspection or acceptance of the vehicle, the foregoing warranty, or the existence of any patent or trade name, the Contractor nevertheless warrants and represents that the vehicle shall be of the best quality and shall be fully fit for the purposes for which it is to be used. The foregoing warranty shall not, however, be a limitation on any rights, which the Port Authority would have, either expressed or implied, in connection with this agreement in the absence of such guaranty, the said guaranty being given only for the greater assurance of the Port Authority.

In the event of a failure which places the vehicle in an "out of service" status, as determined by the Engineer, the Contractor agrees to perform an inspection within twenty-four (24) hours after the Engineer notifies the Contractor of such failure. Upon determination by the Engineer that the failure is to be repaired by the Contractor under this warranty, the Contractor agrees to either replace the failed component or repair it, the repair of same to commence within twenty-four (24) hours after the determination of the Engineer. In the event that the component is to be replaced, the Contractor agrees to have the replacement item shipped within twenty-four (24) hours after the Engineer's determination.

Bidders may propose optional warranties for the benefit of the Port Authority in addition to the warranty requirements provided in this section on the vehicle and its components. Bidders should include any optional warranties it is willing to offer in the OPTIONAL WARRANTIES section of the Part IV Pricing Sheets. The Port Authority will not evaluate optional warranties as part of the bid, but optional warranties may be incorporated into the Port Authority's contract with the winning bidder at the Port Authority's sole discretion. Nothing in this clause or in the provision of OPTIONAL WARRANTIES shall require the Port Authority to elect to accept any or all of such optional warranties.

21. AVAILABILITY OF SPARE PARTS

The Contractor warrants that it shall maintain a stock of spare parts at inventory levels for the period described in the immediately following paragraph.

The Contractor shall itself, or through a dealer, supply (at prices not in excess of percentage included in Part IV Pricing Sheets), spare parts required to support the units to be supplied hereunder for ten (10) years from the date of delivery of the last vehicle. These parts shall be available within seventy-two (72) hours of placement of an order. In order to meet this requirement, the Contractor may maintain a spare parts outlet or Contract with a customs broker to expedite the customs clearance of foreign

parts. It shall, however, remain the responsibility of the Contractor to meet the seventy-two (72) hour delivery requirement.

22. PARTS INTERCHANGEABILITY:

All components of each unit in this order shall be identical; i.e., alternators, filters, distributors, hydraulic pumps, hydraulic valves, etc.

23. PRINCIPLES OF DESIGN

These vehicles must be designed for maximum safety, reliability, and ease of operation. Every effort is to be taken by the manufacturer to assure that the principles of human Engineering and ergonomics are designed into the functional controls of the vehicle. Systems on the unit shall incorporate the use of fail-safe design to assure maximum safety while in operation. Adequate redundancy must be built into any system as deemed necessary. Specific applications of these principles will be evidenced in design criteria including:

- A.** The vehicle weight distribution shall be properly distributed with a laden or unladen vehicle to provide the proper loading on all axles, and provide the vehicle with the proper traction, steering, other drivability factors.
- B.** All bolts, washers, and nuts used to assemble all structural components and any high fatigue parts shall be Grade 8 with elastic self-locking type nuts. All bolts, washer, and nuts used shall be manufactured in North America.
- C.** All electronic system wiring shall be properly shielded as required to assure that circuits are not affected by other vehicle systems or any external interferences.
- D.** All vehicle components and systems shall operate without being affected by interference damage or disruption including detrimental effects or interference to on-board computer modules from either vehicle generated noise, or stray Electromagnetic Frequency (“EMF”) or Radiomagnetic Frequency (“RMF”) fields encountered from any airport operations. EMF and RMF noise sources that may be generated by the vehicle, especially if such noise is detrimental to aircraft, Air Traffic Control, or air navigation equipment, shall be shielded. In the event a unit is found to create or encounter EMF or RMF problems, the Contractor will be responsible for remedying the problem to the satisfaction of the Authority.
- E.** All systems shall be designed to allow quick and efficient operation of the unit. Pneumatic, electrical, electronic, hydraulic, and other systems shall be operational within a minimum amount of temperature stabilization, and accumulator or system build-up.
- F.** All operating controls, light switches, and controls for auxiliary equipment shall be clearly and permanently marked and identified by means of resistant plastic identification plates with recessed lettering of a contrasting color. Should be powered to run with the ignition in a key on position.
- G.** The use of pilot lights or indicators for all controls or switches.
- H.** Venting systems for vehicle fuel, coolant, hydraulics, etc., shall not discharge or vent over any equipment, but shall direct such overflows to a suitable recovery system in order not to cause an environmental spill.
- I.** All emergency shut-off valves shall be properly identifiable, as to location and operation.
- J.** All controls shall be immediately identifiable as to the correct positioning by logic of operation or clear indications.
- K.** All gauges shall be suitably marked as to the intended purpose and shall be easily visible by the operator.

- L. All systems requiring servicing shall be equipped with approved self-contained checking devices. The preferred check device for hydraulic system reservoir shall be sight gauges that are clearly marked to show service level and type of fluid. Pressure gauges shall be installed on accumulators, on all other components, or elsewhere as required with easily connectable service ports in close proximity.
- M. Diesel engine(s) shall be approved for continuous operation using fuel meeting specifications for No. 1 or No. 2 diesel as set forth in ASTM D-976 combined with twenty percent (20%) Biodiesel meeting specification ASTM D 6751 for Biodiesel fuel. If these fuels require additives or involve restrictions all such requirements, restrictions, and concerns are to be detailed in the exceptions or deviations section of the bid, and instructions for such additives or instructions shall be detailed in a placard or decal located at the fuel fill location as close to the fill neck as practical.
- N. Steps, stairways, ladders walkways handholds, handrails, and used to access the cab, maintenance and operational areas or other parts of the equipment shall conform to the most recent edition of SAE J185 – Access Systems for Off-Road Machines, using the ‘preferred’ dimensions offered in this standard

24. ACCESSIBILITY OF COMPONENTS

All parts of the unit and auxiliary equipment shall be easily accessible for inspection, operation, and maintenance. All electrical components shall be centrally located and enclosed in an airtight weatherproof electrical box. All air system components shall also be centrally located and marked. All components shall be readily removable and replaceable. These features are considered mandatory and the unit will be closely inspected to assure conformance with these requirements.

If, in the opinion of the Engineer, any part or component is not readily accessible, removable, or replaceable, the Engineer may require the Contractor to correct these deficiencies at the Contractor's own expense, before acceptance. Any departure from the requirements of these specifications shall be immediately remedied by the Contractor at his own expense.

25. MARKING OF CONTROLS

All operating controls, light switches, and accessory equipment that may be installed on the unit shall be clearly and permanently marked and identified by a metal or oil resistant plastic identification plates with stamped recessed lettering filled with a contrasting color paint. The lettering for the instrument panel controls shall be approximately one-half (1/2”) inch high and approximately one (1”) inch high for all other locations. The above shall apply to all controls. All switches shall be "on" in the up or pressed position.

26. IDENTIFICATION CARDS

Each delivered vehicle shall have a 5" x 9" index card affixed to the inside of the windshield. This card shall contain the following information and shall be visible from the outside of the vehicle:

Contractor's Name
Purchase Order Number
Make & Model

Port Authority Engineer's Name (listed on purchase order)
Vehicle Identification Number (VIN)

27. SERVICING BEFORE DELIVERY (MAKE-READY)

Prior to delivery, each vehicle shall be completely serviced by the Contractor in its shop, including engine tune-ups, lubrication, and wheel alignment. Equipment with water-cooled engines being delivered shall be protected with permanent anti-freeze to a minimum of minus forty degrees (-40°)Fahrenheit . The anti-freeze shall contain corrosion inhibitors. All systems on the unit shall be fully serviced and filled with all required fluids, and be ready for the full in-service operation. A copy of the Contractor's final inspection form shall be forwarded to the Engineer with the invoice.

28. CERTIFICATE OF ORIGIN

The Contractor shall submit to the Engineer seven (7) days before delivery of each unit, the certificate of origin for a vehicle. This certificate shall be fully completed so as to enable the transfer of ownership to the Port Authority of NY & NJ.

If the Contractor or the truck dealer is based in the state of New York, the Contractor shall also submit with the above certificate of origin, the New York State Retail Certificate Of Sale, form MV-50, fully completed.

If the Contractor or the truck dealer is based in the state of New Jersey, the Contractor, in addition to submitting the above certificate of origin, must conform to New Jersey state motor vehicle requirements.

The above document(s) shall be sent to:
The Port Authority of NY & NJ
Port Authority Technical Center
Central Automotive Division
241 Erie Street, Room 307
Jersey City, New Jersey 07310-1397
Attn: Jesse O'Brien, Engineer

All licensing documents shall be sent to:

Port Authority of New York & New Jersey
4 World Trade Center
150 Greenwich Street
New York, NY 10006
Attention: Michael Gernant, Manager, Aviation Technical Services

29. DEVIATIONS

Minor deviations from the provisions of these specifications will be considered, to permit manufacturers to follow their standard manufacturing processes.

Such deviations will be approved, however, only in the sole discretion of the Engineer, in writing, and only if in his opinion they do not adversely affect the operation, maintenance, strength, efficiency, effectiveness, or life of the unit or any of

its parts. All proposed deviations, with full details, must be listed on the attached Contractor's Detail Sheet, which is part of the bid.

There shall be no deviations from the specifications, except those which are listed as deviations and which are expressly approved as part of the Port Authority's acceptance of the Contract. See the clause hereof entitled "Materials and Workmanship".

30. INSPECTION AND ACCEPTANCE TESTING

Inspection of workmanship, materials, designs, and performance of the unit may be made at the Contractor's factory at the sole discretion of the Engineer. The Port Authority will pay all expenses of its inspectors.

The Engineer will inspect each unit delivered to insure that the unit meets all requirements of the specifications. The Engineer will also conduct acceptance testing utilizing the tests set forth in the specifications. Upon satisfactory completion of the inspection and the acceptance testing, the Engineer will advise the Contractor, in writing, of vehicle acceptance. Any defect or failure to comply with any requirements of these specifications shall be immediately remedied by the Contractor at its own expense prior to retesting of the unit.

31. QUALITY CONTROL

Critical components and the complete unit must demonstrate compliance with these specifications. The Contractor shall be responsible for assuring the quality control of his suppliers and shall arrange for the required tests, certifications, and for the test location and all equipment required for testing. The Contractor shall notify the Engineer when major components are ready for testing, and the Engineer will decide whether representatives of the Authority will be present at the tests.

The Contractor shall develop and submit for the Engineer's approval test plans covering all tests required to be performed hereunder. All such tests shall be performed in accordance with the approved plans.

If the unit or any component fails a test, the unit or component must be retested when the deficiencies have been corrected. The Engineer may at his sole discretion require extra testing of the failed unit or component or of all units or components to assure that the noncompliance was not the result of a design error or indicative of the inability of the unit or component to withstand the intended service.

The Port Authority shall have the option of witnessing the following specific tests on randomly selected finished vehicles to assure that they meet minimum performance requirement:

- A.** Vehicle driveability to include vehicle weight distribution, braking, top speed, etc.
- B.** Firefighting agent distribution systems
- C.** Interlock and parking brake system
- D.** Other tests as specified elsewhere in these specifications, required, or as requested by the Engineer.

32. RISKS ASSUMED BY THE CONTRACTOR

The Contractor assumes the following distinct and several risks, whether they arise from acts or omissions (whether negligent or not) of the Contractor, of the Authority, or of third persons, or from any other cause, and whether such risks are within or beyond the control of the Contractor, excepting only risks which arise solely from affirmative acts done by the Authority subsequent to the opening of proposals on this Contract with actual and willful intent to cause the loss, damage and injuries described below:

- A.** The risk of loss or damage to each unit and all its component parts (including parts furnished by the Authority, from the time the Contractor takes possession of such parts), occurring prior to the time the Authority takes title to such unit or occurring subsequent to the transfer of title if such unit is in the possession of the Contractor for the performance of services required hereunder.
- B.** The risk of claims, fines or penalties, just or unjust, made by third persons or assessed by courts or governmental agencies or entities against the Contractor or the Authority on account of injuries (including wrongful death), loss, damage or liability of any kind whatsoever arising or alleged to arise out of or in connection with the performance of this Contract (whether or not actually caused by or resulting from the performance of this Contract) or out of or in connection with the Contractor operations or presence at or in the vicinity of any Authority premises, including claims against the Contractor or the Authority for the payment of workers' compensation, whether such claims, fines or penalties are made or assessed and whether such injuries, damage, loss or liability are sustained at any time both before and after Final Payment.

The Contractor shall indemnify the Authority against all claims described in subparagraphs (a) and (b) above and for all expenses incurred by it in the defense, settlement or satisfaction thereof, including expenses of attorneys, except where indemnity would be precluded by applicable law. If so directed, the Contractor shall defend against any claim described in subparagraphs (a) and (b) above, in which event it shall not without obtaining express advance permission from the General Counsel of the Authority raise any defense involving in any way jurisdiction of the tribunal, immunity of the Authority, governmental nature of the Authority or the provisions of any statutes respecting suits against the Authority, such defense shall be at the Contractor's cost.

The provisions of this numbered clause shall also be for the benefit of the commissioners, officers, agents and employees of the Authority, so that they shall have all the rights which they would have under this numbered clause if they were named at each place above at which the Authority is named, including a direct right of action against the Contractor to enforce the foregoing indemnity, except, however, that the Authority by action of its board of commissioners may at any time in its sole discretion and without liability on its part cancel the benefit conferred on any of them by this numbered clause, whether or not the occasion for invoking such benefit has already arisen at the time of such cancellation.

The making of final payment shall not release the Contractor from his obligations under this numbered clause. Moreover, neither the enumeration in this numbered clause nor the enumeration elsewhere in this Contract of particular risks assumed by the Contractor or of particular claims for which he is responsible shall be

deemed (1) to limit the effect of the provisions of this numbered clause or of any other clause of this Contract relating to such risks or claims, (2) to imply that he assumes or is responsible for risks or claims only of the type enumerated in this numbered clause or in any other clause of this Contract, or (3) to limit the risks which he would assume or the claims for which he would be responsible in the absence of such enumerations.

33. HIGH SECURITY AREA

Services under the Contract may be required in designated secure areas, as the same may be designated by the Engineer from time to time ("Secure Areas"). The Port Authority shall require the observance of certain security procedures with respect to Secure Areas, which may include the escort to, at, and/or from said high security areas by security personnel designated by the Contractor or any subcontractor's personnel required to work therein. All personnel that require access to designated secure areas who are not under positive escort by an authorized individual will be required to undergo background screening and personal identity verification.

Forty-eight (48) hours prior to the proposed performance of any work in a Secure Area, the Contractor shall notify the Engineer. The Contractor shall conform to the procedures as may be established by the Engineer from time to time and at any time for access to Secure Areas and the escorting of personnel hereunder. Prior to the start of work, the Contractor shall request a description from the Engineer of the Secure Areas which will be in effect on the commencement date. The description of Secure Areas may be changed from time to time and at any time by the Engineer during the term of the Contract.

34. EQUAL EMPLOYMENT OPPORTUNITY, AFFIRMATIVE ACTION, NON-DISCRIMINATION

- A. The Contractor is advised to ascertain and comply with all applicable federal, State and local statutes, ordinances, rules and regulations and, federal Executive Orders, pertaining to equal employment opportunity, affirmative action, and non-discrimination in employment.
- B. Without limiting the generality of any other term or provision of this Contract, in the event of the Contractor's non-compliance with the equal opportunity and non-discrimination clause of this Contract, or with any of such statutes, ordinances, rules, regulations or Orders, this Contract may be cancelled, terminated or suspended in whole or in part.

35. SHIPMENT

The Contractor shall ship the units under bills of lading designating the consignee as the Port Authority of New York and New Jersey, c/o Contractor, said bills of lading to provide that the Contractor will pay the insurance and freight charges, and the Port Authority will be the named insured on said insurance but risk of loss or damage until delivery shall be the Contractor's. In such case, the Contractor's obligations under the clause entitled "Risks Assumed by the Contractor" shall not be impaired.

If the Contractor's plant is located more than four hundred (400) miles from the designated delivery point, the Contractor shall ship the unit(s) by railroad or flatbed

truck and the Contractor's obligations under the clauses entitled, "Delivery" and "Risks Assumed by the Contractor" shall not be impaired.

If the Contractor's plant is more than four hundred (400) miles from the designated delivery point, at the Contractor's request the Engineer may approve over-the-road transportation of the completed unit to the Port Authority, with an associated cost savings. In all such instances, the Contractor must utilize his own drivers, or the services of a licensed and bonded driveaway service having a Federal Motor Carrier Safety Administration rating of not less than "Satisfactory". In addition, his driver or the driveaway service must be specifically instructed, in writing, with copies provided to the Engineer prior to approval, as to all truck chassis, power train, tire, and other manufacturer's restrictions on speed, fuel, continuous hours of operation, and any other 'break-in' or operational restrictions. A driver's log and receipts shall be provided demonstrating compliance with the above stated restrictions. Finally, the vehicle must be cleaned, fueled, and prepared in accordance with requirements of this Contract after transportation and prior to delivery to the Port Authority.

36. NO THIRD PARTY RIGHTS

Nothing contained in this agreement is intended for the benefit of third persons except to the extent that this agreement specifically provides otherwise by use of the words "benefit" or "direct right of action."

37. PRODUCTION PLAN

After award, and within ten (10) working days of receipt of a request, the Contractor shall submit to the Engineer:

- A. A detailed production plan for the manufacture and completion of each vehicle. The plan shall include the delivery of major components to be acquired, production start and completion dates, test completion date, and delivery date for each vehicle, based on an award date of one hundred and twenty (120) days after the date of the opening of the bid. The plan shall include a Program Evaluation and Review Technique (PERT) or Critical Path Method (CPM) chart and any other items requested by the Engineer.
- B. Sample drawings and schematics of a manufacturer's production model similar to the vehicle described in the specifications.
- C. A spreadsheet listing vehicle completion, delivery, and in-service schedule, based on paragraph "A" above.

38. DELIVERY

The Contractor shall deliver a total of three (3) units comprised of one of each of the three (3) vehicle styles complete and ready for service, within three hundred (300) calendar days after receipt, by it, of the acceptance of its proposal. The operation of each of the three (3) units shall be closely monitored by operators and maintainers for a period of forty-five (45) calendar days after delivery by the Port Authority Rescue Training Center. On or after the conclusion of the forty-five (45) day period, there shall be a meeting with the Contractor to resolve any issues that were found and corrective actions that need to be taken. Following the Engineer's acceptance of the first three units, the Contractor shall make all adjustments and/or other corrective actions identified at the meeting with the Contractor to the initial three (3) units and all units in production. Thereafter the Contractor will deliver three (3) vehicles per

month until all units are delivered and in service. Manufacture and delivery priorities shall be:

1. 1,500 Gallon 4x4's
2. 3,000 Gallon 6x6 with HRET
3. 3,000 Gallon non-HRET

Following the first three (3) units, the Engineer will provide delivery locations for all remaining units directly to their assigned airport.

The Contractor shall develop and maintain a weekly updated manufacturing and delivery schedule. Upon request, the Contractor shall submit to the Engineer, within two (2) days of the request, a copy of the updated manufacturing and delivery schedules.

The vehicles shall be shipped for sidewalk delivery to the location(s) indicated in the table in paragraph 46 entitled "Delivery Instructions for Vehicles and Manuals." Sidewalk delivery is defined as the Contractor's responsibility for removing the vehicles from the truck and placement onto the ground at a location designated by receiving personnel.

Vehicles shipped by other than the Contractor's own truck shall not abrogate this responsibility. The Port Authority shall not be responsible for re-delivery charges as a result of failure to comply with this clause. Port Authority personnel will not be available to assist in off-loading vehicles.

The Contractor shall notify the Engineer of delivery, at least three (3) working days in advance. The deliveries shall be made to the location(s) indicated in the table at the end of this appendix.

All deliveries shall be made during the hours of 9:00 am to 2:00 pm Monday through Friday, except that there will be no deliveries on holidays celebrated in the state of delivery. The vehicles shall be deemed to have been delivered only if it is complete and in readiness for use and if it meets with the acceptance of the Engineer as elsewhere provided in this agreement. The times above-provided for delivery may be extended (subject, however, to the provisions of this numbered clause) only if in the opinion of the Engineer the Contractor is necessarily delayed in delivery solely and directly by a cause which meets both of the following conditions:

- A.** Such cause is beyond the Contractor's control and arises without his fault. Such cause arises after the opening of proposals on this agreement and neither was, nor could have been, anticipated by investigation before such opening.

The Contractor shall provide the above conditions in writing and shall have an approval by the Engineer in writing. In any event, even though a cause of delay meets the above conditions, an extension shall be granted by the Engineer only to the extent that:

- B.** The delivery is actually and necessarily delayed.

The effect of such cause cannot be anticipated and avoided or mitigated by the exercise of all reasonable precautions, efforts, and measures (including planning, scheduling, and re-scheduling) whether before or after the occurrence of the cause of delay.

Notwithstanding the above, no extension of time shall be granted for a delay which would not have affected the time of delivery were it not for the fault of the Contractor or for other delay for which the Contractor is not entitled to an extension of time.

Any reference herein to the Contractor shall be deemed to include subcontractors and materialmen, whether or not they are privy to the Contract with the Contractor, and employees of all the foregoing. Therefore, the Contractor shall be charged with a delay caused by a subcontractor, materialmen or their employees.

The period of any extension of time shall be that necessary to make up the time actually lost, subject to the provisions of this numbered clause, and shall be only for those units actually delayed. The Engineer may defer all or part of his decision on an extension, and any extension may be rescinded or shortened if it subsequently is found that the delay can be overcome or reduced by the exercise of reasonable precautions, efforts, and measures.

As a condition precedent for an extension of time, the Contractor shall give written notice to the Engineer within forty-eight (48) hours after the time when he knows or should know of a cause which might under any circumstances result in delay for which he claims or may claim an extension of time (including those causes for which the Authority is responsible or has knowledge of). The written notice shall specifically state that an extension is or may be claimed and shall identify such cause and describe, as fully as practicable at the time, the nature and expected duration of the delay and its effect on the delivery of various units. Since the possible necessity for an extension of time may materially alter the scheduling, plans, and other actions of the Authority, and since, with sufficient opportunity, the Authority might, if it so elects, attempt to mitigate the effect of a delay for which an extension of time might be claimed, and since merely oral notice may cause disputes as to the existence or substance thereof, the giving of written notice as above required shall be of the essence of the obligations of the Contractor, and failure of the Contractor to give written notice as above required shall be a conclusive waiver of an extension of time.

It shall in all cases be presumed that no extension, or further extension, of time is due unless the Contractor shall affirmatively demonstrate to the satisfaction of the Engineer that it is due. To this end, the Contractor shall maintain adequate records supporting any claim for an extension of time and, in the absence of such records, the foregoing presumption shall be deemed conclusive.

It is the intent of this agreement that the Contractor shall assume the responsibility for manufacturing the units in a manner acceptable to the Engineer and, consequently, no disapproval by the Engineer of any drawings submitted by the Contractor or of any other act or omission of the Contractor shall be cause for an extension of time.

The Contractor assumes the risk of damages due to delay arising from any acts and causes whatsoever, including, but not limited to, wrongful acts and omissions of the Authority, its officers, employees, Contractors, and agents, and its sole remedy against the Authority shall be an extension of time as set forth herein.

Vendors may recommend alternate delivery schedules, especially schedules which could result in quicker delivery of the entire order for PA consideration. Any such alternate delivery schedules should be detailed as an attachment to the deviations section of the vendor detail sheet.

39. FACTORY SERVICE REPRESENTATIVE

The Contractor shall provide a factory trained service representative(s) at the airport, at the time each unit is delivered to place it in service. The service representative(s) shall be present prior to the arrival of each unit and shall not leave until the delivered unit is fully placed in service. If for any reason a unit is removed from service, if deemed necessary by the Engineer, the service representative(s) shall return to correct any problems that arise. The service representative(s) shall be a technician(s) qualified and familiar with all the vehicle systems; i.e., engine, transmission, axles, brakes and brake interlock, running gear, electrical, electronic, hydraulic, product pumping, etc. The service representative(s) shall be qualified to troubleshoot, service, and/or repair all of the systems.

The Contractor shall provide a vehicle make-ready sheet that provides a list of all items to be performed to prepare each of the vehicles for service. If any problems are encountered in preparing the vehicles for service, the service representative(s) shall address any deficiencies. All deficiencies shall be corrected by the service representative(s). Prior to shipping each vehicle, the representative(s) shall perform a complete inspection of the unit to insure compliance with specifications and to assure that all components required to prepare each vehicle for service are shipped with each vehicle. The make-ready processes to prepare the vehicle for service shall be limited to installation of filter-separator elements, fluid level checks, verification of vehicle and refueling system performance checks for the acceptance testing requirements, and any minor adjustments as deemed appropriate by the Engineer. All items as required for each vehicle to meet all Port Authority airport rules and regulations and all other regulations as required by these specifications to place each vehicle in-service shall be the responsibility of the Contractor.

The representative(s) shall be on site and readily available between the hours of 8:00 am and 4:00 pm, (Saturdays, Sundays, and holidays included) or as required to perform the above tasks.

40. DRAWINGS, SCHEMATICS, AND FUNCTIONALITY CHARTS

Within six (6) weeks after acceptance of its bid, the Contractor shall deliver to the Engineer for approval complete and fully detailed and dimensioned drawings in triplicate showing how it proposes to construct the complete unit with all equipment, the pumping system, the weight distribution of the complete unit both loaded and unloaded, and any other drawings, sketches and calculations requested by the Engineer. These drawings shall show the size and exact location of all principal parts as well as the method of mounting and other data necessary or desirable to provide complete information on what the Contractor proposes to furnish.

The Engineer will approve the drawings or require additions or corrections to be made therein, returning a copy of those drawings on which additions or corrections are required. The Contractor shall promptly make the required additions and corrections and resubmit such drawings within ten (10) days of their return to the Contractor in triplicate to the Engineer for his approval. Each unit as finally furnished and delivered shall be in strict accordance with the drawings as finally approved. Any work performed by the Contractor before approval of the drawings relating to such work shall be at the Contractor's risk and the work so done shall not be considered as work done under and in performance of this agreement unless and until approved and accepted by the Engineer.

All drawings, parts lists, data, and other papers of any type whatsoever, whether in the form of writing, figures, or delineations, which are prepared in connection with this agreement and submitted to the Authority, shall become the property of the Authority, except to the extent that rights are reserved to others under existing valid patents and are not given the Authority under the clause hereof entitled "intellectual property". Subject to the above, the Authority shall have the right to use or permit the use of all such drawings, data, and other papers, and any oral information received by the Authority, any ideas or methods represented by such papers and information for any purpose and at any time, without other compensation than that specifically provided herein. No such papers or information shall be deemed to have been given in confidence, and any statement and/or legend to the contrary on any of the said drawings, data, or other papers shall be void and of no effect.

The Contractor's drawings shall include but not be limited to the following:

- A. General layout of the complete unit, showing all dimensions of the general configuration, position of the major components, turning clearances, weight distribution (laden and unladen), and the location of the vehicle's center of gravity.
- B. Schematic of the following systems, showing all components with full make and part numbers (manufacturer's specification data shall be submitted with drawings): color coded for Identification of systems
 - Electrical and electronic system(s)
 - Pneumatic System(s)
 - Hydraulic System(s)
 - Foam and water pumping systems
 - Additional Agent system(s)
 - Functionality chart showing detailed operation of all systems in all modes of operation
- C. Shear and bending moment diagram for fully laden frame
- D. Any other drawings, schematics, charts, or documentation, as requested by the Engineer.

41. APPROVAL BY ENGINEER

The approval by the Engineer of any workmanship, materials, drawings, designs, or details of construction of the unit shall be construed merely to mean that, at that time, the Engineer knows of no good reason for objecting thereto, and no such approval shall release the Contractor from his full responsibility for the satisfactory construction and operation of the unit.

The decision of the Engineer shall be final and binding on the parties as to the quality, acceptability, and fitness of all parts of the unit, as to conformity of the unit with, and as to the interpretation of, the specifications, drawings, and technical requirements of this agreement and as to all questions in connection with the work hereunder.

Whenever the words "approved," "required," "satisfactory," "necessary," "equal," or words of similar import are used in this agreement, they shall mean approved or required by the Engineer and satisfactory, necessary, or equal in the opinion of the Engineer.

42. OPERATION, MAINTENANCE, REPAIR DATA AND DIAGNOSTIC COMPUTERS, ASSOCIATED EQUIPMENT AND PROGRAMS

The Contractor shall provide operations, parts and service manuals. The manuals shall cover the diagnosis and repair of all vehicle systems, specifically including, chassis, powertrain, wiring, emissions, vocational equipment, and all subsystems and components. Manuals shall be provided electronically on USB drives, and if cd-roms are not available, as bound "hard" copies if not available electronically, or in a format approved by the Engineer. All paper manuals shall be bound and assembled. Manuals are to be shipped per delivery instructions in Section 46. Do not ship the manuals with the unit.

The operating and maintenance or shop manual shall be the latest manufacturer's handbook, covering in detail the recommended operating, maintenance, and service procedures. Manuals are to be updated at no charge to the Port Authority for all changes, modifications, procedure changes component identification, and other changes necessary for supporting the vehicle during its service life.

Quantity of ARFF operator's manuals needed:

- Hard copies per vehicle type: twenty-five (25)
- Ten (10) electronic USB drives of the operator's manual per vehicle type. The Port Authority's rights to reproduction of the operator's manual shall be throughout the life of the vehicle.

Operator's manuals will be shipped directly to the Port Authority Rescue Training Center with a copy of the signed receiving sheet sent to the Engineer.

The repair or shop manual shall include detail drawings, schematic electric and hydraulic or other piping diagrams, and complete parts lists for all components of the unit and associated equipment furnished. The Contractor shall include a complete set of shop drawings as part of each shop manual.

Where components or equipment of several manufacturers have been used in assembling the unit, the manuals shall include operating, maintenance, and repair manuals and parts lists of all manufacturers, covering all of the components used.

Where the Contractor or manufacturer uses components manufactured by others in building equipment which it sells under its own trade name, the Contractor shall furnish the parts numbers and full data from the original manufacturers for all components used, as well as the part numbers it may assign to these components as being parts of its product.

In addition to the manuals, all diagnostic tools, laptop or other computers, associated equipment and connectors, software and programs shall be provided as recommended by the manufacturer for diagnostics and maintenance of the unit(s). Computers shall be of rugged construction and designed for use in the automotive repair environment. When such diagnostic tools, computers, associated equipment, software and programs require updating, maintenance Contracts, or subscriptions, the Contractor will offer such services to the Port Authority as though the Port Authority was a dealer or distributor, at dealer or distributor pricing, for as long as the vehicles are owned by the Port Authority.

The manuals diagnostic tools, equipment, computers, software and programs shall be furnished in sets. Each set shall include an operator's manual, parts catalog, shop repair manual, and diagnostic tools, computers, associated equipment, software and programs.

The total number of sets of manuals diagnostic tools, equipment, software and programs furnished under these specifications shall be as follows:

- A. Three (3) sets for the first vehicle of each type ordered.
- B. One (1) additional set for each subsequent vehicle ordered up to a maximum of twenty-one (21) sets total (total includes A +B).

All manuals shall be in the English language. All dimensions, measurements, and other pertinent data shall be given in U.S. Standard units (i.e., inches, pounds, etc.). (foreign language terms and metric measurements shall not be accepted.)

All technical support documentation diagnostic tools, equipment, computers, software and programs required by this section shall be delivered at least two weeks prior to the delivery of the first unit. In the event the manuals diagnostic tools, computers, associated equipment, software and programs are not delivered as specified above, a retainage amount of ten percent (10%) will be held by the Port Authority from any payments due under the clause entitled "Final Payments", and will be held until such time that all of the required documentation has been received to the satisfaction of the Engineer.

The Contractor shall send Parts & Service Manuals diagnostic tools, computers, associated equipment, software and programs directly to the Port Authority Automotive Shops, as designated at the end of this section. Contractors shall send to the Engineer receipts of delivery from each shop, to expedite payment release.

The manuals diagnostic tools, computers, associated equipment, software and programs shall be shipped separately and not with the vehicles. Final payment will not be released prior to receipt of these materials.

43. PREVENTIVE MAINTENANCE INSTRUCTIONS

In addition to the manuals specified above, the Contractor shall furnish an equal number of condensed preventive maintenance frequency and instructions for each preventative maintenance routine required for the unit. These frequencies and instructions shall consist of manufacturer's recommendations for periodic lubrication, cleaning, and other preventive maintenance, and shall be made up in a compact form to cover the particular unit delivered. The Preventative Maintenance Instructions must include a listing of all part numbers and part descriptions necessary to perform the specific preventative maintenance task such as filter descriptions and part numbers, special tools needed to perform the task, and replacement fluid specifications and quantities.

44. PREVENTATIVE MAINTENANCE PARTS KITS

To facilitate timely preventative maintenance of the units until parts stocking is established, the Contractor shall also provide with each unit all parts required to complete the manufacturers' recommended preventative maintenance for at least six (6) months, two hundred (200) engine hours, or five thousand (5,000) miles of operation. The kit shall include all filters, belts, hoses, and other parts recommended for replacement within the specified period. It shall not include standard automotive service fluids such as motor oil, washer fluid, coolant, etc., although if special lubricants, additives or conditioners are required during this time, such items must be included in the kit.

Each kit shall be furnished with the delivered vehicle in a sealed box or similar container with the vehicle number and the type of maintenance need plainly and conspicuously marked on the box or container. The box or container shall also have a packing list of the contents, identifying the quantity and description of each item contained inside, attached to the exterior. Preventative Maintenance Parts Kits are to be listed on delivery papers, bills of lading, or other receipt documents furnished with the vehicle.

Contractor shall provide the following Halotron re-servicing kit: one (1) primary and one (1) spare each to be delivered to JFK, EWR, LGA, TEB and JFK-RTC.

45. TRAINING

The Contractor shall provide eight (8) separate sessions totaling three hundred and four (304) hours of training vehicle operation training staff ("Train the Trainer" on the operation of the vehicles. This training shall specifically include:

- Train the Trainer (PA Academy Staff, ARFF Command Staff, Others as Designated) for all three (3) Vehicle Types - One (1) twenty-four (24) hour course classes. Classes will be held at the Port Authority Academy, Building 254 at John F. Kennedy International Airport, Jamaica NY 11430.

- Train the Trainer (PA Academy Instructors) seven (7) forty (40) hour course classes to occur at Contractor's manufacturing location. The cost and logistics for Port Authority personnel to attend this training will be the responsibility of the Authority. The Authority will provide as much advance notice as is possible but the Contractor shall be prepared to provide the training sessions with as little as ten (10) days notice.

The Contractor shall also provide separate training sessions on the maintenance, repair, troubleshooting, and inspection of the vehicles. The Port Authority shall designate when and where the sessions will be conducted. This training shall specifically include:

- Basic truck normal operations, diagnostics, troubleshooting & repair - Forty (40) hours/shop/shift
- High Reach Turret normal operations, diagnostics, troubleshooting & repair - Twenty-four (24) hours/shop/shift
- Halotron System normal operations, diagnostics, troubleshooting & repair - Twenty-four (24) hours/shop/shift
- Dry Powder System normal operations, diagnostics, troubleshooting & repair - Twelve (12) hours/shop/shift
- DEVS System normal operations, diagnostics, troubleshooting & repair - Sixteen (16) hours/shop/shift
- Pump Panel normal operations, diagnostics, troubleshooting & repair - Sixteen (16) hours/shop/shift
- MADAS System normal operations, diagnostics, troubleshooting & repair - Eight (8) hours/shop/shift
- Parts Tech Training – Eight (8) hours/shop

Total 140 hours/shop/shift

Prior to performing any training, the Contractor shall prepare the complete training curriculum and send it to the Engineer for approval, thirty (30) days prior to the delivery of the first unit.

The Port Authority shall designate when and where the session will be conducted, and will provide classrooms and/or shop space for the training. The instructor must speak and write in English.

46. DELIVERY INSTRUCTIONS FOR VEHICLES AND MANUALS

The Contractor shall deliver vehicle(s) and parts and service manuals directly to the Port Authority automotive shops, as designated below. Contractors shall send to the Engineer receipts showing delivery of vehicles and manuals from each shop.

Payment will not be released without these documents.

NUMBER OF VEHICLES MANUALS AND TRAINING	DELIVERY ADDRESS
ONE (1) MANUAL	Port Authority of NY & NJ Central Automotive Division 241 Erie Street, Room 307 Jersey City, NJ 07310

	<p>Attn: Ron Westervelt Tel: (201) 216-2345 Fax: (201) 216- 2355 GPS: 40.731317,-74.04297</p>
<p>ELEVEN (11) VEHICLES TWO (2) MANUALS PER VEHICLE 304 HRS: OPERATOR TRAINING TWO (2) SESSIONS MECHANIC TRAINING</p>	<p>Port Authority of NY & NJ Central Automotive Division JFK Int'l Airport - Automotive Shop Building 14 Jamaica, N.Y. 11430 Attn: Steve Tkach Tel: (718) 244-4041 Fax: (718) 244-4438 GPS: 40.650814,-73.809022</p>
<p>FIVE (5) VEHICLES TWO (2) MANUALS PER VEHICLE TWO (2) SESSIONS MECHANIC TRAINING</p>	<p>Port Authority of NY & NJ Central Automotive Division LaGuardia Airport Automotive Shop Bowery Bay Blvd Queens, NY 11371 Attn: John Matsen Tel: (718) 533-3571 Fax: (718) 457-0382 GPS: 40.769443,-73.888158</p>
<p>SIX (6) VEHICLES TWO (2) MANUALS PER VEHICLE TWO (2) SESSIONS: MECHANIC TRAINING</p>	<p>Port Authority of NY & NJ Central Automotive Division Newark Liberty International Airport Automotive Shop 47-199 Brewster Rd Newark, NJ 07114 Attn: Joe Kardos Tel: (973) 961-6044 Fax: (973) 961-6530 GPS: 40.703441,-74.154684</p>
<p>TWO (2) VEHICLES TWO (2) MANUALS PER VEHICLE</p>	<p>Port Authority of NY & NJ Central Automotive Division Teterboro Airport 111 Industrial Ave Hangar 1, Teterboro, NJ 07608 Attn: Rick Vander Wende Tel: 201-807-4017 Fax: 201-296-0499 GPS: 40.858431, -74.061290</p>

47. VEHICLE TESTS AND CERTIFICATES DOCUMENTATION

All tests and certifications shall be documented in a binder or equivalent electronic media acceptable to the Engineer. This document shall be referred to as the "Vehicle Tests and Certificates Booklet". Each vehicle shall have a test and certificates booklet and it shall be identified with a general description of the vehicle, the VIN number, the Port Authority vehicle number, and vehicle manufacturer's name and identification number. The book shall include a detailed

sheet showing the make, model standard equipment and optional items in the build (Line Setting Ticket). All tests shall be fully documented on separate test sheets and in separate sections. The booklet shall have a section signed by a person in responsible charge attesting to the vehicle's qualification with respect to NFPA 414, FAA AC 150/5220-10E, and the terms and conditions of this Contract.

Each vehicle booklet shall have documentation of all certifications and tests as performed by the Contractor and as required by NFPA 414, latest edition, Chapter 6 Acceptance Criteria, and as required in standard industry practice.

After completion of all tests and before delivery of each vehicle, the Contractor shall submit three (3) test booklets, one (1) original and two (2) copies, sent to the Engineer. The Contractor shall retain a copy of the booklet for future reference. The Contractor shall verify and assure that each booklet contains all final satisfactory performance and operational tests, and other certifications required to place the vehicle in-service. This document shall serve as the final quality control assurance document, and shall establish baseline data for each vehicle at the time of manufacture.

A. Testing Completed Vehicle's Operation

Full operation and performance testing for each laden vehicle and its critical components will be performed to assure that all functions, systems and components operate perfectly to the Port Authority's satisfaction. All components needing adjustment shall be properly set and safety wired or locked, to prevent tampering. The vehicles shall be completely tested for all different types of operations and maneuvers required at the airports.

The Contractor shall be responsible for providing all test equipment, personnel and the facilities for vehicle testing. All test equipment requiring calibration shall have been calibrated by an independent calibration service provider within a proper interval and up to date to assure the equipment's accuracy.

Document all tests in the booklet described in the paragraph entitled "Vehicle Tests and Certificates Documentation." The tests performed on each vehicle shall include the following:

B. Overall Vehicle

Test and record tire pressures, all fluid levels, wheel alignment, idle and max governed RPM and other appropriate parameters. Test the vehicles at fully laden weight for proper weight distributions with actual weights for each wheel at the ground. Test and record the proper functionality of all installed equipment and systems, including windshield wipers and washers, heating and air conditioning, mirrors, etc. Test all doors, compartments, seats, seat belts, climate control systems, interior noise, and other aspects of the vehicle construction paying particular attention to the presence of sharp edges, pinch points or other safety hazards to operators. Assure all decals and markings, labels, instruction placards, and warning signs are properly installed.

C. Service Brakes and Parking Brakes

Test the vehicle's service brakes and parking brakes with the fully laden vehicle. Include leak down testing of the air system, on/off settings for the engine driven and on-board compressor, functionality of the glad hands for towing and air chuck connection for tire charging/air tool use. Confirm operation of the ABS system.

D. Vehicle Lighting and Electrical System

Test the vehicle's complete lighting system and electrical system including lights, switches, gauges, warning lights, siren, horns, heating and air conditioning, backup alarm, etc. Complete testing of one hundred and ten (110) VAC system including auto eject plugs, generator, GFCI's, and one hundred and ten (110)VAC lighting, wire reel and other components.

E. Vehicle Maneuverability

Testing of the drivability and maneuverability of the vehicle shall include wall-to-wall turning diameter turning left and right, steering, engine operation, transmission shift, top speed, the evasive maneuver as detailed in NATO Doc. AVTP 03-16W at a minimum of twenty-five (25) mph and a "J" turn within a circle of three hundred (300') ft diameter at a minimum of thirty (30) mph.

F. Fire Fighting Systems

Test all functions of the fire suppression systems and their components for proper operation, accuracy and rate of flow while dispensing all fire fighting agents. This includes filling, flushing and dispensing water, foam, dry powder, and Halotron, or dispensing any combination of agents simultaneously, to test the systems for full functionality and maintainability. Test the vehicles ability to engage the "pump and roll" feature. Test all valves including drain valves, pressure relief valves, pressure regulators, and tank shut off valves. Test the installation and removal of high pressure gas cylinders. Check the full functionality of the HRET and the functionality of its backup hydraulic system.

G. Other

Other tests or demonstrations of functionality as deemed appropriate by the Engineer.

The Contractor shall prepare detailed inspection sheets and submit to the Engineer at least forty-five (45) days before the scheduled delivery of the first unit. The Engineer will approve the sheets, or require changes to them as deemed appropriate. Once the inspection documentation is finalized, the Engineer shall be given advanced notice of the schedule of vehicle tests as well as when the tests of critical components are to be performed so that proper arrangements can be made in the case it is decided a representative from The Authority should be present.

If the unit or any component fails a test, a re-test shall be necessary after the deficiency is corrected. The Engineer may require, at his sole discretion, extra testing of the failed unit or units or components to assure that the noncompliance was not the result of a design error or indicative of the inability of the unit or component to withstand the intended service.

48. RIGHT TO PURCHASE ADDITIONAL UNIT(S)

As used in this clause:

“Model Year” shall mean the vehicle model year of the manufacturer of the vehicles ending on the production cut-off date for the vehicles. In the event there is no defined Model Year or production cut-off date for the vehicles, then for purposes of this numbered clause “Model Year” shall mean the period commencing on the date of the Port Authority’s acceptance of the Contractor’s bid and ending on the three hundred sixty-fifth (365th) day thereafter.

“Initial Model Year” shall mean the Model Year applicable on the Port Authority’s date of acceptance of the Contractor’s bid.

“Subsequent Model Years” shall mean the three (3) consecutive annual periods immediately following the Initial Model Year.

Initial Model Year: By written notice from the Chief Procurement Officer or a duly authorized representative to the Contractor given at any time during the initial Model Year, the Port Authority shall have the right, but not the obligation, to purchase from the Contractor additional unit(s) of initial Model Year vehicles originally purchased hereunder at the same unit prices, conforming to the same specifications, and upon the same terms and conditions as contained herein with respect to such vehicles.

Subsequent Model Years: For up to three subsequent model years, by written notice from the Chief Procurement Officer or a duly authorized representative to the Contractor, the Port Authority shall have the further right, but not the obligation, to purchase from the Contractor additional unit(s) of vehicle(s) originally purchased hereunder but of subsequent Model Years at the same unit prices but as adjusted as set forth below, conforming to the same specifications, and upon the same terms and conditions as amended by the following:

- A.** If price changes are in effect for such vehicles during the subsequent Model Years, the Contractor may, within ten (10) days following the receipt of the Port Authority’s notice of exercise of this option, submit a request to the Port Authority for the application of price changes to the additional unit(s) proposed to be purchased.
- B.** All such requests must include an appropriate explanation and justification for such price changes, including the published price lists for the vehicles and their components in effect at the time of the Contractor’s original bid hereunder, the equivalent published price lists for the vehicles and their components in effect at the time of the Port Authority’s notice, and any additional evidence which the Port Authority deems necessary for its evaluation of the Contractor’s request for the price changes.
- C.** No price changes shall exceed the change in the price calculated utilizing the Consumer Price Index – All Urban Customers (CPI-U); Series ID: CUURA101SA0L2; Not Seasonally Adjusted; Area: New York – Northern New Jersey – Long Island, NY-NJ-CT-PA; Item: All Items Less Shelter; Base Period: 1982-84=100, published by the Bureau Of Labor Statistics of the United States Department Of Labor (herein called the “Price Index”).
- D.** The Contractor shall include all backup materials and calculations with the request for increased pricing.

- E. Specifically, the requested price adjustment may not exceed the percentage change in the consumer price index by using as the numerator the index three months prior to the most recent anniversary of the Contract, and as the denominator the said index three months prior to the commencement of the Contract. This adjustment limitation shall apply for each subsequent Model Year. The new prices shall remain constant for all subsequent purchases made in the same Model Year. In the event the said index is no longer published or its basis is changed, the parties shall in good faith choose a substitute index or agree on another basis for escalation.

Notwithstanding the above terms and conditions, within sixty (60) days following its receipt of the foregoing submission of the price adjustment request, the Port Authority shall have the right, in its sole discretion, to reject the price changes and withdraw its offer to purchase the additional unit(s). The rejection of the Contractor's request for price changes shall be in writing.

Nothing in this numbered clause shall be construed to obligate the Port Authority to purchase any additional unit(s) of vehicle(s), or any minimum number of additional unit(s) of vehicle(s), from the Contractor, or to preclude the Port Authority from purchasing any additional vehicles from any other source whatsoever using such procurement methods as it may in its sole discretion deem appropriate to best serve the public interest.

The Contractor represents that the last day on which orders may be placed for the model year currently in effect is:

_____/_____/_____
(date to be inserted by Contractor)

Acknowledged for Contractor:

By: _____

Title: _____

Date: _____

49. Confidential Information/Non-Publication

- A. As used herein, confidential information shall mean all information disclosed to the Contractor or the personnel provided by the Contractor hereunder which relates to the Authority's and/or PATH's past, present, and future research, development and business activities including, but not limited to, software and documentation licensed to the Authority or proprietary to the Authority and/or PATH and all associated software, source code procedures and documentation. Confidential information shall also mean any other tangible or intangible information or materials including but not limited to computer identification numbers, access codes, passwords, and reports obtained and/or used during the performance of the Contractor's Services under this Contract.

- B.** Confidential information shall also mean and include collectively, as per *The Port Authority of New York & New Jersey Information Security Handbook (October 15, 2008, corrected as of November 14, 2013)*, Protected Information, Confidential Proprietary Information, Confidential Privileged Information and information that is labeled, marked or otherwise identified by or on behalf of the Authority so as to reasonably connote that such information is confidential, privileged, sensitive or proprietary in nature. Confidential Information shall also include all work product that contains or is derived from any of the foregoing, whether in whole or in part, regardless of whether prepared by the Authority or a third-party or when the Authority receives such information from others and agrees to treat such information as Confidential.
- C.** The Contractor shall hold all such confidential information in trust and confidence for the Authority, and agrees that the Contractor and the personnel provided by the Contractor hereunder shall not, during or after the termination or expiration of this Contract, disclose to any person, firm or corporation, nor use for its own business or benefit, any information obtained by it under or in connection with the supplying of services contemplated by this Contract. The Contractor and the personnel provided by the Contractor hereunder shall not violate in any manner any patent, copyright, trade secret or other proprietary right of the Authority or third persons in connection with their services hereunder, either before or after termination or expiration of this Contract. The Contractor and the personnel provided by the Contractor hereunder shall not willfully or otherwise perform any dishonest or fraudulent acts, breach any security procedures, or damage or destroy any hardware, software or documentation, proprietary or otherwise, in connection with their services hereunder. The Contractor shall promptly and fully inform the Chief Procurement Officer in writing of any patent, copyright, trade secret or other intellectual property rights or disputes, whether existing or potential, of which the Contractor has knowledge, relating to any idea, design, method, material, equipment or other matter related to this Contract or coming to the Contractor's attention in connection with this Contract.
- D.** The Contractor shall not issue nor permit to be issued any press release, advertisement, or literature of any kind, which refers to the Port Authority or to the fact that goods have been, are being or will be provided to it and/or that services have been, are being or will be performed for it in connection with this Agreement, unless the Contractor first obtains the written approval of the Port Authority. Such approval may be withheld if for any reason the Port Authority believes that the publication of such information would be harmful to the public interest or is in any way undesirable.

50. ENTIRE AGREEMENT

The Agreement between the Port Authority and the Contractor consists of this document, the Request For Quotation ("RFQ"), the Specifications, any Appendices, and all other documents required to be submitted by the Contractor with its proposal, and the Authority's acceptance of the Contractor's proposal and constitutes the complete and exclusive statement of the terms of the agreement between the parties, and the agreement may not be explained or supplemented by course of dealing, usage of trade, or course of performance; and this document shall supersede all other communications, written or oral.

51. CHANGES IN AGREEMENT

Except as specifically provided in the clause hereof entitled "Rights of the Port Authority," no change in or termination or modification of this agreement shall be effective unless in writing and signed by the party to be charged therewith.

52. APPLICABLE LAW

This agreement shall be construed in accordance with the laws of the state of New York. The Contractor hereby consents to the exercise by the courts of the states of New York and New Jersey of jurisdiction in personam over it with respect to any matter arising out of or in connection with this agreement and waives any objection to such jurisdiction which it might otherwise have; and the Contractor agrees that mailing of process addressed to it, at the address of the Contractor indicated herein by certified mail, shall have the same effect as personal service within the state of New York upon a domestic corporation of the state of New York.

53. INSURANCE PROCURED BY THE CONTRACTOR

The Contractor shall take out, maintain, and pay the premiums on Commercial General Liability Insurance, including but not limited to premises-operations, products-completed operations, and independent Contractors coverage, with Contractual liability language covering the obligations assumed by the Contractor under this Contract and, if vehicles are to be used to carry out the performance of this Contract, then the Contractor shall also take out, maintain, and pay the premiums on Automobile Liability Insurance covering owned, non-owned, and hired autos in the following minimum limits:

Commercial General Liability Insurance - \$ 5 million combined single limit per occurrence for bodily injury and property damage liability.

Automobile Liability Insurance - \$ 5 million combined single limit per accident for bodily injury and property damage liability.

Garagekeepers' Legal Liability - \$2 million per location in the Comprehensive Form

In addition, the liability policy (ies) shall name **The Port Authority of NY and NJ, its related entities, their commissioners, directors, officers, partners, employees and agents, The City of New York, AFCO AvPorts Management LLC.** as additional insured, including but not limited to premise-operations, products-completed operations on the Commercial General Liability Policy. Moreover, the Commercial General Liability Policy shall not contain any provisions for exclusions from liability other than provisions for exclusion from liability forming part of the most up to date ISO form or its equivalent unendorsed Commercial General Liability Policy. The liability policy (ies) and certificate of insurance shall contain cross-liability language providing severability of interests so that coverage will respond as if separate policies were in force for each insured. These insurance requirements shall be in effect for the duration of the Contract to include any warrantee/guarantee period.

The certificate of insurance and liability policy (ies) must contain the following endorsement for the above liability coverages:

“The insurer(s) shall not, without obtaining the express advance written permission from the General Counsel of the Port Authority, raise any defense involving in any way the jurisdiction of the Tribunal over the person of the Port Authority, the immunity of the Port Authority, its Commissioners, officers, agents or employees, the governmental nature of the Port Authority, or the provisions of any statutes respecting suits against the Port Authority.”

The Contractor shall also take out, maintain, and pay premiums on Workers’ Compensation Insurance in accordance with the requirements of law in the state(s) where work will take place, and Employer’s Liability Insurance with limits of not less than \$1 million each accident.

Each policy above shall contain a provision that the policy may not be canceled, terminated, or modified without thirty (30) days’ prior written notice to the Port Authority of NY and NJ, Att: Facility Contract Administrator, at the location where the work will take place and to the General Manager, Risk Financing.

The Port Authority may at any time during the term of this agreement change or modify the limits and coverages of insurance. Should the modification or change results in an additional premium, The General Manager, Risk Financing for the Port Authority may consider such cost as an out-of-pocket expense.

Within five (5) days after the award of this agreement or Contract and prior to the start of work, the Contractor must submit an original certificate of insurance, to the Port Authority of NY and NJ, Facility Contract Administrator, at the location where the work will take place. This certificate of insurance MUST show evidence of the above insurance policy (ies), stating the agreement/Contract number prior to the start of work. The General Manager, Risk Financing must approve the certificate(s) of insurance before any work can begin. Upon request by the Port Authority, the Contractor shall furnish to the General Manager, Risk Financing, a certified copy of each policy, including the premiums.

If at any time the above liability insurance should be canceled, terminated, or modified so that the insurance is not in effect as above required, then, if the Manager shall so direct, the Contractor shall suspend performance of the Contract at the premises. If the Contract is so suspended, no extension of time shall be due on account thereof. If the Contract is not suspended (whether or not because of omission of the Manager to order suspension), then the Authority may, at its option, obtain insurance affording coverage equal to the above required, the cost of such insurance to be payable by the Contractor to the Port Authority.

Renewal certificates of insurance or policies shall be delivered to the Facility Contractor Administrator, Port Authority at least fifteen (15) days prior to the expiration date of each expiring policy. The General Manager, Risk Financing must approve the renewal certificate(s) of insurance before work can resume on the facility. If at any time any of the certificates or policies shall become unsatisfactory to the Port Authority, the Contractor shall promptly obtain a new and satisfactory certificate and policy.

The requirements for insurance procured by the Contractor shall not in any way be construed as a limitation on the nature or extent of the Contractual obligations assumed by the Contractor under this Contract. The insurance requirements are not a representation by the Authority as to the adequacy of the insurance to protect the Contractor against the obligations imposed on them by law or by this or any other Contract. **CITS #4803N**

54. PAYMENTS

After delivery, receipt of an invoice and all other required documents, and acceptance by the Engineer of a unit, the Port Authority will advance to the Contractor, within thirty (30) days, a payment of an amount equal to the unit price as set forth in the Pricing Sheet.

Cost for approved "Extra Work" shall be invoiced separately, accompanied by the written approved authorization by the Engineer and subject to any monetary deductions, as determined solely by the Port Authority Engineer.

The invoice and documents required to be submitted for each vehicle are as follows:

The invoice for the delivered vehicle, which shall indicate a full description of the vehicle, the cab-chassis' make and model, the vehicle identification number, and the Port Authority number.

A certificate of origin fully completed transferring title and ownership to the Port Authority of NY & NJ.

Three (3) test booklets for each vehicle, one original and two copies copies, sent to Engineer, as required by the section entitled "VECHICLE TESTS AND CERTIFICATES DOCUMENTATION."

The above invoice and certificate of origin shall serve to pass title of each complete vehicle to the Port Authority, free of liens, third party claims, or any other security interests.

55. FINAL PAYMENT

The acceptance by the Contractor, or by anyone claiming by or through the Contractor, of the Final Payment hereunder shall be, and shall operate as, a release to the Port Authority of all claims and of all liability to the Contractor for all things done or furnished in connection with the Contract and for every act and neglect, of the Authority or others relating to or arising out of the Contract including claims arising out of breach of Contract and claims based on claims of third persons.

The Contractor's agreement as provided in the immediately preceding paragraph above shall be deemed to be part of the consideration forming part of this Contract as a whole and not to be gratuitous; but in any event even if deemed gratuitous and without consideration, such agreement as provided in the immediate preceding paragraph above shall nevertheless be enforceable. Such release shall include all claims, whether or not in litigation and even though still under consideration by the Authority. Such release shall be effective notwithstanding any purported reservation of rights by the Contractor to preserve such claim. The acceptance of any check designated as "Final Payment" or bearing any similar designation shall be

conclusively presumed to demonstrate the intent of the Contractor that such payment was intended to be accepted as final, with the consequences provided in this numbered clause.

The Contractor agrees that he shall not be entitled to, and hereby waives any right he might otherwise have to, and shall not seek any judgment whether under this Contract or otherwise for any such final payment or for an amount equivalent thereto or based thereon, or for any part thereof, if such judgment would have the effect of varying, setting aside, disregarding or making inapplicable the terms of this numbered clause or have the effect in any way of entitling the Contractor to accept such final payment or an amount equivalent thereto or based thereon or any part thereof other than the same fashion as a voluntary acceptance of a final payment subject to all the terms of this Contract including this numbered clause, unless and until the Contractor should obtain a judgment on any claim arising out of or in connection with this Contract (including a claim based on breach of Contract) for an amount not included in said final payment. In any case in which interest is allowable on the amount of the final payment, such interest shall be at the rate of six percent (6%) per annum for the period, if any, in which such interest is due.

56. EXTRA WORK

The Contractor is required to provide separate materials, supplies, equipment and personnel for Extra Work when such is deemed necessary by the Engineer. "Extra Work" as used herein shall be defined as work that differs from that expressly or impliedly required in the Specifications in their present form.

The Contractor is to supply the amount of materials, supplies, equipment and personnel required by the Engineer within twenty-four (24) hours following receipt of written or verbal notice from the Engineer or, in the case of an emergency as determined by the Engineer, within twenty-four (24) hours following his receipt of the Engineer's written or oral notification.

Compensation for such Extra Work shall be determined by mutual agreement between the Engineer and the Contractor. However, should the parties fail to reach such an agreement, the Contractor's compensation shall be increased by the following amounts and such amounts only:

In the case of Extra Work performed by the Contractor itself, an amount equal to the actual net cost in money of (a) labor required for such Extra Work, plus ten percent (10%) of such net cost, (b) materials required for such Extra Work plus five percent (5%) of such net cost, and (c) such rental for equipment (other than small tools) required for such Extra Work as the Engineer deems reasonable.

In the case of Extra Work performed by a subContractor, an amount equal to the sum of (a), (b) and (c) above, plus an additional five percent (5%) provided that any such SubContract has been approved, in advance, by the Engineer.

As used in this numbered clause:

"Labor" means laborers and supervisors directly employed at the Site of the Work subject to the Engineer's authority to determine what employees of any category are

required for "Extra Work" and as to the portion of their time allotted to Extra Work; and "cost of labor" means the wages actually paid to and received by such employees plus a proper proportion of (a) vacation allowances and union dues and assessments which the employer actually pays pursuant to Contractual obligation upon the basis of such wages, and (b) taxes actually paid by the employer pursuant to law upon the basis of such wages. "Employees" as used above means only the employees of one (1) employer.

"Materials" means temporary and consumable materials as well as permanent materials; and "cost of materials" means the price (including taxes actually paid by the Contractor pursuant to law upon the basis of such materials) for which such materials are sold for cash by the manufacturers or producers thereof, or by regular dealers therein, whether or not such materials are purchased directly from the manufacturer, producer or dealer (or if the Contractor is the manufacturer or producer thereof, the reasonable cost to the Contractor of the manufacture and production), plus the reasonable cost of delivering such materials to the Site of the Work in the event that the price paid to the manufacturer, producer or dealer does not include delivery and in case of temporary materials, less their salvage value, if any. The cost of all Extra Work performed by the Contractor shall not exceed six percent (6%) of the Estimated Total Contract Price of this Contract unless otherwise expressly authorized in writing by the Engineer. These funds shall be used only when necessary and are not routinely spent as part of the Contract.

The Contractor shall submit all reports, records and receipts as are requested by the Engineer so as to enable him to ascertain the time expended in the performance of Extra Work, the quantity of labor and materials used therein and the cost of said labor and materials to the Contractor.

The provisions of this Contract relating generally to Work and its performance shall apply without exception to any Extra Work required and to the performance thereof. Moreover, the provisions of the Specifications relating generally to the Work and its performance shall also apply to any Extra Work required and to the performance thereof, except to the extent that a written order in connection with any particular item of Extra Work may expressly provide otherwise.

57. RIGHTS OF THE CONTRACTOR

Inasmuch as the Contractor can be adequately compensated by money damages for any breach of this Contract which may be committed by the Authority, the Contractor expressly agrees that no fault, act or omission of the Authority shall constitute a material breach of this Contract, entitling him to cancel or rescind it or to suspend or abandon performance.

58. CONTRACTOR NOT AN AGENT

This Agreement does not constitute the Contractor the agent or representative of the Port Authority for any purpose whatsoever except as may be specifically provided in this Agreement. It is hereby specifically acknowledged and understood that the Contractor, in performing its services hereunder, is and shall be at all times an independent Contractor and the officers, agents and employees of the Contractor shall not be or be deemed to be agents, servants or employees of the Port Authority.

59. APPROVAL BY ENGINEER

The approval by the Engineer of any workmanship, materials, drawings, designs, or details of construction of the unit shall be construed merely to mean that, at that time, the Engineer knows of no good reason for objecting thereto, and no such approval shall release the Contractor from his full responsibility for the satisfactory construction and operation of the unit.

The decision of the Engineer shall be final and binding on the parties as to the quality, acceptability, and fitness of all parts of the unit, as to conformity of the unit with, and as to the interpretation of, the specifications, drawings, and technical requirements of this agreement and as to all questions in connection with the work hereunder.

Whenever the words "approved," "required," "satisfactory," "necessary," "equal," or words of similar import are used in this agreement, they shall mean approved or required by the Engineer and satisfactory, necessary, or equal in the opinion of the Engineer.

60. NOTIFICATION OF SECURITY REQUIREMENTS

The Authority has the responsibility of ensuring safe, reliable and secure transportation facilities, systems, and projects to maintain the well-being and economic competitiveness of the region. Therefore, the Authority reserves the right to deny access to certain documents, sensitive security construction sites and facilities (including rental spaces) to any person that declines to abide by Port Authority security procedures and protocols, any person with a criminal record with respect to certain crimes or who may otherwise poses a threat to the construction site or facility security. The Authority reserves the right to impose multiple layers of security requirements on the Contractor, its staff and Sub Contractors and their staffs depending upon the level of security required, or may make any amendments with respect to such requirements as determined by the Authority.

These security requirements may include but are not limited to the following:

- **Contractor/ Subcontractor identity checks and background screening**

The Port Authority's designated background screening provider may require inspection of not less than two (2) forms of valid/current government issued identification (at least one having an official photograph) to verify staff's name and residence; screening federal, state, and/or local criminal justice agency information databases and files; screening of any terrorist identification files; access identification to include some form of biometric security methodology such as fingerprint, facial or iris scanning, or the like.

The Contractor may be required to have its staff, and any Sub Contractor's staff, material-men, visitors or others over whom the Contractor/Sub Contractor has control, authorize the Authority or its designee to perform background checks, and a personal identity verification check. Such authorization shall be in a form acceptable to the Authority. The Contractor and Sub Contractors may also be required to use an organization designated by the Authority to perform the background checks.

As of January 29, 2007, the Secure Worker Access Consortium (S.W.A.C.) is the only Port Authority approved provider to be used to conduct background screening

and personal identity verification, except as otherwise required by federal law and/or regulation (such as the Transportation Worker Identification Credential for personnel performing in secure areas at Maritime facilities). Information about S.W.A.C., instructions, corporate enrollment, online applications, and location of processing centers can be found at <http://www.secureworker.com>, or S.W.A.C. may be contacted directly at (877) 522-7922 for more information and the latest pricing. The cost for said background checks for staff that pass and are granted a credential shall be reimbursable to the Contractor (and its Sub Contractors) as an out-of-pocket expense as provided herein. Staff that are rejected for a credential for any reason are not reimbursable.

- Issuance of Photo Identification Credential

No person will be permitted on or about the Authority construction site or facility (including rental spaces) without a facility-specific photo identification credential approved by the Authority. If the authority requires facility-specific identification credential for the Contractor's and the Sub Contractor's staff, the Authority will supply such identification at no cost to the Contractor or its Sub Contractors. Such facility-specific identification credential shall remain the property of the Authority and shall be returned to the Authority at the completion or upon request prior to completion of the individual's assignment at the specific facility. It is the responsibility of the appropriate Contractor or Sub Contractor to immediately report to the Authority the loss of any staff member's individual facility-specific identification credential. The Contractor or Sub Contractor shall be billed for the cost of the replacement identification credential. Contractor's and Sub Contractor's staff shall display Identification badges in a conspicuous and clearly visible manner, when entering, working or leaving an Authority construction site or facility.

Employees may be required to produce not less than two (2) forms of valid/current government issued identification having an official photograph and an original, unlaminated social security card for identify and SSN verification. Where applicable, for sensitive security construction sites or facilities, successful completion of the application, screening and identify verification for all employees of the Contractor and Sub Contractors shall be completed prior to being provided a S.W.A.C. ID Photo Identification credential.

- Access control, inspection, and monitoring by security guards

The Authority may provide for Authority construction site or facility (including rental spaces) access control, inspection and monitoring by Port Authority Police or Authority retained Contractor security guards. However, this provision shall not relieve the Contractor of its responsibility to secure its equipment and work and that of its subconsultant/Sub Contractor's and service suppliers at the Authority construction site or facility (including rental spaces). In addition, the Contractor, Sub Contractor or service provider is not permitted to take photographs, digital images, electronic copying and/or electronic transmission or video recordings or make sketches on any other medium at the Authority construction sites or facilities (including rental spaces), except when necessary to perform the Work under this Contract, without prior written permission from the Authority. Upon request, any photograph, digital images, video recording or sketches made of the Authority construction site or facility shall be submitted to the Authority to determine

compliance with this paragraph, which submission shall be conclusive and binding on the submitting entity.

- Compliance with the Port Authority Information Security Handbook

The Contract may require access to Port Authority information considered Protected Information (“PI”) as defined in the Port Authority Information Security Handbook (“Handbook”), dated October, 2008, corrected as of November 14, 2013, and as may be further amended. The Handbook and its requirements are hereby incorporated into this agreement and will govern the possession, distribution and use of PI if at any point during the lifecycle of the project or solicitation it becomes necessary for the Contractor to have access to PI. Protecting sensitive information requires the application of uniform safeguarding measures to prevent unauthorized disclosure and to control any authorized disclosure of this information within the Port Authority or when released by the Port Authority to outside entities. The following is an outline of some of the procedures, obligations and directives contained in the Handbook:

- (1) require that the Contractor and Sub Contractors, when appropriate, sign Non-Disclosure Agreements (NDAs), or an Acknowledgment of an existing NDA, provided by the Authority as a condition of being granted access to Protected Information categorized and protected as per the Handbook;
 - (2) require that individuals needing access to PI be required to undergo a background check, pursuant to the process and requirements noted in § 3.2 of the Information Security Handbook.
 - (3) require Contractors and commercial enterprises to attend training to ensure security awareness regarding Port Authority information;
 - (4) specific guidelines and requirements for the handling of PI to ensure that the storage and protection of PI;
 - (5) restrictions on the transfer, shipping, and mailing of PI;
 - (6) prohibitions on the publication, posting, modifying, copying, reproducing, republishing, uploading, transmitting, or distributing PI on websites or web pages. This may also include restricting persons, who either have not passed a pre-screening background check, or who have not been granted access to PI, from viewing such information;
 - (7) require that PI be destroyed using certain methods, measures or technology pursuant to the requirements set forth in the Handbook;
 - (8) require the Contractor to mandate that each of its Sub Contractors maintain the same levels of security required of the Contractor under any Port Authority awarded Contract.
 - (9) prohibit the publication, exchange or dissemination of PI developed from the project or contained in reports, except between Contractors and Sub Contractors, without prior approval of the Port Authority;
require that PI only be reproduced or copied pursuant to the requirements set forth in the Handbook.
- Audits for Compliance with Security Requirements

The Port Authority may conduct random or scheduled examinations of business practices under this section entitled “NOTIFICATION OF SECURITY REQUIREMENTS” and the Handbook in order to assess the extent of compliance with security requirements, Confidential Information procedures, protocols and

practices, which may include, but not be limited to, verification of background check status, confirmation of completion of specified training, and/or a site visit to view material storage locations and protocols.

61. NO PERSONAL LIABILITY

Neither the Commissioners of the Port Authority, nor Directors of the Port Authority Trans- Hudson Corporation (“ PATH,”) nor any of them, nor any officer, agent or employee thereof, shall be charged personally by the Contractor with any liability, or held personally liable to the Contractor under any term or provision of this Contract, or because of its execution or attempted execution, or because of any breach, or attempted or alleged breach, thereof.

PART II- CONTRACTOR'S INTEGRITY PROVISIONS

1. CERTIFICATION OF NO INVESTIGATION (CRIMINAL OR CIVIL ANTI-TRUST), INDICTMENT, CONVICTION, DEBARMENT, SUSPENSION, DISQUALIFICATION AND DISCLOSURE OF OTHER INFORMATION

By bidding on this Contract, each Bidder and each person signing on behalf of any Bidder certifies, and in the case of a joint bid each party thereto certifies as to its own organization, that the Bidder and each parent and/or affiliate of the Bidder has not

- A. been indicted or convicted in any jurisdiction;
- B. been suspended, debarred, found not responsible or otherwise disqualified from entering into any Contract with any governmental agency or been denied a government Contract for failure to meet standards related to the integrity of the Bidder;
- C. had a Contract terminated by any governmental agency for breach of Contract or for any cause based in whole or in part on an indictment or conviction;
- D. ever used a name, trade name or abbreviated name, or an Employer Identification Number different from those inserted in the Bid;
- E. had any business or professional license suspended or revoked or, within the five years prior to bid opening, had any sanction imposed in excess of fifty thousand dollars (\$50,000) as a result of any judicial or administrative proceeding with respect to any license held or with respect to any violation of a federal, state or local environmental law, rule or regulation;
- F. had any sanction imposed as a result of a judicial or administrative proceeding related to fraud, extortion, bribery, bid rigging, embezzlement, misrepresentation or anti-trust regardless of the dollar amount of the sanctions or the date of their imposition; and
- G. been, and is not currently, the subject of a criminal investigation by any federal, state or local prosecuting or investigative agency and/or a civil anti-trust investigation by any federal, state or local prosecuting or investigative agency, including an inspector general of a governmental agency or public authority.

2. NON-COLLUSIVE BIDDING, AND CODE OF ETHICS CERTIFICATION, CERTIFICATION OF NO SOLICITATION BASED ON COMMISSION, PERCENTAGE, BROKER, CONTINGENT OR OTHER FEES

By bidding on this Contract, each Bidder and each person signing on behalf of any

Bidder certifies, and in the case of a joint bid, each party thereto certifies as to its own organization, that

- A.** the prices in its bid have been arrived at independently without collusion, consultation, communication or agreement for the purpose of restricting competition, as to any matter relating to such prices with any other bidder or with any competitor;
- B.** the prices quoted in its bid have not been and will not be knowingly disclosed directly or indirectly by the Bidder prior to the official opening of such bid to any other bidder or to any competitor;
- C.** no attempt has been made and none will be made by the Bidder to induce any other person, partnership or corporation to submit or not to submit a bid for the purpose of restricting competition;
- D.** this organization has not made any offers or agreements or taken any other action with respect to any Authority employee or former employee or immediate family member of either which would constitute a breach of ethical standards under the Code of Ethics dated March 11, 2014, as may be revised, (a copy of which is available upon request) nor does this organization have any knowledge of any act on the part of an Authority employee or former Authority employee relating either directly or indirectly to this organization which constitutes a breach of the ethical standards set forth in said Code;
- E.** no person or selling agency other than a bona fide employee or bona fide established commercial or selling agency maintained by the Bidder for the purpose of securing business, has been employed or retained by the Bidder to solicit or secure this Contract on the understanding that a commission, percentage, brokerage, contingent, or other fee would be paid to such person or selling agency; and
- F.** the Bidder has not offered, promised or given, demanded or accepted, any undue advantage, directly or indirectly, to or from a public official or employee, political candidate, party or party official, or any private sector employee (including a person who directs or works for a private sector enterprise in any capacity), in order to obtain, retain, or direct business or to secure any other improper advantage in connection with this Contract.
- G.** no person or organization has been retained, employed or designated on behalf of the Bidder to impact any Port Authority determination with respect to (i) the solicitation, evaluation or award of this Contract, or (ii) the preparation of specifications or request for submissions in connection with this Contract.

The foregoing certifications in this Part II, Sections 1 and 2, shall be deemed to have been made by the Bidder as follows:

- * if the Bidder is a corporation, such certification shall be deemed to have been made not only with respect to the Bidder itself, but also with respect to each parent, affiliate, director, and officer of the Bidder, as well as, to the best of the certifier's knowledge and belief, each stockholder of the Bidder with an ownership interest in excess of 10%;
- * if the Bidder is a partnership, such certification shall be deemed to have been made not only with respect to the Bidder itself, but also with respect to each partner.

Moreover, the foregoing certifications, if made by a corporate Bidder, shall be deemed to have been authorized by the Board of Directors of the Bidder, and such authorization shall be deemed to include the signing and submission of the bid and the inclusion

therein of such certification as the act and deed of the corporation.

In any case where the Bidder cannot make the foregoing certifications, the Bidder shall so state and shall furnish with the signed bid a signed statement which sets forth in detail the reasons therefor. If the Bidder is uncertain as to whether it can make the foregoing certifications, it shall so indicate in a signed statement furnished with its bid, setting forth in such statement the reasons for its uncertainty. With respect to the foregoing certification in paragraph "2g", if the Bidder cannot make the certification, it shall provide, in writing, with the signed bid: (i) a list of the name(s), address(es), telephone number(s), and place(s) of principal employment of each such individual or organization; and (ii) a statement as to whether such individual or organization has a "financial interest" in this Contract, as described in the Procurement Disclosure policy of the Authority (a copy of which is available upon request to the Chief Procurement Officer of the Procurement Department of the Authority). Such disclosure is to be updated, as necessary, up to the time of award of this Contract. As a result of such disclosure, the Port Authority shall take appropriate action up to and including a finding of non-responsibility.

Failure to make the required disclosures shall lead to administrative actions up to and including a finding of non-responsiveness or non-responsibility.

Notwithstanding that the Bidder may be able to make the foregoing certifications at the time the bid is submitted, the Bidder shall immediately notify the Authority in writing during the period of irrevocability of bids and the term of the Contract, if Bidder is awarded the Contract, of any change of circumstances which might under this clause make it unable to make the foregoing certifications, might render any portion of the certifications previously made invalid, or require disclosure. The foregoing certifications or signed statement shall be deemed to have been made by the Bidder with full knowledge that they would become a part of the records of the Authority and that the Authority will rely on their truth and accuracy in awarding and continuing this Contract. In the event that the Authority should determine at any time prior or subsequent to the award of this Contract that the Bidder has falsely certified as to any material item in the foregoing certifications, has failed to immediately notify the Port Authority of any change in circumstances which might make it unable to make the foregoing certifications, might render any portion of the certifications previously made invalid, or require disclosure, or has willfully or fraudulently furnished a signed statement which is false in any material respect, or has not fully and accurately represented any circumstance with respect to any item in the foregoing certifications required to be disclosed, the Authority may determine that the Bidder is not a responsible Bidder with respect to its bid on the Contract or with respect to future bids on Authority Contracts and may exercise such other remedies as are provided to it by the Contract with respect to these matters. In addition, Bidders are advised that knowingly providing a false certification or statement pursuant hereto may be the basis for prosecution for offering a false instrument for filing (see e.g. New York Penal Law, Section 175.30 et seq.). Bidders are also advised that the inability to make such certification will not in and of itself disqualify a Bidder, and that in each instance the Authority will evaluate the reasons therefor provided by the Bidder. Under certain circumstances the Bidder may be required as a condition of Contract award to enter into a Monitoring Agreement under which it will be required to take certain specified actions, including compensating an independent Monitor to be selected by the Port Authority, said Monitor to be charged with, among other things, auditing the actions of

the Bidder to determine whether its business practices and relationships indicate a level of integrity sufficient to permit it to continue business with the Port Authority.

3. BIDDER ELIGIBILITY FOR AWARD OF CONTRACTS – DETERMINATION BY AN AGENCY OF THE STATE OF NEW YORK AND NEW JERSEY CONCERNING ELIGIBILITY TO RECEIVE PUBLIC CONTRACTS

Bidders are advised that the Authority has adopted a policy to the effect that in awarding its Contracts it will honor any determination by an agency of the State of New York or New Jersey that a Bidder is not eligible to bid on or be awarded public Contracts because the Bidder has been determined to have engaged in illegal or dishonest conduct or to have violated prevailing rate of wage legislation.

The policy permits a Bidder whose ineligibility has been so determined by an agency of the State of New York or New Jersey to submit a bid on a Port Authority Contract and then to establish that it is eligible to be awarded a Contract on which it has bid because (i) the state agency determination relied upon does not apply to the Bidder, or (ii) the state agency determination relied upon was made without affording the Bidder the notice and hearing to which the Bidder was entitled by the requirements of due process of law, or (iii) the state agency determination was clearly erroneous or (iv) the state determination relied upon was not based on a finding of conduct demonstrating a lack of integrity or violation of a prevailing rate of wage law.

The full text of the resolution adopting the policy may be found in the Minutes of the Authority's Board of Commissioners meeting of September 9, 1993.

4. CONTRACTOR RESPONSIBILITY, SUSPENSION OF WORK AND TERMINATION

During the term of this Contract, the Contractor shall at all times during the Contract term remain responsible. The Contractor agrees, if requested by the Port Authority to present evidence of its continuing legal authority to do business in the States of New Jersey or New York, integrity, experience, ability, prior performance, and organizational and financial capacity.

The Port Authority, in its sole discretion, reserves the right to suspend any or all activities under this Contract, at any time, when it discovers information that calls into question the responsibility of the Contractor. In the event of such suspension, the Contractor will be given written notice outlining the particulars of such suspension. Upon issuance of such notice, the Contractor must comply with the terms of the suspension order. Contract activity may resume at such time as the Port Authority issues a written notice authorizing a resumption of performance under the Contract.

Upon written notice to the Contractor, and an opportunity to be heard with appropriate Port Authority officials or staff, the Contract may be terminated by Port Authority at the Contractor's expense where the Contractor is determined by the Port Authority to be non-responsible. In such event, the Port Authority or its designee may complete the Contractual requirements in any manner he or she may deem advisable and pursue available legal or equitable remedies for breach, including recovery of costs from Contractor associated with such termination.

5. NO GIFTS, GRATUITIES, OFFERS OF EMPLOYMENT, ETC.

At all times, the Contractor shall not offer, give or agree to give anything of value either to a Port Authority employee, agent, job shopper, consultant, construction manager or other person or firm representing the Port Authority, or to a member of the

immediate family (i.e., a spouse, child, parent, brother or sister) of any of the foregoing, in connection with the performance by such employee, agent, job shopper, consultant, construction manager or other person or firm representing the Port Authority of duties involving transactions with the Contractor on behalf of the Port Authority, whether or not such duties are related to this Contract or any other Port Authority Contract or matter. Any such conduct shall be deemed a material breach of this Contract.

As used herein "anything of value" shall include but not be limited to any (a) favors, such as meals, entertainment, transportation (other than that contemplated by the Contract or any other Port Authority Contract), etc. which might tend to obligate the Port Authority employee to the Contractor, and (b) gift, gratuity, money, goods, equipment, services, lodging, discounts not available to the general public, offers or promises of employment, loans or the cancellation thereof, preferential treatment or business opportunity. Such term shall not include compensation contemplated by this Contract or any other Port Authority Contract. Where used herein, the term "Port Authority" shall be deemed to include all subsidiaries of the Port Authority.

The Contractor shall insure that no gratuities of any kind or nature whatsoever shall be solicited or accepted by it and by its personnel for any reason whatsoever from the passengers, tenants, customers or other persons using the Facility and shall so instruct its personnel.

In the event that the Contractor becomes aware of the occurrence of any conduct that is prohibited by this section entitled "No Gifts, Gratuities, Offers of Employment, Etc.", it shall report such occurrence to the Port Authority's Office of Inspector General within three (3) business days of obtaining such knowledge. (See "<http://www.panynj.gov/inspector-general>" for information about to report information to the Office of Inspector General). Failing to report such conduct shall be grounds for a finding of non-responsibility.

In addition, during the term of this Contract, the Contractor shall not make an offer of employment or use confidential information in a manner proscribed by the Code of Ethics and Financial Disclosure dated March 11, 2014, as may be revised, (a copy of which is available upon request to the Office of the Secretary of the Port Authority).

The Contractor shall include the provisions of this clause in each subContract entered into under this Contract.

6. CONFLICT OF INTEREST

During the term of this Contract, the Contractor shall not participate in any way in the preparation, negotiation or award of any Contract (other than a Contract for its own services to the Authority) to which it is contemplated the Port Authority may become a party, or participate in any way in the review or resolution of a claim in connection with such a Contract if the Contractor has a substantial financial interest in the Contractor or potential Contractor of the Port Authority or if the Contractor has an arrangement for future employment or for any other business relationship with said Contractor or potential Contractor, nor shall the Contractor at any time take any other action which might be viewed as or give the appearance of conflict of interest on its part. If the possibility of such an arrangement for future employment or for another

business arrangement has been or is the subject of a previous or current discussion, or if the Contractor has reason to believe such an arrangement may be the subject of future discussion, or if the Contractor has any financial interest, substantial or not, in a Contractor or potential Contractor of the Authority, and the Contractor's participation in the preparation, negotiation or award of any Contract with such a Contractor or the review or resolution of a claim in connection with such a Contract is contemplated or if the Contractor has reason to believe that any other situation exists which might be viewed as or give the appearance of a conflict of interest, the Contractor shall immediately inform the Chief Procurement Officer in writing of such situation giving the full details thereof. Unless the Contractor receives the specific written approval of the Chief Procurement Officer, the Contractor shall not take the contemplated action which might be viewed as or give the appearance of a conflict of interest. The Chief Procurement Officer may require the Contractor to submit a mitigation plan addressing and mitigating any disclosed or undisclosed conflict, which is subject to the approval of the Chief Procurement Officer and shall become a requirement, as though fully set forth in this Contract. In the event the Chief Procurement Officer shall determine that the performance by the Contractor of a portion of its Services under this Agreement is precluded by the provisions of this numbered paragraph, or a portion of the Contractor's said Services is determined by the Chief Procurement Officer to be no longer appropriate because of such preclusion, then the Chief Procurement Officer shall have full authority on behalf of both parties to order that such portion of the Contractor's Services not be performed by the Contractor, reserving the right, however, to have the Services performed by others and any lump sum compensation payable hereunder which is applicable to the deleted work shall be equitably adjusted by the parties. The Contractor's execution of this document shall constitute a representation by the Contractor that at the time of such execution the Contractor knows of no circumstances, present or anticipated, which come within the provisions of this paragraph or which might otherwise be viewed as or give the appearance of a conflict of interest on the Contractor's part. The Contractor acknowledges that the Authority may preclude it from involvement in certain disposition/privatization initiatives or transactions that result from the findings of its evaluations hereunder or from participation in any Contract, which results, directly or indirectly, from the Services provided by the Contractor hereunder. The Port Authority's determination regarding any questions of conflict of interest shall be final.

7. DEFINITIONS

As used in this section, the following terms shall mean:

Affiliate - Two or more firms are affiliates if a parent owns more than fifty percent of the voting stock of each of the firms, or a common shareholder or group of shareholders owns more than fifty percent of the voting stock of each of the firms, or if the firms have a common proprietor or general partner.

Agency or Governmental Agency - Any federal, state, city or other local agency, including departments, offices, public authorities and corporations, boards of education and higher education, public development corporations, local development corporations and others.

Investigation - Any inquiries made by any federal, state or local criminal prosecuting and/or law enforcement agency and any inquiries concerning civil anti-trust

investigations made by any federal, state or local governmental agency. Except for inquiries concerning civil anti-trust investigations, the term does not include inquiries made by any civil government agency concerning compliance with any regulation, the nature of which does not carry criminal penalties, nor does it include any background investigations for employment, or Federal, State, and local inquiries into tax returns.

Officer - Any individual who serves as chief executive officer, chief financial officer, or chief operating officer of the Bidder by whatever titles known.

Parent - An individual, partnership, joint venture or corporation which owns more than fifty percent (50%) of the voting stock of the Bidder.

If the solicitation is a Request for Proposal

Bid - shall mean Proposal;

Bidder - shall mean Proposer;

Bidding - shall mean submitting a Proposal.

In a Contract resulting from the taking of bids:

Bid - shall mean bid;

Bidder - shall mean Bidder; except and until the Contract has been awarded, then it shall mean Contractor.

Bidding - shall mean executing this Contract.

In a Contract resulting from the taking of Proposals:

Bid - shall mean Proposal;

Bidder - shall mean Proposer;

Bidding - shall mean executing this Contract.

The undersigned Bidder has satisfied the requirements of the Contract in the following manner (Complete the appropriate spaces and check one box):

The Bidder is committed to meeting the DBE goal set forth in this Contract.

OR

The Bidder is unable to meet the DBE goal set forth in this Contract, but is committed to a minimum of _____% DBE utilization on this Contract and submits the attached narrative and documentation demonstrating good faith efforts consistent with Appendix A of 49 CFR 26 to meet the DBE utilization goal set forth in this Contract. Attach as many pages as necessary to provide a full and complete narrative and supporting documentation of good faith efforts made. This narrative shall be submitted on company letterhead and signed.

It is the present intent of the Bidder to utilize the specific DBE firms identified in Appendix A2 in the performance of the Work under this Contract. If for any reason, one or more of the DBE firms identified in Appendix A2 are unable or unwilling to participate, the Bidder will make good faith efforts to replace the DBE firm with another DBE firm in accordance with the Information For Bidders clause entitled “Disadvantaged Business Enterprise Program (DBE)”.

I _____ (print name), an officer of _____ (company name), certify that I have read the Appendix A1 – DBE Goals Statement and the information contained in it is true. I fully understand that any false statement within this submittal may prevent the company and/or the undersigned from being found to be responsible bidders/proposers in connection with future agreements. In addition, any false statement within this submittal may subject the company and/or the undersigned to criminal charges in the state and federal courts of New York and New Jersey.

Signature _____ Title _____ Date _____

Officer must have ACKNOWLEDGEMENT BY NOTARY PUBLIC completed on the reverse side.

ACKNOWLEDGEMENT BY NOTARY PUBLIC

APPENDIX A1 - DBE GOALS STATEMENT (reverse)

ACKNOWLEDGEMENT
of

STATE OF _____)

S.S.:

COUNTY OF _____)

On this _____ day of _____, before me personally came and appeared _____ to be known, who being by me duly sworn, did depose and say that he/she resides at _____, that he/she is the _____ of _____ company, that the seal affixed to said Certification is such corporate seal, that it was so affixed by order of the directors of said corporation, and that he/she signed his/her name thereto by like order.

(Notary's Seal or Stamp)

Notary Public
My commission expires:

**APPENDIX A2
THE PORT AUTHORITY OF NY & NJ – OFFICE OF BUSINESS DIVERSITY AND CIVIL RIGHTS
DBE PARTICIPATION PLAN AND AFFIRMATION STATEMENT**

Instructions: Submit one DBE PARTICIPATION PLAN AND AFFIRMATION STATEMENT form for each DBE firm used on this Contract.

CONTRACT NUMBER AND TITLE: _____

BIDDER:

Name of Firm: _____

Address: _____ Telephone: _____

Email Address: _____

DBE:

Name of Firm: _____

Address: _____ Telephone: _____

Description of work to be performed by DBE: _____

Calculation (supply only): _____

The Bidder is committed to utilizing the above-named DBE for the work described above. The estimated dollar value of this work is \$ _____
or

_____ % of the total contract amount of \$ _____. The anticipated start date is _____ and the anticipated completion date is ____

AFFIRMATION of DBE

The above-named DBE affirms that it will perform the portion of the Contract for the estimated dollar value as stated above.

By: _____ Date: _____
Signature of Principal or Officer of DBE - Print Name and Title

If the Bidder does not receive award of the Contract, any and all representations in this DBE Participation Plan and Affirmation Statement shall be null and void.

I _____ (print name), an officer of _____ (company name), certify that I have read the Appendix A2 – DBE Participation Plan and Affirmation Statement and the information contained in it is true. I fully understand that any false statement within this submittal may prevent the company and/or the undersigned from being found to be responsible Bidders/Proposers in connection with future agreements. In addition, any false statement within this submittal may subject the company and/or the undersigned to criminal charges in the state and federal courts of New York and New Jersey.

Signature of Bidder _____ Title _____ Date _____

Please Note: Only 60% of the expenditure to a DBE material supplier will be counted toward the DBE goal. Please show calculation above. Example: \$100,000 x 60% = \$60,000 estimated DBE dollar value of work. Plan cannot be accepted without calculation.

Officer of the Bidder must have ACKNOWLEDGEMENT BY NOTARY PUBLIC completed on the reverse side.

ACKNOWLEDGEMENT BY NOTARY PUBLIC

**APPENDIX A2
DBE PARTICIPATION PLAN AND AFFIRMATION STATEMENT (reverse)**

ACKNOWLEDGEMENT
of

STATE OF _____)

S.S.:

COUNTY OF _____)

On this _____ day of _____, before me personally came and appeared _____ to be known, who being by me duly sworn, did depose and say that he/she resides at _____, that he/she is the _____ of _____ company, that the seal affixed to said Certification is such corporate seal, that it was so affixed by order of the directors of said corporation, and that he/she signed his/her name thereto by like order.

(Notary's Seal or Stamp)

Notary Public
My commission expires:

ACKNOWLEDGEMENT BY NOTARY PUBLIC

**APPENDIX A3
INFORMATION ON SOLICITED FIRMS (reverse)**

ACKNOWLEDGEMENT
of

STATE OF _____)

S.S.:

COUNTY OF _____)

On this _____ day of _____, before me personally came and appeared _____ to be known, who being by me duly sworn, did depose and say that he/she resides at _____, that he/she is the _____ of _____ company, that the seal affixed to said Certification is such corporate seal, that it was so affixed by order of the directors of said corporation, and that he/she signed his/her name thereto by like order.

(Notary's Seal or Stamp)

Notary Public
My commission expires:

INSTRUCTIONS:

A LOW BIDDER THAT SUBMITS A DBE PARTICIPATION PLAN THAT INCLUDES AMOUNT(S) FOR TRUCKING MUST COMPLETE THIS FORM TO SHOW HOW THE COMMITMENT AMOUNT WAS ESTIMATED. THIS FORM IS TO BE ATTACHED TO THE REQUIRED "DBE PARTICIPATION PLAN AND AFFIRMATION STATEMENT (APPENDIX A2)" FOR FEDERALLY FUNDED CONTRACTS.

PRIME CONTRACTORS UTILIZING DBE FIRMS WITH A "TRUCKING" CLASSIFICATION TO MEET DBE CONTRACT GOALS MUST BE AWARE THAT CERTAIN CONDITIONS MUST BE MET BY THE DBE TRUCKING FIRM IN ORDER TO BE CONSIDERED COMMERCIALY USEFUL. THESE CONDITIONS DIRECTLY AFFECT HOW MUCH PARTICIPATION CREDIT WILL BE COUNTED TOWARD THE GOAL. FOR DBE CREDIT, THESE CONDITIONS ARE OUTLINED UNDER CFR PART 26.55(d) (1) THROUGH (7).

Use the following factors in determining whether a DBE trucking company is performing a commercially useful function:

- The DBE must be responsible for the management and supervision of the entire trucking operation for which it is responsible on a particular contract, and there cannot be a contrived arrangement for the purpose of meeting DBE goals.
- The DBE must itself own and operate at least one fully licensed, insured and operational truck used on the contract.
- The DBE receives credit for the total value of the transportation services it provides on the contract using trucks it owns, insures, and operates, using drivers it employs.
- The DBE may lease trucks from another DBE firm, including an owner-operator who is certified as a DBE. The DBE who leases trucks from another DBE receives credit for the total value of the transportation services the lessee DBE provides on the contract.
- The DBE may also lease trucks from non-DBE firms and owner-operators. The DBE can count the value of these trucking services up to the value of services performed by the DBE trucks used on the contract. DBE participation can be counted for the value of services of non-DBE trucks that exceed the value of services performed by DBE trucks only in the amount of the fee or commission a DBE receives as a result of the lease arrangement.
- A lease must indicate that the DBE has exclusive use of and control over the truck for the period of the subcontract. This does not preclude the leased truck from working for others during the term of the lease with the consent of the DBE, so long as the lease gives the DBE absolute priority for use of the leased truck

FILL OUT THE INFORMATION ON PAGE 2 FOR EACH DBE TRUCKING FIRM UTILIZED.

MAKE ADDITIONAL COPIES FOR EACH DBE TRUCKING FIRM USED ON THE CONTRACT.

PRE-AWARD DBE TRUCKING COMMITMENT INFORMATION

DATE: _____ CONTRACTOR NAME: _____

CONTRACT NUMBER: _____ TELEPHONE: _____

NAME OF DBE TRUCKING FIRM: _____

SCOPE OF WORK OF TRUCKING FIRM: _____

SUPERVISOR OF THE DAY-TO-DAY DBE TRUCKING OPERATION: _____

NUMBER OF TRUCKS _____ + _____ = _____
OWNED LEASED TOTAL

NUMBER OF TRUCKS
PERFORMING WORK _____

_____ X _____ = _____
RATE PER DURATION/NUMBER COMMITMENT

LIST THE PROPER PERMITS REQUIRED TO BE RETAINED BY THE FIRM FOR THE WORK FOR WHICH IT IS BEING HIRED. _____

DOES/WILL THE DBE FIRM HAVE OR BE ABLE TO RETAIN THE PROPER PERMITS REQUIRED TO PERFORM THE WORK FOR WHICH IT IS BEING HIRED? YES _____ NO _____ IF NO, FIRM CANNOT BE UTILIZED.

FOR ANY LEASED TRUCK, SUBMIT A COPY OF THE LEASE AGREEMENT.

SIGNATURE OF PRINCIPAL OR OFFICER OF TRUCKING FIRM: _____

PRINT NAME: _____ TITLE: _____

I _____ (print name), an officer of _____ (company name), certify that I have read the Pre-Award DBE Trucking Commitment Information and the information contained in it is true. I fully understand that any false statement within this submittal may prevent the company and/or the undersigned from being found to be responsible bidders/proposers in connection with future agreements. In addition, any false statement within this submittal may subject the company and/or the undersigned to criminal charges in the state and federal courts of New York and New Jersey.

Signature _____ Title _____ Date _____

Officer must have ACKNOWLEDGEMENT BY NOTARY PUBLIC completed on the reverse side.

ACKNOWLEDGEMENT BY NOTARY PUBLIC

PRE-AWARD DBE TRUCKING COMMITMENT INFORMATION (reverse)

ACKNOWLEDGEMENT

of

STATE OF _____)

S.S.:

COUNTY OF _____)

On this _____ day of _____, before me personally came and appeared _____ to be known, who being by me duly sworn, did depose and say that he/she resides at _____, that he/she is the _____ of _____ company, that the seal affixed to said Certification is such corporate seal, that it was so affixed by order of the directors of said corporation, and that he/she signed his/her name thereto by like order.

(Notary's Seal or Stamp)

Notary Public
My commission expires:

DBE REGULAR DEALER VERIFICATION FORM

PA 3750A/ 01-15

(To be completed by DBE firm and signed by Prime Contractor)

Project Number:	Telephone # of Prime
Prime Contractor:	
DBE Firm:	
Provide a brief description of the material(s) your firm will be supplying and the Prime is requesting be credited as a regular dealer (including item numbers and estimated quantities when possible).	
If either question is marked 'No', then the Prime cannot receive regular dealer credit for the services provided by the DBE firm. Instead, the maximum credit that could be received would be the fee or commission the DBE firm receives for its services. Before executing this form, read the attached 'Guide for Counting DBE Suppliers' which includes the official question and answer issued by the United States Department of Transportation.	
	Yes No
1. Does your firm "regularly" engage in the purchase and sale or lease, to the general public in the usual course of its business, of product(s) of the general character which will be involved in this contract and for which DBE credit is being sought?	
2. Is the role your firm will play on this specific contract consistent with the regular sale or lease of the product(s) in question, as distinct from a role better understood as that of a broker, packager, manufacturer's representative, or other person who arranges or expedites a transaction?	
Authorized Representative of DBE Firm	
The undersigned individual hereby verifies that he/she is authorized to make this verification on behalf of the DBE firm, that the DBE firm "regularly" engages in the purchase and sale or lease of the items listed herein and is not otherwise a packager, broker, manufacturer's representative, or other person who arranges or expedites transactions, that the answers and information provided herein are true and correct to the best of her/his knowledge, information and belief and any false statement made in this verification may be the basis for prosecution for offering a false instrument for filing (see e.g., New York Penal Law, Section 175.30 et. Seq.).	
_____ Signature of Principal or Officer	_____ Date
_____ Print Name and Title	_____ Phone Number
Authorized Representative of Prime Contractor	
The undersigned individual hereby verifies that he/she is authorized to make this verification on behalf of the prime contractor, that, to the best of his/her knowledge, information and belief the DBE firm 'regularly' engages in the purchase and sale or lease of the items listed herein and is not otherwise a packager, broker, manufacturers' representative, or other person who arranges or expedites transactions.	
I, Signature of Principal or Officer _____	Date _____
_____ an officer of _____	_____
Print Name and Title	Company
certify that I have read the DBE Regular Dealer Verification Form and the information contained in it is true. I fully understand that any false statement within this submittal may prevent the company and/or the undersigned from being found to be responsible bidders/proposers in connection with future agreements. In addition, any false statement within this submittal may subject the company and/or the undersigned to criminal charges in the state and federal courts of New York and New Jersey.	
Officer must have ACKNOWLEDGEMENT BY NOTARY PUBLIC completed on the reverse side.	

ACKNOWLEDGMENT BY NOTARY PUBLIC
DBE REGULAR DEALER VERIFICATION FORM (reverse)

ACKNOWLEDGEMENT

of

STATE OF _____)

S.S.:

COUNTY OF _____)

On this _____ day of _____, before me personally came and appeared _____ to be known, who being by me duly sworn, did depose and say that he/she resides at _____, that he/she is the _____ of _____ company, that the seal affixed to said Certification is such corporate seal, that it was so affixed by order of the directors of said corporation, and that he/she signed his/her name thereto by like order.

(Notary's Seal or Stamp)

Notary Public
My commission expires:

GUIDE FOR COUNTING DBE SUPPLIERS

- The official question and answer (Q & A) issued by the United States Department of Transportation on December 9, 2011 as institutional guidance based on 49 C.F.R. § 26.55 relative to regular dealers poses two questions that must both be answered ‘yes’ in order for the DBE firm to receive regular dealer credit equivalent to 60 percent of the value for materials supplied on federally-assisted transportation projects.
- Following is the official Q & A in italics:
 - First, does the firm “regularly” engage in the purchase and sale or lease, to the general public in the usual course of its business, of products of the general character involved in the contract and for which DBE credit is sought?*
 - *Answering this question involves attention to the activities of the business over time, both within and outside the context of the DBE program.*
 - *The distinction to be drawn is between the regular sale or lease of the products in question and merely occasional or ad hoc involvement with them.*
 - *In answering this question, [the Port Authority of NY and NJ] will not insist that every single item the DBE firm supplies be physically present in the firm’s store, warehouse, etc. before it is sold to a contractor. However, the establishment in which the firm keeps items it sells to the general public should be more than a token location.*
 - *For example, a mere showroom, the existence of a hard-copy or on-line catalog, or the presence of small amounts of material that make questionable the ability of the firm to effectively supply quantities typically needed on a contract, are generally not sufficient to demonstrate that a firm regularly deals in the items.*
 - Second, is the role the firm plays on the specific contract in question consistent with the regular sale or lease of the products in question, as distinct from a role better understood as that of a broker, packager, manufacturer’s representative, or other person who arranges or expedites a transaction?*
 - *For example, a firm that regularly stocks and sells Product X may, on a particular contract, simply communicate a prime contractor’s order for Product Y to the manufacturer, acting in a transaction expediting capacity.*
 - *This means that a firm that acts as a regular dealer on one contract does not necessarily act as a regular dealer on other contracts. For example, a firm that acts as a regular dealer on Contract #1 may act simply as a “transaction expeditor” or “broker” on Contract #2. It would receive DBE credit for 60 percent of the value of the goods supplied on Contract #1 while only receiving DBE credit for its fee or commission on Contract #2.*
 - *In some circumstances, items are “drop-shipped” directly from a manufacturer’s facility to a job site, never being in the physical possession of or transported by a supplier. In many such cases, the supplier’s role may involve nothing more than contacting the manufacturer and placing a job-specific order for an item that the manufacturer then causes to be transported to the job site.*
 - *In such a situation, the supplier’s role may often be better described as that of a “broker” or “transaction expeditor” (see 49 C.F.R. § 26.55(e)(2)(ii)(C)) than as a “regular dealer.” In such a case, DBE credit is limited to the fee or commission the firm receives for its services. If the firm does not provide any commercially useful function (i.e., it is simply inserted as an extra participant in a transaction), then no DBE credit can be counted.*
- The Port Authority of NY and NJ propose that primes submit the two questions to DBEs in writing. If the DBE firm answers ‘yes’ to both questions, then the written documentation would be taken into account in the Port Authority of NY and NJ’s good faith effort determination in accordance with Section 26.53 of the federal DBE regulation set forth in Title 49 Code of Federal Regulations Part 26.
- If it were later determined that the DBE misrepresented itself or erroneously concluded that it was acting as a regular dealer, the Port Authority of NY and NJ would strongly consider this documentation in evaluating the actions of the prime and in determining whether the prime exercised reasonable due diligence by obtaining a written regular dealer confirmation from the DBE even though it later turned out to be false.
- Participation would still have to be revised, but the Port Authority of NY and NJ will fully consider the written documentation in its good faith effort review.
- The Port Authority of NY and NJ reserves the right to address any misrepresentation by the DBE firm or the prime consistent with the “Bidders Certification Statement” and other requirements and procedures for determinations of whether a contractor has acted responsibly.