BID BOOK

CITY OF NEW YORK
DEPARTMENT OF CITYWIDE ADMINISTRATIVE SERVICES
DIVISION OF MUNICIPAL SUPPLY SERVICES
MUNICIPAL BUILDING
1 CENTRE STREET, 18TH FLOOR
NEW YORK, NEW YORK 10007

INVITATION FOR BIDS

BID INFORMATION:

Please note that this procurement is being solicited through the Procurement and Sourcing Solutions Portal (PASSPort). All documents related to this solicitation will be available in PASSPort and all responses should be submitted via PASSPort and in accordance with directions provided by the Agency. Responses submitted through PASSPort will be signed electronically and will remain sealed until bid opening.

CONTRACT

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I. Bid Book (Sectioned into A, B, and C pages)

A Pages: Invitation for Bid, Offer, Vendor Signature and Notarization

B Pages: Contract Specific Terms and Conditions

C Pages: Specifications and Schedule of Quantities and Prices

II. New York City Purchase Contract
(310L/FEBRUARY/2015)

Part I General Definitions

Part II Standard Instructions to Bidders

Part III General Conditions

Part IV Special Conditions

Part V Affirmations

All applicable forms must be completed and submitted with the bid. Non-compliance with any of the bid submission requirements may result in the disqualification of the bid. For a bid to be considered responsive:

1. NO EXCEPTIONS MAY BE TAKEN TO THE NEW YORK CITY PURCHASE CONTRACT.

2. BIDS MUST BE SIGNED. ALL REQUIRED PRICING INFORMATION MUST BE INCLUDED IN THE C PAGES AND BE TYPED OR WRITTEN IN INK.

3. ALL REQUIRED SIGNATURES MUST BE IN INK.

4. ANY ALTERATION OF PRICE (INCLUDING CORRECTION FLUID/TAPE) MUST BE INITIALED IN INK.

OFFER AND ACCEPTANCE

1. FIRM OFFER

The Bidder proposes to furnish and deliver to the City the Goods required under this contract, to provide all labor and services and to perform all other work in connection therewith, all as specified by the terms and conditions of the Contract, based upon the unit prices or lump sum prices in the bid (C Pages).
A submitted bid constitutes an Offer to the City by Bidder to furnish and deliver the Goods or Services specified at the unit or lump sum prices bid. The prices set forth in the bid cannot be revoked and shall be effective until the award of the Contract, unless the bid is modified or withdrawn by written notice received in the office designated to receive bids before the time and date set for bid opening, or, after the expiration of 45 days from bid opening, in advance of an actual award.

The City reserves the right to make awards within 45 days after the date of bid opening during which period the bid may not be withdrawn. If, however, an award is not made within the 45 day period, a bid shall remain in effect until a contract is awarded or the Bidder delivers to the City written notice of the withdrawal of its bid in advance of an actual award.

2. CITY'S ACCEPTANCE

The City shall accept the Offer by mailing to the Bidder at the address specified in the bid a PURCHASE ORDER or NOTICE OF AWARD, for any of the items for which this bid is submitted. An acceptance of the Offer shall constitute a Contract between the City of New York and the Bidder to furnish and deliver to the City the items set forth in the PURCHASE ORDER or NOTICE OF AWARD at the unit prices or lump sum price specified in the bid subject to the terms set forth in the Contract as if said form of Contract had been signed by the Agency Chief Contracting Officer and the Bidder.

3. SUBMISSION OF BID

The completed Bid must be submitted in a sealed envelope on or before the time and at the place indicated in the Invitation for Bids. The envelope must be marked with the name of the person, firm or corporation presenting it, the bid opening date, bid number and bid title. The Bid and all other documents requiring signature must be signed, and the Bid signature on A-1 must be an original signature and notarized. The Bid shall be typewritten or written legibly in ink. The Bid shall be signed in ink. Erasures or alterations, including correction fluid/tape, shall be initialed by the signer in ink. The Bid must be properly signed by an authorized representative of the bidder.

4. FALSE STATEMENT

A false statement willfully or fraudulently made in connection with the bid and/or any of the forms completed and submitted to the City in connection with the bid, may result in the termination of any contract between the City and the Bidder. As a result, the Bidder may be barred from participating in future City contracts as well as be subject to possible criminal prosecution.

5. NEW YORK CITY PURCHASE CONTRACT

Bidder acknowledges receipt of and agrees to be bound by the terms and conditions of the New York City Purchase Contract referenced in the Table of Contents.

6. PROCUREMENT POLICY BOARD RULES

This contract is subject to the Rules of the Procurement Policy Board of the City of New York, as amended. In the event of a conflict between said Rules and a provision of this contract, the Rules shall take precedence. For information and updates on the Procurement Policy Board Rules, bidders are referred to www.nyc.gov/ppb, or the Mayor's Office of Contract Services at 212-788-0010.

7. BID PROCESS

The New York City Comptroller is charged with the audit of contracts in New York City. Any vendor who believes that there has been unfairness, favoritism or impropriety in the bid process should inform the Comptroller, Office of Contract Administration, One Centre Street, Room 835, New York, New York; telephone number (212) 669-2323.

8. PROMPT PAYMENT

The Prompt Payment provisions set forth in Chapter 4, Section 4-06 of the Procurement Policy Board Rules in effect at the time of this solicitation will be applicable to payment made by New York City agencies only under a contract resulting from this solicitation. The provisions require the payment to contractors of interest on payments made after the required payment date except as set forth in subdivisions c(3) and d(3), (4), (5) and (6) of Section 4-06 of the Rules.

The contractor must submit a proper invoice to receive payment, except where the contract provides that the contractor will be paid at predetermined intervals without having to submit an invoice for each scheduled payment.

Determinations of interest due will be made in accordance with the provisions of Section 4-06 of the Procurement Policy Board Rules and General Municipal Law §3-a.

Pursuant to the Prompt Payment provisions of the Procurement Policy Board Rules, the Division may designate this contract and the items specified herein as subject to a longer acceptance period to afford a practicable opportunity for testing, installation and inspection. For purposes of vendor payment in such case, the actual date of acceptance by the Division's Bureau of Quality Assurance shall substitute for the Invoice Received/Acceptance Date (IRA Date).

9. ELECTRONIC FUNDS TRANSFER

In accordance with Section 6-107.1 of the New York City Administrative Code, the Contractor agrees to accept payments under this Agreement from the City by electronic funds transfer. An electronic funds transfer is any transfer of funds, other than a transaction originated by check, draft or similar paper instrument, which is initiated through an electronic terminal, telephonic instrument or computer or magnetic tape so as to order, instruct or authorize a financial institution to debit or credit an account. Prior to the first payment made under this Agreement, Contractor shall designate one financial institution or other authorized payment agent and shall complete the attached "EFT Vendor Payment Enrollment Form" in order to provide the Commissioner of Finance with information necessary for Contractor to receive electronic funds transfer payments through the designated financial institution or authorized payment

agent. The crediting of the amount of a payment to the appropriate account on the books of a financial institution or other authorized payment agent designated by the Contractor shall constitute full satisfaction by the City for the amount of the payment under this agreement. The account information supplied by the Contractor to facilitate the electronic funds transfer shall remain confidential to the fullest extent provided by law.

The EFT Vendor Payment Enrollment Form available for download at:
http://www1.nyc.gov/site/finance/about/doing-business-with-nyc-direct-deposit-program.page

NYC EARNED SAFE AND SICK TIME ACT CONTRACT RIDER

(To supersede Section 4.06 of the January 2018 Appendix A and Section 35.5 of the March 2017 Standard Construction Contract and to be attached to other City contracts and solicitations)

A. *Introduction and General Provisions.*

1. The Earned Safe and Sick Time Act ("ESSTA"), codified at Title 20, Chapter 8 of the New York City Administrative Code, also known as the "Paid Safe and Sick Leave Law," requires covered employees (as defined in Admin. Code § 20-912) in New York City ("City") to be provided with paid safe and sick time. Contractors of the City or of other governmental entities may be required to provide safe and sick time pursuant to the ESSTA. The ESSTA is enforced by the City's Department of Consumer and Worker Protection ("DCWP"), which has promulgated 6 RCNY §§ 7-101 and 201 *et seq*. ("DCWP Rules").

2. The Contractor agrees to comply in all respects with the ESSTA and the DCWP Rules, and as amended, if applicable, in the performance of this agreement. The Contractor further acknowledges that such compliance is a material term of this agreement and that failure to comply with the ESSTA in performance of this agreement may result in its termination.

3. The Contractor must notify (with a copy to DCWP at ComplianceMonitoring@dcwp.nyc.gov) the Agency Chief Contracting Officer of the City Agency or other entity with whom it is contracting in writing within 10 days of receipt of a complaint (whether oral or written) or notice of investigation regarding the ESSTA involving the performance of this agreement. Additionally, the Contractor must cooperate with DCWP's guidance and must comply with DCWP's subpoenas, requests for information, and other document demands as set forth in the ESSTA and the DCWP Rules. More information is available at https://www1.nyc.gov/site/dca/about/paid-sick-leave-what-employers-need-to-know.page.

4. Upon conclusion of a DCWP investigation, Contractor will receive a findings letter detailing any employee relief and civil penalties owed. Pursuant to the findings, Contractor will have the opportunity to settle any violations and cure the breach of this agreement caused by failure to comply with the ESSTA either i) without a trial by entering into a consent order or ii) appearing before an impartial judge at the City's administrative tribunal. In addition to and notwithstanding any other rights and remedies available to the City, non-payment of relief and penalties owed pursuant to a consent order or final adjudication within 30 days of such consent order or final adjudication may result in the termination of this agreement without further opportunity to settle or cure the violations.

5. The ESSTA is briefly summarized below for the convenience of the Contractor. The Contractor is advised to review the ESSTA and the DCWP Rules in their entirety. The Contractor may go to www.nyc.gov/PaidSickLeave for resources for employers, such as Frequently Asked Questions, timekeeping tools and model forms, and an event calendar of upcoming presentations and webinars at which the Contractor can get more information about how to comply with the ESSTA and the DCWP Rules. The Contractor acknowledges that it is responsible for compliance with the ESSTA and the DCWP Rules notwithstanding any inconsistent language contained herein.

B. *Pursuant to the ESSTA and DCWP Rules: Applicability, Accrual, and Use.*

1. An employee who works within the City must be provided paid safe and sick time.[1] Employers with one hundred or more employees are required to provide 56 hours of safe and sick time for an employee each calendar year. Employers with fewer than one hundred employees are required to provide 40 hours of sick leave each calendar year. Employers must provide a minimum of one hour of safe and sick time for every 30 hours worked by an employee and compensation for such safe and sick time must be provided at the greater of the employee's regular hourly rate or the minimum wage at the time the paid safe or sick time is taken. Employers are not discouraged or prohibited from providing more generous safe and sick time policies than what the ESSTA requires.

2. Employees have the right to determine how much safe and sick time they will use, provided that an employer may set a reasonable minimum increment for the use of safe and sick time not to exceed four hours per day. For the use of safe time or sick time beyond the set minimum increment, an employer may set fixed periods of up to thirty minutes beyond the minimum increment. In addition, an employee may carry over up to 40 or 56 hours of unused safe and sick time to the following calendar year, provided that no employer is required to carry over unused paid safe and sick time if the employee is paid for such unused safe and sick time and the employer provides the employee with at least the legally required amount of paid safe and sick time for such employee for the immediately subsequent calendar year on the first day of such calendar year.

3. An employee entitled to safe and sick time pursuant to the ESSTA may use safe and sick time for any of the following:

a. such employee's mental illness, physical illness, injury, or health condition or the care of such illness, injury, or condition or such employee's need for medical diagnosis or preventive medical care;

b. such employee's care of a family member (an employee's child, spouse, domestic partner, parent, sibling, grandchild, or grandparent, the child or parent of an employee's spouse or domestic partner, any other individual related by blood to the employee, and any other individual whose close association with the employee is the equivalent of a family relationship) who has a mental illness, physical illness, injury or health condition or who has a need for medical diagnosis or preventive medical care;

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[1] Pursuant to the ESSTA, if fewer than five employees work for the same employer, and the employer had a net income of less than one million dollars during the previous tax year, such employer has the option of providing such employees uncompensated safe and sick time.

c. closure of such employee's place of business by order of a public official due to a public health emergency;

d. such employee's need to care for a child whose school or childcare provider has been closed due to a public health emergency; or

e. when the employee or a family member has been the victim of a family offense matter, sexual offense, stalking, or human trafficking:

1. to obtain services from a domestic violence shelter, rape crisis center, or other shelter or services program for relief from a family offense matter, sexual offense, stalking, or human trafficking;
2. to participate in safety planning, temporarily or permanently relocate, or take other actions to increase the safety of the employee or employee's family members from future family offense matters, sexual offenses, stalking, or human trafficking;
3. to meet with a civil attorney or other social service provider to obtain information and advice on, and prepare for or participate in any criminal or civil proceeding, including but not limited to, matters related to a family offense matter, sexual offense, stalking, human trafficking, custody, visitation, matrimonial issues, orders of protection, immigration, housing, discrimination in employment, housing or consumer credit;
4. to file a complaint or domestic incident report with law enforcement;
5. to meet with a district attorney's office;
6. to enroll children in a new school; or
7. to take other actions necessary to maintain, improve, or restore the physical, psychological, or economic, health or safety of the employee or the employee's family member or to protect those who associate or work with the employee.

4. An employer must not require an employee, as a condition of taking safe and sick time, to search for a replacement. However, where the employee's need for safe and sick time is foreseeable, an employer may require an employee to provide reasonable notice of the need to use safe and sick time. For an absence of more than three consecutive work days, an employer may require reasonable documentation that the use of safe and sick time was needed for a reason listed in Admin. Code § 20-914; and/or written confirmation that an employee used safe and sick time pursuant to the ESSTA. However, an employer may not require documentation specifying the nature of a medical condition, require disclosure of the details of a medical condition, or require disclosure of the details of a family offense matter, sexual offense, stalking, or human trafficking, as a condition of providing safe and sick time. Health information and information concerning family offenses, sexual offenses, stalking or human trafficking obtained solely due to an

employee's use of safe and sick time pursuant to the ESSTA must be treated by the employer as confidential. An employer must reimburse an employee for all reasonable costs or expenses incurred in obtaining such documentation for the employer.

5. An employer must provide to all employees a written policy explaining its method of calculating sick time, policies regarding the use of safe and sick time (including any permissible discretionary conditions on use), and policies regarding carry-over of unused time at the end of the year, among other topics. It must provide the policy to employees using a delivery method that reasonably ensures that employees receive the policy. If such employer has not provided its written policy, it may not deny safe and sick time to an employee because of non-compliance with such a policy.

6. An employer must provide a pay statement or other form of written documentation that informs the employee of the amount of safe/sick time accrued and used during the relevant pay period and the total balance of the employee's accrued safe/sick time available for use.

7. Safe and sick time to which an employee is entitled must be paid no later than the payday for the next regular payroll period beginning after the safe and sick time was used.

C. *Exemptions and Exceptions*. Notwithstanding the above, the ESSTA does not apply to any of the following:

1. an independent contractor who does not meet the definition of employee under N.Y. Labor Law § 190(2);

2. an employee covered by a valid collective bargaining agreement, if the provisions of the ESSTA are expressly waived in such agreement and such agreement provides a benefit comparable to that provided by the ESSTA for such employee;

3. an audiologist, occupational therapist, physical therapist, or speech language pathologist who is licensed by the New York State Department of Education and who calls in for work assignments at will, determines their own schedule, has the ability to reject or accept any assignment referred to them, and is paid an average hourly wage that is at least four times the federal minimum wage;

4. an employee in a work study program under Section 2753 of Chapter 42 of the United States Code;

5. an employee whose work is compensated by a qualified scholarship program as that term is defined in the Internal Revenue Code, Section 117 of Chapter 20 of the United States Code; or

6. a participant in a Work Experience Program (WEP) under N.Y. Social Services Law § 336-c.

D. *Retaliation Prohibited.* An employer shall not take any adverse action against an employee that penalizes the employee for, or is reasonably likely to deter the employee from or interfere with the employee exercising or attempting in good faith to exercise any right provided by the ESSTA. In addition, an employer shall not interfere with any investigation, proceeding, or hearing pursuant to the ESSTA.

E. *Notice of Rights.*

1. An employer must provide its employees with written notice of their rights pursuant to the ESSTA. Such notice must be in English and the primary language spoken by an employee, provided that DCWP has made available a translation into such language. Downloadable notices are available on DCWP's website at https://www1.nyc.gov/site/dca/about/Paid-Safe-Sick-Leave-Notice-of-Employee-Rights.page. The notice must be provided to the employees by a method that reasonably ensures personal receipt by the employee.

2. Any person or entity that willfully violates these notice requirements is subject to a civil penalty in an amount not to exceed $50.00 for each employee who was not given appropriate notice.

F. *Records*. An employer must retain records documenting its compliance with the ESSTA for a period of at least three years, and must allow DCWP to access such records in furtherance of an investigation related to an alleged violation of the ESSTA.

G. *Enforcement and Penalties.*

1. Upon receiving a complaint alleging a violation of the ESSTA, DCWP must investigate such complaint. DCWP may also open an investigation to determine compliance with the ESSTA on its own initiative. Upon notification of a complaint or an investigation by DCWP, the employer must provide DCWP with a written response and any such other information as DCWP may request. If DCWP believes that a violation of the ESSTA has occurred, it has the right to issue a notice of violation to the employer .

2. DCWP has the power to grant an employee or former employee all appropriate relief as set forth in Admin. Code § 20-924(d). Such relief may include, but is not limited to, treble damages for the wages that should have been paid; statutory damages for unlawful retaliation; and damages, including statutory damages, full compensation for wages and benefits lost, and reinstatement, for unlawful discharge. In addition, DCWP may impose on an employer found to have violated the ESSTA civil penalties not to exceed $500.00 for a first violation, $750.00 for a second violation within two years of the first violation, and $1,000.00 for each succeeding violation within two years of the previous violation. When an employer has a policy or practice of not providing or refusing to allow the use of safe and sick time to its employees, DCWP may seek penalties and relief on a per employee basis.

3. Pursuant to Admin. Code § 20-924.2, (a) where reasonable cause exists to believe that an employer is engaged in a pattern or practice of violations of the ESSTA, the Corporation Counsel may commence a civil action on behalf of the City in a court of competent jurisdiction by filing a complaint setting forth facts relating to such pattern or practice and requesting relief, which may include injunctive relief, civil penalties and any other appropriate relief. Nothing in § 20-924.2 prohibits DCWP from exercising its authority under section 20-924 or the Charter, provided that a civil action pursuant to § 20-924.2 shall not have previously been commenced.

H. *More Generous Polices and Other Legal Requirements.* Nothing in the ESSTA is intended to discourage, prohibit, diminish, or impair the adoption or retention of a more generous safe and sick time policy, or the obligation of an employer to comply with any contract, collective bargaining agreement, employment benefit plan or other agreement providing more generous safe and sick time. The ESSTA provides minimum requirements pertaining to safe and sick time and does not preempt, limit, or otherwise affect the applicability of any other law, regulation, rule, requirement, policy or standard that provides for greater accrual or use by employees of safe and sick leave or time, whether paid or unpaid, or that extends other protections to employees. The ESSTA may not be construed as creating or imposing any requirement in conflict with any federal or state law, rule or regulation.

WHISTLEBLOWER PROTECTION EXPANSION ACT RIDER

1. In accordance with Local Law Nos. 30-2012 and 33-2012, codified at sections 6-132 and 12-113 of the New York City Administrative Code, respectively,

   (a) Contractor shall not take an adverse personnel action with respect to an officer or employee in retaliation for such officer or employee making a report of information concerning conduct which such officer or employee knows or reasonably believes to involve corruption, criminal activity, conflict of interest, gross mismanagement or abuse of authority by any officer or employee relating to this Contract to (i) the Commissioner of the Department of Investigation. (ii) a member of the New York City Council, the Public Advocate, or the Comptroller, or (iii) the City Chief Procurement Officer, ACCO, Agency head, or Commissioner.

   (b) If any of Contractor's officers or employees believes that he or she has been the subject of an adverse personnel action in violation of subparagraph (a) of paragraph 1 of this rider, he or she shall be entitled to bring a cause of action against Contractor to recover all relief necessary to make him or her whole. Such relief may include but is not limited to: (i) an injunction to restrain continued retaliation, (ii) reinstatement to the position such employee would have had but for the retaliation or to an equivalent position, (iii) reinstatement of full fringe benefits and seniority rights, (iv) payment of two times back pay, plus interest, and (v) compensation for any special damages sustained as a result of the retaliation, including litigation costs and reasonable attorney's fees.

   (c) Contractor shall post a notice provided by the City in a prominent and accessible place on any site where work pursuant to the Contract is performed that contains information about:

      (i) how its employees can report to the New York City Department of Investigation allegations of fraud, false claims, criminality or corruption arising out of or in connection with the Contract; and
      (ii) the rights and remedies afforded to its employees under New York City Administrative Code sections 7-805 (the New York City False Claims Act) and 12-113 (the Whistleblower Protection Expansion Act) for lawful acts taken in connection with the reporting of allegations of fraud, false claims, criminality or corruption in connection with the Contract.

(d) For the purposes of this rider, "adverse personnel action" includes dismissal, demotion, suspension, disciplinary action, negative performance evaluation, any action resulting in loss of staff, office space, equipment or other benefit, failure to appoint, failure to promote, or any transfer or assignment or failure to transfer or assign against the wishes of the affected officer or employee.

(e) This rider is applicable to all of Contractor's subcontractors having subcontracts with a value in excess of $100,000; accordingly, Contractor shall include this rider in all subcontracts with a value in excess of $100,000.

2. Paragraph 1 is not applicable to this Contract if it is valued at $100,000 or less. Subparagraphs (a), (b), (d), and (e) of paragraph 1 are not applicable to this Contract if it was solicited pursuant to a finding of an emergency. Subparagraph (c) of paragraph 1 is neither applicable to this Contract if it was solicited prior to October 18, 2012 nor if it is a renewal of a contract executed prior to October 18, 2012.

NOTICE TO BIDDERS, PROPOSERS, CONTRACTORS, AND RENEWAL CONTRACTORS

This contract includes a provision concerning the protection of employees for whistleblowing activity, pursuant to New York City Local Law Nos. 30-2012 and 33-2012, effective October 18, 2012 and September 18, 2012, respectively. The provisions apply to contracts with a value in excess of $100,000.

Local Law No. 33-2012, the Whistleblower Protection Expansion Act ("WPEA"), prohibits a contractor or its subcontractor from taking an adverse personnel action against an employee or officer for whistleblower activity in connection with a City contract; requires that certain City contracts include a provision to that effect; and provides that a contractor or subcontractor may be subject to penalties and injunctive relief if a court finds that it retaliated in violation of the WPEA. The WPEA is codified at Section 12-113 of the New York City Administrative Code.

Local Law No. 30-2012 requires a contractor to prominently post information explaining how its employees can report allegations of fraud, false claims, criminality, or corruption in connection with a City contract to City officials and the rights and remedies afforded to employees for whistleblowing activity. Local law No. 30-2012 is codified at Section 6-132 of the New York City Administrative Code.

NOTICE TO BIDDERS

As of March 2013 the City has implemented a new web based subcontractor reporting system through the City's Payee Information Portal (PIP), available at www.nyc.gov/pip. In order to use the new system, a PIP account will be required. Detailed instructions on creating a PIP account and using the new system are also available at that site. Additional assistance with PIP may be received by emailing the Financial Information Services Agency Help Desk at pip@fisa.nyc.gov.

In order to obtain subcontractor approval under section 3.02 of Appendix A or Article 17 of the Standard Construction Contract and PPB Rule § 4-13 Contractor is required to list the subcontractor in the system. For each subcontractor listed, Contractor is required to provide the following information: maximum contract value, description of subcontractor work, start and end date of the subcontract and identification of the subcontractor's industry. Thereafter, Contractor will be required to report in the system the payments made to each subcontractor within 30 days of making the payment. If any of the required information changes throughout the term of the contract, Contractor will be required to revise the information in the system.

Failure of the Contractor to list a subcontractor and/or to report subcontractor payments in a timely fashion may result in the Agency declaring the Contractor in default of the Contract and will subject Contractor to liquidated damages in the amount of $100 per day for each day that the Contractor fails to identify a subcontractor along with the required information about the subcontractor and/or fails to report payments to a subcontractor, beyond the time frames set forth herein or in the notice from the City. For construction contracts, the provisions of Article 15 of the Standard Construction Contract shall govern the issue of liquidated damages.

Contractor hereby agrees to these provisions.

REPORT

CORRUPTION, FRAUD, UNETHICAL CONDUCT

RELATING TO A NYC-FUNDED CONTRACT
OR PROJECT

CALL THE NYC DEPARTMENT OF INVESTIGATION

212-825-5959

DOI CAN ALSO BE REACHED BY MAIL OR IN PERSON AT:

New York City Department of Investigation (DOI)
80 Maiden Lane, 17th floor
New York, New York 10038
Attention: COMPLAINT BUREAU

OR FILE A COMPLAINT ON-LINE AT:
www.nyc.gov/doi

All communications are confidential

THE LAW PROTECTS EMPLOYEES OF CITY CONTRACTORS WHO REPORT CORRUPTION

- Any employee of a City contractor, or subcontractor of the City, or a City contractor with a contract valued at more than $100,000 is protected under the law from retaliation by his or her employer if the employee reports wrongdoing related to the contract to the DOI.
- **To be protected by this law, an employee must report to DOI – or to certain other specified government officials –** information about fraud, false claims, corruption, criminality, conflict of interest, gross mismanagement, or abuse of authority relating to a City contract valued at more than $100,000.
- Any employee who makes such a report and who believes he or she has been dismissed, demoted, suspended, or otherwise subject to an adverse personnel action because of that report is entitled to bring a lawsuit against the contractor and recover damages

← Scan the QR Code at Left to File a Complaint

PIN: 8572600092

SPECIAL INSTRUCTION TO BIDDERS
CONTRACT SPECIFIC TERMS AND CONDITIONS

CITY OF NEW YORK
DEPARTMENT OF CITYWIDE ADMINISTRATIVE SERVICES
DIVISION OF MUNICIPAL SUPPLY SERVICES
MUNICIPAL BUILDING, NEW YORK, NY 10007

BID NUMBER: 2600092.

BID TITLE: APPARATUS, 2000GPM PUMPER - FDNY

ALL INQUIRIES REGARDING THIS BID ARE TO BE DIRECTED TO:
PURCHASING AGENT: CHRISTOPHER O. LIKOKAS AT (212) 386-0424

VENDORS WILL BE SEEN BY APPOINTMENT ONLY

TYPE OF CONTRACT: THIS IS A "C" CONTRACT (REQUIREMENT CONTRACT) AS DEFINED IN THE NEW YORK CITY PURCHASE CONTRACT, PART II, PARAGRAPH 2.8, OR, IF APPLICABLE, THE NEW YORK CITY SERVICE CONTRACT, PART II, PARAGRAPH 2.6.

IN ACCORDANCE WITH THE NEW YORK CITY PURCHASE CONTRACT, PART II, SECTION 5.6 - ALTERNATE PRODUCTS - OR, IF APPLICABLE, THE NEW YORK CITY SERVICE CONTRACT, PART II, SECTION 5.5 - ALTERNATE SERVICES:

A BIDDER MAY NOT BID MULTIPLE PRODUCTS OR SERVICES FOR ONE BID ITEM. IF A BIDDER OFFERS MORE THAN ONE, ONLY THE LOWEST PRICE OFFERING WILL BE CONSIDERED. IF THE PRICE OFFERINGS ARE IDENTICAL, ONLY THE FIRST ITEM LISTED WILL BE CONSIDERED.

PRODUCTS OFFERED SHOULD BE MANUFACTURED FROM RECYCLED, RECOVERED, OR ENVIRONMENTALLY PREFERABLE MATERIALS TO THE MAXIMUM EXTENT POSSIBLE PROVIDED THAT THE PRODUCT MEETS ALL SPECIFICATIONS AND PERFORMANCE CRITERIA AND PROMOTES ECONOMICALLY ADVANTAGEOUS LIFE CYCLE COSTS.

ALL ITEMS AWARDED UNDER THIS CONTRACT MUST BE IN COMPLIANCE WITH THE NEW YORK CITY MAYOR'S EXECUTIVE ORDER NO. 113 (1988), "PROHIBITION OF THE PURCHASE OF PRODUCTS MADE OF POLYSTYRENE FOAM."

WHENEVER PRACTICABLE, PACKAGING SHALL ELIMINATE WASTE; REDUCE WASTE BY WEIGHT, VOLUME AND TOXICITY WITHOUT SUBSTITUTING A MATERIAL THAT IS NOT RECYCLABLE; AND SHOULD CONTAIN RECYCLED CONTENT.

THE CITY MAY, IN IT'S SOLE DISCRETION, DISSAPROVE ANY PROVIDER(S) OF GOODS AND/OR SERVICES USED BY PRIME VENDOR/CONTRACTOR TO FULFILL ANY CONTRACT RESULTING FROM THIS SOLICITATION. AS USED IN THIS SECTION, A "PROVIDER" SHALL INCLUDE, BUT NOT BE LIMITED TO, A SUBCONTRACTOR, A SUPPLIER OF GOODS AND/OR SERVICES, AND THE MANUFACTURER(S) OF ANY GOODS BEING PROCURED UNDER SUCH CONTRACT. A VENDOR WHO IS AWARDED A CONTRACT PURSUANT TO THIS SOLICITATION MAY, AT THE CITY'S OPTION, BE ASKED TO PROVIDE TO THE CITY A LIST OF PROVIDERS AND, FOR EACH PROVIDER, ITS ADDRESS AND THE NAME OF ITS PRINCIPALS.

IN ADDITION, THE VENDOR MAY BE ASKED TO PROVIDE, ANY OTHER INFORMATION DEEMED NECESSARY BY THE CITY TO DETERMINE WHETHER A PROVIDER SHALL BE DISAPPROVED. FURTHERMORE, DURING THE TERM OF SUCH CONTRACT, THE VENDOR MAY BE ASKED TO SUPPLY TO THE CITY ALL SUCH INFORMATION REGARDING ANY ADDITIONAL PROVIDER(S) IT INTENDS TO USE.

THE CITY RESERVES THE RIGHT TO WITHDRAW ANY APPROVAL IT HAS GIVEN, WHERE SUCH WITHDRAWAL OF APPROVAL IS BASED ON INFORMATION RECEIVED SUBSEQUENT TO THE APPROVAL. THE VENDOR MAY NOT USE A PROVIDER THAT HAS BEEN DISAPPROVED BY THE CITY OR WHOSE APPROVAL HAS BEEN WITHDRAWN.

PURSUANT TO PROCUREMENT POLICY BOARD RULE 2-08(F)(2),THE CONTRACTOR WILL BE CHARGED A FEE FOR THE ADMINISTRATION OF THE PASSPORT SYSTEM, INCLUDING THE VENDOR NAME CHECK PROCESS, IF A VENDOR NAME CHECK REVIEW IS REQUIRED TO BE CONDUCTED BY THE DEPARTMENT OF INVESTIGATION. THE CONTRACTOR SHALL ALSO BE REQUIRED TO PAY THE APPLICABLE REQUIRED FEES FOR ANY OF ITS SUB-CONTRACTORS FOR WHICH VENDOR NAME CHECK REVIEWS ARE REQUIRED. THE FEE(S) WILL BE DEDUCTED FROM PAYMENTS MADE TO THE CONTRACTOR UNDER THE CONTRACT.

FOR CONTRACTS WITH AN ESTIMATED VALUE OF LESS THAN OR EQUAL TO $1,000,000, THE FEE WILL BE $175.

FOR CONTRACTS WITH AN ESTIMATED VALUE OF GREATER THAN $1,000,000, THE FEE WILL BE $350.

INTENT/SCOPE:
THE PURPOSE OF THIS CONTRACT IS TO PROCURE 2000 GPM PUMPER APPARATUSES FOR THE CITY OF NEW YORK. THE SPONSORING AGENCY IS THE FIRE DEPARTMENT OF NEW YORK (FDNY).

PERIOD OF CONTRACT:
THE PERFORMANCE PERIOD OF THIS CONTRACT SHALL BE:

FROM: APRIL 10, 2027
TO: APRIL 9, 2032

THE CITY RESERVES THE RIGHT, PRIOR TO CONTRACT REGISTRATION, TO CHANGE (ADJUST) THE START AND END DATES AS NOTED ABOVE. THE CITY FURTHER RESERVES THE RIGHT TO CHANGE (ADJUST) THESE DATES AFTER CONTRACT REGISTRATION TO REFLECT THE ACTUAL REGISTRATION DATE.

NOTE:
VENDORS INTENDING TO DO BUSINESS WITH THE CITY OF NEW YORK SHOULD COMPLETE AN ONLINE PROCUREMENT AND SOURCING SOLUTIONS PORTAL (PASSPORT) DISCLOSURE FILING (FORMERLY KNOWN AS VENDEX) TO BE CONSIDERED FOR AN AWARD. PAPER SUBMISSIONS INCLUDING CERTIFICATIONS OF NO CHANGE (CNC) TO EXISTING VENDEX SUBMISSIONS, WILL NOT BE ACCEPTED IN LIEU OF COMPLETED ONLINE FILINGS. PLEASE VISIT NYC.GOV/PASSPORT FOR MORE INFORMATION.

MOCS OR THE AGENCY MAY REQUEST THAT THE VENDOR START SUBMITTING INVOICES RELATING TO THIS AGREEMENT THROUGH THE CITY'S PASSPORT SYSTEM. UPON RECEIPT OF SUCH REQUEST FROM THE CITY, THE VENDOR AGREES THAT IT WOULD COMMENCE SUBMITTING INVOICES RELATING TO THIS AGREEMENT THROUGH THE PASSPORT SYSTEM. VENDOR TRAINING WILL BE MADE AVAILABLE TO PROCESS INVOICES IN PASSPORT.

THE CITY OF NEW YORK UTILIZES MULTIPLE SYSTEMS FOR DISPATCHING ORDERS AND RECEIVING INVOICES. PLEASE BE AWARE THAT THE VENDOR IS RESPONSIBLE FOR RECEIVING ORDERS AND SUBMITTING INVOICES UTILIZING THE SYSTEM(S) DESIGNATED FOR USE IN A PARTICULAR AGREEMENT AND SHOULD REACH OUT TO THE MANAGING AGENCY FOR INSTRUCTIONS ON WHICH SYSTEM WILL BE UTILIZED FOR ORDERING AND PAYMENT.

CONTRACT QUANTITIES:
QUANTITIES SPECIFIED HEREIN ARE ESTIMATES BASED ON EXPERIENCE. THE QUANTITIES TO BE ORDERED ARE ONLY THOSE NEEDED BY THE AGENCY.

THE CITY WILL NOT BE COMPELLED TO ORDER ANY SPECIFIC QUANTITY OF ANY ITEM NOR WILL THE CITY BE LIMITED TO THE QUANTITY SPECIFIED.

BASIS FOR AWARD

THE AWARD FOR THIS SOLICITATION WILL BE MADE TO THE LOWEST RESPONSIBLE AND RESPONSIVE BIDDER MEETING OR EXCEEDING REQUIREMENTS OF THIS SOLICITATION.

CONTRACT DOCUMENTS/RIDERS:
IN THE EVENT OF ANY DISCREPANCY OR AMBIGUITY AMONG THE CONTRACT DOCUMENTS AND ANY ATTACHED SPECIFICATION(S), THE CONTRACT DOCUMENTS SHALL SUPERSEDE THE ATTACHED SPECIFICATION(S), UNLESS OTHERWISE STATED IN THE CONTRACT DOCUMENTS.
IT IS INCUMBENT ON THE BIDDER TO IDENTIFY AND ADVISE THE OFFICE OF CITYWIDE PROCUREMENT (OCP) OF ANY DISCREPANCY OR AMBIGUITY BETWEEN THE CONTRACT DOCUMENTS/RIDERS AND SPECIFICATION(S) SO THEY CAN BE RESOLVED PRIOR TO BID OPENING.
WHEN THERE IS A VARIATION IN THE DESCRIPTION OF AN ITEM AND THE SPECIFICATION OR MODEL NUMBER THE DESCRIPTION CONTAINED IN THE SPECIFICATION WILL TAKE PRECEDENCE.

LAWS/REGULATIONS:

VEHICLES SUPPLIED SHALL MEET OR EXCEED ALL APPLICABLE FEDERAL, STATE AND LOCAL EMISSION STANDARDS. VEHICLE SUPPLIED SHALL CONFORM TO ALL APPLICABLE FEDERAL, STATE AND LOCAL LAWS AND/OR REGULATIONS FOR VEHICLES IN ITS CLASS.

THE PRICE BID BY VENDOR MUST INCLUDE THE COST OF ALL KNOWN TECHNOLOGIES REQUIERED TO MEET CURRENT REGULATIONS AND THE COST OF ANY TECHNOLOGY ALREADY DEVELOPED TO MEET FUTURE REQUIREMENTS.

BIDDER CERTIFICATE
EACH BIDDER MUST INDICATE THE MANNER IN WHICH THE BID SPECIFICATION(S) WILL BE MET BY COMPLETELY AND COMPETENTLY FILLING OUT THE "BIDDERS CERTIFICATE" ATTACHED TO OR FOUND WITHIN THE BID SPECIFICATION(S) AND SUBMITTING IT WITH THE BID PROPOSAL.
THE BIDDERS CERTIFICATE SHALL BECOME AN INTEGRAL PART OF THIS CONTRACT.
THERE SHALL BE NO SUBSTITUTIONS OR MODIFICATIONS TO THE BID SPECIFICATIONS WITHOUT THE WRITTEN CONSENT OF THE OFFICE OF CITYWIDE PROCUREMENT AND END USER

LITERATURE:
DESCRIPTIVE LITERATURE AND COMPLETE PRODUCT SPECIFICATIONS FOR EACH ITEM OFFERED SHOULD ACCOMPANY EACH BID. BIDDER MAY BE REQUIRED TO SUPPLY ADDITIONAL PRODUCT INFORMATION FOR ITEMS OFFERED OR ITS COMPONENTS.

QUALIFICATIONS OF BIDDERS:
BIDS WILL BE ACCEPTED ONLY FROM MANUFACTURERS OR THEIR AUTHORIZED DISTRIBUTORS WHO HAVE BEEN ACTIVELY ENGAGED IN THE SALE OR MANUFACTURE OF VEHICLES AND/OR EQUIPMENT FOR A MINIMUM OF FIVE(5) YEARS.

DELIVERY CHARGES:
DELIVERY CHARGES ARE TO BE INCLUDED IN BID PRICE. ITEMS PROCURED VIA THIS CONTRACT SHALL BE DELIVERED FREIGHT ON BOARD (FOB) DESTINATION.

PLANS, PILOT AND DELIVERY TERM:

PLEASE REFER TO ATTACHED AGENCY SPECIFICATION FOR THE BID/CONTRACT SPECIFIC TERMS FOR THE ABOVE.

LIQUIDATED DAMAGES:

PLEASE REFER TO ATTACHED AGENCY SPECIFICATION FOR THE BID/CONTRACT SPECIFIC LIQUIDATED DAMAGES TERMS.

NOTE:

SHOULD AGENCY OTHER THAN THE ONE THAT REFERENCED ON THE SPECIFICATION PLACE ORDERS UTLIZING THIS CONTRACT, THE DELIVERY INSTRUCTIONS MIGHT BE MODIFIED TO MEET THAT AGENCY NEED.

WARRANTY:

PLEASE REFER TO ATTACHED AGENCY SPECIFICATION FOR WARRANTY TERMS APPLICABLE TO THIS BID/CONTRACT.

INVOICES

INVOICES SHALL BE PRESENTED TO THE ADDRESS/AGENCY INDICATED ON A PURCHASE ORDER.

THE PURCHASE ORDER NUMBER MUST BE CLEARLY IDENTIFIED ON EACH DOCUMENT, OTHERWISE THE DOCUMENTS MIGHT BE RETURNED TO VENDOR FOR CORRECTIONS.

TITLE AND RISK OF LOSS WILL REMAIN THE CONTRACTOR'S UNTIL THE COMPLETE UNIT IS DELIVERED AND ACCEPTED BY THE CITY.

UPON DELIVERY VENDOR SHALL PROVIDE ALL FORMS REQUIRED BY THE NEW YORK STATE DEPARTMENT OF MOTOR VEHICLES TO REGISTER AND OBTAIN THE TITLE OF THE VEHICLE.

UNLESS OTHERWISE INSTRUCTED, THE AGENCY NAMED ON THE TITLE AND REGISTRATION FORMS WILL BE THE SAME AS THE AGENCY NAMED ON THE PURCHASE ORDER.

INSPECTION:
INSPECTION OF ALL CONSTRUCTION OR EQUIPMENT SHALL BE PERFORMED BY THE OFFICE OF CITYWIDE PROCUREMENT'S BUREAU OF QUALITY ASSURANCE (BQA) AND REPRESENTATIVES OF THE PROCURING AGENCY. INSPECTION MAY TAKE PLACE AT THE FINAL POINT OF DELIVERY OR AT THE CONTRACTOR'S OR A SUBCONTRACTOR'S FACILITY AS DESIGNATED BY THE BUREAU OF QUALITY ASSURANCE.

THE CITY REPRESENTATIVE FOR BQA SHALL BE PERMITTED FULL ACCESS TO ALL PARTS OF THE PLANT WHEN AND WHERE WORK ON THIS CONTRACT IS BEING PERFORMED. REPRESENTATIVES FOR BQA SHALL BE NOTIFIED OF AND GIVEN AN OPPORTUNITY TO BE PRESENT AT ALL TESTS OF MATERIAL OR WORKMANSHIP AND SHALL BE PROVIDED WITH ALL NECESSARY FACILITIES IN EXAMINING AND MEASURING ALL PARTS AND EQUIPMENT TESTS. THE EXPENSE OF ALL TESTS (LABORATORY, SHOP AND FIELD) SHALL BE BORNE BY THE CONTRACTOR AND BE INCLUDED IN UNIT PRICE.

NO FINAL ACCEPTANCE SHALL BE MADE BY THE CITY UNLESS ACCEPTANCE HAS BEEN MADE BY THE OFFICE OF CITYWIDE PROCUREMENT BUREAU OF QUALITY ASSURANCE AND THE PROCURING AGENCY, AFTER TEST AND INSPECTION

CONTRACTOR SHALL NOTIFY THE BUREAU OF QUALITY ASSURANCE AND THE PROCURING AGENCY AS TO WHEN ANY MATERIAL WILL BE READY FOR INSPECTION IN THE FIELD. SUCH NOTICE SHALL BE GIVEN A MINIMUM OF FOURTEEN (14) DAYS IN ADVANCE OF THE REQUESTED INSPECTION DATE.

DCAS INSPECTION TEAM CONTACTS:
ANAND VARGHESE- BQA AUTOMOTIVE SUPERVISOR
TEL: 212 386-0402 E-MAIL: ANVARGHESE@DCAS.NYC.GOV

DAN CALLES- BQA EXEC. DIRECTOR
TEL: 212 386-0262 E-MAIL: DCALLES@DCAS.NYC.GOV

ANY RECEIPT GIVEN TO THE CONTRACTOR BY A REPRESENTATIVE OF THE PROCURING AGENCY AT THE TIME OF DELIVERY SHALL NOT CONSTITUTE FINAL OR OFFICIAL CITY ACCEPTANCE.

INSPECTION EXPENSE:

WITHIN 30 DAYS OF RECEIPT OF THE PURCHASE ORDER, THE SUCCESSFUL VENDOR MUST ISSUE A CHECK IN THE AMOUNT OF $30,000.00 TO THE DEPARTMENT OF CITYWIDE ADMINISTRATIVE SERVICES FOR INSPECTION EXPENSES. THIS IS TO COVER TRAVELING EXPENSES OF THE CITY'S REPRESENTATIVES. THE VENDOR MUST INCLUDE THIS AMOUNT ON THEIR FIRST INVOICE FOR REIMBURSEMENT. MAIL CHECK TO:
DEPARTMENT OF CITYWIDE ADMINISTRATIVE SERVICES
DIVISION OF MUNICIPAL SUPPLY SERVICES
BUREAU OF QUALITY ASSURANCE, 18TH FLOOR
1 CENTRE STREET
NEW YORK, N.Y. 10007

PRICE ADJUSTMENT

FOR THE TERM OF THE CONTRACT AN ADJUSTMENT IN PRICE WILL BE PERMITTED IF MANUFACTURER'S PRICE DECREASE OR INCREASE TAKES EFFECT DURING THE SUBSEQUENT MODEL YEARS. SUITABLE DOCUMENTATION SHALL BE FURNISHED TO OFFICE OF CITYWIDE PROCUREMENT TOGETHER WITH THE OFFICIAL REQUEST.

NO PRICE ADJUSTMENT BECOMES EFFECTIVE WITHOUT THE PRIOR WRITTEN APPROVAL BY THE OFFICE OF CITYWIDE PROCUREMENT.

AN ADJUSTMENT IN PRICE MAY BE ALSO PERMITTED IF A GOVERNMENT MANDATED PROGRAM IS INSTITUTED. DOCUMENTATION OF NEW STANDARD MUST BE SENT TO OFFICE OF CITYWIDE PROCUREMENT.

VENDOR MUST INCLUDE A CERTIFICATION FROM THE REGULATORY AUTHORITY THAT THE PROPOSED SOLUTION BRINGS THE VEHICLES IN COMPLIANCE AND THE DOCUMENTATION VERIFYING THE COST OF NEW EQUIPMENT, INCLUDING INSTALLATION. THE CITY WILL PAY A MAXIMUM OF TEN PERCENT (10%) MARK-UP ABOVE COST OF THE EQUIPMENT, INCLUDING INSTALLATION.

IF APPROVED, THE EFFECTIVE DATE OF PRICE INCREASE WILL BE AS INDICATED IN CONTRACT MODIFICATION LETTER.

THE REQUEST FOR THE PRICE MODIFICATION AND ALL SUPPORTING DOCUMENTATION SHALL BE SENT IN WRITING TO:
AGENCY CHIEF CONTRACTING OFFICER (ACCO)
OFFICE OF CITYWIDE PROCUREMENT
1 CENTRE STREET, 18TH FLOOR NEW YORK, NY 10007

A MINIMUM OF 30 DAYS ADVANCE NOTICE IS REQUIRED FOR ALL SUCH REQUESTS. THE DETERMINATION AND APPROVAL WILL BE AT SOLE DISCRETION OF THE AGENCY CHIEF CONTRACTING OFFICER.

ADDITIONAL OPTIONS:
VEHICLES/EQUIPMENT MAY BE ORDERED WITH ADDITIONAL ORIGINAL EQUIPMENT MANUFACTURER (OEM) AND/OR NON-OEM OPTIONS.

OEM OPTIONS INSTALLED SHALL BE AT DEALER COST, NON-OEM OPTIONS INSTALLED SHALL BE AT DEALER COST PLUS A MARKUP NOT EXCEEDING TEN PERCENT.

OEM AND NON-OEM OPTIONS SHALL NOT RESULT IN CHANGE OF CHASSIS OR OTHER MATERIAL CHANGE.

GROSS VEHICLE WEIGHT RATING SHALL REMAIN WITHIN THE RANGE ALLOWED FOR THE CLASS OF CONTRACTED VEHICLE.

ANY AND ALL ADDITIONAL OPTIONS PROVIDED SHALL BE COVERED BY THE WARRANTY TERMS AND CONDITIONS AS STIPULATED IN THE ORIGINAL AGREEMENT.

SPECIAL TERMS AND CONDITIONS

DURING INSTANCES WHERE THE CITY IS ADDING OEM OPTIONS TO AN AUTO/EQUIPMENT/MACHINERY BUILD, THE CONTRACTOR IS REQUIRED TO PROVIDE WITH THEIR QUOTE AN OFFICIAL OEM CORPORATE APPROVED PRICELIST THAT DOES NOT CONTAIN ANY DEALER ENDORSEMENT OR LOGO, WITH THE ITEM DESCRIPTIONS, PART NUMBERS, AND PRICE HIGHLIGHTED FOR VERIFICATION AND AUDITING PURPOSES. THIS PRICELIST SHALL BE THE SAME PRICELIST PROVIDED TO ALL DEALERS WITHIN THAT APPROPRIATE REGION OR TERRITORY.

DURING INSTANCES WHERE THE CITY IS ADDING NON-OEM OPTIONS TO AN AUTO/EQUIPMENT/MACHINERY BUILD, THE CONTRACTOR IS REQUIRED TO PROVIDE THE SUPPLIERS INVOICE FOR THE ITEMS PURCHASED ALONG WITH THE MANUFACTURERS LABOR GUIDE WITH ALL THE APPLICABLE LABOR TIME TOTALS FOR THE ITEMS INSTALLED EITHER CIRCLED OR HIGHLIGHTED FOR VERIFICATION AND AUDITING PURPOSES. THE INVOICE MUST INCLUDE ITEM DESCRIPTIONS, PART NUMBERS, ALONG WITH THE BREAKDOWN OF THE LABOR COST(HOURLY LABOR RATE AND TIME) FOR EACH ITEM. LABOR SHALL NOT EXCEED THE INDUSTRY'S ALLOWABLE ALLOTTED TIME INDICATED IN THE MANUFACTURE'S CURRENT LABOR GUIDE.

THE CITY RESERVES THE RIGHT TO REQUEST ANY ADDITIONAL INFORMATION IT DEEMS NECESSARY FOR PRICE VERIFICATION.

USAGE REPORT:
UPON REQUEST BY THE OFFICE OF CITYWIDE PROCUREMENT, A USAGE REPORT DETAILING PROCURING AGENCIES, QUANTITIES ORDERED, DESCRIPTION AND DOLLAR VALUE SHALL BE SUBMITTED WITHIN SEVEN (7) BUSINESS DAYS OF THE RECEIPT OF WRITTEN REQUEST.

THE USAGE REPORT SHALL BE SENT IN THE FORMAT AND TO THE ADDRESS AS SPECIFIED BY THE REQUESTING AGENCY.

IMPORTANT REMINDER:

QUESTIONS/CONCERNS REGARDING THIS SOLICITATION MUST BE RECEIVED, IN WRITING, NO LATER THAN SEVENTY-TWO (72) HOURS PRIOR TO BID OPENING DATE. PLEASE EMAIL YOUR QUESTIONS TO CHRISTOPER LIKOKAS AT CLIKOKAS@DCAS.NYC.GOV, MELINE HATCHIKIAN AT MHATCHIKIAN@DCAS.NYC.GOV OR MASHA RUDINA AT MRUDINA@DCAS.NYC.GOV

THIS CONTRACT IS SUBJECT TO ONE OR MORE OF THE FOLLOWING LOCAL LAWS AND ANY RULES ENACTED PURSUANT TO SUCH LOCAL LAWS: LOCAL LAW NUMBER 118 OF 2005, LOCAL LAW NUMBER 119 OF 2005, LOCAL LAW NUMBER 120 OF 2005 AND LOCAL LAW NUMBER 121 OF 2005, IF APPLICABLE.

THE VENDOR WILL BE REQUIRED TO PROVIDE A REPORT, FOR ANY PERIOD REQUESTED BY AN AGENCY, ON PRODUCTS SPECIFIED BY OR FOR THE CITY THAT APPEAR IN THE NEW YORK CITY EPP MINIMUM STANDARDS FOR GOODS. THE REPORT MUST CONTAIN THE FOLLOWING INFORMATION: AGENCY, ITEM DESCRIPTION, QUANTITY ORDERED AND DOLLAR VALUE OF ALL ITEMS ORDERED OVER THE PERIOD REQUESTED, IF APPLICABLE.

COPYRIGHTS
ANY REPORTS, DOCUMENTS, DATA, PHOTOGRAPHS, DELIVERABLES, AND/OR OTHER MATERIALS PRODUCED PURSUANT TO THIS CONTRACT, AND ANY AND ALL DRAFTS AND/OR OTHER PRELIMINARY MATERIALS IN ANY FORMAT RELATED TO SUCH ITEMS PRODUCED PURSUANT TO THIS CONTRACT, SHALL UPON THEIR CREATION BECOME THE EXCLUSIVE PROPERTY OF THE CITY.

ANY REPORTS, DOCUMENTS, DATA, PHOTOGRAPHS, DELIVERABLES, AND/OR OTHER MATERIALS PROVIDED PURSUANT TO THIS CONTRACT ("COPYRIGHTABLE MATERIALS") SHALL BE CONSIDERED "WORK-MADE-FOR -HIRE" WITHIN THE MEANING AND PURVIEW OF THE UNITED STATES COPYRIGHT ACT, 17 U.S.C. § 101, AND

THE CITY SHALL BE THE COPYRIGHT OWNER THEREOF AND OF ALL ASPECTS, ELEMENTS AND COMPONENTS THEREOF IN WHICH COPYRIGHT PROTECTION MIGHT EXIST. TO THE EXTENT THAT THE COPYRIGHTABLE MATERIALS DO NOT QUALIFY AS "WORK-MADE-FOR-HIRE," THE CONTRACTOR HEREBY IRREVOCABLY TRANSFERS, ASSIGNS AND CONVEYS EXCLUSIVE COPYRIGHT OWNERSHIP IN AND TO THE COPYRIGHTABLE MATERIALS TO THE CITY, FREE AND CLEAR OF ANY LIENS, CLAIMS, OR OTHER ENCUMBRANCES. THE CONTRACTOR SHALL RETAIN NO COPYRIGHT OR INTELLECTUAL PROPERTY INTEREST IN THE COPYRIGHTABLE MATERIALS. THE COPYRIGHTABLE MATERIALS SHALL BE USED BY THE CONTRACTOR FOR NO PURPOSE OTHER THAN IN THE PERFORMANCE OF THIS CONTRACT WITHOUT THE PRIOR WRITTEN PERMISSION OF

THE CITY. THE DEPARTMENT MAY GRANT THE CONTRACTOR A LICENSE TO USE THE COPYRIGHTABLE MATERIALS ON SUCH TERMS AS DETERMINED BY THE DEPARTMENT AND SET FORTH IN THE LICENSE.

THE CONTRACTOR ACKNOWLEDGES THAT THE CITY MAY, IN ITS SOLE DISCRETION, REGISTER COPYRIGHT IN THE COPYRIGHTABLE MATERIALS WITH THE UNITED STATES COPYRIGHT OFFICE OR ANY OTHER GOVERNMENT AGENCY AUTHORIZED TO GRANT COPYRIGHT REGISTRATIONS. THE CONTRACTOR SHALL FULLY COOPERATE IN THIS EFFORT, AND AGREES TO PROVIDE ANY AND ALL DOCUMENTATION NECESSARY TO ACCOMPLISH THIS.

THE CONTRACTOR REPRESENTS AND WARRANTS THAT THE COPYRIGHTABLE MATERIALS: (I) ARE WHOLLY ORIGINAL MATERIAL NOT PUBLISHED ELSEWHERE (EXCEPT FOR MATERIAL THAT IS IN THE PUBLIC DOMAIN); (II) DO NOT VIOLATE ANY COPYRIGHT LAW; (III) DO NOT CONSTITUTE DEFAMATION OR INVASION OF THE RIGHT OF PRIVACY OR PUBLICITY; AND (IV) ARE NOT AN INFRINGEMENT, OF ANY KIND, OF THE RIGHTS OF ANY THIRD PARTY. TO THE EXTENT THAT THE COPYRIGHTABLE MATERIALS INCORPORATE ANY NON-ORIGINAL MATERIAL, THE CONTRACTOR HAS OBTAINED ALL NECESSARY PERMISSIONS AND CLEARANCES, IN WRITING, FOR THE USE OF SUCH NON-ORIGINAL MATERIAL UNDER THIS CONTRACT, COPIES OF WHICH SHALL BE PROVIDED TO THE CITY UPON EXECUTION OF THIS CONTRACT.

IF THE SERVICES UNDER THIS CONTRACT ARE SUPPORTED BY A FEDERAL GRANT OF FUNDS, THE FEDERAL AND STATE GOVERNMENT RESERVES A ROYALTY-FREE, NON-EXCLUSIVE IRREVOCABLE LICENSE TO REPRODUCE, PUBLISH, OR OTHERWISE USE AND TO AUTHORIZE OTHERS TO USE, FOR FEDERAL OR STATE GOVERNMENT PURPOSES, THE COPYRIGHT IN ANY COPYRIGHTABLE MATERIALS DEVELOPED UNDER THIS CONTRACT.
IF THE CONTRACTOR PUBLISHES A WORK DEALING WITH ANY ASPECT OF PERFORMANCE UNDER THIS CONTRACT, OR WITH THE RESULTS OF SUCH PERFORMANCE, THE CITY SHALL HAVE A ROYALTY-FREE, NON-EXCLUSIVE IRREVOCABLE LICENSE TO REPRODUCE, PUBLISH, OR OTHERWISE USE SUCH WORK FOR CITY GOVERNMENTAL PURPOSES.

PATENTS AND INVENTIONS
THE CONTRACTOR SHALL PROMPTLY AND FULLY REPORT TO THE DEPARTMENT ANY DISCOVERY OR INVENTION ARISING OUT OF OR DEVELOPED IN THE COURSE OF PERFORMANCE OF THIS CONTRACT. IF THE SERVICES UNDER THIS CONTRACT ARE SUPPORTED BY A FEDERAL GRANT OF FUNDS, THE CONTRACTOR SHALL PROMPTLY AND FULLY REPORT TO THE FEDERAL GOVERNMENT FOR THE FEDERAL GOVERNMENT TO MAKE A DETERMINATION AS TO WHETHER PATENT PROTECTION ON SUCH INVENTION SHALL BE SOUGHT AND HOW THE RIGHTS IN THE INVENTION OR DISCOVERY, INCLUDING RIGHTS UNDER ANY PATENT ISSUED THEREON, SHALL BE DISPOSED OF AND ADMINISTERED IN ORDER TO PROTECT THE PUBLIC INTEREST.

PRE-EXISTING RIGHTS
IN NO CASE SHALL THE "COPYRIGHTS" AND "PATENTS AND INVENTIONS" SECTIONS APPLY TO, OR PREVENT THE CONTRACTOR FROM ASSERTING OR PROTECTING ITS RIGHTS IN ANY DISCOVERY, INVENTION, REPORT, DOCUMENT, DATA, PHOTOGRAPH, DELIVERABLE, OR OTHER MATERIAL IN CONNECTION WITH OR PRODUCED PURSUANT TO THIS CONTRACT THAT EXISTED PRIOR TO OR WAS DEVELOPED OR DISCOVERED INDEPENDENTLY FROM THE ACTIVITIES DIRECTLY RELATED TO THIS CONTRACT.

ANTITRUST
THE CONTRACTOR HEREBY ASSIGNS, SELLS, AND TRANSFERS TO THE CITY ALL RIGHT, TITLE AND INTEREST IN AND TO ANY CLAIMS AND CAUSES OF ACTION ARISING UNDER THE ANTITRUST LAWS OF THE STATE OR OF THE UNITED STATES RELATING TO THE PARTICULAR GOODS OR SERVICES PROCURED BY THE CITY UNDER THIS CONTRACT.

PROPRIETARY INFORMATION/TRADE SECRETS
THE BIDDER SHALL IDENTIFY THOSE PORTIONS OF THEIR BID THAT THEY DEEM TO BE CONFIDENTIAL, PROPRIETARY INFORMATION OR TRADE SECRETS, AND PROVIDE JUSTIFICATION WHY SUCH MATERIALS SHALL NOT BE DISCLOSED BY THE CITY. ALL MATERIALS THE BIDDER DESIRES TO REMAIN CONFIDENTIAL SHALL BE CLEARLY INDICATED BY MARKING THE PAGES ON WHICH SUCH INFORMATION APPEARS, AT THE TOP AND BOTTOM THEREOF WITH THE WORD "CONFIDENTIAL." SUCH MATERIALS MARKED "CONFIDENTIAL" MUST BE EASILY SEPARABLE FROM THE NON-CONFIDENTIAL SECTIONS OF THE BID.

ALL SUCH MATERIALS SO INDICATED SHALL BE REVIEWED BY THE AGENCY AND ANY DECISION NOT TO HONOR A REQUEST FOR CONFIDENTIALITY SHALL BE COMMUNICATED IN WRITING TO THE BIDDER. FOR THOSE BIDS WHICH ARE UNSUCCESSFUL, ALL SUCH CONFIDENTIAL MATERIALS SHALL BE RETURNED TO THE BIDDER. PRICES, MAKES AND MODEL OR CATALOG NUMBERS OF THE ITEMS OFFERED, DELIVERIES, AND TERMS OF PAYMENT SHALL BE PUBLICLY AVAILABLE AFTER BID OPENING REGARDLESS OF ANY DESIGNATION OF CONFIDENTIALITY MADE BY THE BIDDER.

DESCRIPTION	QUANTITY	UOI	UNIT PRICE	EXTENSION

CLASS/ZONE AWARD 01

THIS IS A CLASS AWARD.
YOU MUST BID ON ALL ITEMS IN THE CLASS TO BE CONSIDERED FOR AN AWARD. IF YOU DESIRE TO BID "NO CHARGE" ON AN ITEM IN THE CLASS YOU MUST SO INDICATE.

ITEM NUMBER: 1. COMM. C071 03
2000 GPM PUMPER APPARATUS AS DESCRIBED IN THE ATTACHED FDNY SPECIFICATION REQ. #202703, DATED: AUGUST 5, 2026. — 60. EACH $_____ $_____

MANUFACTURER: .....

MODEL: .....

ITEM NUMBER: 2. COMM. C071 03
BOOKS, MANUALS AND DIAGNOSTIC EQUIPMENT AS DESCRIBED IN THE ATTACHED FDNY SPECIFICATION REQ# 202703, DATED: AUGUST 5, 2026. — 60. EACH $_____ $_____

ITEM NUMBER: 3. COMM. C071 03
TRAINING SESSIONS AS DESCRIBED IN THE ATTACHED FDNY SPECIFICATION REQ# 202703, DATED: AUGUST 5,2026 — 60. EACH $_____ $_____

ITEM NUMBER: 4. COMM. C071 03
2000 GPM HIGH PRESSURE PUMPER OPTION, AS DESCRIBED IN THE ATTACHED FDNY SPECIFICATION REQ# 202703, DATED: AUGUST 5, 2026. — 60. EACH $_____ $_____

ITEM NUMBER: 5. COMM. C071 03
INSPECTION FEE: — 1. EACH $_____ $_____

AN INSPECTION FEE OF $30,000 IS TO BE INDICATED AND ENTERED ON THE UNIT PRICE AND ON THE EXTENSION LINES (ABOVE, TO THE RIGHT). THIS INSPECTION FEE MUST BE INCLUDED AS PART OF THE TOTAL VALUE OF THE CLASS.

TOTAL CLASS OR ZONE AWARD (ITEMS 1.00 THRU 5.00) 01 .....$_____

DESCRIPTION	QUANTITY	UOI	UNIT PRICE	EXTENSION

CASH DISCOUNTS

OFFERS OF CASH DISCOUNTS WILL NOT BE CONSIDERED IN MAKING AN AWARD. PLEASE NOTE BELOW IF YOU OFFER A CASH DISCOUNT AND, IF SO, THE DISCOUNT TERMS.

DISCOUNT
YES ..... NO ..... TERMS ..... % ..... DAYS

FIRE DEPARTMENT
CITY OF NEW YORK

SPECIFICATION FOR
2000 GPM PUMPER

DATED: August 5, 2026

SPECIFICATION PREPARED BY BUREAU OF SUPPORT SERVICES - FLEET SERVICES DIVISION

SPECIFICATION SUPERSEDES ANY PREVIOUS SPECIFICATION FOR
FDNY 2000 GPM PUMPER

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Intent of This Purchase:

It is the purpose of this specification to describe a single rear axle 2000 GPM pumper apparatus. It will be front line apparatus and subjected to extensive use and the most severe service throughout the City of New York. It shall have the capability and capacity to carry a full equipment and personnel load. It shall be designed to carry supplies, material, equipment and personnel in a safe and secure manner. Travel height shall be as low as possible for this type of apparatus.

It is required that the prime vendor use materials, components and design practices that are the best available in the industry. The apparatus and its systems shall be designed and engineered to work properly under severe conditions and must perform its mission with a minimum amount of downtime. All components shall be selected to ensure maximum performance, service life, reliability and safety, not only to meet the minimum requirements of the specification.

Notice to Bidders

(Items Listed in The Notice to Bidders Shall Apply Throughout This Specification)

1. **At the time of bid submission, the bidder shall have a minimum of two (2) years' experience in manufacturing emergency apparatus similar to that required by this specification.** It is not the intent of this specification to cover all details of design and construction. Nothing stated, implied or omitted from these specifications shall relieve the supplier from providing a finished product of high engineering design and workmanship, fully equipped and capable of performing its intended function.
2. It shall be the responsibility of the successful bidder to mount the unit, wire and install all accessories, paint, finish, and test the completed unit in accordance with the requirements of this specification.
3. The terms "vendor", "prime vendor", and "contractor" shall all refer to the firm awarded this contract.
4. Units shall be delivered "ready for service".
5. Measurements and dimensions listed in this specification shall be defined as + / - 5% solely at the discretion and approval of FDNY.
6. **Pop-rivets, riv-nuts, self-tapping screws or sheet metal screws shall not be used throughout this apparatus without the prior approval of FDNY. Attaching devices shall be approved by FDNY.**
7. All vendor-installed wiring, accessories, equipment and options are subject to FDNY approval with regard to equipment selection, placement / location and final installation. FDNY shall determine which accessories and installations may require a relay to carry the electrical load.
8. Any OEM equipment removed shall be provided to FDNY upon delivery.
9. All indicator lamps throughout the apparatus shall illuminate only when the device(s) they control is/are operational or ready to operate. Further details shall be discussed at the Preconstruction Conference.

Notice to Bidders (Continued):

(Items Listed in The Notice to Bidders Shall Apply Throughout This Specification)

10. All relays, switches and controls shall be properly and permanently labeled to show their function. No breaker or relay shall be mounted upside down.

11. If a component, option or feature specified in this specification is not available from the manufacturer, appropriate written documentation shall be provided by the prime vender to FDNY stating that the specified component or system is not available through that manufacturer. FDNY shall approve any proposed substitutes to these components or systems.

12. On any item specified with a direct part number and/or name, the bidder may request to provide an "or equal". This request must be provided with documentation showing the replacement item meets or exceeds the specifications of the original item. The FDNY will then compare the product and have final approval.

13. It is the intent of the FDNY to accept an apparatus with commercially rated components (e.g. tires, axles, suspension). If a specified component cannot meet the weight requirement as commercially rated, then a fire service rating may be acceptable. Proper documentation for fire service shall be provided from both the component manufacturer and the prime vendor. FDNY shall have final direction and approval on these components.

14. 304 series stainless steel shall be used on all unpainted and exposed surfaces. On all other surfaces 3CR12 series stainless shall be used. Further details shall be discussed at the Preconstruction Conference.

15. FDNY shall direct any areas of the apparatus that require padding to prevent personnel injury and/or equipment damage.

Notice to Bidders (Continued):

(Items Listed in The Notice to Bidders Shall Apply Throughout This Specification)

16. As deemed necessary by FDNY, protection for the undercarriage shall be provided in the form of ¼" thick minimum plate(s) to protect the apparatus and components from damage. These plates shall be installed at the discretion of FDNY. Further details shall be discussed at the Preconstruction Conference and subsequent inspection conferences.
17. Installation of all components shall be in compliance with all applicable laws and regulations pertaining to an apparatus of this type. The vendor shall supply written documentation of compliance upon FDNY's request.
18. The apparatus described in this specification shall meet all necessary Federal OSHA requirements.
19. All efforts shall be made to save apparatus weight. Further details shall be discussed at the Preconstruction Conference. FDNY shall direct and approve the material type used in a given area.
20. Prevention of water intrusion is a critical concern for FDNY. As deemed necessary, and as applicable to the apparatus being offered, vents shall be extended on components including, but not be limited to the cab tilt reservoirs, transmission, axles, hydraulic reservoirs and fuel tank.
21. Due to the various chassis/body configurations and manufacturing processes available, further discussion may be necessary with regard to compartment and component layout. There shall be further discussion at the Preconstruction Conference as to any possible design changes. Due to the vast scope required in apparatus design, in-process changes may be required. This shall be discussed at subsequent inspection conferences. FDNY and/or DCAS shall have the final determination on these matters.
22. All welding procedures shall be consistent throughout the entire build process.
23. As deemed necessary, metal covers shall be provided for equipment protection from damage and the elements. Further details of cover requirements shall be discussed at the Preconstruction Conference.
24. Manufacturer's advertising/logos shall be as directed by FDNY.
25. As applicable and as deemed necessary by FDNY, hardware shall be coated with Bostik™, or equal, "Never Seez". In addition, some hardware may require the use of Loctite™, or equal, thread locker. Further details shall be discussed at the Preconstruction Conference. All electrical connections and terminations shall be coated with Deka™, or equal **red** spray varnish. Critical fasteners shall be torque marked as directed by FDNY.
26. Linex™, or equal application "grit" shall be further discussed at the Preconstruction Conference. UV protection shall be contained in the base stock, use of an additive to attain UV protection is not acceptable.

Notice to Bidders (Continued):

(<u>Items Listed in The Notice to Bidders Shall Apply Throughout This Specification</u>)

27. All welds shall be first class in quality and finish and suitable for severe service all welding shall be in accordance with American Welding Society standards. all welding shall be performed in accordance with AWSS. Standard D1.1, by certified welders**.**

28. This Department reserves the option to modify or reconfigure vehicles purchased under this contract for the express purpose of Research and Development. This Department may utilize this R&D Clause a maximum of 3 times throughout the term of the contract, inclusive of all contract renewals and extensions. The total value of the R&D Clause throughout the term of the contract, including all renewals and extensions, shall not exceed 5% of the contract's registered value. Changes covered by this R&D Clause may involve the modification or the substitution of any component, as well as contingent equipment including, but not limited to, the drive train, body, sub-assemblies and supporting component hardware. These modifications and/or substitutions may also include changes to introduce new primary propulsion systems (i.e., Diesel, C.N.G., Hydrogen, Hybrid Power, etc.) to vehicles and equipment covered within the contract parameters. All terms and conditions used to govern the use of this R&D Clause will be dictated by the technological advances and innovations that take place, as they become available, within the primary industry of the contract and will be properly justified and quantified on each Purchase Order.

1. GENERAL REQUIREMENTS:

1.1 The entire apparatus shall be constructed using only new materials and accessories, complete and ready for operation. Apparatus delivered under this contract shall comply with all requirements of this specification. The cab and body shall be manufactured by the OEM to facilitate both in-process and final inspections. Cab and body design are of critical importance to the FDNY. Both the cab and the body shall be custom designed to FDNY's requirements. The manufacturer shall modify their design as deemed necessary by FDNY to meet these requirements.

1.2 All parts and components shall conform to the best practices known to the automotive and fire apparatus industries in design, strength, quality of material and workmanship.

1.3 Units shall be manufacturer's latest, top-of-the-line design, highest quality and modified, where necessary, to conform to these specifications. All surfaces shall be designed and manufactured to eliminate sharp edges and / or corners capable of producing an injury.

1.4 The apparatus shall be designed and constructed with careful attention given to weight distribution and weight balance as well as in accordance with recommendations of the National Fire Protection Association (NFPA) and current best standard automotive practices.

1.5 Units shall comply with all applicable Federal, State and City regulations, standards and laws relating to commercial vehicles and/or fire apparatus.

1.6 Assembly shall be designed to facilitate repairs, maintenance, servicing and lubrication.

- All gauges, valves, controls, inlets, outlets, drains and auxiliary appendages shall be labeled as directed by FDNY

- Location of undercarriage equipment including but not limited to air tanks and Glad-Hands shall have pre-approval of FDNY. Installation without such approval may require relocation.

1. GENERAL REQUIREMENTS (CONTINUED):

1.7 All replacement parts listed in these specifications shall be complete, modified and compatible with the apparatus contracted for and other spare equipment and parts included.

1.8 Units shall be diesel powered, with an automatic transmission

1.9 The apparatus shall comply with the following dimensions:

Item	Dimension	Minimum	Maximum
A	Height		130 inches
B	Overall length		360 inches
C	Wheelbase	185 inches	191 inches
D	Cab interior width (interior door panel to interior door panel)	91 inches	
E	Cab width (skin to skin)		96 inches
F	Overall width – rub rail to rub rail		97 inches
G	Turning radius		32 feet (left and right)
H	Curb to curb radius		33 feet (left and right)
I	Wall to wall radius		37 feet (left and right)
J	Road clearance	*10 inches	
K	Angle of approach	8 ½ degrees	
L	Angle of departure	15 ¼ degrees	

* With the exception of rear axle & rear axle components, which shall be 9 inches min.

1. GENERAL REQUIREMENTS (CONTINUED):

1.10 Provide a general shop drawing showing all key dimensions, including turning radius and approach & departure angles, and all dimensions described in section 1.9 at the Preconstruction Conference.

1.11 Certificate of Origin: Prime vendor shall provide, upon delivery of each apparatus, its' **original certificate of origin**.

- A list shall be provided to include but not be limited to apparatus chassis numbers, as well as serial numbers for the engine, transmission, axles and driveline retarder, and other major components of the apparatus.

1.12 The vendor shall provide written approval, certifying the following components for fire service use. This documentation **shall accompany the vendor's bid**:

Chassis Frame • Engine • Transmission • Brakes • Axles • Steering Gear • Tires • Fire Pump •Booster Tank • Other assemblies or units which FDNY may request

1.13 Provide the following at time of delivery:

- Apparatus manufacturer's certificate for the bumper-to-bumper warranty
- Original Equipment Manufacturer's certificates for any component in order to meet or exceed the requirements of the bumper-to-bumper warranty
- Certificate on emergency lights as per NFPA 1900
- Certificate on electrical load test as per NFPA 1900
- Certificate of compliance with applicable provisions of ANSI 92.2, 2001
- Fire Pump certification as per NFPA 1900
- Compliance with other NFPA regulations as they pertain to this specification.

1. GENERAL REQUIREMENTS (CONTINUED):

- "As Built" line sheets showing all model/part numbers for components, including but not limited to engine, horsepower and torque rating, transmission, front & rear axles, suspension and brake system

1.14 All hardware shall be grade eight (8) minimum, with self-locking nuts or caged nuts and shall be stainless steel unless otherwise noted differently in this specification. In critical areas. The use of other grades may be acceptable with the approval of FDNY. In addition, if deemed necessary by FDNY, anti-vibration hardware shall be used in other critical areas. Further details regarding hardware shall be discussed at the Preconstruction Conference.

1.15 **Original equipment manufacturers application approval shall be provided for: engine, transmission, driveline retarder, suspension & axles – provide Application Engineering Review ("AER"), or other equivalent mandated testing for the completed pilot model.**

1.16 Engine & transmission mounts shall be heavy duty poly type or equal - the engine mounts on the pilot model shall be certified by the engine manufacturer as they pertain to vibration.

1.17 Engine mounts shall be located above the chassis mounts to ensure that the engine remains in place in the event of mounting bolt or other hardware failure.

1.18 "Barrier Tape" shall be used wherever / whenever necessary to isolate dissimilar metals & prevent corrosion / electrolysis.

1. GENERAL REQUIREMENTS (CONTINUED):

1.19 After completion of all road, brake & pump testing and before final acceptance by FDNY, a complete preventive maintenance inspection shall be performed on each apparatus delivered. Note: these documents shall be provided to FDNY upon delivery.

This shall include but not be limited to:

- Change engine oil & filter
- Change pump transmission fluid
- Check & top off all fluids
- Change fuel filter
- Inspection of brakes at each wheel position
- Re-Torque wheel nuts and U-bolts
- Check operation of all electrical devices, systems, & lights
- Check air pressure in all tires
- Check Auto Lube System for proper operation
- Lubricate all grease fittings
- Correction of any / all deficiencies

Note: A written check-off list of this inspection shall be provided for each individual apparatus - the VIN number shall be noted, and document shall be signed by the person completing the inspection – all deficiencies found / corrected shall be noted.

2. CHASSIS FRAME / FRONT BUMPER / TOW ATTACHMENTS:

2.1 Gross Vehicle Weight Rating: 46,800 pounds, minimum.

2.2 Chassis / Frame:

- Chassis / frame shall be manufactured and designed by the bidder. The chassis shall be designed for a GVWR in excess of both a full complement of equipment and a six (6) person crew.

- The chassis / frame shall be designed and manufactured for heavy duty / severe service. It shall have adequate strength and capacity for the intended load, duty cycle, and service requirements of the New York City Fire Department.

- Chassis frame shall be constructed of R7 high strength steel with a minimum rating of 120,000 PSI.

- The chassis / frame shall be full length double rail, minimum construction. A full-length frame liner (from end to end) shall be provided.

- All cross members bolted in place with grade "8" hardware, 5/8"-18 min. Flange head bolts with "Spiralock" nuts. **"Huck Bolts" are not acceptable.**

- Holes in the frame area for required, apparatus specific, componentry only. No "swiss cheese" type rails. Holes shall be confined to the neutral / middle area of the web. No removal, cutting or notching of cross members

- It is the desire of the FDNY to avoid "notching" of the frame rails in order to install any equipment or accessories. Should this be required, the vendor shall inform FDNY of the areas that require modification. All modifications shall be certified in writing by the manufacturer that they do not affect the strength or rigidity of the frame. Any proposed modifications shall be approved by FDNY.

- Line loading diagram with bending moment & shear curve shall be provided at the Preconstruction Conference.

2. CHASSIS FRAME / FRONT BUMPER / TOW ATTACHMENTS (CONTINUED):

2.2 Chassis / Frame (Continued):

- The area between axle front most & rearmost suspension hangers shall be free of any welding, holes or fasteners in the frame flanges. No welding shall be incorporated in attachment of components. All frame dimensional cutting shall be by a plasma cutter or mechanical means only. All relief areas shall be cut in a 30-degree angle with a 2-inch radius at intersection points with edges ground smooth to prevent a stress focal point.

- Frame rails and all components thereof shall be coated with a rust resistant paint, gloss "**Job Red"**, including but not limited to air tanks, axles.

- The chassis / frame shall be new, heavy-duty custom fire apparatus chassis and all standard components not specified shall be furnished.

- Chassis / frame shall be manufactured and designed by the bidder and shall be that manufacturer's six (6) person custom chassis. Designed for a GVWR, in excess of the fully loaded running weight with six (6) person crew.

- The chassis / frame shall be designed and manufactured for heavy-duty service with adequate strength and capacity for all components for the intended load to be sustained and the type of service required by the New York City Fire Department.

2. CHASSIS FRAME / FRONT BUMPER / TOW ATTACHMENTS (CONTINUED):

2.3 Front Bumper:

- Front bumper extension shall be 80,000 PSI high tensile steel channel, minimum (9" high x 3" wide x ¼" thick approx.) Designed to protect the front of the apparatus from, head-on & angled, impact loads - bumper shall be securely bolted with correctly sized grade "8" hardware. – the bumper shall be backed full width and full height with ¼" thick steel for strength and rigidity. The bumper backing shall be formed in the same manner and shape as the outer bumper. The bumper corners shall also be supported in the same manner to withstand side /angular impacts. The extension shall be painted **job red**, and bumper face shall be painted **job red**. Final bumper design shall be approved by FDNY.

- Bumper extension assembly shall be able to support apparatus weight without bending or damage when apparatus has to be lifted by the front for towing and recovery operations.

- Front bumper extension shall be a maximum of 18" from front of cab.

- All open areas shall be covered with 3/16" aluminum tread plate and shall be bolted in place.. Further details shall be discussed at the Preconstruction Conference.

- In addition, if deemed necessary by FDNY, stainless steel tread plate shall be installed on the lower front of the cab to function as a "scuff plate" to protect the cab finish

- Bumper support bracket shall be bolted directly to the chassis frame and have sufficient strength to withstand high impact.

- Extended assembly shall be capable of accommodating thirty-five (35) feet of FDNY's currently used 5-inch hose, and one hundred (100) feet of FDNY's currently used 1-3/4-inch hose. These hoses shall be held in separate boxes, recessed into the top surface of bumper extension, fabricated of 3/16 min thick, smooth aluminum. Each box shall be equipped with drain holes and seat belt type straps, with "lift to release" levers to secure hose. Final design and type of straps shall be approved by FDNY

2. CHASSIS FRAME / FRONT BUMPER / TOW ATTACHMENTS (CONTINUED):

2.3 Front Bumper (Continued):

- Guide Poles: Removable stainless steel with non-illuminated **amber** lenses on the tips. They shall be mounted on the left and right sides of the bumper visible to the chauffeur. Poles shall be mounted in a bolt on sleeve type bracket on the outside of the bumper surface and shall be angled if necessary. The pole shall have a tethered pull pin that allows for the removal of the pole from the bracket.

- Speaker and air horn shall be installed in front bumper, recessed behind bumper with stainless steel grille over siren speaker, speaker boxed in aluminum plate enclosure. Cut-outs (which are large enough to permit removal / replacement of air horn & speaker without removal of bumper) shall be provided on left hand side for air horn and right-hand side for siren speaker.

Note: the siren speaker mounting shall allow for interchangeable installation of a Federal Signal™ "MS100" or "ES100C" speaker. See section 22 for siren speaker details. In addition, there shall be provisions for the wiring and mounting of a mechanical siren. Further details shall be discussed at the Preconstruction Conference.

2.4 Tow Attachments:

- Two (2) 1" steel plate **job red** tow eyes, installed with a minimum of six (6) grade #8, 5/8" bolts each side. The plates shall have 3" inside diameter holes. The front tow eyes shall be rated to allow pick-up of front of apparatus, capable of lift, tow and recovery operations. A clearance of 3" from the bottom of the 3" hole in the eye to the gravel plate shall be provided as well as a clearance of 3" from the body. Tow eyes shall not extend nor protrude beyond bumper surface. Tow eyes shall be a 'captured' and/or cradled design that shall cradle the chassis in such a manner to lessen the stress on the bolts. Holes shall be circular—slotted or elongated type holes are not acceptable. Tow eye design, spread, and final mounting location shall be approved by FDNY.

- Two (2) 1" steel plate **job red** tow eyes, same as described above, shall be bolted directly to the rear frame with a minimum of six (6) grade #8, 5/8" bolts each side. All dimensions and clearances shall be the same as described above. The rear tow eyes shall be rated to allow pick-up of rear of apparatus, capable of lift, tow and recovery operations.

- Tow eye design, spread distance, and final mounting location of all tow attachments shall be approved by FDNY. Further details shall be discussed at the Preconstruction Conference.

3. FRONT AXLE / SUSPENSION:

3.1 Front Axle: The front axle shall be a Dana™ D2200W, or equal, shall have a capacity of 22,800 pounds, minimum (the axle itself shall be rated at 24,000 lbs. minimum) - GAWR axle capacity shall be certified by axle manufacturer. **Note: Upon delivery to FDNY, there shall be a minimum of 2,000 lbs. clear payload capacity on the front axle.**

- Front axle wheel bearings shall be grease lubricated (no oil)

3.2 Front Suspension:

- Shall be equipped with elliptical type leaf springs with military type double wrapped front eye.
- Rated at 22,800 pounds, minimum.
- Spring pins and shackle pins, non-rotating type, designed for ease of removal. Pin size shall be 1", minimum. All spring bushings provided with spiral grooves and a center circular groove to permit grease to penetrate around the pins completely. Serrated pins with nuts are **not** acceptable.
- Access panels shall be provided as deemed necessary by FDNY to facilitate free access to shackle pins and hangers and to permit ready removal of springs.
- Heavy duty, 3 ¼" diameter minimum, double acting heavy-duty shock absorbers shall be provided. Shock absorber bushings shall be polyurethane type, if available.
- Shock absorbers shall be mounted in accordance with the shock absorber manufacturer's recommended angles and shall be field replaceable.

4. STEERING:

4.1 The front steering system shall be adequately sized for front axle loading. Steering shall function smoothly from lock to lock under all conditions (including idle) and have proper return characteristics, at all times, under all operating conditions. A second steering gear or assist cylinder(s) shall also be acceptable.

4.2 All power steering hoses shall be properly sized and rated for the application. They shall be Parker™, or equal, with wire braid jacket. Pressure side shall be fabricated with the proper crimp fittings and return side shall have reusable fittings.

4.3 The power steering pump shall incorporate a built-in relief valve and regulator. Final design subject to FDNY approval.

4.4 The power steering reservoir cap shall be color coded **blue** and shall be properly labeled.

4.5 The steering column shall be a tilt & telescoping type with an 18" steering wheel. The steering wheel shall be covered with **black** Absorbite™, or equal, padding. The steering column shall contain a horn button, self-canceling turn signal switch, four-way hazard switch on turn lever. If deemed necessary by FDNY, a bolt on cover shall be installed over the steering column. Design and final installation shall be approved by FDNY.

Note: The turn signals shall not operate when the master disconnect switch is turned to the 'OFF' position. The four-way hazard flashers shall be wired to battery positive.

5. REAR AXLE / DRIVELINE RETARDER / SUSPENSION:

5.1 Rear Axle: Shall be a Dana™ model "S23-190", or equal, mounted to provide optimum drive shaft angle, 24,000 GAWR, minimum, certified by the manufacturer. The single reduction differential shall be geared to provide maximum acceleration while maintaining a top road speed not less than 55 MPH, and not greater than 58 MPH.

5.2 Rear axle shall have oil lubricated wheel bearings.

5.3 Driveline Retarder: Klam™, or equal, drive-line retarder system • Wring shall be "side mount" style • Properly sized for apparatus load • Entire system shall be of the latest design approved for fire service application • Focal mounted on rear axle • Stages 1 & 2 activated simultaneously through off throttle status and shall activate the brake lights •Stages 3 & 4 activated by brake application & shall function in sequence • Four (4) **red** LED lights on dash mounted indicator panel to indicate stage that is activated • Operation of retarder shall interface with "ABS" system - brake pedal application of retarder shall continue to work when abs system senses a failure • System type/design, location and operation shall be discussed at the Preconstruction Conference.

5.4 Rear Suspension: Neway-Holland™ "AD Series", or equal, mono-pivot angular beam air-ride type, rated at 24,000 pounds, minimum. The rear suspension shall have limiting straps. Access panels for servicing/replacing suspension components shall be provided as deemed necessary by FDNY**.** All suspension parts shall be top coated by the suspension manufacturer in rust resistant **Job Red** paint prior to shipment to the OEM. Suspension components package shall be engineered & approved by the manufacturer and shall contain the heaviest duty tracking bars and torque bars available for this application-both the transverse torque and fore/aft bars shall be "bolt on" style on both ends. Protection plates for the chassis rails shall be provided to prevent damage of air lines and harnesses in the event of the separation of these torque rods. Components & installation approved & signed off by factory PE – final approval shall be by FDNY. **Note- There shall not be any reduction of body compartment dimensions or intrusion into body compartment space, due to interference of any suspension component.**

5.6 Heavy duty 3 ¼" diameter double acting heavy duty shock absorbers shall be provided. Shock absorber bushings shall be polyurethane type, if available.

5.7 Shock absorbers shall be mounted in accordance with the shock absorber manufacturer's recommended angles and shall be field replaceable.

6. BRAKES:

6.1 Apparatus shall be equipped with a braking system that is in compliance with all applicable Federal, State & local requirements for vehicles of the weight class.

6.2 All brake system components shall be installed in accordance with manufacturer's instructions & recommendations. If there should be any conflict with Federal regulations in effect at the time of award of contract, Federal standards shall be complied with.

6.3 Bidder, in their bid, shall detail any / all departures from specifications which are necessary to comply with Federal regulations.

6.4 A complete schematic of brake system arrangement shall be provided at the Preconstruction Conference for FDNY review and approval.

6.5 Brakes shall be heavy duty full air disc type with ABS and ATC.

6.6 Front and rear brakes shall be Knott™, or equal, (latest version) with 17" vented rotors.

6.7 Friction material for front and rear brakes shall be the latest fire service rated composition available from the manufacturer.

6.8 The minimum size of the two (2) rear brake chambers shall be “2424”, piston type design, with provisions to mechanically release parking brake for towing.

6.9 A Wabco™, or equal, two (2) axle (4S-4M) anti-lock braking system with automatic traction control shall be installed for safer apparatus control during braking and reduced stopping distance in all skid applications. Traction control shall apply brake on slipping wheel and drop electronic engine throttle back to prevent wheel spin while accelerating on a slippery surface.

- Provide a deep mud and snow switch for ATC (described in section 13).

- ABS ECM shall have a shielded metal cover.

6.10 Air Compressor: Engine manufacturer approved, gear driven, water-cooled, engine lubricated unit. Possible alternative shall be approved by FDNY—in the case of an alternative compressor additional reserve capacity may be required. There shall be a resonator used to suppress compressor noise. Further details shall be discussed at the Preconstruction Conference. **The apparatus shall pass the build-up test specified in section 24.**

6. BRAKES (CONTINUED):

6.11 Air pressure governor shall be located in an easily accessible area to facilitate adjustment, service and replacement. A remote air pressure governor shall be acceptable, final location shall be approved by FDNY.

6.12 System pressure shall be set at one hundred twenty-five (125) PSI.

6.13 The line from the compressor to the dryer shall be a properly sized line. This line shall be stainless steel on the compressor side and on the rear portion. The line shall be located so that it is field serviceable/repairable. A bulkhead fitting shall be used to split the line into two for easier service. Final layout and location shall be approved by FDNY.

6.14 Brake Plumbing: All plastic lines shall be reinforced nylon, SAE & DOT approved / rated, protected by Parker™, or equal, type chafe guard or loom – all fittings shall be Alkon™, or equal. All fittings and lines shall be rated for high temperature use. All plumbing secured with approved clamps.

- Braided flex hoses shall provide flexibility between frame & axle connections – all hoses to chambers protected by "spiral guard".

6.15 Air Dryer: Bendix™ model #AD-9, or equal. Desiccant type thermostatically controlled heater, safety valve, check valve, purge valve. Located in an area that will facilitate service and replacement.

6.16 Bendix Puraguard™, or equal, system filter shall be provided to remove oil & other contaminants. It shall incorporate a built-in by-pass & drain type valve. Filter installed in supply line between air dryer and "wet" tank.

6.17 Brake system shall be equipped with quick release system and Bendix™ R-14, or equal, anti-compound valve.

6.18 Brake pedal shall be mounted to cab floor, on the same plane as the accelerator pedal

6.19 Air system shall be plumbed in a manner that will provide "rapid build-up" of air pressure.

6.20 A 150 PSI safety valve shall be provided on "wet tank".

6. BRAKES (CONTINUED):

6.21 Air System Capacity: Total air system capacity shall be: 7931 cu in, minimum. The apparatus air system shall be as follows:

- Main: 4270 cu in minimum for foundation braking system (3,020 cu in primary, 1,250 cu in secondary). Note: The primary capacity includes the wet tank.
- Auxiliary: 1,770 cu in minimum for the air horn system and auxiliary air outlet.
- Pump Shift: 1,250 cu in minimum.
- Tilt Cab Air Seal: 641 cu in minimum.

6.22 All air tanks shall be equipped with pressure protection valve(s). In the event that the auxiliary air, pump shift, or tilt cab seal air supply is depleted, there shall be no draw of air from the "main" air supply. All air tanks shall be stenciled for easy identification. Component selection, layout, final design and installation shall be directed and approved by FDNY.

6.23 All air tanks shall be of metal construction and adhere to minimum ground clearance requirements in section 1.

6.24 Heavy duty manual drain valves with pull cables shall be provided on **each** tank to drain condensation. Automatic type drains are not acceptable. Route drain cables to a readily accessible location on outer cab / body. Drain cables shall also have sufficient slack built into the design to prevent unintended activation as a result of body flex/movement. Identify location with a permanently mounted placard that reads "drain daily". Placards shall **not** be installed on rub rail.

6.25 An auxiliary air outlet shall be provided:

- Outlet shall be plumbed to the auxiliary air tank.
- A ninety (90) degree shut-off valve and 1/4" stainless steel Kimball Midwest™ 52-797, or equal, female coupling and #52-790, or equal male nipple. type high-flow, push-pull coupler shall be provided.
- A check valve shall be installed between the shut-off valve and push-pull coupler.
- Outlet and shut-off valve shall be recessed in a location directed by FDNY.
- Installation shall be subject to FDNY approval.

6. BRAKES (CONTINUED):

6.26 Parking brake (maxi) control valve operating handle shall be mounted to right hand side of chauffeur, within easy reach

- Parking brake control valve shall be Sealco™ p/n "110221", or equal with Sealco™ p/n "9073", or equal, **yellow** permanently labeled knob.

- Parking brake control valve shall operate as follows:
  Push- To Apply
  Pull- To Release

6.27 An auxiliary parking brake control shall be installed on the right side of cab as directed by FDNY. This control shall give the officer the ability to activate the parking brake in the event of an emergency. The activation of the switch shall also disable the cab throttle, returning the engine to idle speed. The cab accelerator shall return to an active state when this switch is returned to the 'normal' (open) position.

- This control shall be guarded against accidental activation.

- A **red** pilot light shall be located near control to indicate activation and shall remain illuminated until deactivated. See section 13 for further details on this light.

- Control & pilot light shall have permanent placards stating "caution: emergency use only" and "parking brake activation -throttle disengagement" as well as on/off arrow indicators.

- If this system is electrically controlled and power is turned off, the batteries are disconnected, or disabled for any other reason, it shall not affect the releasing of the apparatus parking brake

6.28 Two (2) "Glad Hand" connectors shall be provided at the left front of the apparatus to control the operation of the parking brake and rear service brakes from a tow truck when it is being towed.

- One (1) glad hand, color- coded "**red**", plumbed to supply air pressure to release the parking brake. Glad hand shall be plumbed in a manner that will immediately apply the parking brake in the event that the supply air should become disconnected or fail. This glad hand shall have a ¼ turn shutoff valve located as directed by FDNY.

- One (1) glad hand, color- coded "**blue**", plumbed to supply air pressure to apply the rear service brakes. In addition, the rear brake lights of the apparatus shall also illuminate when the service brakes are applied on the tow vehicle.

- Each glad hand shall be equipped with a vented, removable dust cover, secured to the apparatus with a vinyl-covered chain. Exact location and operation of glad hands shall be approved by FDNY.

6. BRAKES (CONTINUED):

6.29 Passive Security System: Vehicle shall be equipped with a Vista Brake™ VBL-17, or equal, passive security system that utilizes a four (4) to six (6) digit code entered through a backlit keypad in the cab to allow the apparatus parking brake control to be released. This system shall lock out the parking brake control when the chauffeur leaves the driver's seat via an open driver's door. System shall be equipped with a driver's door switch that indicates an open driver's door condition. There shall be a seat sensor in the driver's seat to detect driver occupancy. Keypad shall display visual signals to the operator indicating "Door Open" and "Seat Not Occupied". Keypad shall also display a visual signal that system is in the secure mode as well as displaying a visual signal that the security aspect is deactivated. Location of all components shall be approved by FDNY.

7. TIRES & WHEELS:

7.1 Tires:

- Tires and tire capacities shall meet or exceed, all applicable Federal, State, and City regulations & standards.
- Tires shall be steel belted radial type. All tires shall be non-directional, and capable of being mounted on the left or right side of the apparatus.
- Tire weight ratings shall meet or exceed gross axle weight ratings.
- Two (2) front tires shall be Goodyear™ "WHA", or equal, 425/65R22.5, load range "L", rated for all weather traction. Tires shall be rated at 11,400 pounds each, minimum.
- Four (4) rear tires shall be Goodyear™ "G182 RSD", or equal, 11R22.5 rated for all weather traction - load range "H". Tires shall be rated at 6,005 pounds each, minimum.
- Four (4) permanent labels, that indicate appropriate tire pressures, shall be attached to the front and rear wheel openings (one above each tire). Tire pressure indicated shall be the proper amount for the load rating of the tire, as used in its application.

7.2 Wheels:

- Wheels and wheel weight ratings shall meet or exceed gross axle weight ratings, and meet or exceed tire inflation requirements
- Alcoa™, or equal aluminum wheels – hub piloted, ten (10) hole, 11-1/4" bolt circle, with "Clean Buff" finish.
- Rear wheels shall be installed so cut-outs in wheels line up to each other
- Securex™, or equal, wheel fasteners – 5061 (PTFE) coating – nut body SAE 1045 through hardened to RC 26-32.
- All lugs shall be equipped with Wheel Check™, or equal, **orange** wheel nut indicators, with a minimum temperature rating of 450° F.

8. AUTO LUBRICATION SYSTEM:

8.1 Vogel/SKF Lubrication Systems™, or equal, automatic lubrication system shall be provided. System operated by an electrically driven 12-volt D.C. gear pump. The pump shall be capable of operating against a backpressure of 38 bar, nominal, with an output of 160 cc/min. Reservoir capacity: 2.7 liters, minimum. The system shall use NLGI #2 grease.

8.2 Power unit / reservoir shall be mounted in a protected area allowing ease of service. Location shall be approved by FDNY.

8.3 System shall include an electronic control module that monitors main line pressure & operation cycles with led pilot lights. Adjustable interval cycle, 1 hour to 11 hours in 1-hour increments. Control shall include a system reset button to initiate one cycle for diagnostics and / or reset the module after a fault. Upon fault system shall disable until corrected & reset. Module shall be mounted in an area that will provide a clear view of pilot lights.

8.4 System shall be connected to lubricate **every permitting** lube point on the apparatus. All dosages as per system manufacturer. Final selection of lube points shall be approved by FDNY.

8.5 Distribution of lubricant to any & all lubrication fitting / points on apparatus via piston distributors, with metering nipples that bear dosage identification. Nipples shall be field changeable without disruption of other lubrication point connections.

8.6 Provide an **amber** "Auto Lubrication System" warning light on dash

8.7 Fluid, Maintenance and Lubrication Placard: A permanent engraved plate shall be provided in a location directed by FDNY which shall specify the dry fill and service fill quantities and type of the following used in the apparatus: Engine oil • Engine coolant • Transmission fluid (dry fill and service fill) • Auto lube grease • Power steering fluid • Drive axle oil •Hydraulic ladder rack oil • Cab tilt fluid • Tire inflation info • Fuel capacity ● Diesel exhaust fluid capacity •A/C refrigerant oil capacity • A/C refrigerant charge • Windshield washer fluid • Paint codes ● Drive belt part number• Serial numbers for engine, transmission, axles, driveline retarder, fire pump and pump transmission . This plate shall be product specific. Chassis manufacturer shall also list all points on the apparatus that require lubrication which are not serviced by the Auto Lube System.

9. ENGINE:

9.1 A Cummins X10™ or equal, diesel engine shall be supplied. It shall have but not be limited to the following requirements:

- Six (6) cylinders
- 10.0L
- Four (4) stroke design
- Four (4) valves per cylinder
- 450 HP minimum @ 1800 RPM
- 1650 ft-lb minimum torque @ 1000 RPM
- Water cooled
- High performance variable output turbocharger
- Full computer-controlled technology
- Appropriately rated OEM block heater
- Components shall be driven by their own dedicated belt
- Belt routing diagram including belt part numbers installed as directed by FDNY
- OBDII port shall be available for the installation of DCAS approved telematics hardware, OBDII port shall be in an accessible location.

9.2 Oil filter(s) shall be easily accessible & removable, spin-on type or cartridge disposable type

9.3 If the oil drain plug is located on the bottom of the pan, it shall be a recessed square type.

9.4 Any grease fitting on the engine or its accessories shall be remotely mounted for easy access, properly routed and labeled

9.5 Engine shall be a commercially produced diesel truck engine. All parts readily available. Provide OEM application approval & certification for fire service.

9.6 Engine shall accelerate quickly & smoothly from a standing start, without any “bogging”, hesitation or time lags in the acceleration curve. OEM engineering shall immediately correct any problems in performance noted by FDNY

9. ENGINE (CONTINUED):

9.7 Certified Power Curves:

- Bidder shall submit certified power curves on the engine model which is being offered before award

- The bidder shall submit, within ten (10) calendar days of FDNY request, certified Application Engineering Review (AER) results, or other equivalent mandated testing, for torque and horsepower curves on the engine specified. "AER" emissions testing, or other equivalent mandated testing shall be performed & certified on / for a completed apparatus, cab, body, panels, with covers & all cowling in place / mounted.

9.8 A performance "SCAAN" shall be provided.

9.9 At the time of apparatus manufacture, engine shall be certified as complying with all applicable requirements.

9.10 Vendor's bid shall reflect all exhaust / emission components & accessories needed to comply with any applicable emissions requirements, as well as emission system lights and warning devices provided in the chauffeur's and officer's areas of the apparatus, as well as the operator's panel.

- Mobile regeneration speed as well as emission-related settings shall be further discussed at the Preconstruction Conference. There shall be no regeneration when the apparatus is in pump mode.

9.9 Fuel System:

- Engine shall be approved for use with #1 and #2 ultra-low sulfur diesel fuel as well as renewable diesel fuel. Written certification shall be provided detailing all approved fuels.

- Fuel tank, with a minimum capacity of sixty-five (65) **drawable** gallons shall be provided. Welded safety type, constructed of #10-gauge min, 304 stainless steel. **Tank shall not be painted. Note: The fuel tank shall not interfere with the angle of departure.**

- Fuel tank shall be full at the time of delivery to FDNY.

- Fuel tank shall have at least one (1) baffle plate, sump, and a drain plug with a recessed 1/2" square. A "drop-out" stainless steel cradle type mounting, with 5/8" diameter minimum threaded rods & nylon lock nuts, shall be provided for easy removal / replacement of tank.

- Final design of all components shall be approved by FDNY.

9. ENGINE (CONTINUED):

9.9 Fuel System (Continued):

- Fuel sending units: sending units shall be top mounted for ease of service or replacement. It is the intent of FDNY to accept a "float" style fuel sending unit with a metal arm and a ball-type float mechanism. If a "float" style sender cannot be supplied, then a Centroid™, or equal, style sending unit shall be acceptable.

  Note: If a Centroid™, or equal, type sending unit is used, it shall maintain the accurate fuel level reading regardless of electrical system voltage.

- There shall be a separate fuel sending unit for the dash gauge and the pump panel gauge. Each gauge shall operate independently. If a second sending unit cannot be installed in the fuel tank, electronic monitoring of the fuel gauge may be acceptable with prior FDNY notification and approval. Further details shall be discussed at the Preconstruction Conference.

- Access panel for service of fuel tank, fuel lines & gauge sending unit shall be provided. Final design shall be approved by FDNY.

- Fuel fill plumbing shall be securely mounted and suitably protected against damage from snow chains or road debris. It shall not be routed through any body compartments. Fuel hose shall be size #6, minimum.

- If the fuel fill plumbing is of metal construction, it shall be **stainless steel.** All fuel plumbing connections made into a rubber hose shall be inserted a minimum of 2" into the rubber hose.

- Walbro™ p/n FRC-8, or equal, aux electric fuel pump shall be provided. Pump shall be plumbed to include an inline check valve and shall be installed near the fuel tank in an area that provides easy serviceability and replacement

- The pump shall be wired to a dedicated, breaker protected, electrical circuit, controlled by a dash mounted momentary switch with a pilot light. Note: pump shall have the ability to operate when ignition is 'On' **and** the switch is activated, regardless of whether the engine is running or not. Note: If this is not possible due to the engine manufacturer's requirements, then the operation of this pump shall be discussed at the Preconstruction Conference.

- Fuel lines shall be Parker™, or equal, with braided wire jacket and shall be of the recommended size by the engine manufacturer for the length of the run. "push to connect" fittings are unacceptable.

9. ENGINE (CONTINUED):

9.9 Fuel System (Continued):

- Fuel filter - Davco™ "Fuel Pro" "386 Series", or equal, filter / water separator with thermostatically controlled 12V electric heater (a coolant heater shall not be acceptable) • water-in-fuel indicator light • Rated flow 150 gallons per hour minimum • Ten (10) micron element • shall be properly secured & plumbed into fuel system • all electrical connections "Weather-Pac" type.

- Filter heater shall be on a separate electrical circuit, protected by the properly sized breaker.

- Fuel filter shall be easily accessible from pump module compartment "M2", opposite side from exhaust piping. Final location shall be approved by FDNY.

- A fuel cooler that uses fire pump water as its source of cooling shall be provided on the fuel return line plumbing. Shall be designed that all water is drained from unit through fire pump "main drain". Exact type, design and location of cooler shall be approved by FDNY.

9.10 Cooling System:

- Cooling system shall have sufficient capacity to meet extended periods of full load operation in local ambient temperature. It shall maintain engine temperature not to exceed maximum or minimum operating temperature as recommended by the engine manufacturer.

- Radiator: General Thermodynamics™, or equal, one-piece unit shall be provided. Certified as being adequate for all operating conditions and approved by engine manufacturer for its application. Radiator shall be removable by tilting the cab. Aluminum radiators may be acceptable with prior FDNY discussion and approval. Further details shall be discussed at the Preconstruction Conference.

- Particular attention shall be directed to the adequacy of radiator mounts and supports. Mounts shall be heavy duty rubber type. Radiator frame shall adequately support and protect radiator from movement & vibration damage. Radiator shall be removable by tilting the cab. Final design of radiator mounting, and all components shall be approved by FDNY.

- Radiator shall have a welded-in filler neck. The cooling system fill shall be accessible without having to tilt the cab. Location of all components shall be approved by FDNY

- An easily removable screen or skid plate shall be provided across bottom of the charged air cooler and radiator, to prevent damage from road debris. Design and location shall be approved by FDNY.

9. ENGINE (CONTINUED):

9.10 Cooling System (Continued):

- All coolant drain valves shall be "petcock" type with FDNY approved labels. All valves shall be properly protected from damage.

- A low coolant level indicator shall be installed in radiator. Indicator shall be a type recommended by the engine manufacturer. Approval of the installation of indicator shall be supplied by both the engine and radiator manufacturers.

- Engine Cooling Fan: Shall be a Horton™, or equal, thermostatically controlled clutch fan. If it is equipped with a grease fitting, it shall be remotely mounted in an area approved by FDNY and properly labeled. The supply line shall be properly secured & protected. The distance of the activation solenoid to the fan shall be such that it does not affect operation.

- Apparatus shall be delivered with the cooling system protected to minus forty degrees (–40ºF) with an OEM approved, Fleetguard® extended life (5-year, minimum) coolant and Fleetguard® "WF2122", or equal, remote coolant filter. If necessary, the proper coolant additive shall be provided. **The coolant shall be fuchsia colored, compatible with the current in use coolant used by FDNY and shall be approved by engine manufacturer.**

- If necessary, additive shall be added to cooling system to provide proper PH factor

- All cooling system hoses (including heater hoses), where applicable, shall be Gates™ "**Green Stripe**", or equal. Plastic split-loom chafe guarding, of the proper size diameter, shall be installed (full length where possible) to protect the hoses from abrasion damage.

- Oetiker™, or equal stainless-steel hose clamps, or equal, shall be used on all silicone hoses to prevent cold water leaks. Clamps shall be installed in compliance with the manufacturer's instructions. Where not available due to size, stainless steel liner clamps shall be used, Breeze Corp™., Aeroseal, or equal.

9. ENGINE (CONTINUED):

9.10 Cooling System (Continued):

- All heater hoses shall be connected to ¼ turn shut off valves at the engine, easily accessible properly & permanently labeled. Shut off valves shall be mounted on a common fixed plate in the engine compartment. Final location of all components shall be approved by FDNY.

- See section 17 for further details on the "Auxiliary Engine Cooler", "Emergency Radiator Fill" and "Emergency Radiator Sprinkler System".

9.11 Air Intake:

- The air cleaner shall be a high mount dry type with a replacement canister as well as a heavy-duty metal ember screen. It shall have outside air intake of full metal construction and an instrument panel mounted air restriction indicator to show when the air cleaner element requires replacement. It shall be designed to limit water intrusion. An automatic type drain shall be provided in the air intake as directed by FDNY. The air filter installed height shall be four (4) feet from the ground, minimum. The air intake installed height shall be five (5) feet from the ground, minimum. Final location of all components shall be approved by FDNY.

- Any air intake piping that passes through cab or crew area shall be insulated to keep the airflow noise to a minimum. It shall consist of a removable wrap secured with Velcro, or equal, fabricated from 1/4" minimum foil covered insulation, 1/2" minimum foam core, covered in Cordura® or equal. Design shall be approved by FDNY.

- A heavy-duty air charge cooler, approved by engine manufacturer, shall be mounted in front of the radiator. All air charge piping / hoses shall have proper clearance from other components to prevent any "rub through" damage from occurring.

- Final design, method of attachment, and locations of all the above air intake items shall be approved by FDNY.

9. ENGINE (CONTINUED):

9.12 Primary and Emergency Engine Shut Down:

- The primary engine "Run" / "Off" operation shall be controlled by the engine Electronic Control Unit (ECU). The dash mounted ignition switch shall send a signal to the ECU that determines "run" mode or "off" mode. This shall be independent of the emergency shut down device.

- An emergency engine shut down shall be provided. This shall be an intake air shut down, electrically operated from a dash-mounted control, independent of the primary shut down.

- An engine manufacturer's approved shutdown device shall be provided. A **red** indicator light shall be provided near the switch to indicate when emergency shutdown has been activated. The light shall remain illuminated until the control is reset.

- Indicator light shall turn off when shut down has been reset.

- Design and location of shut down / reset control subject to approval of FDNY.

9. ENGINE (CONTINUED):

9.13 Exhaust System:

- At the time of apparatus manufacture, exhaust system shall be certified as complying with all applicable federal, state, and city noise level standards for fire apparatus.

- Diesel Exhaust Fluid (DEF) Tank: Tank shall be ten (10) gallons minimum capacity. Sender shall be accessible without removing the tank. Location shall not impinge upon compartment space. If deemed necessary by FDNY, tank shall have a stainless steel hinged door using with a "T" style handle latch for the door. DEF tank shall have a mis-filling prevention device (Elafix™ 40 magnetic fill neck adapter, or equal) compatible with the system currently used by the City of New York. This adapter shall allow the refueling of the urea solution without the risk of mis-fueling. The apparatus shall have a spray cooler system for the diesel exhaust fluid to prevent it from boiling. This system shall be automatic with a temperature sensor, shall have an indicator light on the pump panel and shall utilize fire pump water. In addition, if deemed necessary by FDNY, there shall be a means to heat the DEF fluid to prevent it from freezing. Further details shall be discussed at the Preconstruction Conference. Tank shall be full on final delivery.

- In addition, there shall be a DEF sprinkler momentary test switch in the left side battery box. Final details shall be discussed at the Preconstruction Conference.

- Stainless steel flex tubing shall be installed between turbocharger and exhaust pipe, if applicable

- A removable / reusable thermal exhaust blanket, wrap around type, shall be installed on the turbocharger, if applicable

- Entire system (from manifold to exit pipe) shall be insulated or shielded where necessary to prevent heat transfer to any other components. These components shall include but not be limited to:

  - Engine & related items
  - Transmission & related items
  - Chassis & related items
  - Fuel Hoses / lines
  - Air Hoses / lines
  - All wiring and batteries

- Adequate heat deflector shields shall be installed under compartment floors.

9. ENGINE (CONTINUED):

9.13 Exhaust System:

- Provisions shall be made for connection to the FDNY Nederman™ exhaust system as installed in all firehouses. This shall include but not limited to proper angles on exit pipe, receiver plate & transmitter (located in cab, wired to ignition "On"). Note: due to recent changes in Nederman™ components, the location of exhaust exit and Nederman™ component layouts shall be determined at the Preconstruction Conference.

- Exhaust shall be horizontal and have proper body clearance and shall terminate flush with rub rail. In addition, the exhaust outlet shall terminate at a ninety (90) degree angle from the body of the apparatus. The exhaust pipe shall be "indexed" to prevent loosening and distortion. Further details shall be discussed at the Preconstruction Conference.

- Final layout & component location of exhaust system, including any other remotely located related item, shall be approved by FDNY

9.14 The following shall be readily accessible without tilting of cab or removal of engine side panels:

- Engine oil dipstick and fill - color coded **yellow**
- Power steering dipstick and fill - color coded **blue**
- Transmission fluid dipstick and fill- color coded **red**
- Engine coolant fill (with low and high markings) *
- Windshield washer fluid fill (with low and high markings) *
- Reset for secondary engine shut down

* The level in these reservoirs shall be easily visible. If necessary, there shall be an LED light to illuminate these reservoirs. Further details shall be discussed at the Preconstruction Conference.

9. ENGINE (CONTINUED):

9.15 Accelerator pedal shall be a Williams™, or equal, electronic type, installed per engine manufacturer's requirements. Pedal shall be floor mounted, on the same plane as the brake pedal. **Pedal function shall be de-activated when the apparatus is in "pump" mode.**

Note: There shall be a 1 ¾" minimum distance from the engine enclosure to the closest edge of the accelerator pedal, a minimum of 2 ¾" between the throttle pedal and the brake pedal and minimum distance of 1 ¾" between the brake pedal and the steering column, using the current in use sized pedals**.**

9.16 Malfunction warning system – audible alarms with individual warning lights for each function shall include, but not be limited to: Low Oil Pressure • Low Coolant Level • High Coolant Temperature • Check Engine • Stop Engine • High Transmission Temperature ● Lights / alarms for current emission standards shall also be provided – **no shutdown or de-rate of engine except as Federally mandated--- audible & visual alarms only**

Note: the apparatus shall have a placard easily visible to the chauffeur that states that the ignition should not be turned off if the diesel exhaust fluid (DEF) light illuminates. Exact verbiage shall be discussed at the Preconstruction Conference.

10. TRANSMISSION:

10.1 Transmission shall be an Allison™ 4000EVS, or equal, 580HP gross input power with all electronic controls, six (6) speed automatic and Prognostics™ feature. Transmission shall be programmed with "aggressive dynamic" shift pattern. Transmission shall be factory filled with approved synthetic fluid. Further details shall be discussed at the Preconstruction Conference.

10.2 Transmission shall be plumbed to an internal oil cooler in the radiator, in a full flow coolant system application, as per OEM, to ensure adequate cooling. Any departures require written application approval from transmission OEM.

10.3 The pressure sensitive range selector touch pad, to right of the chauffeur with the mode legends back lit for night use. Touch pad surface mount type, separate from "ECM"

10.4 The transmission gear ratios shall be:

1st	3.51:1
2nd	1.91:1
3rd	1.43:1
4th	1.00:1
5th	0.74:1
6th	locked out*
Rev	-4.80:1

*Note: Due to the various drivetrain combinations available, it may be necessary to enable 6th gear to maximize performance and acceleration. This shall be discussed further at the Preconstruction Conference. The vendor shall provide FDNY with various drivetrain combinations for review and approval.

10.5 High transmission oil temperature audible alarm & indicator light on cab dash (as described in section 13) pump panel shall have a "Check Transmission" light and audible alarm. (see section 18 for further details).

10.6 All transmission hoses shall be Parker™, or equal, braided hose with reusable fittings for all medium pressure applications on automatic transmission and cooler.

10.7 Transmission shall be installed with a rear top mounted support approved by the transmission manufacturer.

10.8 See section 9 for information on dipstick / fill tube.

11. DRIVE SHAFTS:

11.1 Drivelines/shafts shall be adequate for the apparatus specified, and shall be Spicer™ “1810HD Series”, or equal.

11.2 All U-joints shall be Spicer™ #1810 series, or equal, mechanic type.

11.3 Drive shafts shall be in compliance with all applicable standards and regulations.

11.4 The drive shaft angles, and installation shall comply with axle, transmission, retarder and drive line component manufacturers requirements.

11.5 A computer generated drawing of drive line, engine, and transmission installations indicating angles and lengths shall be submitted at the Preconstruction Conference. In addition, a final drawing of drive shaft length shall also be supplied at the Preconstruction Conference.

11.6 All drive shafts shall have suitable guards, multiple if necessary, with catch brackets to prevent damage in case of failure of shaft or universal joint. The guards shall be mounted as close to the joints as possible without impeding removal of the shaft. All guards shall be a “drop out design” utilizing a “U” shaped bracket with a locating pin and a bolt on each side. It is the intent to capture the shaft at all joints. Number, type and location of guards shall be approved by FDNY.

12. 12 VOLT ELECTRICAL:

12.1 Batteries: Six (6) 12 Volt - Odyssey™, AGM batteries, model #PC2150 or equal, Group 31, 1150 CCA minimum, 205-minute minimum reserve capacity. Alternator, battery tray and battery charger area shall be labeled "System calibrated for use with AGM batteries. Replace only with AGM batteries."

12.2 System shall be 12-Volt with negative (–) ground.

12.3 Chassis frame shall be used as common ground.

12.4 Battery Cables: 000 (triple 0) gauge, minimum - positive (+) shall be **red** and negative (–) shall be **black**, covered by protective loom. Individual cables shall be connected to a common connecting point. Stacking of battery cables is not acceptable. Terminal extenders shall be used if deemed necessary by FDNY. Jumper cables from battery to battery will not be accepted.

12.5 Battery mounting location shall be in crew cab step area. This area shall be accessible through hinged doors in crew cab step area. Battery enclosure & all mounting hardware shall be type 3CR12, or equal stainless steel for corrosion resistance. The battery hold-down hardware shall be captured so that they do not fall out of the tray when the batteries are serviced. This compartment shall be coated in Linex™, or equal. The bottom of the enclosure / tray lined with Mateflex™, or equal **black** grating & adequate, protected, drain holes. A stainless-steel sliding tray shall be provided if necessary for easy service access to batteries – cover shall be equipped with stay-arms if necessary - location and design shall be approved by FDNY.

12.6 There shall be a Blue Sea™ 3000, or equal, main / master electrical disconnect on the positive battery cable circuit, mounted at chauffeur's area. Some electrical items will be required to stay "hot" at all times and not be wired through this switch. These items will be discussed at the pre-construction conference.

Note: This switch shall be easily removable without the need to remove any other components to access it. Final design and layout of all components shall be approved by FDNY.

12.7 **A fully enclosed, weather resistant**, battery wiring control box shall be installed near the battery location. The box shall include three (3) minimum, automatic reset circuit breakers. The breakers shall supply power to engine & transmission electronics, and engine fuel injectors.

12.8 Electronic engine / transmission system shall be powered through chassis battery. A dedicated battery and isolator are not acceptable. Wiring for this shall be as direct as possible to reduce voltage drop to components as much as possible. If this differs from the manufacturer's recommendations, FDNY shall be notified.

12. 12 VOLT ELECTRICAL (CONTINUED):

12.9 Two (2) Gigavac™, or equal, heavy duty continuous duty relays, mounted in cab dash, shall be supplied: One (1) will supply power to cab and body wiring, controlled by ignition switch, and one (1) will supply power to warning lights, controlled by "Master Light" switch described in section 13. Relays shall be properly sized for the intended loads. Further details shall be discussed at the Preconstruction Conference.

12.10 Emergency jump start system (as per SAE J1283) • Two (2) Kauffman Engineering™, or equal, receptacles #15126, or equal, with weather tight cover #15128, or equal, secured with cables, one (1) in each battery box • Wired direct to vehicle battery system. • Receptacle shall be labeled "Emergency Jump Start" • Twenty-five (25) foot "000" gauge jumper cable with plug compatible with receptacle (on both ends) shall be supplied with each apparatus • locations shall be directed by FDNY.

12.11 Starter: Delco™ model #39MT, or equal, 12-Volt, heavy duty high torque, with "over heating" protection and starter lock out protection.

12.12 One (1) heavy duty, three (3) position, rocker style ignition switch shall be provided on the dash.

- The three positions on rocker switch shall be labeled "OFF", "RADIO", and "RUN". When the switch is in the "RADIO" position, the two-way radio equipment shall be operable.

- When the switch is in the "RUN" position, it shall enable the starter switches, which are wired in parallel. There shall be two (2) momentary push button starter switches provided on dash. The power and ground for each switch shall be independent of the other switch.

12.13 If deemed necessary by FDNY, two (2) heavy duty, properly rated solenoids, wired in parallel, shall take the signal from start switches, and supply current to starter. The starter load shall not be wired through any other component. **Circuit shall be wired to ensure that starter receives maximum battery voltage & amperage during cranking**. Solenoids shall be located in an area that provides ease of service and protection from the elements. Location shall be approved by FDNY.

12.14 Starter circuit shall be interlocked to operate in "transmission neutral" only & to disable engagement while engine is running.

12.15 There shall be an interlock that prevents the operation of all HVAC fans and blowers during starter operation.

12.16 A complete wiring diagram showing the starter wiring circuit in its entirety, including all interlocks & all components, shall be provided at the Preconstruction Conference. Wiring diagram and all component locations subject to FDNY approval.

12. 12 VOLT ELECTRICAL (CONTINUED):

12.17 Alternator: Niehoff™ #C574, or equal, 415 Amp, minimum, stabilized –modified pad mounted – high efficiency fan – enclosed brush / slip ring - supply certified charging graph, RPM shall include actual **engine** RPM. Alternator shall put out a minimum of 180 amps at idle.

Note: If another alternator is being proposed other than those listed above, the vendor shall provide FDNY with detailed technical data including reliability reports of the proposed unit.

FDNY reserves the right to approve the alternator model and the mounting system being proposed.

- Voltage regulator shall be completely accessible for replacement / adjustment
- Ignition feed wire from ignition switch to regulator ignition terminal shall be on separate circuit breaker, it shall not be wired with lights or accessories.
- The belt drive system for alternator shall be a serpentine belt with self- tensioner, approved by both alternator and engine manufacturer. A multi-belt system shall be acceptable with prior FDNY approval.

12.18 The failure of a non-essential component shall not affect the operation of any essential circuit.

- Circuits deemed essential shall include, but not be limited to: ignition, engine, transmission, fire pump (which shall also include, but not be limited to: pressure governor, "Pump Engaged" and "OK to Pump" indicator lights, flowmeter and pressure gauges), and other circuits as specified by FDNY. Further details shall be discussed at the Preconstruction Conference.
- Circuits shall be wired in a manner so that they are as isolated as possible (by function) from other essential components, as well as non-essential components.
- Final layout of all electrical circuits shall be approved by FDNY.

12.19 If deemed necessary by FDNY, a shunt shall be provided to work in conjunction with an analog ammeter (mentioned in section 13). Ammeter shall be wired to show actual load on electrical system and output of charging system.

12. 12 VOLT ELECTRICAL (CONTINUED):

12.21 A fast idle system shall be provided utilizing the OEM engine management system. When all interlocks (described below) are met, system shall raise engine idle to approximately 1000 RPM when it detects battery voltage is at 13 volts or less. A properly labeled indicator panel shall be provided in cab that shall indicate when voltage is "normal" and when "low voltage" is detected & system is activated. Type & size of indicator panel and locations of all related components shall be approved by FDNY. **Note: shedding of loads shall not be acceptable**.

12.22 The fast-idle system shall be interlocked with transmission "neutral", parking brake "applied", and road to pump selector in "road" mode, to permit automatic operation on "low voltage" conditions. The high idle shall activate when the voltage drops below 13 volts and stay on 3-4 minutes after the voltage reaches 13.8 volts.

12.23 Prime vendor shall perform an electrical system load test and ensure adequate alternator output under all operating conditions. All tests shall be conducted in both response and stationary mode.

12.24 Prime vendor shall provide a complete electrical system load calculation at the Preconstruction Conference.

12.25 One (1) Kussmaul™ (p/n 59-02-2134), or equal. This kit contains the following: two (2) Super Auto-Eject, 120 volt, 15 amp plugs- one (1) with **red** cover, one (1) with **gray** cover • one (1) onboard 12 volt air compressor with automatic condensation drain • one (1) onboard 80A battery charger calibrated for use with "AGM" batteries • one (1) led charge indicator panel.

- The Auto-Ejects and charge indicator shall be mounted on L/S of cab over front wheel opening area on a large stainless steel brushed panel, as directed by FDNY.
- Battery charger & air compressor located as directed by FDNY – a metal cover shall be mounted for protection – automatic condensation drain shall be plumbed to drain out of cab.
- **Red** auto-eject is for air compressor and battery charger
- **Gray** auto-eject is for engine block heater
- Auto-Ejects properly labeled as directed by FDNY
- All Locations shall be approved by FDNY.

12.26 **All multiplexed wiring shall have prior FDNY approval.**

12. 12 VOLT ELECTRICAL (CONTINUED):

12.27 All wiring shall be high temperature GXL color coded and imprinted with circuit number & function every four (4) inches for ease of tracing & troubleshooting. Identification system subject to FDNY approval. Exceptions will be by FDNY approval.

12.28 Coded wiring diagrams & schematics shall be provided for complete apparatus, As Built

12.29 Wiring and connections shall be protected from the elements and routed to avoid road splash. All wiring shall be to highest standards & practices of the industry.

12.30 All wiring shall be securely fastened with rubber insulated metal wire clamps, properly routed and protected by rubber grommets or edge guard where passing through metal, any other sharp edge or chafe area.

12.31 All wiring shall be enclosed in protective loom or sheathing to prevent chafing. Type of loom and method of installation, subject to FDNY approval.

12.32 Extreme care shall be taken in the installation of any wiring to avoid any high heat source that could expose the wiring to severe overheating or damage. As deemed necessary by FDNY, proper insulation, heat resistant loom and heat deflection panels shall be installed in such areas. Further details shall be discussed at the Preconstruction Conference.

12.33 All 12-volt wiring to the body shall be routed down each side of the exterior body compartments in enclosed electrical raceways in the compartment roof area. The raceways shall be enclosed full length to protect wiring from damage and shall provide access for service

12.34 All wire connections and terminations shall be securely made and weather-tight (including removable “plug type” connections).

12.35 All permanent wire connections and terminations shall be crimped and covered with self-sealing type heat shrink tubing.

12.36 All wire runs that require junctions shall terminate to weather–tight “buss bar” terminals.

12.37 “Buss Bar” terminals shall be secured with locking type hardware to prevent loose connections

12.38 All “buss bar” terminals shall be coated/sealed.

12.39 Ultrasonic welding is not acceptable without prior FDNY approval.

12.40 Combination “crimp and self-sealing heat shrink” butt connectors and terminals shall be acceptable only when a “home run” of the wiring is not possible. Further details shall be discussed at the Preconstruction Conference.

12. 12 VOLT ELECTRICAL (CONTINUED):

12.41 All exposed connections/terminations shall be covered with “liquid electrical tape”. Further details shall be discussed at the Preconstruction Conference

12.42 No “wire nuts” or “twisted” wires shall be acceptable.

12.43 No exposed wiring shall be acceptable.

12.44 Wiring shall be concealed to prevent unauthorized access. This shall prevent the ability to make splices for unauthorized electrical equipment.

12.45 All wire ends connected to a replaceable device shall have 6-inch pigtails, minimum.

12.46 Grounding straps between cab & frame, body & frame and separate grounding straps on appliances and / or circuits shall be provided as directed by FDNY

12.47 All circuit breakers, terminals & other electrical panels shall be easily accessible & protected inside enclosures made for this purpose, with hinged cover panels equipped with key lock. Panel lock by south co. Vice Action Lock, part #E3-15-15; key part #E-3-5-15.

12.48 All electrical components, relays shall be identified as to function by a permanent label affixed to its’ mounting location

12.49 All circuit breakers shall be only automatic reset type. It is the intent of FDNY to provide circuit breaker protection on all circuits to protect wiring and equipment from damage. The vendor shall provide a proposed layout of all circuits and circuit breakers at the Preconstruction Conference for FDNY review.

12.50 As directed by FDNY, waterproof junction boxes and conduit shall be provided: junction boxes shall be Hoffman™ p/n A-806NP or equal, clamp cover type and cable / conduit protection system shall be. PMA AG™, or equal. Wiring shall have the ability to be easily split to facilitate easy removal at a later date if needed. FDNY shall direct and approve those locations requiring this system.

- All connections inside junction boxes shall be made with “buss bar” type strips. Each terminal permanently labeled to identify function of wire.

- The junction box (mentioned above) shall be used in additional locations wherever deemed necessary by FDNY to create an easily serviceable junction. All runs through any conduit shall be “home runs”.

13. CAB:

13.1 The cab shall be a six (6) person split tilt design.

13.2 The cab shall be the manufacturer's highest quality custom designed four (4) door split tilt cab design. It shall be specifically designed for fire service.

13.3 It is the intent of the FDNY to only accept a cab made of 3CR12, or equal, stainless-steel construction.

13.4 A full description including grade, thickness and tensile strength of the proposed material for cab construction shall be supplied at the Preconstruction Conference.

13.5 Detailed engineering drawings of the cab showing power plant arrangement, and cab mounting configuration shall be supplied at the Preconstruction Conference.

13.6 Cab Structure: The cab shall be a "roll cage" design for maximum personnel protection and cab longevity.

- The cab substructure shall be a heavy-duty design.
- The cab shall be manufactured with multiple reinforcements in the cab front, floor, walls and roof.
- The cab roof shall have full length left to right support tubing as well as additional front to rear supports to form a grid type pattern.
- The cab roll cage structure shall be constructed of 3/16" minimum stainless-steel components.
- As deemed necessary by FDNY, heavy wall tubing shall be used in the construction of the cab. Note: thicker wall tubing may be required in certain areas at the discretion of FDNY.
- Due to the various cab designs available as well as FDNY's duty cycle, further details of the "roll cage" design, including material thickness and placement of supports shall be discussed at the Preconstruction Conference. Final design shall be approved by FDNY

13. CAB (CONTINUED):

13.7 Cab Dimensions:

- The back wall of the cab shall measure approximately 74" from the center of the front axle.
- The cab shall have an approximate overall length (skin to skin) of 142-144", with 144" being the maximum.
- The cab shall have an inside minimum width of 91" and an outside maximum width (skin to skin) of 96".
- Interior floor to ceiling height in the front cab shall be approximately 60" minimum and shall be approx. 66" minimum in the rear (crew) portion of the cab. If it is necessary for the roof to be raised to achieve this height, the maximum allowable dimension shall be eight (8) inches. **Note: The cab floor must be flat**.
- Door opening shall be a minimum of 72" high. Entrance step wells to the chauffeur's and officer's positions shall be a minimum of 24" wide, crew entrance step wells shall be a minimum of 34" wide.
- If deemed necessary by the FDNY, an additional step may be added inside cab at the battery box cover area to facilitate access/egress.
- All step wells shall be provided with bolted, framed Bustin™, or equal, overlay grating with ¼" clearance to wash out dirt from under grating and prevent entrapment of debris.
- There shall be an additional bolt-on non-slip aluminum step installed under each cab door. Step shall be a "breakaway" design to prevent damage to the cab. Final design shall be approved by FDNY.

13.8 The fixed crew cab portion shall be mounted in a minimum of six (6) places. Mounts shall be of the rubber isolating type.

13.9 Cab Tilt: The cab shall tilt a minimum of 45 degrees for normal servicing of the engine and other equipment. The tilt cab locking system shall be a two-point type that locks automatically when the cab is lowered into its nested position. The cab tilt open device shall be painted **day glow orange**. The cab tilt package shall be custom designed for safety and ease of apparatus maintenance. The hydraulic tilting system shall consist of two (2) heavy-duty double acting cylinders equipped with holding valves at the cylinder base in case of any failure in the operating mode. The power supply shall be a high efficiency electric over hydraulic system with an integral mechanical override in case of battery failure. All components and parts shall be designed for installation with a minimum of 3 to 1 safety factor based on current S.A.E. standards. A secondary positive pin-type latch shall be provided at the rear of the tilt portion of the cab. Design shall be approved by FDNY.

13. CAB (CONTINUED):

13.10 Cab Tilt Remote Control: A remote control shall be provided utilizing a 15' cable with a handheld pushbutton device. This device shall be hardwired and stored in a compartment under the right rear facing seat. This control shall be properly labeled as directed by FDNY.

- Provisions shall be made for the tilting of the cab in the event of total system failure. Two screw-in, threaded, removable eyes shall be installed. These eyes shall be capable of supporting the full weight of the cab. Location shall be directed at the Preconstruction Conference. The two eyes shall be shipped loose, and bolts shall be provided to cover the bolt eye holes.

13.11 Cab Open Lock: This shall consist of a metal channel device that automatically drops over the extended rod of the right-side hydraulic lift cylinder thereby preventing its retraction. The safety channel must be manually released by the operator using a remotely mounted lever or cable.

13.12 Secondary Cab Securing Device: The apparatus shall have a secondary manual securing device that locks the cab into the "down" position. There shall be a tethered pin, and hydraulic valve/pivoting handle assembly on each side of the cab. The pin hole size shall be 11/16". When engaged, the pivoting handle shall prevent the pin from "walking" out of position. The valve shall disable the hydraulic system for the tilt cab as an additional safety. Final design, layout and location of all components shall be directed by FDNY.

13.13 Tilt Cab Seal: there shall be a positive seal between the forward and rear cab sections. There shall be a primary and secondary means of sealing the contact surfaces. If an inflatable type seal is used, an isolated air tank shall be provided and isolated from depleting the primary and secondary air systems in the event of a leak. Final sealing system design and all related components shall be approved by FDNY.

13.14 The tilt cab controls (including, but not limited to relays, solenoids, breakers, buss bar terminals) shall be mounted in a waterproof, readily accessible enclosure. Final design and placement to be approved by FDNY.

13.15 The roof shall be adequately braced to support approx. 2 PSI, min.

13. CAB (CONTINUED):

13.16 The roof shall have additional panels over the seating areas covered in 12 gauge minimum 304 stainless steel material. These panels shall be held in place using welded studs on the cab and properly graded hardware. The roof shall be covered in **gray** Linex™, or equal. Exact texture, color, area covered, and material selection shall be directed by FDNY.

13.17 The sides of roof shall be provided with an integral drip molding that runs down the full length of the cab with a "dog leg" past the lower windshield. Further details shall be discussed at the Preconstruction Conference.

13.18 E-Z Pass holder mounted on roof, location approved by FDNY

13.19 Any intrusions into the cab interior shall be sealed from outside elements.

13.20 The cab ceiling shall be 1 ½" thick minimum insulation with heavy duty **gray** vinyl covering.

13.21 Switches & controls mounted in ceiling shall be recessed.

13.22 Two-Way Radio Storage Compartments/Antenna Access: Provide a minimum of six (6) antenna access points that are each a minimum of 4" in diameter with cover plates. For ease of handling, no individual access panel shall exceed a size of 6" x 24". Panel design shall be approved by FDNY. Weatherproof hinged-down, LED lit, lockable storage compartment(s) for the radios shall be provided. The overhead space above the two rear facing crew seats shall be used to house the radio equipment. The center shall be angled to accept an MDT. Final layout and installation of all components shall be approved by FDNY. In addition, there shall be a full-length exterior antenna box mounted as directed by FDNY. Further details shall be discussed at the Preconstruction Conference.

13. CAB (CONTINUED):

13.23 Engine Enclosure: The engine enclosure shall be constructed of stainless steel, sealed, structure that is integral to the cab. The stainless-steel structure shall have an additional engine cover overlay. The combined enclosure and cover shall be angled inboard on each side. The angled break shall start a minimum of 2.5" below the top surface of the chauffer and officer's seat cushion. The top forward portion of the engine cover shall have a full-width switch / accessory area with a smooth inclined face.

Note: The intent is to provide maximum space for firefighters, including the ability to don SCBA gear without restriction. Minimum hip room shall be no less than 25" for the chauffer and 26" for the officer as measured across the rear portion of the seat when it is fully inflated. Nothing shall protrude past the vertical cab door flange. Final design, layout, and installation of all seat related components shall be approved by FDNY.

- Note: The intent is to provide maximum space for the chauffeur, officer, and firefighters. The vendor may be required to modify the engine enclosure as necessary to provide this space. Further details shall be discussed at the Preconstruction Conference.

- The rear portion of the engine cover (behind the officer's map box shall be equipped with a continuous grab rail that runs full perimeter and extend to front cab engine cover between the chauffeur and officer's seats. The clearance between the engine cover and the lowest edge of the grab rail shall be a minimum of 3 ½". This cover shall be finished in **black** Linex™, or equal. The texture and color shall be approved by FDNY. Final layout / location and component selection shall be approved by FDNY

Full conceptual drawings of the engine enclosure shall be provided at the Preconstruction Conference. Final layout subject to FDNY approval.

13.24 Engine Enclosure Access Door: This door shall be provided so that routine fluid checks and fills can be made without tilting the cab. Special attention shall be given to the sealing and securing of these panels. The design of the enclosure shall also allow for the resetting of the emergency engine shutdown device without tilting the cab.

13. CAB (CONTINUED):

13.25 Engine Enclosure & Cab Insulation: Engine enclosure and cab insulation: the engine hood and cab shall be insulated to effectively control noise level to a maximum of 90 DBA when the apparatus is driven at a constant speed of 45 MPH, as well as effectively control heat from permeating into the cab.

- Engine hood and cab insulating material on the engine side of the engine tunnel and cab floor shall be one (1) inch thick minimum composite, with a heat rejecting, rip-stop, facing and built in lead shield for noise reduction. Exact coverage area shall be discussed at the Preconstruction Conference

- Insulating material shall be sandwiched between the stainless-steel engine enclosure and cab interior engine tunnel cover. Thermal type foam of 1/2" thick minimum in the angled sides and 1" thick minimum between the top surfaces shall be provided to reduce surface temperature of the interior engine cover.

- As directed by FDNY, vertical surface areas inside the cab, including the step wells shall be scuff protected with Linex™, or equal. Color shall be **gray**. Exact color, texture and exact coverage area shall be approved by FDNY. Further details shall be discussed at the Preconstruction Conference.

13. CAB (CONTINUED):

13.26 Cab Floor, Vertical Risers, And Scuff/Contact Areas: The cab floor, vertical risers, the area under the crew seats, and any foot contact area shall be constructed of a stainless-steel skin.

- Stainless steel skin shall be covered by 3/8" thick minimum floor insulation.
- The cab floor shall be twelve (12) gauge stainless steel tread plate.
- All vertical contact areas shall be twelve (12) gauge aluminum tread plate as directed by FDNY.
- All tread plate surfaces shall be covered with Linex™, or equal. Color shall be medium **gray**. Color and texture shall be approved by FDNY.
- Cab side walls shall be twelve (12) gauge aluminum and covered with Linex™, or equal. Color shall be medium **gray**. Color and texture shall be approved by FDNY.

13.27 Side and rear walls shall have 1 ½" thick minimum insulation and be covered with **gray** Linex™, or equal. Exact coverage area shall be directed by FDNY.

13.28 Provide Rosco™ "930FDNY", or equal, **black** adjustable sun visors that block out 100% of the sun's rays. They shall be installed on each side of cab interior. Each visor shall be full width and equipped with an integral visor organizer/pocket for storage of various items. Visors shall be capable of full motion without interference with other cab mounted components. Final design, equipment selection and installation shall be approved by FDNY.

13. CAB (CONTINUED):

13.29 Mirrors:

- Stainless steel exterior rear-view mirror kits shall be installed on cab doors. Two (2) Rosco™ model "6676 Series", or equal, including upper and lower mirror heads as well as mounting arms. An additional Rosco™, or equal 6" stainless steel mirror shall be installed on the right-hand lower mirror bracket as directed by FDNY.

  Note: due to the various cab designs available, further details shall be discussed at the Preconstruction Conference.

  The mirrors shall be designed and installed in a manner that prevents vibration. Final design and installation of all components shall be approved by FDNY.

- One (1) Rosco™, or equal mirror with bracket mounted on the officer's door to serve as a "down view" mirror. Location and type shall be approved by FDNY.

- One (1) Rosco™ p/n 801DSSP, or equal, eight (8) inch diameter, stainless steel, convex mirror. It shall be mounted on the right front outside edge of cab, as far to the right as possible, above windshield on a stainless-steel mounting bracket, suitable for viewing front of apparatus from cab interior.

- One (1) Rosco™, or equal, six (6) inch diameter convex stainless-steel mirror on the right side of cab, to view blind spot, on a single stainless-steel arm mounted off lower cab. Also, if deemed necessary by FDNY, an additional six (6) inch stainless steel mirror shall be installed to function as a "crossover" mirror. Further details shall be discussed at the Preconstruction Conference.

- See section 15 for information on a mirror at rear of body.

- Locations & mountings of all mirrors shall be approved by FDNY.

13. CAB (CONTINUED):

13.30 The fender and the fenderette shall be constructed of stainless steel and bolted in place. The fenderette shall be a multiple piece design and be fully polished. The inner fender wells shall be separate from the fenderettes to allow for easy removal. They shall cover the full radius of the tire and be of split design to permit tilting of cab. Mud guards with **white** FDNY block lettering shall be provided. The wheel wells shall protrude a minimum amount to provide tire coverage. Final design of fenders and fenderettes shall be approved by FDNY.

13.31 Cab Doors:

- Cab doors shall be fitted with double lock safety catches meeting all applicable safety standards.

- Lock levers shall be part of door lock mechanism. Doors shall not "slam lock".

- Interior and exterior cab door latches shall be Trimark™, or equal, heavy duty paddle type latch.

- All four (4) cab doors shall be keyed the same. They shall be equipped with Trimark™ #202 locks. Each apparatus ordered shall be keyed the same to each other

- Cab doors shall be mounted on heavy duty stainless steel full length "bolt on" piano hinges, approved by FDNY. **Welding of the hinges is not acceptable**. Bolts shall be ¼" minimum zinc coated grade 8 hex head. No part of the hinge shall be welded to the door or the door frame.

- Cab doors shall be double panel with inner panel of 14 gauge brushed finish stainless (no abs, padding, or painting shall be used on inside door finish).

- Cab doors shall be fabricated so that window regulator, lock assembly, and related items, are mounted to the inner door and not the door panel. Each door shall have three (3) easily removable inner door panels- one (1) to access regulator assembly, one (1) to access the exterior door handle and one (1) smaller panel to access the lock assembly. All door mechanisms shall be lubricated prior to assembly.

  Note: The lock assembly panel shall be capable of being removed without removing the other two (2) panels described above. For ease of removal, the maximum size of a panel shall be half the overall size of the door panel. Panels shall provide access to the door lock release with the door closed in the event of lock failure. In addition, the panels shall be removable in the event the doors are stuck closed. Final design and installation of all door panels and related components shall be approved by FDNY.

- Interior of all cab doors shall be provided with reflective 18-inch reflective stop signs, W.H. Brady and Co™, model #94142, or equal. Each sign shall have 96 square inches of reflective surface area and be bolted on.

13. CAB (CONTINUED):

13.31 Cab Doors (Continued):

- All doors shall be equipped with one (1) 5" nylon woven belt type door restrictor to allow door to open to ninety (90) degrees.

- Heavy duty rubber push-on door weather stripping shall be installed on the perimeter of the door opening where it comes in contact with the door opening surface. Glued on weather stripping is unacceptable. Weather stripping shall have a stainless steel "edge guard" on rear portion of the front doors and the front portion of the rear doors to prevent snags and damage to the weatherstripping. Further details shall be discussed at the Preconstruction Conference.

- All cab doors shall have drain holes. Further details shall be discussed at the Preconstruction Conference.

- Horizontal Door Scuff Plates: All cab doors shall be equipped with thin stainless-steel scuff plates, which cover the bottom full width of each cab door opening.

    - Each horizontal scuff plate shall begin at the bottom exterior of the cab and wrap around to the inside of the stepwell to the first break.

    - They shall extend towards the front of the apparatus approx. One (1") inch past the door.

    - They shall also extend to the rear of the apparatus, ending flush with the vertical scuff plate at the rear of each door opening (described below).

    - On the rear doors, they shall meet the wrap around tread plate.

    - Final design and placement shall be approved by FDNY.

- Vertical Door Scuff Plate: There shall be a stainless-steel scuff plate, at the rear of each door opening. It shall cover the full length of the door opening, from top to bottom. It shall start at the first break inside the door opening and wrap around to the exterior cab skin. Final design and placement shall be approved by FDNY.

- Rear Cab Scuff Plates: Each side of the cab, behind the rear cab doors (from handrail down to bottom of the cab) shall be covered with 12 gauge minimum stainless steel tread plate and wrap around the rear of the cab. These plates shall fully cover the exposed portion of rear of cab (full height). Final design and placement shall be approved by FDNY.

13. CAB (CONTINUED):

13.31 Cab Doors (Continued):

- All glass shall be tempered safety glass & comply with all applicable FMVSS standards

- All cab windows shall be tinted laminated automotive safety glass. The windshield and front cab windows shall be **green** tinted with a tint percentage of 30% (70% light transmission) and the rear crew cab windows shall be **gray** tinted with a tint percentage of 60% (40% light transmission).

- All cab doors shall be equipped with power windows. The chauffeur's control shall be a two (2) button type control with the capability of operating both the chauffeur's and the officer's windows. It shall be mounted to the right of the chauffeur, within right hand reach. The officer's switch shall be a single switch, operating the right-hand window. It shall be mounted to the left of the officer within left hand reach. All other control positions shall be a single switch control with the ability to operate the window at that seating position. All windows shall function with the ignition switch in the "radio" and "ignition" position. Final system design, component selection and layout shall be directed and approved by FDNY.

- The crew cab shall be equipped with two (2) sliding side windows located forward of each door. All crew cab door windows shall be equipped with a vertical stainless-steel bar coated with **black** Linex™, or equal for personnel safety. Size, final design and location shall be approved by FDNY.

- All crew cab door windows shall be equipped with a vertical bar for personnel safety. The bar shall be installed a manner that allows for sufficient clearance for a gloved hand but does not present a pinch hazard. "Pinch Point" placards shall be installed as directed by FDNY. These bars shall be coated with **black** Linex™, or equal. Further details shall be discussed at the Preconstruction Conference.

13. CAB (CONTINUED):

13.32 Cab Grab Handles, Rails, And Hooks:

- Grab handles & rails shall be installed to facilitate entry into cab.
- Grab handles & rails shall not interfere with the operation of door handles.
- Cab and Crew Doors (Exterior): One (1) knurled "non-slip" stainless steel vertical grab handle or railing installed on each cab door post. Grab handles shall be recessed into cab at the rear of each cab door.
- Cab Back Wall (Exterior): One (1) knurled "non-slip" stainless steel grab handles shall be provided on the officer's side to facilitate access to the deck area.
- Front Cab Doors (Interior): One (1) grab handle installed on the inside of each front door. Handle shall be an Austin Hardware™ #TH555 CH, or equal.
- Front cab posts (Interior): Two (2) Hansen International™ #F340SXXXXXX, or equal, grab handles shall be provided. Mount one (1) on the chauffeur's side "A" post, and one (1) on the officer's side "A" post, as directed by FDNY.
- Crew Cab Doors (Interior): At each crew door, provide one (1) Hansen International™ #F340SXXXXXX, or equal, handle, mounted horizontally on the interior door surface as directed by FDNY.
- Crew Cab Ceiling (Interior): There shall be one (1) Allegis Corporation™ #9/01226, or equal, 18" handle mounted on the crew cab ceiling between the two (2) forward facing seats. Location shall be approved by FDNY.

13. CAB (CONTINUED):

13.32 Cab Grab Handles, Rails, and Hooks (Continued):

- Provide and mount five (5) hooks / brackets to hold mask face pieces, installed to the left of the respective seating position. The officer's bracket shall be installed on an adjustable low profile stainless steel Unistrut™ or equal track. Location and type shall be to be discussed at pre- construction conference and approved by FDNY.

13.33 Seating:

- Cab shall provide seating for six (6) personnel- seating for officer and chauffeur in front section, seating for four (4) firefighters in crew cab area. Fore and aft seat placement shall be approved by FDNY.

- Two (2) rear-facing crew seats shall be outboard. The two (2) forward facing crew seats shall be inboard with 12" minimum center spacing. **All riding positions shall allow for maximum hip and shoulder room.**

- All seating positions shall be equipped with approved three-point restraint systems and be ergonomically correct. All seating positions (except the chauffeur's and officer's positions) shall have a dual retractor system. IMMI™, "Ready Reach", or equal, system shall be provided in cab seating positions as deemed necessary by FDNY. All seat belts shall have a belt height adjuster. Seat belts shall be **bright orange** in color. Seat belts shall be the manufacturer's most updated design. The vendor shall supply decals at each cab door position on the apparatus stating, "Occupants Must Be Seated And Belted When Apparatus Is In Motion". Seat belt receiver length shall be discussed at the Preconstruction Conference. These shall be in addition to the seat belt decals specified in section 21.

- The apparatus shall be equipped with a seat belt monitoring system with an audible warning device. The system shall have a display board indicating which belts in the apparatus are unfastened. An indicator light shall stay illuminated as long as the belt remains unfastened. Further details of operation and system design shall be discussed at the Preconstruction Conference.

13. CAB (CONTINUED):

13.33 Seating (Continued):

- All seat mounting & restraint systems certified in compliance with all applicable FMVSS, DOT requirements, including, but not limited to FMVSS 208, 209, 210. The length of the receiver shall be discussed at the Preconstruction Conference. It shall also be attached to the inboard side of the seat, unless otherwise directed by FDNY. Final design shall be approved by FDNY.

- Note: The intent is to provide adequate space for maintenance and maximum space for firefighters including the ability to don SCBA. Full conceptual drawing shall be provided at the Preconstruction Conference. Final layout shall be subject to FDNY approval.

- All seat coverings shall be heavy duty Bostrom™ "Durawear Plus", or equal, 1800# Nylon, **black** in color. All seats shall also have Bostrom™ "Zip Clean" or equal removable and washable seat covers.

- All seats shall have heavy duty material on SCBA seat backs with a support bracket under the SCBA brackets. Further details shall be discussed at the Preconstruction Conference.

- Chauffeur's seat shall be a Bostrom™ "134001-0712F", or equal, knee action seat and shall have fore and aft adjustment capability. It shall be equipped with air suspension with chauffeur's control located at seat base area.

- Officer's seat shall be a Bostrom™, high-back "350 FDNY Series SCBA Air 30", model "210008-0339L", or equal with air suspension. Seat shall have fore and aft adjustment capability. Officer's control shall be located at the seat base area. This seat shall also have a storage area in the base of the seat. Install a two (2) stud (positive and negative) buss bar under the officer's seat wired battery positive. Further details shall be discussed at the Preconstruction Conference.

Note: All seat back material shall be heavy duty and have a support plate under the SCBA brackets. Further details shall be discussed at the Preconstruction Conference. The vendor shall mount the chauffeur's and officer's seat controls in location that minimizes the potential for damage. Final location shall be approved by FDNY.

- Two (2) rear facing seats in the crew cab shall be Bostrom™, high-back "350 FDNY Series SCBA", or equal with 12" minimum center spacing.

- Two (2) front facing seats in the crew cab shall be Bostrom™, "300 CT FDNY Series SCBA", or equal, "flip-up" type.

13. CAB (CONTINUED):

- Six (6) Zico™ "Walkaway" KD-NY-FH-6-SF-CRS, or equal, brackets for Scott™ 45-minute air pack, with Zico™ NY-FH-6, or equal, high cycle clips and short foot plate, shall be provided. One (1) mounted in officer's seat, one (1) mounted in each of the four (4) crew cab seats, and one (1) shipped loose.

13.34 Crew Cab Storage Compartments: Two (2) storage compartments to the left and right of the forward-facing seats, utilizing the available wall space to its maximum height and width. These compartments shall be as deep as possible without protruding into the egress / access area. Each compartment shall have a metal pegboard back wall, one (1) adjustable shelf, one (1) fixed shelf, and three (3) adjustable seat belt type straps. All of the above components shall be mounted on low profile Unistrut™ tracks. The hardware for these shelves shall be 3/8" minimum.

13.35 Bulk Item Storage: There shall be two (2) fabricated storage trays (one on each side) between the front seats and the rear facing crew seats for bulk item storage.

- Each tray shall be bolted to the cab floor.
- A removable bolt in box shaped sleeve/module shall be provided on top of each tray to extend the height for storage.
- All surfaces shall be covered in **black** Linex™, or equal.
- Final dimensions, layout, and further construction details shall be discussed at the Preconstruction Conference.

13. CAB (CONTINUED):

13.36 Cab Dash: It shall be low mount for maximum chauffeur and officer visibility. Final dash layout shall be approved by FDNY.

13.37 Cab Overhead Console: It shall be high mount for maximum chauffeur and officer visibility. Final layout shall be approved by FDNY.

13.38 Overall Height Placard: There shall be two (2) overall height placards, one (1) on the officer's side and one (1) on the chauffeur's side. These placards shall be approximately 2.5" high by 4" long, with numbers 1" high, min.

13.39 Cab Switches & Controls: Cab shall include, but not be limited to, the following properly & permanently labeled switches:(type and location shall be approved by FDNY)

1) One (1) Battery-disconnect switch
2) One (1) Ignition switch
3) Two (2) Momentary starter buttons
4) One (1) Three-way headlight switch (As approved by FDNY)
5) One (1) Floor mounted dimmer switch (An integral style high beam/windshield wiper switch is acceptable
6) One (1) Instrument lamp dimmer switch
7) One (1) Windshield wiper switch with intermittent feature
8) One (1) "Cab to Rear" warning buzzer momentary push button
9) One (1) Pump engagement control
10) One (1) Air parking brake control
11) One (1) Electric fuel pump momentary switch
12) One (1) Foot pedal on the chauffeur's side for the air horn
13) One (1) Switch on chauffeur's side for siren brake
14) Three (3) Foot pedals on officer's side for siren, siren brake and air horn
15) One (1) three-way switch for regeneration inhibit.
16) HVAC controls / switches

13. CAB (CONTINUED):

Note: The following require a **red** "flip cover" to prevent accidental activation:

17) One (1) Emergency engine stop momentary switch
18) One (1) ATC deep mud and snow on/off switch
19) One (1) Officers parking / emergency brake control switch
20) One (1) Ladder rack enable switch. (Note: A push type enabling device for this switch shall also be acceptable in lieu of a flip cover).
21) One (1) Engine Shutdown Reset.
22) One (1) "Door Open" Alarm Disable Switch.

13.40 Cab Rocker Switch Panel:

A separate illuminated switch panel shall be provided in cab that is accessible to chauffeur and officer, in a location approved by FDNY. It shall incorporate eight (8) pilot lit, properly & permanently labeled, heavy- duty rocker switches (type approved by FDNY). They shall be laid out from left to right, labeled in the following order:

1)---Response Lights
2)---Front Flashers
3)---Compartment Lights
6)---Air / Electric Horn Selector Switch
7)---Brow Light
7)---Stereo
8)---Spare *
9)---Ladder Rack Master

* Note: The vendor shall supply one (1) spare switch in position #8.

13. CAB (CONTINUED):

13.41 Cab Gauges:

1) One (1) Electronic Tachometer
2) One (1) Electronic Speedometer on Chauffeurs Side
3) One (1) Electronic Speedometer On Officer's Side (a digital speedometer may be acceptable with prior FDNY approval).
4) One (1) Dual Air Pressure Gauge (Or Two (2) Single Gauges)
5) One (1) Digital LED Voltmeter, Autometer™ Model #6393
6) One (1) 500 Amp Stewart Warner™, Or Equal, Analog Ammeter with a positive and negative 500 Amp scale (See Section 12 For Further System Description)
7) One (1) Engine Coolant Temp Gauge
8) One (1) Fuel Level Gauge
9) One (1) DEF (Diesel Exhaust Fluid) Level Gauge
10) One (1) Electronic Engine Oil Pressure Gauge
11) One (1) Engine Hourmeter (To Read **Actual** Engine Run Hours Only)
12) One (1) Electronic Engine Oil Pressure Gauge
13) One (1) Air Filter Restriction Indicator

Note: Cab shall include but not be limited to the following: All gauges shall be backlit, with the exception of the LED voltmeter and the air filter restriction indicator. Type and location shall be approved by FDNY. A digital display system shall also be acceptable with prior FDNY approval.

13.42 Cab Warning / Indicator Lights: Cab shall include, but not be limited to the following properly & permanently labeled warning / indicator lights. Type, size, and location shall be approved by FDNY

Red lights for the following:

1) Primary Low Air Pressure (Non-Flashing Weldon™ # 9186-2300-10)
2) Secondary Low Air Pressure (Non-Flashing Weldon™ # 9186-2300-10)
3) Parking Brake Applied
4) Officer's Emergency Parking Brake Switch Activated
5) Seat Belt Warning Lights
6) Low Coolant Level
7) High Coolant Temp
8) Emergency Engine Shut Down Activated
9) Stop Engine
10) Low System Voltage
11) ABS Failure
12) Water in Fuel
13) Ladder Not Locked
14) Drive Line Retarder Indicator Panel (See Section 5)

13. CAB (CONTINUED):

13.42 Cab Warning / Indicator Lights (Continued):

Red Lights (Continued):

15) Open Cab Door / Body Compartment
16) Cab Not Nested & Locked

Green lights for the following:

1) Master Battery Switch "On"
2) Ignition Switch In "Run" Position
3) Pump Engaged
4) OK to Pump
5) Ladder Rack Enabled
6) Two (2) Directional Indicators

Amber lights for the following:

1) Auto Lubrication System
2) Electric Fuel Pump Activated
3) Check Engine
4) Check Transmission
5) High Transmission Temperature
6) High Exhaust System Temperature (HEST) lights. (One (1) each on the chauffeur's and officer's side).
7) Diesel Particulate Filter (DPF) lights. (One (1) each on the chauffeur's and officer's side).
8) Diesel Exhaust Fluid (Def) lights. (One (1) each on the chauffeur's and officer's side).

Blue light for the following:

1) High Beam Headlights

13. CAB (CONTINUED):

13.43 Cab Audible Warnings: Cab shall be equipped with an audible warning system that will sound whenever the warning light for one or more of the listed below conditions are met. All of the below shall be connected to a single device, with the exception of the "open cab / compartment door" indicator- this shall have its own device with a different sound. Mounting locations and types of warning devices (including sound type), shall be approved by FDNY.

1) Low air pressure (primary & secondary air)
2) Low engine oil pressure
3) High coolant temp
4) Low coolant level
5) Low system voltage
6) High transmission temp
7) "Stop Engine" light activation
8) Water in fuel
9) Cab not nested & locked
10) Open cab / compartment door*

* There shall also be a momentary shut off device that turns off the compartment door open buzzer. The buzzer shall reset with each ignition cycle. The warning light shall stay illuminated when the momentary shut off is activated. There shall also be a light that illuminates to indicate when the buzzer shut off device is activated.

13.44 An illuminated perimeter drawing of the apparatus indicating which door is ajar shall be provided. Warning light & audible alarm to activate if cab or any compartment door(s) is "Open" when parking brake is released.

13.45 Windshield Wipers: Shall be heavy-duty, 12-Volt powered, horizontal park type with two (2) speed & intermittent feature. A windshield washer shall be incorporated into wiper system. Wipers and washer shall be operated by a single switch, easily accessible to chauffeur. Windshield wiper and washer system shall completely clear the windshield when in use.

13. CAB (CONTINUED):

13.46 "Buzzer" Type Communication System: A 2-way, "buzzer" type communication system between the rear of apparatus and the chauffeur shall be provided- it shall contain two (2) "buzzers", one (1) located in cab, and one (1) at the rear of the apparatus. It shall also contain three (3) momentary push buttons; one (1) located at chauffeur's area, and one (1) on each side of the rear of the apparatus. Rear switches shall have stainless steel protective guards. All the buttons shall be permanently labeled: 1=Stop, 2=Go, 3=Back-Up. **Note: The cab button shall activate the rear buzzer and the rear buttons shall activate the cab buzzer.**

13.47 Electric Horns: Two (2), meeting FMVSS and DOT requirements, shall be installed under front of cab

13.48 Air Horn: Shall be Grover™ #1510 or equal. Location and mounting of all horn components shall be approved by FDNY.

- Solenoid air valve shall be a Skinner™ "V-5", or equal.
- The air horn shall remain operable at the full decibel rating for a minimum of thirty (30) seconds. In addition, the air supply for the horn shall be plumbed so as to build up rapidly and not deplete the primary or secondary air tanks.
- It shall be easily serviceable / replaceable. No screen or cover in front of horn outlet
- Horn shall be controlled by four (4) independent methods- the horn button in steering wheel, a foot switch at chauffeur's area, a foot switch at officer's area, and an "Emergency Use Only" switch on the pump panel.
    - ° Foot Switches: Shall be Linemaster™ #632S, or equal. Exact locations shall be directed by FDNY at Preconstruction Conference.
    - ° Pump Panel Air Horn Switch: There shall be a weatherproof guarded, momentary push button that activates the air horn. It shall be labeled "Air Horn - Emergency Use Only". Exact location and final installation shall be directed by FDNY

13.49 Air/Electric Horn Selector Switch: Shall be installed in the cab to switch between the air horn or electric horn operation on the steering wheel.

13. CAB (CONTINUED):

13.50 Siren Control:

- Siren shall be controlled by two (2) independent methods- the siren control box switch, and a foot switch at officer's area.

- Foot switch shall be Linemaster™ #632S, or equal. Exact location shall be directed by FDNY at the Preconstruction Conference.

- Siren speaker and related items will be described fully in section 22

- Two (2) switches for siren brake shall be installed. One (1) shall be a Linemaster™ 491S, or equal, for use by the officer. One (1) rocker switch shall be installed on the cab dash, accessible to the chauffeur. Switch installations and locations shall be approved by FDNY.

13.51 12V USB Ports. There shall be (1) port for the chauffeur, three (3) for the officer, and one (1) in each rear riding position. Each USB unit shall be able to charge both USB-A and USB-C devices. USB units shall have appropriate circuit breaker protection and be wired "hot".

13.52 Map/Document Holder Box: This shall be installed rearward of the working area between the officer's and the chauffeur's seated positions. This box shall be bolted to the engine hood cover and extend rearward to the dividing line between forward and crew cabs.

- The chauffeur's side of the box shall have angled slots facing forward with Velcro™, or equal, straps. Two (2) dividers shall be provided. The slotted portion of the box shall measure approximately 7" high x 15" wide x 14" deep. Final width shall be determined and discussed at the Preconstruction Conference.

- The base of the storage unit on the chauffeur's side shall also have provisions to house the Two-Way Radio CPU unit and the siren amp. These storage provisions shall be approximately 5" high. The width and depth shall be determined by the slotted portion of the storage unit. It shall be locked with a Southco™ #E3-26-819-15, or equal, "radio compartment key" to prevent unauthorized access. This compartment shall also be vented to protect the equipment from overheating.

- The officer's side shall serve as a storage area for equipment (no dividers), and shall also have Velcro™, or equal straps. The top of this area shall be open. This side of the box shall measure approximately 7" high x 14" deep. The width shall be determined and discussed at the Preconstruction Conference.

° The entire box shall be coated in **black** Linex™, or equal. Box location, material selection and final installation shall be directed and approved by FDNY.

13. CAB (CONTINUED):

13.53 A record book storage box with writing console / lid shall be provided on the right-hand side of the cab dash in front of the officer's seating position.

- The box under the writing console shall be divided with a 12" wide x 10" long x 4" tapering to 1" deep space directly under the writing console and a 2.5" wide x 9" long x 4" tapering to 3" deep space to the right of the space under the writing console and open to the top.

- The box under the writing console shall be constructed of aluminum. Compartment finish shall be determined and discussed at the Preconstruction Conference.

- Provide a 1" I.D. diameter by 3" long tube type pen holder mounted to the outside of the box. The pen holder design shall also prevent the pen from falling out of the holder the box shall have a ½" lip on the top of the rearward 4" face for the full width of the box.

- The lid shall be 12.5" wide over the 12" wide box space and hinged full width of the lid. The lid shall include a Lexan™, or equal, cover, gas prop, and two (2) latching mechanism. There shall be a Lexan™, or equal, cover will be retained by 4 countersunk screws and for retaining documents and other departmental paperwork.

- The writing console and box shall be illuminated by a SoundOff Signal™ model #EMPML001, or equal flexible neck LED light mounted on the dash. Location and final installation subject to FDNY approval.

- There shall be provisions to install the current in use FDNY hand light next to this box. Further details shall be discussed at the Preconstruction Conference.

13.54 Provide one (1) Zico™ p/n "SW-MBA", or equal, spanner wrench holder, installed in a location in the cab as directed by FDNY. Exact location shall be discussed at the Preconstruction Conference.

13.55 FDNY Hook Holder: FDNY approved hook holders shall be provided as follows: the chauffeur's side shall have one (1) double hook holder on the rear of the cab, and the officer's side shall have one (1) single hook holder on the rear of the cab. Holders shall be of aluminum construction. There shall be full-length stainless-steel scuff plates to protect the cab from damage.

13. CAB (CONTINUED):

13.56 360 Degree Camera System: Provide and install a Fire Research™, or equal, 360-degree color back-up camera and monitoring system with sound feature. Minimum screen size shall be 7" as measured diagonally. The camera system shall have graphical overlay technology, permitting the operator to view the apparatus in perspective to objects and obstructions around it. The screen view shall incorporate grid lines showing the approximate distance the apparatus is from these obstructions/fixed objects. The system shall activate when the apparatus transmission is placed in reverse or the turn signals are activated as well as provide a "quad view" on the screen. Component selection, layout, exact operation and final installation shall be directed and approved by FDNY.

13.57 Back-Up Alarm: One (1) Ecco™ p/n SA914 or equal, solid-state electronics, automatic volume adjustment from 87 to 112 decibels, shall be provided. Properly mounted at rear of body, in a location approved by FDNY, to ensure automatic operation, and be protected from the elements. Shall be activated automatically when transmission is in reverse mode.

13.58 Vehicle Data Recorder (VDR): Fire Research™ model # SBA743-A00, or equal, with audible warning device and USB port for data retrieval. This shall be provided onboard allowing for the download of data from the apparatus. There shall also be a momentary shutoff device provided that resets with each ignition cycle. Due to the various systems available, this shall be further discussed at the Preconstruction Conference.

13.59 Provide and install one (1) Kenwood™, or equal, AM/FM stereo radio with weather band feature, two (2) speakers, and clock. Final location shall be approved by FDNY.

13.60 There shall provisions to hold one (1) current in use FDNY pike pole pocket on each side of the cab as directed by FDNY. Further details shall be discussed at the Preconstruction Conference.

14. HVAC SYSTEM:

14.1 General Description: For optimum comfort in all weather, an automotive type climate control panel shall allow the chauffeur and / or the officer to control the heating, air conditioning, defrosting and ventilating functions for the forward portion of the cab. The front control panel shall be designed for ease of use. It shall include an air source switch (fresh / recirculating) and controls for air discharge location (mode), fan speed, and temperature. It shall also have a "Max A/C" button to provide maximum cooling. All of the functions shall have an indicator showing what mode is on. The heater unit shall be located near the floor. No part of the HVAC system shall impinge on the cab floor area. **Note: system shall be manual controls. An electronic system is not acceptable.**

Note: Due to FDNY's severe duty cycle and operating environment, proper HVAC system function is of critical importance. If it is determined that the HVAC system does not meet FDNY's requirements, the vendor shall be required to modify the system in any way necessary to meet FDNY's needs. Further details shall be discussed at the Preconstruction Conference.

14.2 HVAC Air Distribution: The HVAC system shall be properly ducted to provide consistent and even airflow to all seating positions. Blower motors shall be capable of producing 700 CFM minimum of free air.

- There shall be a minimum of eight (8) rear facing vents installed in the cab dash. Two (2) of these vents shall be used to defrost the chauffeur's and officer's side windows. Vents shall be rotatable and closeable.

- Conventional defroster outlets shall be provided from the heater for directing warm air to the windshields. These shall be "slot" type, located at the bottom of the windshield.

- The crew cab evaporator (described below) shall have a minimum of eight (8) air vents to allow for multi-directional air flow. Vents shall be rotatable and closeable. Four (4) of these vents shall be directed to the main portion of the crew cab, and two (2) vents each shall be provided on the left and right side.

14. HVAC System (Continued):

14.2 HVAC Air Distribution (Continued):

- All vents and outlets shall be built to the largest size possible and be capable of directing air flow in all directions. Final design, location and installation of all components shall be subject to FDNY approval.

Note: It is the desire of FDNY to accept an apparatus with metal diffusers. If these are not available, plastic diffusers are acceptable.

- The HVAC system shall have easily replaceable fiber and mesh filters. These filters shall be accessible through a door or panel. Final design and location shall be approved by FDNY.

14.3 Heater and Defroster: A 46,000 BTU, minimum, front heater and defroster shall be installed with a variable blower. A heater control valve shall be provided to shut off hot water when the air conditioning is called for. In addition, manual shut off valves shall be provided to shut off the system. These valves shall be ¼ turn and permanently and properly labeled with their function and direction of operation.

14.4 Crew Cab Heater: Crew cab heater(s) shall provide equal dispersion of heated air to all personnel.

- Heater unit(s) shall be one (1) heater unit of 30,000 BTU minimum output or two (2) heater units of 15,000 BTU minimum output each.

- System shall be powered by an illuminated three (3) speed rocker switch for the blower. In addition, the system shall have a rotary temperature control dial.

- A heater control valve shall be provided on the supply line to control the engine coolant flow into the heater core.

- There shall also be manual shutoff valves to shut off the system. The manual shutoff valves shall be ¼ turn and permanently and properly labeled with their function and direction of operation.

- All crew cab heater related components shall be mounted as directed by FDNY.

14. HVAC SYSTEM (CONTINUED):

14.5 Air Conditioning: The HVAC system shall be compliant with all EPA regulations and use r-134a or latest approved refrigerant. The cab and crew cab shall be equipped with an automotive type air conditioning system. The system shall consist of two (2) independent systems and shall include but not be limited to two (2) pad mounted compressors with two (2) dedicated serpentine belts, two (2) condensers, and two (2) evaporators. The cab evaporator shall be totally integrated into the HVAC system and have the ability to provide dehumidified air. The crew cab evaporator shall be ceiling mounted.

14.6 Rear Air Conditioning Control Panel: A manual style control panel shall be provided consisting of controls for fan speed and temperature. The panel shall be located on the evaporator unit. A drain system shall be provided inside the cab to allow for the removal of condensation. If a drain hose is used it shall be of Synflex™, or equal, type. A drain pump shall not be acceptable. All a/c tubing and hoses shall be protected from unauthorized access.

- Any portion of the HVAC system that protrudes into the crew area shall be protected by padding.
- Bulkhead type connections shall be used at all through roof & bulkheads.
- All hoses used in the air conditioning shall be "barrier" type construction for containment of the refrigerant with replaceable six foot (6') "whip ends" as directed by FDNY.
- Hose fitting type shall be Eaton™ "E-Z Clip", or equal. Hose design shall be approved by FDNY.
- The condenser(s) shall be low profile, dual fan compact design with dryer and pressure switch included. The condenser(s) shall be located on the cab roof. The condenser unit(s) and all roof mounted components shall be protected from damage with fabricated stainless-steel tread plate cover(s). The fan shall be protected with a stainless steel framed cover.

14. HVAC SYSTEM (CONTINUED):

14.7 The A/C system shall conform to the following standards:

Relative humidity	Ambient air temperature (° f)	Refrigerant pressure (PSI)	Air duct temperature (° f)
Above 30%	70	135-165 (high) 8-14 (low)	36-44
Above 30%	80	155-185 (high) 10-15 (low)	41-47
Above 30%	90	170-205 (high) 11-17 (low)	42-52
Above 30%	100	215-255 (high) 15-22 (low)	45-60
Above 30%	110	250-295 (high) 18-27 (low)	50-65

14.8 A/C fans shall be operable with the ignition on.

14.9 Condenser fan(s) shall come on when a/c is activated.

14.10 The HVAC system design, component selection, layout and installation shall be approved by FDNY.

14.11 Provide two (2) Haldex-Midland™ #BE29012, or equal, four (4) blade, 6.5” diameter 12-volt, 2 speed with individual controls, air circulation fans in the cab. Fans shall be all metal construction. They shall be mounted on 12-gauge stainless steel plates with 3/8" stainless steel bolts and locking Nylock™, or equal, nuts and have individual control switches. Installation and location shall be approved by FDNY.

15. BODY / PUMP MODULE:

15.1 The body, substructure, and related supports & braces shall be constructed of "400 Series" stainless steel. Body shall be a "bulkhead" design for strength and rigidity.

15.2 The body shall consist of two (2) main parts:

- Main Body Section: That incorporates a hose bed area, exterior compartments, and a booster tank

- Pump Module Section: That houses the fire pump, plumbing, valves and related items. It shall incorporate operators pump panels on both sides of the apparatus (See section 18 for further details)

15.3 Pump module section shall be located forward of the main body section, and each shall be mounted separately.

15.4 Body Substructure Fabrication:

- Shall be fabricated from full length, formed 7-gauge, minimum, stainless steel channels, that run parallel with frame rails.

- Body cross members shall be stainless steel tubing, adequately sized for the application, and approved by FDNY. They shall be welded to the formed channels mentioned above. These shall extend full width of the apparatus and serve as structural support for the compartment walls. Additional stainless-steel cross members shall be installed to support hose bed floor.

- The substructure shall be adequately supported and braced to withstand the heavy load and extreme duty that the apparatus will encounter. It shall be approved by FDNY.

15. BODY / PUMP MODULE (CONTINUED):

15.5 Body Fabrication:

- The sheet metal welding of the body shall be with inert gas, continuous feed welders only. The use of “stick type” welding is not desired due to heat distortion.

- Body and compartment construction, including compartment walls, dividing walls, ceilings, door frames, and doors, shall be fabricated using 14-gauge, min, stainless steel.

- Pump module shall have an exterior fabricated from 14-gauge, min, “304” stainless steel, with a 3/16” min aluminum tread plate roof. The roof surface shall be properly supported so that it can be used as a work platform.

- Main body compartment floors shall be fabricated using 12-gauge, min, stainless steel. They shall have a 1-1/2", minimum, vertical break at rear wall and both side walls of compartment. These breaks shall be welded on the inside and outside of compartment. All compartments shall have full length/width “hat section” reinforcement supports.

- Main body compartment floors shall each have a “box pan” support, fabricated from 12-gauge min, stainless steel, welded to the underside. The floor construction shall permit easy cleaning with a "sweep out" type design.

- Each main body compartment floor shall have four (4) drain holes, one in each corner. Edges of any holes shall be sealed to prevent corrosion.

- The compartment door frames shall be of channel shaped double break design on the sides. There shall be a 2 ½” double break along rub rail attachment point for reinforcement of the floor. All compartments shall also have “hat section” reinforcement supports for compartment durability and strength. Further details shall be discussed at the Preconstruction Conference.

- All exterior compartments shall have stainless steel bolted on scuff plates. These plates shall run to the first break in the compartment door frame. Further details shall be discussed at the Preconstruction Conference.

15. BODY / PUMP MODULE (CONTINUED):

15.5 Body Fabrication (Continued):

- The wheel well panels shall be set back 1-3/8" minimum from outside edge of rub rails.

- An enclosed channel shaped header shall be provided at the top of compartments to accommodate all 12-Volt body wiring, permitting easy accessibility.

- Each main body compartment shall be provided with two (2) stainless steel ventilation louvers that will not let road debris and road splash enter into the compartment.

- All seams in the compartments shall be sealed with continuous silicone based waterproof caulking sealants.

- Only stainless-steel nuts and bolts shall be used in mounting exterior trim, moldings, hardware, or equipment.

15.6 Body Mounting:

- The main body section shall be adequately and securely attached to the chassis at six (6) points, minimum. The rear mounting shall incorporate "through-bolts" easily accessible through body substructure caps and the chassis frame rails. Forward of this point shall be U-bolts with coil springs to allow movement of the chassis frame under the body. A nylon, or equal, full length, one-piece caged isolator shall be used between frame rails and underside of body, **wood will not be accepted.** Isolators shall be captured so as to prevent "walking" of the isolator out of position.

- The pump module shall be adequately and securely attached to the chassis at four (4) points, minimum.

- Mounting of both the main body section and the pump module shall be approved by FDNY.

15. BODY / PUMP MODULE (CONTINUED):

15.7 Main Hose Bed:

- Hose bed layout shall allow the full hose complement to be “packed” in the same manner as per FDNY regulations.

- Hose bed shall have the capability to properly hold the following complement of the same brand / type hose that FDNY currently uses:

  A) Eight (8) fifty-foot lengths of 3 ½” hose.

  B) Twenty-six (26) fifty-foot lengths of 2 ½” hose.

  C) Twelve (12) fifty-foot lengths of 1 ¾” hose.

- Dimensions of hose bed shall be 84” long, 58” wide, and 33” high. On units with a 500-gallon booster tank, the top surface of hose bed floor shall be approximately 58” from ground. Variations shall be approved by FDNY.

- The hose bed outer walls shall be reinforced with 3" x 1.5" min stainless steel tubing. The inner panel shall provide a smooth surface for the hose bed sides allowing easy removal & loading of fire hose.

- Inner walls of hose bed shall remain unpainted, and have a “DA” finish.

- Stainless steel adjustable Unistrut™, or equal, "C" channel tracks shall be provided for the mounting of hose bed dividers. There shall be two (2) located at the front (one upper & one lower) and one (1) at the rear of the hose bed.

15. BODY / PUMP MODULE (CONTINUED):

15.8 Hose Bed Dividers:

- Three (3) fully adjustable hose bed dividers, fabricated of 12-gauge min stainless steel, shall be provided. 1" stainless steel tubing shall be welded to front, top, and rear edge of divider, forming a continuous border. Tubing shall be formed in a manner that provides a grab handle at the rear of divider. Grab handle shall run the full height of divider. Final design shall be approved by FDNY.

- Dividers shall be attached to "C" channel using 3/8" minimum diameter zinc coated grade 8 bolts. Top rear of dividers shall also be secured to the cross bar described in section 15.10.

- Dividers shall remain unpainted and shall have a "DA" finish.

15.9 A 1 1/4" diameter tubular knurled stainless-steel cross bar using grade 8 zinc coated hardware with hex heads shall be provided at the rear of hose bed. It shall run full width of hose bed and be installed approximately 69 ½" from top surface of rear step, bolted in place using grade 8 zinc coated hardware with hex heads. The upper rear area of dividers shall be secured to this cross bar, however, shall still remain easily adjustable.

15.10 Hose Bed Decking:

- Flooring shall be Firmaline™, or equal, smooth fiberglass grating to assist in ventilation. It shall be installed in base of hose bed above top of booster tank and back board box flooring.

- Shall be properly supported, held in place by hose bed dividers and be easily removable if needed to service booster tank and related items.

15. BODY / PUMP MODULE (CONTINUED):

15.11 Hose Bed Cover: Shall be an Appleton Awning™, or equal, "Herculite #80", **red** cover. Main center seam shall be electronically welded or double stitched. Cover shall be permanently attached to the front of the hose bed, sandwiched between the top flange of the body divider and the aluminum reinforcement strip. Snap and Velcro™, or equal, attachment points shall be used to fasten the left- and right-hand side of the cover to the top of the side body compartments. Gator straps™, or equal shall be provided at the rear to tighten and secure the cover. Three (3) Velcro™, or equal, straps shall be provided across the front edge to secure the cover in the rolled position when not in use. Cover shall provide full vertical coverage at the rear of hose bed to comply with NFPA requirements. Final design of covers and attaching methods shall be approved by FDNY.

15.12 Back Board Box: A fully enclosed box shall be provided at the right-side lower area of hose bed to hold one (1) FDNY supplied backboard. Box shall be fabricated from 3/16" min smooth aluminum, with the approx. dimensions of 19" wide, 4 ½" high, and 75" deep. It shall have a flip down door at the rear, fabricated of 1/8" min stainless steel tread plate, with a stainless-steel piano style hinge horizontally mounted to bottom of door with stainless steel hardware with hex heads. Positive latching device(s) shall be provided on door. Box shall be securely fastened in place using grade 8 zinc coated hardware with hex heads. It shall be easily removable if needed. Final design and location shall be approved by FDNY.

15. BODY / PUMP MODULE (CONTINUED):

15.13 Main Body Compartment Identification & Dimensions (All Dimensions Are Approximate):

Note: Compartment measurements shall be denoted as follows:

Width: Inside width of compartment from wall to wall.

Height: Inside height of compartment from floor to ceiling

Depth: Inside back wall of compartment to outermost edge of door frame.

Note: Due to the ongoing changes in the equipment carried by the FDNY, compartment dimensions may need to change at the time of build. This shall be further discussed at the Preconstruction Conference.

- Compartment #1: Left side, lower body area forward of rear wheel opening with dimensions of 30.75" wide, 30.25" high, 24.25" deep, with an opening size of 28.75" wide by 29" high.

- Compartment #2: Left side, lower body area rearward of rear wheel opening with dimensions of 30" wide, 33.25" high, 24.25" deep with an opening size of approximately 28.75" wide by 29" high.

- Compartment #3: Right side, upper body area forward of rear wheel opening with dimensions of 56.25" wide, 34" high, 24" deep with an opening size of approximately 52" wide by 30.38" high.

- Compartment #4: Right side, lower body area forward of rear wheel opening with dimensions of 30.75" wide, 31" high, 24.25" deep with an opening size of approximately 28.75" wide by 29" high.

- Compartment #5: Right side, upper body area rearward of rear wheel opening with dimensions of 56.25" wide, 34" high, 24.25" deep with an opening size of approximately 52" wide by 30.38" high.

- Compartment #6: Right side, lower body area rearward of rear wheel opening with dimensions of 30" wide, 31" high, 24.25" deep with an opening size of approximately 28.75" wide by 29" high.

15. BODY / PUMP MODULE (CONTINUED):

15.13 Pump Module Compartment Identification & Dimensions (All Dimensions Are Approximate):

- Compartment "M1": Left side of apparatus, forward upper area of operator's pump panel, with dimensions of 18.75" wide, 22" high, with opening dimensions of 16" wide by 20" high, transverse with compartment "M3".

- Compartment "M2": Left side of apparatus, forward lower area of operator's pump panel. This shall be a fire pump access compartment, (not a useable storage compartment), with an opening of 11" wide x 17" high.

- Compartment "M3": Right side of apparatus, forward area of right-side pump panel. This compartment shall have two (2) parts- the upper part shall be a storage area with dimensions of 18.75" wide, 22" high, transverse with Compartment "M1". The lower part shall be a fire pump access compartment. Both parts shall share the same door opening with dimensions of 16" wide x 53.75" high.

- Compartment "M4": Right Side of apparatus, upper rearward area of right-side pump panel. This compartment shall have two (2) parts- the upper part shall be a storage area with dimensions of 35.75" wide, 22" high, 60" deep (outside of body to back wall). The lower part shall be a fire pump access compartment, (not a useable storage compartment). Both parts shall share the same door opening with dimensions of 22.25" wide x 27" high.

- Top Body Mounted Storage Box: An "L" shaped storage box configuration shall be provided on the top of the body. One portion shall have approximate dimensions of 57.75" wide by 20" high by 23.75" deep, and the other portion shall be approximately 41.75" wide by 20" high by 15.50" deep. It shall contain but not be limited to the following features: • Aluminum tread plate construction • Full length stainless steel hinge with a 120 degree opening • Gas charged assist struts • Mateflex™ or equal, **black** grating installed on the floor of the boxes • Cables to prevent overextension of the struts •Full length bolt on angle brackets to secure the boxes in place. Length and width of this box shall be maximized and shall not increase the overall height of the apparatus • Two (2) rubber coated handles and two (2) Southco™ p/n K5-2856-52, or equal "draw latches". Final design and location shall be approved by FDNY and further details discussed at the Preconstruction Conference.

15. BODY / PUMP MODULE (CONTINUED):

15.14 Compartment Doors:

- All doors that are the same dimension shall be of "universal design" and capable of being installed on either side of the apparatus. This shall be discussed at the Preconstruction Conference.

- The doors on compartments #1,#2,#4 and #6 shall be vertically hinged, fabricated from 12-gauge min stainless steel with a 14-gauge min inner box pan.

- The doors on compartments "M1", "M2", "M3", And "M4", shall be vertically hinged, fabricated from 12-gauge min "304" stainless steel with a 14-gauge min brushed finished inner box pan. Inner box pan shall be mechanically fastened.

- The doors on compartments #3 and #5 shall be Amdor™, or equal, aluminum "roll up" type doors, with a full width "l" angle along base of door, and a "lift bar" type latch with a lock that uses a # 1250 key. Doors shall have integral LED track lighting & remain **unpainted.**

- The box pan on all vertically hinged doors shall be constructed approximately 1-3/4" deep with drain holes for water drainage and ventilation. The door latching assembly shall be fully enclosed. Box pan welds shall be a minimum of 1-1/2" in length every six (6) inches. A removable access panel to allow for service and replacement shall be provided. A 3/4" access hole with a removable "plug" shall be provided at the edge of the door to allow spray lube to be applied the latch mechanism. All door mechanisms shall be lubricated prior to assembly.

15. BODY / PUMP MODULE (CONTINUED):

15.14 Compartment Doors: (Continued):

- Vertically hinged compartment door latches shall be Hansen™, or equal, stainless steel "D-ring" type, 6" diameter with bent handle, two-point dead bolt latch system, with locks that use #1250 keys. The top of latch shall rotate towards the hinge of door when opening. Dead bolt rods shall line up with holes in compartment frame, without having to bend rods to gain entry into holes. The doors on compartments #1, #2, #4, and #6 shall be provided with a secondary locking device. Stainless steel 5" high brackets with vinyl covered halyards and stainless-steel snap hooks with grommet, Ronstan International™ "CS2450-10", or equal, shall be installed. Note: Halyards and snap hooks shall lay as flat as possible against the compartment doors/ body when engaged. There shall also be provisions to store the halyard when not in use. Method of attachment and all components shall be approved by FDNY.

- Compartment doors shall be equipped with full length 14-gauge stainless steel piano type hinges, with ¼" stainless steel pins. **Welding the hinges is unacceptable**. The hinges shall be bolted to both the body and door using ¼" minimum, grade 8 zinc coated hardware with hex heads. Mounting bolts shall be on 4" centers, minimum, with vertical and horizontal mounting slots that allow for full adjustment.

- The doors on compartments #1, # 2, #4, and #6 shall be provided with a Hansen™, or equal, stainless steel door prop assembly to hold door at 90° when open.

- The door on compartment #1 shall have the hinge mounted towards the rear of apparatus, making it a "suicide" type door. All other vertically hinged doors shall have the hinge mounted towards the front of apparatus, allowing them to open in a conventional manner.

- Each compartment door shall be provided with extruded automotive type rubber moldings. This molding shall protect the compartment door framing yet provide a weather resistant seal around the door. In addition, rubber moldings shall be installed along the hinged portion to prevent entry of moisture.

- **All** compartment doors, including back board box and the roof storage box shall be connected to the "Open Door" indicator system mentioned in section 13.

15. BODY / PUMP MODULE (CONTINUED):

15.15 Adjustable Shelving:

- Compartments #2, #3, #4 and #6 shall each have one (1) adjustable shelf. The adjustable shelving shall be fabricated of 3/16" smooth aluminum sheets with a full length “c” channel welded to underside for reinforcement.

- Each shelf shall have the front edge broken to a double channel edge reinforcement with 2" vertical beam. The rear edge shall have a similar break, however, in the opposite direction, so that shelf may be reversed for lip free edge. Each shelf shall have a bolt-on or welded on hat section.

- The shelves shall have full vertical adjustment capability. Each main body lower compartment shall have four (4) stainless steel Unistrut™ "C-channels" welded in place- two (2) on each side wall. "C-channels" shall run from the floor to 1” from top. All hardware shall be 3/8” minimum stainless-steel hardware.

- Each adjustable shelf shall have two (2) 1/8” min stainless steel angle mounting brackets that shall run the full depth of the shelf. Brackets shall be secured to underside of shelf with stainless steel hardware, and then the bracket shall be secured to “C-channel” slide blocks using 3/8” stainless steel bolts.

15.16 Plastic Matting:

- All compartment shelving and floors shall be fitted with Mateflex™, or equal, removable **black** plastic matting.

15.17 Slide Out Trays:

- Two (2) slide out trays shall be provided in compartment #1. They shall be fabricated of 3/16", min, smooth aluminum. The trays shall be heavily reinforced to prevent flexing. The edges of the trays shall be broken with 3" flange on each side, welded on corners to form a box type tray surface. The approx. dimensions of useable area of tray is 24” wide x 21” deep.

15. BODY / PUMP MODULE (CONTINUED):

15.17 Slide Out Trays (Continued):

- Each slide out tray shall be mounted on two (2) Slidemaster™, or equal, slides rated at 250 pounds each.

- Slide out trays shall slide fully out of the compartment with locking devices to hold tray in the "In" and "Out" position. Locking devices shall allow release with “one hand” operation, as well as providing multiple stop points along the travel of the tray.

- Each slide out tray shall be equipped with a removable aluminum peg board that lays flat in the tray, with an approx. ¾” space from the floor of the tray to the bottom of the pegboard to allow for installation of the pegs and mounting screws in the pegboard. It shall be sized to utilize all bottom surface space of the tray. Each peg board shall be equipped with twelve (12) removable round aluminum pegs with the dimensions of 1” diameter x 4” long. Final design of peg board shall be approved by FDNY.

15.18 Certified First Responder Box:

- A box for certified first responder medical equipment and supplies shall be provided in compartment # 5. It shall be fabricated from 1/2" min polypropylene, **white** in color, with the approximate dimensions of 48” wide, 25” high, and 22” deep and be bolted in compartment, yet be easily removable if needed.

- There shall be three (3) Whelen™ “0SC0EDCR” or equal, **clear** LED lights inside this box.

- The exact design and interior layout are of critical importance. It shall incorporate fixed shelves and fixed dividers formed from the same polypropylene material. Entire box shall be “plastic welded” together. Exact details on the interior layout will be given at the Preconstruction Conference.

- The box shall include two (2) reinforced polypropylene vertically hinged doors, with stainless steel piano style hinges secured stainless steel hex head hardware. Each door shall have a Hansen™, or equal, 6” diameter stainless steel “d-ring” type latch (non-locking). Approx. dimensions of doors shall be different from each other- one door shall be 15 ¼” wide, 19 ¾” high and the other one shall be 24 ¼” wide, 25” high. Each door shall have a rubber gasket around opening to provide a good seal when closed.

15. BODY / PUMP MODULE (CONTINUED):

15.18 Certified First Responder Box (Continued):

- Box shall have "12V hot at all times" hardwired power for the current in use FDNY supplied "suction unit" with appropriate circuit breaker protection.

- Final design and mounting location of box and all related items, shall be approved by FDNY.

15.19 Spare SCBA Cylinder Storage:

- The apparatus shall be capable of properly and safely storing a minimum of six (6) of FDNY's currently used Scott™ 45-minute spare air cylinders.

- Cylinders shall be stored in three (3) fully enclosed compartments in the rear wheel opening panels.

- Each cylinder shall have its own holder to prevent cylinder to cylinder contact.

- The entire compartment shall be lined with rubber matting. Compartments shall have a 2" downward slant to help keep cylinders in place.

  Each compartment shall hold two (2) cylinders:

  ° One (1) compartment on the left side of apparatus.
  ° Two (2) compartments on the right side of apparatus.

- The holders shall be part of the body, and not part of the removable wheel opening panel.

- Provisions for each compartment shall include a vertically hinged brushed stainless-steel door with stainless steel "piano" type hinge, appropriate latching device, #1250 keyed locks, and grade 8 zinc coated hardware with hex heads.

- Final design / locations of spare cylinder storage shall be approved by FDNY.

15. BODY / PUMP MODULE (CONTINUED):

15.20 Roll-Up Hose Storage:

- The area directly above compartments #1 and #2 shall be used for securing lengths of "roll-up" hoses. This shall be an external shelf type area and have the approximate dimensions of 122" long and 10" deep.

- Entire top surface shall have Firmaline™, or equal, smooth fiberglass grating held in place with grade 8 zinc coated hardware with hex heads. Shall be mounted in a way that will allow for proper water drainage.

- Six (6) seat belt type straps Indiana Mills™ model U-10 (with "lift to release" type latches) shall be provided to secure hoses in place. Final layout, type of strap, color and method of attachment shall be approved by FDNY.

- A removable support bracket fabricated from ¼" min polished stainless steel shall be provided at the rear of this shelf. It shall be used as a brace for the rear of the left side hose bed wall. Exact design, location, and mounting of this bracket shall be directed by FDNY.

15.21 Suction Hose Storage:

- The exterior side of the left side hose bed wall shall be used to store suction hoses by use of adjustable hose trays.

- Four (4) 304 stainless steel hose trays to hold the following:

    - Two (2) 6" x 10' x 6" light weight hoses for drafting.

    - One (1) 6" x 10' x 6" rigid hard suction hose for drafting

    - One (1) 4½" x 10' x 4 ½" soft suction hose for hydrant connection

- Each tray shall be equipped with three (3) stainless steel spring actuated hold down clamps, that have a stainless-steel rod that connects all three clamps to each other to provide one hand operation.

15. BODY / PUMP MODULE (CONTINUED):

15.21 Suction Hose Storage (Continued):

- Three (3) stainless steel Unistrut™, or equal, "C-channels" shall be evenly spaced and welded in place on this wall. These channels shall run full height of the wall to allow for full vertical adjustment of trays. Each tray shall be secured at each channel with two (2) 3/8" diameter minimum stainless-steel bolts.

- The lower wall shall be covered with brushed finish 304 stainless steel to prevent scuffing and damage from the hose couplings. Final design shall be approved by FDNY.

- There shall be provisions to store the current in use water main shut-off key in this same area.

15.22 Foam Can Storage:

- Provide secure storage for three (3) of the currently used type of foam cans, located behind cab, on top of pump module. Final design and exact location shall be approved by FDNY.

15.23 Wheel Chock Storage:

- Four (4) Zico™ p/n "SQCH-44-H", or equal, wheel chock holders shall be installed on a location on body, as directed by FDNY.

15. BODY / PUMP MODULE (CONTINUED):

15.24 Hydraulic Ladder Rack:

- The portable ladder mentioned in section 23 shall be mounted above the right-side compartments on a swing-down ladder rack. This rack shall be constructed of #6061 aluminum plate and #6063 aluminum tubing. Rack shall have a minimum weight capacity of 150 lbs.

- The rack shall be mounted to the body at three pivot locations; front, rear and center. All pivot locations shall be bronzed bushed and pins shall be 1" min diameter

- A double acting hydraulic cylinder shall be furnished at the center pivot location to move the rack up and down. The cylinder shall have a 2" min diameter bore size and a 1" min diameter piston rod size. The piston rod shall be threaded and provided with an adjustable clevis. Mounted directly to the cylinder shall be a holding valve used to lock the cylinder in case of hydraulic line burst or leakage.

- A door shall be provided to cover the hydraulic cylinder and shall operate automatically when the rack is being operated.

- The hydraulic cylinder shall be operated by an independent hydraulic pump. It shall be equipped with a cartridge type check valve and externally adjustable relief valve. The pump shall be powered by a close coupled 12-volt DC motor.

- A guarded toggle switch shall control the hydraulic pump through a relay. This switch shall be located on the right-side rear of body to allow the operator full view of the rack when operating. In addition to the switch at rear, a ladder rack master control switch, “Power On”, and “Ladder Not Locked” indicator lights shall be provided in cab as mentioned in section 13.

- The ladder rack shall be capable of being lowered within seven (7) seconds. When lowered, the bottom of the rack shall not be more than 54" above the ground.

15. BODY / PUMP MODULE (CONTINUED):

15.24 Hydraulic Ladder Rack (Continued):

- An over center stainless steel manual cam lock shall secure the ladder rack when in the up position. This cam lock shall prevent the ladder rack from moving both side to side and from moving fore and aft during road travel. The cam lock shall be installed at the rear of body within easy reach of the operator. There shall be an electrical interlock to prevent the rack from being lowered when the cam is closed. The interlock system shall also be incorporated with compartment "M4" to prevent ladder rack operation should this compartment door be opened.

- Provisions shall be made to securely hold ladder in place on the ladder rack. This shall be done by a spring-loaded arm in the center of rack and an angle bracket at each end. The spring-loaded arm shall securely hold ladder in place yet have the ability to easily be released with "one hand" operation.

- Final design and layout of ladder rack, hydraulic system, switches, and securing devices shall be approved by FDNY.

15.25 Rear Step: The rear step shall be constructed as follows:

- The "tailwhacker" shall serve as the frame for the entire rear step assembly.

- The two outer corners shall be fabricated from 3/16" aluminum tread plate. These end pieces shall extend to the sides of apparatus body and shall be angled on the ends as directed by FDNY.

- The middle section shall be formed by using a 3/16" sheet of stainless-steel with two (2) cutouts for drainage and shall be framed with Bustin™, or equal stainless-steel grating with ¼" space for debris and water washout.

- All wiring in the rear step area shall have weather tight plugs to permit easy disconnecting.

- The top surface of the complete assembly shall be approximately 23" from the ground. Final design of all rear step components shall be further discussed at the Preconstruction Conference.

- There shall be a properly labeled United States Plastic™ #3119, or equal bucket and #3133, or equal, lid bolted to the rear step as directed by FDNY.

15. BODY / PUMP MODULE (CONTINUED):

15.25 Rear Step (Continued):

- Rear "Tailwhacker": To further protect the rear sides of the apparatus from damage, a custom fabricated frame mounted cross brace shall be installed. It shall be bolted to the chassis frame with appropriately graded hardware and shall extend outboard past the body of the apparatus. Cross brace shall be tapered in the front and shall be overlapped by the above-mentioned rub rail. Size and final design shall be approved by FDNY and further discussed at the Preconstruction Conference.

15.26 Folding Steps:

- Provide three (3) South Park™ p/n "LFS-46", or equal, folding steps- mount two (2) on right side rear wall of cab to assist with access to top of the pump module. Mount one (1) on rear of the apparatus to assist with entry / exit of the hose bed.

- Exact locations of all steps shall be approved by FDNY.

15.27 Fixed Steps:

- One (1) Cast Products™ p/n "SP2006-1-B" or equal, vehicle step with built-in light and grab handle mounted on right side pump panel as directed by FDNY, to assist with access to top of the pump module.

- Two (2) custom built, 3/16" aluminum tread plate steps shall be provided. One (1) shall be provided over the discharge on the right-side pump panel and one (1) over the discharge outlet on the rear of the apparatus. Steps shall be covered in **gray** Linex™, or equal. Steps shall be used to assist with entry / exit to the pump module and / or hose bed area. All components shall be mounted as directed by FDNY.

- Exact locations shall be approved by FDNY.

15.28 Body Grab Handles:

- Two (2) knurled "non-slip" stainless steel vertical grab handles or railings, with an approximate length of 28", shall be provided at rear step area- one (1) mounted on each side, in a location that will not interfere with hose loading / unloading, as directed by FDNY. Final design of handle shall be approved by FDNY.

- One (1) knurled "non-slip" stainless steel grab handle with an approximate length of 9", shall be provided at the right side of pump module. Final design of handle and exact mounting location shall be approved by FDNY.

15. BODY / PUMP MODULE (CONTINUED):

15.29 Rear Wheel Well Exterior Panel:

- The rear wheel opening shall consist of an easily removable assembly that incorporates an exterior panel and an inner wheel well.

- The exterior panel of the wheel well enclosure shall be bolted in place with 1/4" stainless steel hex head bolts & hardware. This panel shall be 3/16" stainless steel tread plate.

- The inner wheel well liner shall be constructed of 16-gauge stainless steel, bolted in place. Prior to installation, the complete wheel well area shall be undercoated.

- The rear wheel openings shall be equipped with a round radius, extruded **black** rubber fenderette bolted in place, with zinc coated grade 8 hardware.

- **Black** mud guards shall be provided behind the rearmost wheels.

- An additional full width Ultraguard™, or equal, mud guard shall be installed at the rear of the apparatus. There shall be 1" of clearance between the bottom of the mud guard and the ground. Mud guard shall be **black** with no advertising.

15.30 Fuel Fill Door:

- The apparatus fuel system shall be equipped with a spring-loaded fuel fill door, located in the rearward area of the left side wheel well. The door shall be stainless steel with a brushed finish. Permanent "diesel fuel" label at fuel door opening.

- Fuel fill shall be fitted with a Protectoseal™ , or equal, fuel cap with a removable straight debris screen.

  ° The screen shall not impede the flow of fuel into the tank.

  ° The layout of fuel fill plumbing shall allow for rapid refilling of the fuel tank.

  ° Final selection and layout of all components shall be approved by FDNY.

15. BODY / PUMP MODULE (CONTINUED):

15.31 Rub Rail:

- The protection of the sides of apparatus is of critical importance. A rub rail assembly shall be fabricated of 2-1/2" x 1" solid polypropylene, **black** in color, spaced 1/2" out from the body with three (3) 1-1/2" diameter rubber bushings for each rub rail. These units shall be bolted to the exterior edge of the compartment floor.

- Rub rails shall be installed using nuts and bolts to allow for easy removal from the outside of the apparatus. Caged nuts may be acceptable in areas where the use of a nut and bolt is not possible. Further details shall be discussed at the Preconstruction Conference.

- The assembly shall blend into the front and rear corners for the body, and rolled radius of the wheel well assembly, with 45-degree angles on end of assemblies.

- the rub rail assembly shall extend a minimum of 1 ¼" from compartment door frame, with 2-1/2" vertical scuff surface.

15.32 Drinking Water Cooler:

- There shall be mounting provisions for this bracket on the officer's side fire pump compartment door as well as on the rear of the apparatus. Location and final installation of all components shall be approved by FDNY.

16. 12 VOLT LIGHTING:

16.1 Wiring requirements and standards from section 12 of this specification shall apply to all items mentioned in this section.

16.2 All lighting required by any applicable laws, regulations and standards shall be supplied.

16.3 All lighting shall be NFPA 1900 compliant.

16.4 All 12-Volt lighting systems and electrical appliances shall be to modern automotive standards throughout the installation. Extreme care shall be exercised to provide for ease of serviceability.

16.5 All lighting shall be LED type where available, unless otherwise specified by FDNY.

16.6 Front & rear lower lights shall be mounted on easily removable panels where possible. Weather tight buss bar terminal strips for body lighting and other related items shall be installed behind these panels. Laminated schematics, that describe the buss bar terminal strips, shall be installed on interior of panels. Design of panels, buss bar layout, and type of laminated schematics, shall be approved by FDNY.

16.7 A metal cover shall be provided to fully protect the back of any light that protrudes into any compartment. Design and layout of cover shall be approved by FDNY.

16.8 All light bars shall be shock mounted with rubber grommets or pads.

16.9 Light bar frames shall not be used for grounding purposes- separate ground wires to chassis frame shall be provided.

16.10 All front facing **white** / **clear** lights shall change color when the parking brake is **applied.**

16. 12 VOLT LIGHTING (CONTINUED):

16.11 Flash patterns on all programmable LED lights shall be set as follows, unless otherwise directed by FDNY:

- Warning Lights: Upper zones shall flash at 90 flashes per minute and lower zones shall flash at 60 flashes per minute. The lighting shall incorporate "high intensity/low intensity" technology. Further details shall be discussed at the Preconstruction Conference.
- Turn Signals------"FMVSS compliant" mode for the lower lights and sequential for the upper lights.
- Brake Lights------ "Steady" mode.

16.12 Warning lights: FDNY uses the following "zones" when referring to light locations:
Zone "A"—Front of Apparatus **Zone "C"—**Rear of Apparatus
Zone "B"—Left Side of Apparatus **Zone "D"—**Right Side of Apparatus

Note: Exact locations of all lights shall be approved by FDNY. At the Preconstruction Conference, the vendor shall notify FDNY of any updates / supersession to the warning lights specified. After FDNY approval, the vendor shall supply the manufacturer's most current/updated models of the light specified. All connectors shall be Molex™, or equal.

Lights of the same color shall not be placed next to each other to prevent "wash-out". Lights shall remain fully populated in "blocking" mode. Light patterns shall be properly "synched". Further details shall be discussed at the Preconstruction Conference

Zone "A" Upper:

- Whelen™ "R4BFDNY-D", or equal, **red/white** left side cab roof light bar.
- Whelen™ "R4BFDNY-C", or equal, **red/white** center cab roof light bar.
- Whelen™ "R4BFDNY-P", or equal, **red/white** right side cab roof light bar.

Note: These light bars shall be mounted on a five (5) degree angle. Further details shall be discussed at the Preconstruction Conference.

16. 12 VOLT LIGHTING (CONTINUED):

16.12 Warning Lights (Continued):

Zone "A" Lower:

- Headlights: Two (2) Firetech™, or equal, halo LED high / low beam lights and two (2) rectangular Firetech™ or equal, halo LED high beam lights, with daytime running light feature, mounted in chrome or stainless-steel bezels, controlled by an FDNY approved three-way dash mounted switch.

- Two (2) Whelen™ p/n "M6R-FDNY", or equal, **red** LED light heads with programmable flash pattern, and Whelen™ "M6FC-FDNY", or equal **chrome** flanges, used as warning lights.

- Two (2) Whelen™ p/n "M62T-FDNY", or equal, **amber** LED turn signals, with programmable flash pattern, and Whelen™ "M6FC-FDNY" or equal **chrome** flanges.

- Two (2) Whelen™ **"**TLIC-FDNY", or equal **white** LED lights mounted on the grille as directed by FDNY.

Zone "B" Lower and Upper:

- Two (2) Whelen™ p/n "TLI2D-FDNY", or equal, **red/white** LED, programmable flash pattern, vertically mounted at the front 45-degree corners of the cab, with Whelen™ "TIONC-FC", or equal **chrome** flanges, used as warning lights.

- One (1) Whelen™ p/n "M6R-FDNY", or equal, **red** LED light head with programmable flash pattern, and Whelen™ "M6FC-FDNY" or equal **chrome** flange used as a warning light.

- Five (5) Whelen™ p/n "TLIR-FDNY", or equal **red** LED lights mounted as directed by FDNY.

16. 12 VOLT LIGHTING (CONTINUED):

16.12 Warning Lights (Continued):

Zone "C" Upper:

- One (1) Whelen™ p/n "IT9R0R0F-FDNY-D", or equal, **blue/red** LED light bar, mounted on left side rear of apparatus.

- One (1) Whelen™ p/n "IT9R00RF-FDNY-P", or equal, **red/amber** LED light bar, mounted on right side rear of apparatus.

- One (1) Whelen™ p/n "TANF65-FDNY", or equal, **amber** LED traffic advisor, mounted on the upper rear of apparatus with an in-cab controller as directed by FDNY.

- Two (2) Whelen™ p/n "5GR-FDNY", or equal, **red** LED lights used as high mount tail and stop lights.

- Two (2) Whelen™ p/n "5GA-FDNY", or equal **amber** LED high mount turn signals.

Note: The stop / tail, and turn signal lights described in Zone "C" upper, shall be installed in bolt-on stainless steel boxes that are painted the same color as the body. Design & exact locations of boxes and exact locations of lights, shall be directed by FDNY.

Zone "C" Lower:

- Two (2) Whelen™ p/n "M6A-FDNY", or equal **amber** LED light heads, programmable flash pattern, used as warning lights.

- Two (2) Whelen™ p/n "M62BTT-FDNY", or equal, **red** LED brake / taillight heads, programmable flash pattern - fully populated.

- Two (2) Whelen™ p/n "M62T-FDNY", or equal, **amber** LED turn signals, programmable flash pattern.

- Two (2) Whelen™ p/n "M6BUW-FDNY", or equal, **clear** LED back-up light heads.

- Eight (8) Whelen™ p/n "M6FC-FDNY", or equal, **chrome** plated flanges- one (1) for each light mentioned above.

Note: The lights described in Zone "C" lower, shall be installed from top to bottom as follows: warning lights, stop / taillights, turn signals, back-up lights

16. 12 VOLT LIGHTING (CONTINUED):

16.12 Warning Lights (Continued):

Zone "D" Lower and Upper:

- Two (2) Whelen™ p/n "TLI2D-FDNY", or equal, **red/white** LED, programmable flash pattern, vertically mounted at the front 45-degree corners of the cab, with Whelen™ "TIONC-FC", or equal **chrome** flanges, used as warning lights.

- One (1) Whelen™ p/n "M6R-FDNY", or equal, **red** LED light head with programmable flash pattern, and Whelen™ "M6FC-FDNY" or equal **chrome** flange used as a warning light.

- Five (5) Whelen™ p/n "TLIR-FDNY", or equal **red** LED lights mounted as directed by FDNY.

16.13 Marker, I.C.C., and Clearance Lights: Provide the proper amount of marker, I.C.C., and clearance lights as per FMVSS standards. Lights shall be controlled by a three-way headlight switch. All marker lights shall be easily replaceable, and recess mounted where possible. All lighting shall be Whelen™, or equal.

16.14 Remote Controlled Spotlight: One (1) Whelen™ "Arges2-FDNY", or equal, remote LED spotlight, 12 volt – park and home feature, with appropriate circuit breaker protection – mounted in the center of the cab roof as directed by FDNY. Mounting shall be accomplished in a manner that allows the light to be used on both sides of the apparatus and both sides of the street. Final installation of all components shall be directed by FDNY.

16.15 Brow Light: The apparatus shall be equipped with one (1) Whelen™ "PCH1", or equal LED lamp mounted on the roofline. This lamp shall be capable of both spot and flood functions. All wiring used shall be properly rated for the intended electrical load and properly protected from damage.

- The light shall be mounted to the roof with a special four (4) point mounting bracket in a location approved by FDNY.

- The mounting of the brow light shall be accomplished in such a manner so it does not interfere with any warning lights or devices.

- The light shall be operated by a switch in the cab located as directed by FDNY. Light shall only operate when the parking brake is applied.

16.16 Midship and Rearmost Marker and Turn Signal Lights: Four (4) Britax™ p/n "L428. 102.L12V", or equal, rubber mounted lights, fitted with **amber** / **red** LED light assemblies. Wired to be used as directional and marker light. Lights shall be mounted on both sides of cab above front wheels & each side at rear wheel well area. Locations subject to FDNY approval.

16. 12 VOLT LIGHTING (CONTINUED):

16.17 Rear Cornering Lights: Two (2) Whelen™ model "PEL2C-FDNY", or equal LED lights mounted on each side rear of the apparatus as directed by FDNY. These lights shall illuminate when the turn signals are activated or when the apparatus transmission is placed in reverse. These lights shall be controlled by a switch in the cab. Further details shall be discussed at the Preconstruction Conference.

16.18 Perimeter Ground Lights: Six (6) Whelen™ p/n "5GC-FDNY", or equal, **clear** rubber mounted LED perimeter lights shall be installed. The lights shall operate as follows:

- Cab and Body Perimeter Lights: When the main / master electrical disconnect switch is "On", and the photocell is activated and a cab door is opened, all of the perimeter lights shall illuminate.

16.19 Under Hood Engine Work Lights: Two (2) Whelen™ "TIONC-FDNY", or equal **clear** LED engine area work lights with built in switches, and protective guards shall be provided. Type of light and location shall be approved by FDNY.

16.20 Compartment Lights: ROM™ "R03000", or equal, **clear** LED strips, mounted as directed by FDNY. Lighting shall be the latest version available from the manufacturer.

- All compartment lights and wiring shall be recessed in metal enclosures to protect from damage. Compartment lights shall extend full height of compartment.

- All compartment lights shall be powered through one (1) rocker switch on dash panel (described in section 13). Rocker switch shall be powered **only** when parking brake is applied.

The left side and right-side compartment lights shall be on separate circuits (after the single rocker switch), with a properly sized circuit breaker for each side.

16. 12 VOLT LIGHTING (CONTINUED):

16.21 Pump Panel Lighting:

- One (1) Fire Research™ "5FRLED200A27", or equal, **clear** LED light shall be provided on the left side operators pump panel as directed by FDNY.

- One (1) Cast Products™ p/n "SP2006-1-B", or equal, vehicle step with built-in light and grab handle, (mentioned in section 15), mounted on right side pump panel as directed by FDNY.

- Lights shall be energized by a "push-pull" type switch, wired through a relay, located on the left side pump panel (mentioned in section 18). Switch shall be protected by a metal guard.

16.22 Miscellaneous Body Lighting: Four (4) Whelen™ "5GC-FDNY", or equal, **clear** LED lights, recessed mounted with flanges on body- two (2) at rear step area, one (1) at left front corner of the body to illuminate hose tray below left side operators pump panel, one (1) at right front corner of body to illuminate hose tray below right side pump panel. Exact locations shall be directed by FDNY. Lights shall be energized when the pump panel lights are energized.

16.23 LED Combination Spot/Flood Work Light: One (1) Whelen™ model "PCH1P-FDNY", or equal, LED light - 12-volt D.C., mounted on a 36" pole. Light shall be controlled by a single position toggle switch located on the left side operators pump panel, permanently labeled "Off/On". Exact mounting locations of light and switch shall be directed by FDNY.

16.24 Hose Bed Lighting: Two (2) LED Hi-Viz™ "FT-CU-HD24-4300K", or equal LED lights. Each light shall be 24" in length and installed at the front of the hose bed with an appropriate fabricated guard to protect the lights. Lighting shall be installed in a manner to limit glare when packing hose. Lighting shall activate when the pump panel light switch is activated. In addition, there shall be one (1) Unity™, or equal, LED flood light with fully moveable / adjustable swivel type mount and self-contained On/Off switch provided in the area of rear cross bar. Final model and exact location shall be approved by FDNY.

16. 12 VOLT LIGHTING (CONTINUED):

16.25 Cab Dome Lights:

- All lights shall be Whelen™ "60CREGS", or equal, recessed type, **red/white** LED.
- Each light shall operate with its' own recessed three-way switch. Switches shall be mounted at each light and be able to deactivate light from coming on when door opens.
- One (1) light in the chauffeur's area and one (1) light in the officer's area.
- Four (4) lights in the rear of cab as directed by FDNY.
- Light locations and layout shall be approved by FDNY.

16.26 Stepwell Lights: Four (4) Whelen™ "T0CACCCR", or equal **clear**, LED rubber mounted lights. One (1) flush mounted in each cab step well. Lights shall activate when master battery switch is "on" and when any cab door is opened.

16.27 Handheld Flashlight: Two (2) Bright Star Lighthawk™ model "07912FDNY", or equal, (or latest updated model) LED flashlights and charger kits - intrinsically safe portable lights with 12-volt direct wired battery chargers (wired 'hot'), web carrying strap, waterproof, steel reinforced handle & switch guard. Light color shall be directed and approved by FDNY – "FDNY" engraved in handle.

Note: Vendor shall mount one (1) charger base unit as directed by FDNY. The balance of the components from these kits shall be shipped loose..

16.28 "Fast Chargers": Five (5) Survivor Streamlight™ p/n "90345", or equal,12-Volt "fast" chargers shall be provided in cab. All chargers shall be wired constant hot, 12-Volt, to batteries with circuit breaker protection. Locations shall be directed by FDNY.

16.29 Cab Mounted Work Lights: There shall be one (1) Whelen™ "WSLC-FDNY", or equal, "Work Side" **clear** LED light on each side of the cab as directed by FDNY. These shall be used to light the area around the sides of the apparatus. These lights shall be powered through a Whelen™, or equal photocell and shall be wired to operate with the ground lights and shall be activated when the parking brake is applied. In addition, there shall be one (1) each of these same lights mounted on the left and right side of the roof storage box. There shall also be a On/Off switch on the pump panel. Further details of operation and layout shall be discussed at the Preconstruction Conference.

17. FIRE PUMP / PLUMBING / BOOSTER TANK:

17.1 Fire Pump:

- Shall be a Waterous™ "CMU2000", or equal. Pump shall be manufacturer's latest design, two-stage centrifugal fire pump, capable of meeting or exceeding all FDNY requirements and tests. Pump shall be in compliance with all applicable requirements of the latest standards for automotive fire apparatus of the National Fire Protection Association. Fire pump controls & manifold detail shall be shown on detailed blueprints. Prints shall be supplied at the Preconstruction Conference.

- Shall have a ball type transfer valve.

- Shall be capable of delivering a rated capacity of 2,000 GPM (US) at 150 PSI, minimum, tested as described in section 25.

- Pump body shall be closed-grained, **gray** iron, minimum tensile strength not less than 33,000 PSI, fitted with bronze bushings. Body horizontally split in two sections for easy removal of the impeller shaft assembly. Pump shall be designed for complete servicing from the bottom of the apparatus without disturbing setting of pump in the chassis or related plumbing connected to pump. Pump body halves bolted together on a single horizontal face to minimize leakage and facilitate re-assembly. All passageways carefully matched to assure the best possible hydraulic flow characteristics

- Impeller shaft shall be stainless steel supported at each end by oil or grease lubricated ball bearings. Bearings shall be protected from water & sediment by suitable stuffing boxes, flinger rings and oil seals. The shaft shall be of two-piece construction, separable between the pump & pump transmission, to allow separation of the transmission from the pump without disassembly of either component

- Shaft seals shall be self-adjusting stainless-steel spring loaded double ended mechanical seals to eliminate leakage & routine maintenance.

17. FIRE PUMP / PLUMBING / BOOSTER TANK (CONTINUED):

17.1 Fire Pump (Continued):

- Two (2) bronze impellers shall be accurately balanced both mechanically & hydraulically, mixed flow design with reverse flow labyrinth type wear rings that resist water bypass & loss of efficiency due to wear

- A Waterous™ "21st Century", or equal, discharge manifold shall be provided on the fire pump.

- Wear rings shall be bronze, easily replaceable to restore original pump efficiency and eliminate the need for replacing the entire pump casing due to wear

- Pump Mounting: Pump shall be mounted as low as possible on frame and shall be in compliance with the directives below as well as all pump manufacturers mounting requirements. The prime vendor shall provide documentation from the pump manufacturer certifying the finished pump mounting in the chassis upon delivery to FDNY.

    - Pump shall be mounted with angle brackets that shall attach the pump to the apparatus chassis.

    - The prime vendor shall drill suitably sized holes in the above-mentioned angle brackets corresponding with the tapped hole in the intake adapter. These holes shall be tapped holes, 1/2-13 UNC-2b x 1.13 deep in each of the four (4) intake adapters.

    - Using only one (1) tapped hole on each side of the adapter, the angle brackets shall be fastened to the angle brackets of the fire pump.

    - The angle brackets shall be fastened to the chassis frame rails using a three (3) point mounting technique.

    - The four (4) bolt mounting pads on the output shaft side of the pump transmission case shall not be used for pump mounting.

17. FIRE PUMP / PLUMBING / BOOSTER TANK (CONTINUED):

17.1 Fire Pump (Continued):

- Two (2) ½" minimum size cap screws (Grade 5 minimum) on each side of the pump shall be utilized together with lock washers and/or Loctite™, or equal, thread locking compound to retain the screws in place.

- Caps screws shall be tightened to the manufacturer's recommended torque specifications. Cap shall be installed from the underside of the pump

- Pump and pump enclosure shall be readily accessible for inspection, removal and / or repair.

- Fire pump and all related plumbing shall be painted **red.**

17.2 A randomly selected fire pump shall be tested at the pump manufacturer's facility, in the presence of representatives of the City of New York.

- Pump shall be fully tested at pump manufacturers facility to the performance marks outlined in the latest NFPA 1900. Pump shall be free from objectionable pulsation & vibration. The pump and all related plumbing shall be hydrostatically tested to a pressure of 600 PSI.

- Pump being tested shall be equipped with discharge gates identical in type and size as will be installed on production units.

- Testing shall include the full operational range and rating of the pump.

- Written certification of these tests shall be provided by the pump manufacturer.

17. FIRE PUMP / PLUMBING / BOOSTER TANK (CONTINUED):

17.3 Pump Transmission:

- Provide a Waterous™ heavy duty "C" series "C22", or equal, chain drive type pump transmission.

- Pump transmission shall be installed in the chassis in a manner that will allow it to be removed without having to remove the fire pump.

- Pump transmission shall be rigidly attached to the pump body assembly & incorporate a Morse™, or equal "HV" high strength involute form chain, capable of operating at high speeds & providing smooth, quiet transfer of power.

- Provide a means to cool the pump transmission oil utilizing fire pump intake water. Related plumbing shall be arranged to ensure that such water will be completely drained from the system when the fire pump is drained.

- Shift engagement shall be accomplished by a constant mesh, two (2) position sliding collar that engages all teeth simultaneously. It shall incorporate an internal locking mechanism to ensure that collar will be maintained in "Road" or "Pump" position. Shifting shall be accomplished by an air operated actuator assembly mounted on pump transmission.

- Selection of "Road" or "Pump" positions shall be by an air operated, single lever device, located at the right side of the chauffeurs seating position. Lever shall be designed for positive locking in either "Road", "Pump", or "Neutral" position. The selector assembly shall be designed and manufactured by the pump manufacturer. Location approved by FDNY.

- A permanently labeled instruction plate shall be provided in cab near pump shift lever. It shall fully describe the proper procedure to switch apparatus in and out of "pump" mode. Wording and location of plate shall be approved by FDNY.

- A dedicated (additional) air tank shall be installed to ensure positive shift, regardless of available pressure in the balance of the air systems.

- A mechanically operated pump shift override shall be provided.

- Pump transmission and related items shall be painted **red.**

17. FIRE PUMP / PLUMBING / BOOSTER TANK (CONTINUED):

17.4 Pump Mode Indicator Lights:

- Indicator lights shall be provided, in final locations that are approved by FDNY, to indicate when apparatus is in “pump” mode and fire pump is ready to be operated.

- A **green** indicator light shall be located in the cab, near the pump shift lever, and be labeled "Pump Engaged." the light shall not activate until the pump shift has completed its full travel into pump engagement position.

- A second **green** indicator light shall be located in the cab, near the pump shift lever, and be labeled "OK To Pump". This light shall be energized when the following requirements are met:

  A) The apparatus parking brake is applied
  B) The pump transmission is in the “Pump” position
  C) The main transmission is in “High Range Lockup” mode

- A third **green** indicator light shall be provided- located on the left side pump panel, in an area directed by FDNY, and be labeled “OK To Pump”. This light shall be connected to the same circuit that energizes the “OK To Pump” light in the cab, and only operate when the same conditions are met. **Note: This shall be the only green light on the operator’s panel**.

17.5 Plumbing:

- All plumbing arrangements shall be depicted on a schematic and submitted to FDNY at the Preconstruction Conference. Plans shall be subject to FDNY approval.

- The plumbing shall consist of stainless steel or high-pressure flexible hose with stainless steel fittings. All with a 1200 PSI minimum burst pressure rating and 30-inches minimum vacuum rating.

- All plumbing shall be hydrostatically tested to a minimum of 600 PSI.

17. FIRE PUMP / PLUMBING / BOOSTER TANK (CONTINUED):

17.5 Plumbing (Continued):

- Wherever possible, Victaulic™, or equal, connections shall be used to permit easy assembly and disassembly of the joints. Any modifications to these fittings shall not compromise the integrity of the metal. Victaulic™, or equal, connections shall also be used at all joints / union where vibration and / or chassis flexing may loosen or damage piping.

- The use of threaded connections and ninety (90) degree elbows shall be kept to a minimum, to minimize friction loss.

- All plumbing shall be routed to eliminate water and / or air traps. Plumbing shall also be designed to facilitate maintenance, servicing and replacement.

- All fitting ends, including drains shall be stainless steel to prevent corrosion and withstand exposure to road salt. Further details shall be discussed at the Preconstruction Conference.

- All plumbing shall have pressure protection on both sides of any valve as well as drains on both sides of the valve.

- Piping shall be painted **red.**

- Complete plumbing layout subject to FDNY approval.

17.6 All intakes and discharges shall terminate with aluminum adapters with FDNY thread, unless otherwise noted. See section 27 for information & requirements for all fittings / adapters.

17.7 All intakes and discharges, with the exception of the deck monitor, shall be equipped with caps or plugs, with vinyl covered chains that secure them to the apparatus to prevent accidental loss.

17.8 A minimum of two (2) zinc anodes of sufficient area to prevent electrolysis shall be affixed with stainless steel bolts to the fire pump and related plumbing. Surfaces of anodes shall be left unpainted.

17.9 All intake and discharge valves shall be gear operated Waterous™ “full flow” type, unless otherwise noted.

17. FIRE PUMP / PLUMBING / BOOSTER TANK (CONTINUED):

17.10 All valves shall be readily operable under maximum pressure.

17.11 Valves shall close tightly to prevent water leaks, air leaks, and air traps.

17.12 All discharge valves shall be properly & permanently labeled with placards indicating the direction of operation. Placard text shall be as large as possible.

17.13 All valves shall be easily removable / serviceable. All drain handles shall turn in the same direction. All linkages shall be secured with locking hex head hardware. Pins are not acceptable. Further details shall be discussed at the Preconstruction Conference.

17.14 Transfer Valve:

- Ball type bronze valve, in removable bronze housings with large waterways for smooth flow.
- Valve controlled by a manual hand crank, with 6" min diameter handle.
- Transfer valve shall provide smooth transfer to either pressure or volume.
- Two (2) **amber** indicator lights that indicate "Pressure" position or "Volume" position shall be provided at the hand crank control. Type of light shall be approved by FDNY.
- A placard that is permanently labeled with the words "operate daily", shall be provided at the hand crank control area as directed by FDNY.

17. FIRE PUMP / PLUMBING / BOOSTER TANK (CONTINUED):

17.15 Front Intake:

- Provide one (1) gated intake at front of apparatus as directed by FDNY.
- Front intake plumbing shall be 5" inside diameter minimum, stainless welded pipe with Victaulic™, or equal, couplings.
- Front inlet shall be a 90-degree Akron™, or equal, swivel elbow, 5" inside diameter, allowing for the pre-connect of soft suction hose in the front tray.
- Provide one (1) 6" female NST x 4 ½ male FDNY adapter.
- The front inlet shall be controlled by a Crane™, or equal, 5" gear operated crank type valve, operable from left side pump panel with a 6" minimum diameter handle.

17.16 Left Side Intakes:

- Two (2) intakes (as described below) shall be provided at the left side pump panel as directed by FDNY.
- One (1) 6" gated intake with 6" male NST, equipped with a 6" female NST x 6" NST male adapter (used as a thread saver), and a 6" female NST x 4 ½" male FDNY thread adapter, shall be provided. It shall be equipped with a manually controlled Waterous™ "Monarch", or equal, 6" intake valve. A 6" minimum diameter control crank shall be mounted on the left side pump panel as directed by FDNY.
- One (1) 3" gated intake with 3" female FDNY threaded swivel and plug shall be provided. Entire gated inlet waterway, including valve and plumbing to pump, shall be 3" I.D., minimum. Gear type control handle shall be provided on left side pump panel.

17. FIRE PUMP / PLUMBING / BOOSTER TANK (CONTINUED):

17.17 Right Side Intakes:

- Two (2) intakes (as described below) shall be provided at the right-side pump panel as directed by FDNY.

- One (1) 6" Siamese inlet shall be provided. **Note: This inlet including caps (with the exception of the "drafting only" cap) shall not protrude past the side of apparatus. Exact layout of this intake shall be directed and approved by FDNY.**

    A) One (1) intake of the Siamese shall be equipped with a manually controlled Waterous™ "Monarch", or equal, 8" intake valve and a 6" female NST **x** 4 ½" male FDNY thread adapter. Valve shall be mounted on the outboard side of pump panel and valve control mounted directly on valve.

    B) The remaining intake of the Siamese shall be equipped With a 6" female NST x 6" male NHT thread adapter and a 6" cap. This cap shall be permanently marked "Drafting Only"

- One (1) 3" gated intake with 3" female FDNY threaded swivel and plug shall be provided. Entire gated inlet waterway, including valve and plumbing to pump, shall be 3" I.D., minimum. Gear type control handle shall be provided on right side pump panel.

17.18 Intake Strainers:

- A **heavy-duty** type strainer shall be provided at **every** intake, located at the actual intake fitting / adapter, to prevent foreign objects from entering the fire pump & plumbing.

- Strainers shall be bronze or other approved corrosive-resistant and non-deteriorating material. Plastic is not acceptable.

- Strainers shall be secured by the fitting / adapter installed on the inlet or other restraining device – friction method of securing strainers is not acceptable. Final design subject to FDNY approval.

17. FIRE PUMP / PLUMBING / BOOSTER TANK (CONTINUED):

17.19 Intake Relief Valves:

- It is the objective to protect all intake plumbing from damage due to excessive pressure. No portion of the intake plumbing shall be left unprotected.

- A minimum of six (6) pre-set intake relief valves shall be provided on the intake plumbing, as directed below. Valves shall be pre-set to relieve at 150 PSI. The exit ports shall be plumbed to direct the water away from the pump operators' standing area. The exit port plumbing shall terminate with male N.P.T., with permanent labels that read, "Do Not Cap". Exact locations of labels shall be approved by FDNY.

- One (1) relief valve shall be installed between the front inlet at the front of apparatus and front inlet valve.

- One (1) relief valve shall be installed between the right side 6" gated intake (on Siamese), and the right side 6" intake valve (OK if built into valve).

- One (1) relief valve shall be installed between the left side 6" intake and the left side 6" intake valve (OK if built into valve).

- One (1) relief valve shall be installed between **each** of the 3" gated intakes and the 3" intake valves (OK if remotely mounted).

- One (1) relief valve shall be installed in a location on fire pump plumbing that would pressure protect the pump when intake water is fed into the right side 6" "un-gated" side of the Siamese.

- Type of valve to be used and mounting locations shall be approved by FDNY.

17. FIRE PUMP / PLUMBING / BOOSTER TANK (CONTINUED):

17.20 Primer System:

- An NFPA approved priming system shall be provided. It shall consist of a 12-Volt electric motor coupled to an oil-less primer pump, and a vacuum operated priming valve.
- There shall be a primer motor emergency shut off switch located in a pump module compartment as directed by FDNY. Switch shall have an appropriately rated breaker and shall have a placard stating, “Emergency Primer Motor Shut Off”. Further details shall be discussed at the Preconstruction Conference.
- System shall develop not less than 22" of mercury within sixty (60) seconds.
- Primer system shall be controlled by an electrical momentary large “push button” switch located on the left side pump operators’ panel.
- Type, size, and exact mounting location of primer activation button shall be approved by FDNY.

17.21 Pressure Governor:

- One (1) Fire Research™ model “NYA100”, or equal, electronic engine / pressure governor system compatible with the engine selected shall be provided.
- System shall maintain constant pressure control during pump operation, and have auto preset for quick pressure & RPM changes.
- Shall have the ability to operate in “pressure” mode, or “RPM” mode.
- The system shall have a cavitation shut down feature.
- Hard wired at weather tight protected terminals, no splices or butt connectors.
- Control head shall have a **red** LED display, and be mounted on the left side pump panel as directed by FDNY.
- The system shall meet all applicable provisions of NFPA 1900.
- See section 18 for approval documentation that shall be required from Fire Research™, for the installation of pressure governor and related components.

17. FIRE PUMP / PLUMBING / BOOSTER TANK (CONTINUED):

17.22 The 2 ½" discharges shall have valves with 1 ½" min. I.D., and plumbing with 2" min. I.D.

- The 3" discharges shall have valves and plumbing with 3" min., I.D.
- The 4 ½" discharges shall have valves with 3 ½" min. I.D., and plumbing with 4" min. I.D.
- The deck monitor shall have a valve with 3 ½" min I.D., and plumbing with 4" min I.D.
- All discharges shall be arranged, as per NFPA guidelines, to ensure a minimum friction loss between the fire pump discharge and the various discharge outlets. Documentation showing friction losses for each discharges shall be provided before start of pilot model construction. Friction loss values shall be approved by FDNY.

17.23 Front Discharges: There shall be two (2) discharges located at the front of the apparatus as directed by FDNY:

- One (1) 2 ½" swivel outlet with a 2 ½" female N.P.T. **x** 2 ½" male FDNY thread adapter, one (1) Akron™ p/n "1581", or equal, Siamese with a 2 ½" female FDNY thread swivel inlet & dual outlets with 1 ½" male FDNY threads, shall be provided
- One (1) 4 ½" recessed outlet with a 4" female N.P.T. to 4 ½" male FDNY thread adapter shall be provided

17.24 Left Side Discharges:

- There shall be two (2) 2 ½" outlets, located on the left side pump panel as directed by FDNY.
- Outlets shall each be equipped with a 2 ½" female N.P.T. x 2 ½" male FDNY thread adapter.
- One (1) 45-degree aluminum elbow, with 2 ½" female FDNY thread x 2 ½" male FDNY thread, shall be provided on each of these outlets.

17. FIRE PUMP / PLUMBING / BOOSTER TANK (CONTINUED):

17.25 Right Side Discharges:

- There shall be two (2) 3” discharges located on the right-side pump panel as directed by FDNY.
- Each outlet shall be equipped with a 3” female N.P.T. x 3” male FDNY thread adapter.
- Each outlet shall have one (1) 45-degree aluminum elbow, with 3” female FDNY thread x 3” male FDNY thread.
- both outlets shall be reduced to 2 ½” male FDNY thread, then to 1 ½” FDNY male thread, by the use of removable adapters.

17.26 Rear Discharge:

- There shall be one (1) 4 ½” discharge located at the rear of apparatus, as directed by FDNY.
- Outlet shall be equipped with a 4” female N.P.T. to 4 ½” male FDNY thread adapter.
- One (1) 45-degree aluminum elbow, with 4 ½” female FDNY thread x 4 ½” male FDNY thread.
- One (1) 4 ½” female FDNY thread x 3” male FDNY thread adapter shall be provided.

17.27 Deck Monitor:

- One (1) Akron™ # 3436FDNY, or equal, 4” I.D. deck monitor, with built in pressure gauge, shall be provided on the top of pump module with a properly supported bracket. There also shall be a bracket & support for the monitor tip as directed by FDNY.
- The Akron™ # 3436FDNY, or equal, assembly shall include the following: one (1) “3485”, or equal, Stream Shaper, and a stacked tip assembly that includes the following tips- 2 ¾”, 2 ½”, 2 ¼”, 2”, 1 ½”, and 1 ¼”. All of the above shall have FDNY thread. A custom-made bracket shall be provided to store the tips when not in use. Final design shall be approved by FDNY.
- Plumbing, with a 4" min. I.D., including a section of flexible hose with Victaulic™, or equal, connections, shall be provided to absorb movement between fire pump and monitor.
- A 3 ½" min. I.D. Waterous™, or equal, gear operated valve, operable from the left side pump panel, shall be provided.

17. FIRE PUMP / PLUMBING / BOOSTER TANK (CONTINUED):

17.28 Master Drain:

- Fire pump shall be equipped with an OEM approved master drain that is designed to completely drain all water from pump. It shall be remotely operated by a cable, with "pull to open – push to close" action. The end of cable shall have a "T" type control handle located on the left side pump panel, as directed by FDNY.

- Valves shall have an equal number of lines and ports. Any additional items that are to drain through that particular valve shall be plumbed to that port via a manifold. Further details shall be discussed at the Preconstruction Conference.

17.29 Other Drains:

- All plumbing on apparatus shall be equipped with suitable drains to completely drain all water from the system.

- If drain valves are to be remotely located, the plumbing shall be ¾" min I.D., and be routed to prevent "water traps". Plumbing shall be rated to withstand total capable pump pressure.

- Each gated intake and discharge shall be equipped with an Akron™ style #57, or equal, ¾" min I.D., 1/4 turn drain valve, with "T" type control handle, as directed by FDNY.

- Front inlet plumbing shall be equipped with a drain valve on each side of front inlet control valve.

- Final locations of drain valves & handles, and routing of drain valve plumbing shall be approved by FDNY.

17. FIRE PUMP / PLUMBING / BOOSTER TANK (CONTINUED):

17.30 Manual Fire Pump Bypass Cooler:

- Means of keeping the fire pump from overheating when in "pump" mode without any discharges open shall be provided. This shall be achieved by the use of plumbing, that incorporates a 1/4 turn valve, to allow water flow from discharge side of pump to water tank for pump.

- Control handle for valve shall be located on the left side pump panel, as directed by FDNY. Control shall be labeled "fire pump bypass cooler".

- I.D. of valve and related plumbing shall be large enough to provide adequate cooling of pump when apparatus is in "pump" mode with all discharges closed. Size of I.D. shall be approved by FDNY. **Note: manual fire pump by-pass cooler & automatic by-pass cooler shall not be plumbed together.**

17.31 Automatic By-Pass Cooler & High Temp Warning:

- In addition to the manual by-pass cooler, the apparatus shall be equipped with a Waterous™, or equal "Overheat Protection Manager". At 140 degrees Fahrenheit, water shall be automatically directed from pump to booster tank. At 180 degrees Fahrenheit, a warning light located on the left side pump panel shall illuminate. System shall be installed as instructed / directed by Waterous™, or equal.

17.32 Auxiliary Engine Cooler:

- Means to control engine coolant temperature while fire pump is in operation shall be provided. This shall be achieved by the use of a properly sized heat exchanger that uses fire pump water to lower temperature of engine coolant.

- Heat exchanger unit shall be located in engine compartment area, as directed by FDNY.

17. FIRE PUMP / PLUMBING / BOOSTER TANK (CONTINUED):

17.33 Auxiliary Engine Cooler (Continued):

- System shall be controlled by one (1) 1/4 turn valve located on the left side pump panel, as directed by FDNY. Control shall be labeled “Auxiliary Engine Cooler”.

- Type, design, size, and final mounting locations of auxiliary cooler and **all** of its components shall be approved by FDNY.

17.34 Emergency Radiator Fill:

- A means of introducing fire pump water into the engine cooling system, to accommodate a large-scale coolant leak in an emergency situation shall be provided.

- System shall be controlled by a permanently labeled 1/4 turn valve located in compartment “M2”. The compartment door shall be permanently labeled “emergency radiator fill access”.

- A one-way check valve shall be provided in the plumbing.

- A properly sized restrictor orifice or pressure regulator shall be provided in the emergency fill plumbing to prevent excessive pressure to the radiator / cooling system.

- Type, design, and final mounting locations of all emergency radiator fill system components shall be approved by FDNY.

17.35 Emergency Radiator Sprinkler System:

- A sprinkler system shall be provided that sprays fire pump water on the front face of the radiator to help lower coolant temperature in the event of an overheating condition when pumping.

- System shall be designed to properly function without damaging radiator, or any other component.

- This shall be controlled by a permanently labeled ¼ turn valve.

17. FIRE PUMP / PLUMBING / BOOSTER TANK (CONTINUED):

17.35 Emergency Radiator Sprinkler System (Continued):

- If the system is not self-draining, there shall be a manual drain plumbed into the main pump drain. Design & location shall be directed by FDNY.
- Label shall also state, "Valve Must Be Closed When Drafting – Not For Winter Use".
- A drawing, including full description and locations of all components of system, shall be provided at the Preconstruction Conference. The complete design, component locations, labeling, and system operation, shall be approved by FDNY.

Note: All cooler hoses, fill hose, radiator sprinkler hoses that route from the engine area to the fire pump shall have a split bulkhead connection after the engine area for ease of service. Further details shall be discussed at the Preconstruction Conference.

17.36 Labeling:

- **All** controls, gauges, drains, warning indicators, shall be permanently and clearly identified & labeled for direction as directed by FDNY.
- This shall include **every** item on both pump panels, and **every** other control, drain, inlet / outlet that is located elsewhere on the apparatus.
- All labels shall be identical for all apparatus purchased under the contract.
- Labels shall not be installed on any rub rail on the apparatus.
- Type of labels, wording, means of attachment, and final mounting locations, shall be directed and approved by FDNY.

17. FIRE PUMP / PLUMBING / BOOSTER TANK (CONTINUED):

17.37 Color Coding:

- A color-coding system shall be provided to easily identify the inlets / outlets, their related controls, meters, and drains. It shall consist of metal color coded "rings", with engraved or raised labeling, that shall be installed around the inlets / outlets and their related controls, meters, and drains as manufactured by Visionmark™, or equal.

- Rings shall be bolted in place- no screws or pop rivets.

- Colors Shall Be as Follows:
  All Inlets---------- **Burgundy** (Labeled as directed by FDNY)
  Front 2 ½" Discharge----**Orange** (Labeled #1)
  Front 4 ½" Discharge----**Beige** Labeled #7)
  Left Side 2 ½" Discharge-------- **Red** (Labeled #2)
  Left Side 2 ½" Discharge-------- **Yellow** (Labeled #3)
  Right Side 3" Discharge--------- **Black** (Labeled #6)
  Right Side 3" Discharge ---------- **Blue** (Labeled #5)
  Rear 4 ½" Discharge--- **White** (Labeled #4)
  Deluge Gun---------- **Gray** (Labeled "Deluge Gun")

- Type of identifying "rings", color shading, wording/labeling with the text as large as possible, means of attachment and final mounting locations, shall be approved by FDNY.

17. FIRE PUMP / PLUMBING / BOOSTER TANK (CONTINUED):

17.38 Booster Tank:

- A booster tank for water shall be provided on apparatus. Tank capacity shall be 500 gallons, except if / when directed by FDNY to provide a tank of a different capacity.

- A detailed drawing of booster tank shall be provided within thirty (30) calendar days from award of contract, and all aspects of design shall be approved by FDNY

- Tank shall be of special FDNY heavy duty "L" design, to facilitate a low hose bed height

- Tank shall be of polypropylene construction, stress relieved, UV stabilized thermo plastic – all joints & seams tested for maximum strength and integrity.

  ° All exterior panels shall be ¾" min. thick.
  ° Lower covers shall be recessed and ¾" min, thick.
  ° Divider wall shall be ¾" min, thick.

- The tank shall be adequately baffled and braced – transverse & longitudinal swash partitions shall be constructed of 3/8" min polypropylene-transverse partitions shall extend from approx. 4" off the floor to just under the cover – longitudinal partitions shall extend from the floor through the cover to allow for positive welding & maximum integrity – all partitions shall be equipped with vent & air holes and designed to provide maximum water flow – all swash partitions shall interlock with one another and shall be welded to each other as well as the walls of the tank – tank interior shell shall be extrusion welded – the area under the side overhangs shall be extrusion welded – the exterior of the tank shall be triple welded sleeve on the outside and welded as much as possible inside – the outside overflow shall be triple welded.

17. FIRE PUMP / PLUMBING / BOOSTER TANK (CONTINUED):

17.38 Booster Tank (Continued):

- Tank shall be provided with an accessible fill box and vent to permit air flow during pumping, with 4" I.D. overflow and a discharge to the rear of axle, subject to FDNY approval. Tank fill box cover shall not be equipped with a locking device. Booster fill box shall rise approximately 10.5" above top of booster tank to above hose bed. Booster fill box dimensions: 12" x 12" x 10.5" with screen cover. Screen shall be secured with stainless steel screws.

- Tank isolated from the cross members & chassis / body by hard rubber strips ¼" x 2", minimum - strips shall have a Rockwell hardness of 60 Durometer – tank shall be supported around the entire bottom outside perimeter & captured both front and rear as well as side to prevent tank from shifting during apparatus operation.

- Tank shall be easily removable with minimal dismantling & disruption of the apparatus. Tank shall be equipped with top mounted hoisting points to facilitate safe removal. Final hoisting point layout shall be approved by FDNY.

- A quick-opening 90-degree dump valve & plumbing, with a 2" min I.D., for tank drainage, shall be provided. Valve shall be provided with a readily accessible operating handle located as directed by FDNY. A cable operated valve system is **not** acceptable.

- Tank To Pump Plumbing: Plumbing from booster tank to suction side of fire pump shall be equipped with a 3" I.D. flexible anti-collapse connection, with a 3" I.D. Akron™, or equal, inline type valve with "push-pull" control located on the left side pump panel. Pump inlet shall be equipped with a brass one-way flapper valve to allow water to flow from tank to pump only.

- Tank Fill Plumbing: A system shall be provided that allows filling of the booster tank with fire pump water. All plumbing shall be 1 ½" min inside diameter. Fittings & piping shall be stainless steel only. Plumbing shall include a section of high-pressure flexible hose with stainless steel Victaulic™, or equal, type ends. Valve shall be a 1 ½" I.D. Akron™, or equal, inline type with "Push-Pull" control located on the left side pump panel.

17. FIRE PUMP / PLUMBING / BOOSTER TANK (CONTINUED):

17.38 Booster Tank (Continued):

- Aux Tank Fill: a system shall be provided that allows filling of the booster tank with a garden hose from either side pump panel. All plumbing, including valves, shall be 3/4" min inside diameter. Two (2) 1/4 turn valves (one at each pump panel) shall be plumbed and "Tee'd" to a common check valve and then connected to the tank fill plumbing (between the tank fill valve and booster tank). Each pump panel shall be equipped with a female swivel garden hose connector.

- Final locations of all of the above shall be approved by FDNY.

18. OPERATORS PUMP PANELS:

18.1 It is important that the design & layout of pump panels be consistent with current “in service” FDNY pumpers, therefore the **entire** design & layout shall be directed and approved by FDNY.

18.2 Pump module shall be equipped with an operator’s pump panel on the left side and right side of the apparatus.

18.3 A schematic of fire pump, all plumbing including intakes / outlets, and entire pump panel layout (both sides), shall be submitted within thirty (30) calendar days from award of contract.

18.4 Pump panels shall be constructed of 14-gauge, min, “304” stainless steel.

18.5 Pump panels shall be removable to provide complete access to the fire pump, secured with 1/4" diameter stainless steel hex head bolts with caged nuts & lock washers. These panels shall be divided into section for ease of handling and service. Further details shall be discussed at the Preconstruction Conference.

18.6 Upper half of left side pump panel shall be vertically hinged, forming a “swing out” panel, with a gas strut to hold panel at 90 degrees. Panel shall be secured with stainless steel hex head bolts with a min diameter of 5/16”. Hinge shall be a ¼” min diameter, stainless steel “piano” type. Design of this panel and related items shall be approved by FDNY.

18.7 All items on pump panels, including but not limited to, intakes / outlets, controls, gauges / meters, warning devices and instruments shall be readily accessible for servicing / replacement.

18.8 **All** items on pump panels shall be identified clearly, subject to FDNY approval (see section 17 for labeling details).

18.9 A permanently labeled placard with information about “Street Hydraulics” shall be mounted in a location directed by FDNY. Exact wording shall be directed by FDNY.

18.10 Pump panels shall include but not be limited to the following mentioned items (sections 18.11 through 18.20).

18. OPERATORS PUMP PANELS (CONTINUED):

18.11 Left Side Pump Panel Gauges:

- One (1) Master Inlet (Hydrant) Gauge
- One (1) Master Pressure Gauge
- Eight (8) Flow Meter / Pressure Gauges
- One (1) Booster Tank Level Indicator
- One (1) "Pump Mode" Hour Meter
- One (1) Pump Transmission Oil Temperature Gauge
- One (1) Fuel Level Gauge
- One (1) DEF (Diesel Exhaust Fluid) Level Gauge
- Ten (10) Valve Position Indicators

The following shall be digitally displayed in the electronic governor control head:

- One (1) Pump Discharge Gauge
- One (1) Pump Intake Gauge
- One (1) Engine Tachometer
- One (1) Engine Oil Pressure Gauge
- One (1) Engine Coolant Temp Gauge
- One (1) Pump Transmission Oil Temp Gauge
- One (1) Battery Voltage Gauge

18.12 Master Pressure Gauges:

- Master inlet (hydrant) gauge shall have a 6" diameter with a range from 30" HG to 400 PSI and be located to the left of the master pressure gauge.

- Master pressure gauge shall have a 6" diameter with a range from 30" HG to 600 PSI and be located to the right of the master inlet (hydrant) gauge. It shall be equipped with a clearly labeled "dampening" device to help keep needle steady during operation.

18. OPERATORS PUMP PANELS (CONTINUED):

18.13 Left Side Pump Panel Inlets / Outlets:

- One (1) 6” Gated Inlet
- One (1) 3” Gated Inlet
- One (1) Booster Tank Aux Fill Inlet
- Two (2) 2 ½” Outlets

18.14 Left Side Pump Panel Controls:

- One (1) “Dampening” Control for Master Pressure Gauge
- One (1) Electronic Governor Control Head
- Eight (8) Discharge Controls
- One (1) Front Suction Control
- One (1) Transfer Valve Control
- One (1) Booster Tank Fill Control
- One (1) Tank to Pump Control
- One (1) Booster Tank Aux Fill Control
- One (1) Auxiliary Engine Cooler Control
- One (1) Fire Pump Bypass Cooler Control
- One (1) Emergency Radiator Sprinkler System Control
- One (1) 6” Gated Inlet Control
- One (1) Manual Pump Shift Override Control
- One (1) Master Drain Control
- One (1) 3” Gated Inlet Control
- Seven (7) Drains (For #1, #2, #3, #4 & #7 Outlets, Deluge Gun, And 6” Intake)
- One (1) 3” Inlet Bleeder

The following shall be installed in a location as directed by FDNY:

- One (1) Booster Tank Drain Control.

18. OPERATORS PUMP PANELS (CONTINUED):

18.14 Left Side Pump Panel Indicator Lights / Warning Devices:

- One (1) **Red** "Pump Overheat" Light (With Test Button)
- One (1) **Red "**Low Engine Coolant" Light
- One (1) **Red** "Low System Voltage" Light
- One (1) **Amber** "Check Trans" Light
- One (1) **Amber** "DPF" (Diesel Particulate Filter) Light
- One (1) **Amber** "HEST" (High Exhaust System Temperature) Light
- One (1) **Amber** "Pressure Mode" Light
- One (1) **Amber** "Volume Mode" Light
- One (1) **Green** "OK To Pump" Light (Per NFPA Standards).
- One (1) Audible Alarm That Shall Sound Whenever The "Check Engine", "Stop Engine", "Low Coolant Level", Or "Low Voltage" Lights Are Activated

- The following lights shall be displayed in the electronic governor control head:

    - One (1) **Amber "**Check Engine" Light
    - One (1) **Red "**Stop Engine" Light

18.15 Left Side Pump Panel Switches:

- One (1) Primer Pump Control Switch
- One (1) Pump Module Flood/Spot Work Light Switch
- One (1) Pump Panel Light Switch
- One (1) Air Horn Switch.
- One (1) Booster Tank Level Switch

18.16 Left Side Pump Panel Accessories:

- One (1) Auxiliary Air Coupler (See Section 6)
- One (1) Set of Test Ports for Master Inlet (Hydrant) Gauge and Pressure Gauge

Note: Ports shall be 1/4" female N.P.T., equipped with plugs.

18. OPERATORS PUMP PANELS (CONTINUED):

18.17 Right Side Pump Panel Inlets / Outlets:

- One (1) 6” Siamese Inlet with The Following Fittings:

  ° One (1) 6” Inlet Used for Drafting.
  ° One (1) 6” Inlet with a Gated Valve.

- One (1) 3” Gated Inlet
- One (1) Booster Tank Aux Fill Inlet
- Two (2) 3” Outlets

18.18 Right Side Pump Panel Controls:

- One (1) 6” Gated Inlet Control (Mounted on One Inlet of Siamese)
- One (1) 3” Gated Inlet Control
- Two (2) Drains (For #5 and #6 Outlets)
- One (1) Booster Tank Aux Fill Control
- One (1) 3” Inlet Bleeder
- One (1) 4 ½” Suction Bleeder
- One (1) Pump Suction Drain

18.19 Right Side Pump Panel Gauges:

- Two (2) Valve Position Indicators
- One (1) Booster Tank Level Indicator

18.20 Right Side Pump Panel Switches:

- One (1) booster tank level switch

18. OPERATORS PUMP PANELS (CONTINUED):

18.21 Flowmeters / pressure gauges shall be Fire Research Insight Ultimate™ "FPA400-030-NW2-C00-HP", or equal. Digital flowmeter display shall read 0-9,999 GPM, and analog pressure gauge shall read 0 – 600 PSI. Waterproof housing filled with nitrogen gas- electronic pressure sensor- Delrin™, or equal, damage resistant high-pressure paddlewheel with stainless steel pin, installed in stream straightener- UL listed & NFPA compliant – all cables and connectors OEM supplied. All units shall be calibrated prior to acceptance pump test.

18.22 Installation of Fire Research™ pressure governor, flowmeters & all related components shall be installed as per FRC's requirements. Final design / layout shall be approved by FRC prior to pilot model production. Written documentation of approval shall be obtained from FRC and forwarded to FDNY.

18.23 All intake and discharge controls shall utilize a Waterous™ p/n 73052, or equal, valve position indicators. These indicators shall have seven (7) indicator lights: one (1) **red** to indicate fully closed, five (5) **amber** to indicate positions in between fully closed and fully open, and one (1) **blue** to indicate fully open. Permanently labeled decals shall be provided on each pump panel as directed by FDNY.

18.24 Booster tank level indicators shall be a Fire Research™ "Tankvision", or equal. 180º visibility-ultra-brite LED indicators- self calibrating- pressure type sensor- self diagnosing- level test button, that shall operate with the apparatus chassis power off.

18.25 There shall also be two (2) Fire Research™ "Maxvision" or equal LED booster tank level gauges mounted on the exterior of the cab, one (1) on each side as directed by FDNY. In addition, there shall be placards that state "Booster Tank Water Level" under each gauge.

18.26 Pump panel fuel level and diesel exhaust fluid level gauges shall have their own tank sending unit (separate from the dash mounted gauges).

18.27 One (1) easily removable running board shall be provided beneath both the left side and the right-side pump panels, fabricated from 3/16" min, aluminum tread plate. Each running board shall incorporate one (1) hose tray capable of holding 50' of FDNY's currently used 3 ½" hose. Two (2) seat belt type straps (with "lift to release" type latches) shall be provided at each tray, to secure hoses in place. Bottom of tray shall be fitted with Mateflex™, or equal, **black** grating. Adequate drainage shall be provided in bottoms of trays. Final design, including type of hold down strap, shall be approved by FDNY.

19. PAINT:

19.1 All finishing of this apparatus shall be to fire apparatus standards. Surface imperfections, orange peel, pinholes, dust, grit, bubbles, peeling, chipping, rust bleed through and fading are not acceptable. All sheet metal, including the interior of the apparatus body shall be properly prepped for stainless steel.

19.2 A complete finishing system, multi-step surface preparation, corrosion protection and topcoat shall be used. Preparation / application shall be in compliance with all paint system manufacturer's requirements and recommendations. Manufacturer's technical support shall be provided to address any problems noted by FDNY.

19.3 The entire apparatus shall be primed. The primer and sealer coats shall be machine and hand sanded to assure a smooth metal surface for finishing. All loose equipment shall be removed from the apparatus and painted separately.

19.4 Dupont™, or equal, high solid polyurethane basecoat / clear coat. Color: #B8241 **red** lower cab and body (including the fixed walls in hose bed area). #W8430 **white** upper cab. Color chip(s) shall be furnished to FDNY for approval. Type, quality, finish and final appearance subject to FDNY approval.

19.5 Touch Up Paint: Two (2) bottles of **red** and two (2) bottles of **white** touch up paint shall be supplied with each apparatus delivered. Each bottle shall be one (1) pint. Touch up paint shall be the same paint brand and color code as originally applied on the apparatus. Each bottle shall have a built-in brush applicator.

19.6 The cab shall be painted prior to installation of glass, wiring, and trim. The stainless-steel fuel tank shall **not** be painted. No air brake piping or wiring shall be painted. The chassis frame, axles, and other components shall be painted prior to wiring and brake line installation. The cab interior shall be painted **gray**. The frame, cross members and other under-carriage parts shall be painted gloss **"Job Red".**

19. PAINT (CONTINUED):

19.7 All tread plate shall be installed before painting, then removed. The body shall then be primed and painted, the areas under the aluminum tread plate undercoated, aluminum tread plate underside separately undercoated, or a non-metallic di-electric barrier tape applied. After installation, edges of all aluminum tread plate shall be silicone caulked.

19.8 All hinged compartment doors shall be fitted to the apparatus, sanded, primed, and painted separately off the apparatus. All flush mounted lights, drip moldings, and other equipment shall also be fitted on the body prior to painting, then removed for final finishing to assure paint under all equipment. Note: all holes shall be drilled prior to any painting.

19.9 The interior of all compartment doors shall be sealed in all corners and edges. The interior panel of the compartment doors together with the lock access panel shall be coated as an assembly with Linex™, or equal. The lock panel shall be easily removable from the interior of the compartment door after coating. Color and exact coverage area shall be approved by FDNY. Further details shall be discussed at the Preconstruction Conference.

19.10 Linex™, or equal, coating shall be applied to all interior areas of the exterior compartments, including the inboard facing box pan panel. Color, texture, final application quality, and exact coverage area shall be directed and approved by FDNY, and also further discussed at the Preconstruction Conference.

19.11 The paint layout / paint break line shall be the same as the current “in service” FDNY apparatus, subject to FDNY approval.

20. GRAPHICS:

NOTE- EXACT LOCATION OF ALL GRAPHICS SHALL BE DIRECTED AND APPROVED BY FDNY. FONT SHALL BE "YEARBOOK" – EXPANDED SPACING. ALL FRONT AND REAR FACING GRAPHICS SHALL BE REFLECTIVE.

QUANTITY	SIZE	COLOR	DESCRIPTION
2	12"	**Full Color Reflective**	New York City Fire Department Licensed Official Logo@ (One each side of front cab door)
2	3"	**Red or White** Reflective SEE NOTE # 1	F.D.N.Y Decal (One each side under crew cab window)
1	3"	**White Reflective**	F.D.N.Y Decal (On front of Cab)
1	9"	**White Reflective**	Company Number (On front bumper- centered)
2	12"	**White Reflective**	Company Number (One on each side crew cab door)
1	Size TBD at Preconstruction	**Color TBD at Preconstruction**	Company Number (On cab roof) - Numbers shall be as large as possible, highlighted and outlined. The material chosen shall provide a non-slip walking surface.
2	9"	**White Reflective**	"FDNY" Slanted Decals (Mounted inline with striping – each side of rear compartment. Degree of slant TBD at Precon.)
3	2"	**White Reflective**	"KEEP BACK 200 FEET" Decal (Rear of Apparatus)
3	1"	**White Reflective**	Registration numbers located at: Glove box face, Left lower front cab, and Left lower rear of body
2	9"h x 20" w	**Red/White**	Rectangular sign to read: "TO REPORT A FIRE DIAL 911"
A/R	2" or 3"	**Red/White** Reflective	Scotchlite™ alternating tape, applied to rear step and insides of cab & compartment doors, and as directed by FDNY.
A/R	Size TBD at Precon.	**Red**	3M Scotchlite™ Diamond Grade Conspicuity: **RED** tape applied to the rear of the apparatus to the **RED** painted surfaces of the body.
2	12" x 12"	**Custom**	Company Logo, mounted on each side of cab

20. GRAPHICS (CONTINUED):

QTY	SIZE	COLOR	DESCRIPTION
2	2-1/2”	**Gold Reflective**	680 Series 3M striping shall be installed around front cab and both sides of the apparatus.
2	2-1/2”	**Yellow Reflective**	980 Series 3M striping installed on the rear of the apparatus. Note: There shall be a 4” gap between the lower edge of top stripe and upper edge of bottom stripe.
1	2-1/2”	**White Reflective**	680 Series 3M striping shall be installed around front cab, both sides, and rear of apparatus.
1	2-1/2”	**White Reflective**	980 Series 3M striping shall be installed on the rear of the apparatus. Note: These stripes shall be centered between the **GOLD** and **YELLOW** stripes maintaining a ¾” gap.

20. GRAPHICS (CONTINUED):

2	2.35”h x 21” l	**Black Reflective**	“nyc.gov/FDNY” decal. 3M™ “680” Series. Font: Helvetica Medium
2	Size TBD at Precon	**Red, White and Blue Reflective**	“Waving Style” American flag decals
4	Size TBD	**Red, Orange and White**	“BUCKLE UP” Seat Belt Decals—at each cab door position.
1	Size TBD	**Custom**	CFR-D Logo

NOTE # 1—COLOR WILL BE DICTATED BY WHAT SIDE OF THE PAINT BREAK DECAL WILL GO ON. IF IN **RED** AREA, DECAL SHALL BE **WHITE**. IF IN **WHITE** AREA, DECAL SHALL BE **RED**

680 Series Material: •**WHITE** (3M 680-10) •**GOLD** (3M 680-64) •**RED** (3M 680-72)

980 Series Material: •**WHITE** (3M 983-10) •**YELLOW** (3M 983-71) •**RED** (3M-983-72)

@ This decal shall be three (3) color silk screened on 3M 680 Engineer Grade Reflective white vinyl. All inks shall be Scotchlite® compatible and non-face. Logo shall have Gerber UV Guard™, or equal, over seal and be pre-masked.

NOTE: All graphics shall be created using high resolution and high-quality computer-generated artwork. The vendor shall provide scalable electronic copies of all logos in addition to printed approval drawings for final approval by FDNY.

Contact FDNY Graphics Unit at 718-571-7625 with questions only on font type, style and size.

21. TWO-WAY RADIO EQUIPMENT:

SPECIFICATION FOR TWO WAY RADIO COMMUNICATIONS AND ANCILLARY EQUIPMENT TO BE INSTALLED IN NEW YORK CITY FIRE DEPARTMENT
2000 GPM PUMPER

SUMMARY OF EQUIPMENT TO BE INSTALLED AND/OR PROVIDED

1. One (1) APX8500 All Band Mobile Two Way Radio with Dual E5 Control Head Individual telephony style Handset and Speaker, and remote configuration.

   Primary radio with telephonic handset will be located by the Officer/ Chauffer position,
2. One (1) Mobile Data Terminal, with Dead Reckoning GPS Module, Rear MDC Screen, and Printer.
3. One (1) Electronic siren w/Public Address System and Rumbler
4. Three (3) Portable Radio Battery Chargers & Six (6) OEM Motorola APX8500 Batteries
5. One (1) Commercial carrier Broadband Modem
6. Antenna Box (Quantity is TBD)

I ALL BAND MOBILE TWO WAY RADIOS

The Contractor shall furnish and install One (1) Motorola APX8500 Dual Head All band Radio, Model M37TSS9PW1CN with three (3) speakers (two cab based and one (1) Pump Panel based) or equal with each vehicle to include:

Radio, Control Heads, and Speakers will be mounted at the direction of the Director, FDNY Radio Shop or their designee.

Critical Note: (1) Due to a recent product line change, the APX8500 with a "CN" model designation" may have a different footprint, form factor, and layout compared to previous versions. As such, the installation process may require remote configurations to support the Ethernet connections. Exact feature sets, cabling, and other parts will be determined during the prebuild process and throughout the contract term. (2) These Radios must be ordered through the Motorola Solutions NYC Field Office which is currently Altech Electronics. (3) Technical questions regarding the feature set or any technical matter must be addressed to FDNY Radio Shop and Fleet Services.

	M37TSS9PW1CN	APX8500 ALL BAND MOBILE
	GA00268AA	ADD: RFID TAG APEX
	G444AH	ADD: APX CONTROL HEAD SOFTWARE
	GA01670AA	ADD: APX E5 CONTROL HEAD
	GA09007AA	ADD: OUT OF THE BOX WI-FI PROVISIONING
	G806BL	ENH: ASTRO DIGITAL CAI OP APX

	G51AT	ENH: SMARTZONE OPERATION APX
	G319	ENH: ENABLE RF MODEM APX (STD Option)
	G67EH	ADD: REMOTE MOUNT E5 MP
	QA01749	ADD: SW KEY SUPPLEMENTAL DATA (STD OPTION)
As Directed by FDNY	G892AB	ENH: HAND MIC,GCAI WTR RESISTANT APX
	GA00580	ADD: TDMA OPERATION APX
	G831	ADD: AUXILARY SPKR 15W WATER RESISTANT
	UA00049AA	ADD: RADIO MANAGEMENT LICENSE
	W947	ADD: RS232 INTERFACE PACKET DATA (STD OPTION)
	GA00229	ENH: APX GPS ACTIVATION (STD OPTION)
	G857	ADD: FDNY TONESET
	G361AH	ENH: P25 TRUNKING SOFTWARE APX
	G996AS	ENH: OVER THE AIR PROVISIONING
	G298AS	ENH: ASTRO 25 OTAR W/ MULTIKEY
	GA01620AA	ADD: MULTISYSTEM OTAR
	G851AG	ADD: AES/DES-XL/DES-OFB ENCRYPTION AND ADP
	GA09000AA	ADD: DIGITAL TONE SIGNALING
	GA05100	STD WARRANTY
	H1919	MULTIPLEXER QMA
	GA01513SP01PL	ADD: ALL BAND ANTENNA
	QA03399AA	ADD: ENHANCED DATA
	GA00250AA	ADD: WIFI/GNSS FLEXIBLE CABLE LMR240
	GA09001AA	ADD: WI-FI CAPABILITY
	GA01630	ADD: SMART CONNECT
	GA00631	DVRS MSU Activation
	Q445	ADD: MOBILE PERSONAL ACCOUNTABILITY SW
	GA01515	ADD: J600 ADAPTER CABLE
	QA09113	ADD: BASELINE RELEASE
	QA09772AA	EN: MULTI CODEPLUG PROGRAMMING
	GA09012	ADD: MISSION CRITICAL GEOFENCING
	G387	ADD:MULTICAST VOTING SCAN
	GA01767	ADD: APX MOBILE RADIO AUTHENTICATION
	GA01787	ADD: APX8500 ETHERNET MP FACEPLATE
	H02	ENH: TACTICAL RAIO STW-STUN/KILL
	GA01843	ADD: MOBILE IMPACT DETECTION
	GA09008AA	ADD: GROUP SERVICES

	QA03400	DEL: FCC NARROWBANDING
	QA00583	ADD: BLUETOOTH (STD OPTION)
	G335	ADD: 1/4 WAVE 762-870 mHz ANTENNA FOR VRM
	GA00092	ADD: APXM DUAL CONTROL HEAD E5
	G628	ADD: 17FT REMOTE CABLE (TBD on Build)
	G173	ENH: SMART ZONE OMNI LINK (INCL AS PART OF G361AH)
	H1933A	E5 RM TO E5 DM MP RETROFIT KIT
	APX7MICAD	ASSEMBLED MAP KIT (incl. RKN4166 & HLN6863)
	APXWING	WING BOLTS
As Directed by FDNY	G874ABSP01	Coiled Handset modified by vendor
As Directed by FDNY	FD-12	Clip from Telephone Components.com
As Directed by FDNY	G876	Handset w/ Coil
	PNKTDD259A01	USB Ethernet Hub Cable Assembly (UEHCA) Kit w/ Cabling & mounting equipment
	KT000259A01	USB Ethernet Hub Cable Assembly
	DQSPD38301	NORTHCOMM QMA TO MINI-UHF JUMPER CABLES (RF223 CABLES): 12" IN LENGTH NYFD PROJECT ONLY (same as Northcomm Part # NC-05-MUFQMM-FDNY-12-V1)

A. Display & Frequency Programming

The contractor shall program the Motorola Radio with the latest approved codeplug programming configuration used by FDNY. The FDNY Radio Shop can assist the vendor with the proper information at the time of programming.

B. TWO WAY RADIO (APPLICABLE TO ALL RADIOS UNLESS OTHERWISE NOTED)

1. Radio Frequency, deviation and output power shall be measured and recorded by the installer. The Director, FDNY Radio Shop or their designee may provide a worksheet with devices to be tested and the acceptable values. (All Radios)

2. Time out Timer (Time Out Timer shall be set for one minute.) (All Radios)

3. Power output: The power output of the mobile transmitter shall be 10-50 watts, adjustable.

4. Audio Output: Receiver audio output shall be at least 10 watts. Audio shall be routed to the handset ear piece as well as to all mobile speakers simultaneously (Cab and Pump Panel), under all conditions.

   The contractor shall modify the specified handset to allow for FDNY specific needs, procedure to modify handset will be supplied by FDNY Radio Shop. Handset and modified cable shall be installed for easy replacement no rewire or disassembly shall be required to replace handset and or modified cable.

5. The standard mobile speaker (4 ohm without volume control) shall be mounted in the vehicle cabin.
6. An additional E5 control head and enhanced 15-watt audio speaker without volume control shall be mounted in the rear passenger FF area terminated to Main onboard radio.
7. One (1) Motorola HSN6003 waterproof speaker shall be placed in the Pump Panel. Exact placement, wiring scheme, and any interlocks will be determined during preconstruction conference and throughout the contractual period). NOTE: Placement cannot interfere with pump panel operations.
8. All speakers and control heads shall be mounted at the direction of the Director, FDNY Radio Repair Shop or their Designee. The standard mobile speaker(s) (4 ohm without volume control) shall be mounted in the vehicle cabin. One shall be mounted in the front of the cab and the other in the backstep (rear) of the cab.
9. Receive audio shall be routed to the individual mobile speaker and where applicable, handset earpiece simultaneously, at all times.
10. The audio output shall be tied into the siren system to give audio broadcast capability through the vehicle siren amplifier/speaker.
11. The Front, Rear, and pump panel speakers shall be provisioned to have independent volume control.
12. At the discretion of the Director, FDNY Radio Shop, the contractor shall test, tune, and align and program the radio(s) with the latest configuration used by FDNY including the latest available firmware to allow use of TSBK decode, encode, and alert in the format presently used by FDNY. The FDNY Radio Shop can assist the vendor with the proper information at time of programming
13. The contractor shall supply all Motorola OEM parts necessary to change the radio from a remote mount to a “under dash” mount (control head directly attached to the radio) and vice versa contingent upon the application. Determination of final configuration shall be determined at time of install under direction of the Director, FDNY Radio Shop or their designee.
14. All radios shall be wired and fused independently as directed by the Director, FDNY Radio Shop or their designee.

15. Contractor shall physically engrave each radio with an FDNY serial number. The engraving shall be consistent with the manufacturer's guidelines and engraved using professional engraving practices. No "hand held" engraving is allowed. Final location and font size to be approved by the Director, FDNY Radio Repair or their designee. Serial numbers will be provided by the FDNY Radio Shop. Pictorial of present engraving location and design supplied upon request.

16. Provision 550 MHz CAT 6a Ethernet Cable from APX8500 Radio to Cradlepoint Quantity of 1 / One per APX8500 Radio transceiver Cable length is TBD

CAT 6a Ethernet Cable Specifications
Standards Reference: UL-444 / cETLus, ANSI/TIA 568-2.D, ISO / IEC 11801
Solid Copper, POE Capable, Shielded Twisted Pair (STP). Manufacturer certified to 10 Gbps. Color coded ends and labels indicating purpose shall be used at the discretion of the Director, FDNY Radio Shop or their designee. **Documentation to be provided to the FDNY demonstrating each individual cable's capacity and tested to 10 Gbps post installation. The use of CCA Cable is not allowed.**

II. MOBILE DATA TERMINAL ENSEMBLE

A. MOBILE DATA COMPUTER (MDC)

The Mobile Data Computer (MDC) as referenced within these specifications is to mean any and all radio equipment, modems, mobile computers, cabling, mounts, power supplies (internal and/or external), software, peripherals, interface devices, etc. needed to make a working system to provide communication over the FDNY Broadband system.

The contractor shall furnish and install:

Panasonic CF338Z-0KBM or Equal
Quantity of One (1)
Win11 Pro, Intel Core i7-1270P vPro (up to 4.8GHz), AMT, 12.0" QHD Gloved Multi Touch+Digitizer, 32GB, Intel Iris Xe, 512GB OPAL SSD, Intel Wi-Fi 6E, Bluetooth, 4G MLP31-W, GPS, Dual Pass (Ch1:WWAN/Ch2:GPS), Mic and Infrared 2MP Webcam, 8MP Rear Camera, Fingerprint (AD), Barcode, Standard Batteries (2), TPM 2.0, Flat, CF-SVCPDEP3Y - 3 Year Premier Deployment, FZ-SVC512SSD3Y - 3 Year No Return of Defective Drive, FZ-SVCTPNF3YR - 3 Year Protection Plus Warranty, CF-SVCBIOS1 - Custom BIOS, FZ-SVCFESGEN10 - Mobility Engineering Field Service

CF-VEK-333-LMP or Equal

Quantity of One (1)

Premium Keyboard for CF-33.

Emissive Red Backlit (4 levels). Handle/kickstand - display can be opened to any angle. Compatible with Tablet, 33 Laptop Vehicle Dock, and 33 Desktop Dock. Ethernet, SDXC

(full-size), HDMI, VGA, USB 2.0, USB 3.0 (2), Serial (USB), Power, Docking Connector, Kensington Lock, Tablet Release with Lock/Unlock, Latch Arm. Forward or Reverse-dockable to Convertible Mode"

CF-SVCPDBRZ or Equal
Bronze deployment, all security screws will be included and inserted before delivery.

Build # may vary due to vendor adjustments over time, final build to be approved by Director, FDNY Radio Shop or their designee.

IKEY, Ltd. Or equal –MDC peripherals –PDRC package (remote screen)
IK-PAN-PDRC-FDNY - CUSTOM 12.1-Inch Key Vision High-Bright Touchscreen Display for FDNYIK-PAN-USB-RJ45 - USB over Ethernet with 30-foot cable to include, 30ft serial power on/off cable and all cables and accessories required for proper operation.
35 -50 ft. High quality shielded HDMI &VGA cable to be included as noted under video cables. FDNY Fleet and Radio shall be contacted if different lengths are required. **Critical Note: The prepackaged Ethernet Cable Shall NOT be used. Rather, an Ethernet Cable meeting or exceeding the following specifications shall be used with length TBD**

Provision 550 MHz CAT 6a Ethernet Cable from Gamber Johnson Dock to Ikey PDRC Quantity of 1.

CAT 6a Ethernet Cable Specifications
Standards Reference: UL-444 / cETLus, ANSI/TIA 568-2.D, ISO / IEC 11801
Solid Copper, POE Capable, Shielded Twisted Pair (STP). Manufacturer certified to 10 Gbps. Color coded ends and labels indicating purpose shall be used at the discretion of the Director, FDNY Radio Shop or their designee. **Documentation to be provided to the FDNY demonstrating each individual cable's capacity and tested to 10 Gbps post installation. The use of CCA Cable is not allowed.**

Gamber-Johnson, or equal – MDC peripherals
GJ-33-LVD2 PART#7160-0909-02 – or equal, laptop vehicle dock (dual pass) for the Panasonic CF-33 or equal. USB 2.0 (4), USB 3.0 (2), Serial, Ethernet (2), HDMI, VGA, Docking Connector, Dual RF, Power, Release Lever, Lock (Keyed alike). Features two front USB ports for easy access. To include mounting plate for ease of servicing and hard-wired Lind power adapter for this dock.

Provision 550 MHz CAT 6a Ethernet Cable from Gamber Johnson Dock to Cradlepoint Quantity of 1.

Lind power adapter #14103 or equal
Screen support arm #7110-1214 or equal
Wall mounting bracket with for the Ikey screen #7160-0454 or equal
FDNY swivel MDC mounts for use with dock #7160-0868 or equal

Peripherals: PDRC package available through Panasonic as a bundle
All items supplied with standard warranty.

Video+ speciality Cables & adapters -Peripherals

CSTCABAU 35' HQ HN AUDIO CABLE (or equal, available through Altech Electronics)

CSTCABDB9MF 35' HQ HN DB9MF DATA CABLE (or equal available through Altech Electronics)

CSTCABVID 35' HQ HN VIDEO CABLE (or equal available through Altech Electronics)

CSTCABUSB 35' HQ HN USB CABLE, NO AMP (or equal available through Altech Electronics)

ICUSBAUDIOB USB to stereo out external sound card or equal (available from StarTech.com)

47-400-024 USB over cat 5 extender Balun (or equal available from show me cables)

Motorola/Trimble –MDC peripherals-

Altech Electronics	GPS coax w/ SMA connectors or equal
GPSNMO01	Pulse Electronics GPS antenna, white NMO type or equal

B. **Additional Peripherals required for MDT**

1. VTP-112-SP-FDNY printer Manufactured by Cybertech or equal to include all cables, mount(s), device drivers, cabling, and a test roll of thermal paper are to be supplied for the specified printer.
2. 602-1522-ND Edgeport 2c USB to serial converter 2 port- Digi key or equal
3. ATRACK NE100 or equal stand-alone GPS Dead Reckoning solution
   GPS receiver with all cables, options and mounting required for FDNY use. Shall include OEM power, USB and serial cable from manufacture (serial cable is null modem type)
   VSS Z063 Centrodyne VSS Speed Signal Divider / Quantity of One (1)

- The contractor shall supply custom mounting brackets if required for all devices
- Custom Bracket or other approved method shall be required to secure cables that do not secure to it associated device via locking screws
- Custom Bracket may be required for assorted peripheral devices such as Serial and USB extensions and adapter devices.
- The FDNY reserves the right to inspect and approve such brackets prior to use and throughout the contract period.

C. CRADLEPOINT OR EQUAL BROADBAND MODEM(FIRSTNET READY)

1. R1900 Broadband Modem or equal
2. R1900 MB01-19005GB-GA
3. RX30 Dock MB-RX30-MC
4. RC1250 Captive Modem w/ OEM Bracket
5. MC4005G Modem MB-MC400-5GB

6. Critical Note: All manufacture approved peripherals and cables to extend and share the OBDII port. Provision connectivity from vehicle OEM OBDII port to Cradlepoint device in radio compartment with the intent to provision DR-GPS connectivity and other services using OBD2 port
7. Parsec Pro CUJO Antenna- PRO13CJ8L4W1G25W or equal
   Parsec 13:1 White Radome CUJO Antenna w/ 8 Cellular elements, 4 WIFI Elements, and 1 GPS Element) Cable Part # PC2008L4WG20SFRSM Cable length is TBD. **Critical Notes: (1) Model of antenna subject to change to adapt for vehicle model and latest technology TBD during prebuild and throughout contract period. (2) Right angle connectors shall be used for final termination to the Cradlepoint. Exact jumper fabrication and installation will be determined during prebuild conferences and throughout the contractual period(s).**
8. MBA5-19005GB-GA NC Mobile Performance Ess+Adv Plan & R1900 5-yr, Global with support and IBR1700 router with WiFi (5G modem), no AC power supply or antennas, North America
9. FTDI Ltd DS_US232R-100 USB to RS232 cable or equal (100 CM or 39.3701 inches) or equal
10. DAT-Int Cable OBDII M/F w/ DB9-DB9 Part # 170758-000 (Cable length is TBD) or equal
11. Smartworx cradlepoint LD31C-S B+B OBDII connection cable or equal
12. Null Modem Mini Connector
13. Provision 550 MHz CAT 6a Ethernet Cable from APX8500 Radio to Cradlepoint Quantity of 1. / One per APX8500 Radio transceiver Cable length is TBD

CAT 6a Ethernet Cable Specifications
Standards Reference: UL-444 / cETLus, ANSI/TIA 568-2.D, ISO / IEC 11801
Solid Copper, POE Capable, Shielded Twisted Pair (STP). Manufacturer certified to 10 Gbps. Color-coded ends and labels indicating purpose shall be used at the discretion of the Director, FDNY Radio Shop or their designee. **Documentation to be provided to the FDNY demonstrating each individual cable's capacity and tested to 10 Gbps post installation. The use of CCA Cable is not allowed.**

D. MDC ASSEMBLY AND MOUNTING

The contractor shall furnish and install CradlePoint, or equal modem with all cables and accessories and basic services required for operation and connectivity.
The device shall be configured for FDNY use operating as intended for multi carrier switch over without user intervention certified for use on FirstNet, or equal, modem shall be wired according to manufactures guidelines, each power connection shall have its own location on the blue sea fuse block additional blue sea devices may be required.
Modem shall be mounted in the radio compartment, final wiring and location to be determined during pre-build and throughout the contractual term(s) by the Director, FDNY Radio Shop or their designee.

Contractor shall physically laser engrave each computer, keyboard, screen, Docking station and printer with a FDNY serial number which shall be provided by Radio shop. The engraving

shall be consistent with the manufacturer's guidelines and engraved using professional engraving practices. No "hand held" engraving is allowed. Final location and font size to be approved by the Director, FDNY Radio Shop or their designee. A pictorial of present engraving location and design provided upon request.

The MDC will be programmed by the FDNY for use on the FDNY Broadband Network.

The CF33 laptop, dock, and mobile printer shall be mounted in the apparatus cab to allow accessibility of the MDC by both Chauffer and Officer, and rear PDRC accessible to the crew in the Backstep. Final mounting locations to be determined by the Director, FDNY Radio Shop or their designee. An 800MHz antenna shall be furnished and roof mounted, clear of any obstructions, and/or tread plates. A long stanchion shall be used and the single band antenna whip shall be one piece. There shall be no set screws, mechanically compressed contacts or spring-loaded contacts. The contact point between the NMO roof antenna mount and antenna whip shall be the whip itself. A waiver may be issued if a multiband antenna is used. Final configuration and location will be determined by the Director, FDNY Radio Shop or their designee.

III. SPECIFIC MOBILE DATA COMPUTER (MDC) POWER REQUIREMENTS

A. Wired to a clean voltage source. Source shall be protected to prevent voltage spikes and noise from affecting the radio and MDC equipment. The Lind power protector (described below) shall be used to provide additional protection to the mobile data terminal and its peripherals.

B. Must respond to ignition sense or battery switch on/off to allow MDC, RF transmitter & modem to power off cleanly after vehicle ignition or battery switch has been shut off as though user shut down the MDC via Windows GUI.

C. MDC, RF modem and RF Transmitter shall boot when vehicle ignition or battery switch is turned on without recovery application running on startup. The FDNY MDC client software shall operate properly upon boot up and turn on of the MDC. Proper operation is as defined by FDNY Radio Shop and FDNY Starfire group.

D. Vehicle VSS, Forward/Reverse indication & Ground terminals are to be provided in the radio compartment for easy connection to the mobile data computer and / or associated DR-GPS receiver, Manufacture should be contacted for specific electrical requirements. FDNY Radio Shop is to approve final VSS & Forward/Reverse terminal location. The vendor must make the appropriate connections to the vehicle VSS and reverse signals. **The VSS shall only be present when the vehicle is in motion.**

E. When ignition sense or "battery switch" voltage is turned on, this voltage is applied to the 12VDC timer relay (timer) sense input and to the ignition sense of the CF-33 Dock. The timer will pass voltage to the Lind power conditioner and the Red Lead. The output of the Lind power conditioner will provide power to the Red Lead input to the MDC. The MDC and peripherals shall now be activated.

F. When the ignition sense or "battery switch" is removed, the data computer (CF-33) will shut down Windows in a "graceful" fashion (as if shut down through the start menu on a desktop). The timer will continue to pass voltage through the Lind power conditioner to the CF-33 dock. At some time after the "graceful" shut down, the timer will "time out" and remove Red Lead voltage to the laptop dock and associated data terminal peripherals.

G. FDNY reserves the right to change or reconfigure the turn on and shut down sequences. Final determination of this configuration shall be discussed at time of installation with the Director, FDNY Radio Shop or their designee.

H. Newmar Mobile Data Power System- or equal

1. Newmar Mobile Data Power System part number MDP-25. The protector shall provide spike protection and noise filtering,
2. The Newmar Data Power System is to be wired to protect the red & black power leads to the mobile data terminal and second screen. Output shall go to a blue sea Fuse box Labeled Navpac/UPS

I. Lind 12 VDC timer relays-or equal

1. Lind 12 VDC timer relays (model SDT1230U-023) or approved equal are used to power down the CF-33 after the device has performed a graceful
2. Shutdown via removal of ignition sense voltage. They will also power up and down all Red Leads for all radios.
3. The timers will be triggered on by ignition sense or voltage provided by a "battery switch". These timers are effectively relays that will be turned on by this ignition sense. The relays will allow for a higher current to pass through. Upon removal of the ignition sense the timers will continue to pass current and will begin timing. After a preset time the timer relays will open, and will remove voltage from the output.
4. Due to current demand, two (2) will be necessary for each vehicle

IV. ELECTRONIC SIREN AND PUBLIC ADDRESS SYSTEM

A. The Electronic Siren and Public Address System shall consist of:

Federal Signal Model PF400Q-FDNY w/ palm microphone
RBKIT2-COMPACT-FDNY
ES100C 100w Speaker w/ accessory kit
Or Equal

The control head shall be installed in the vehicle cab and the speaker to be mounted face forward, with an approved, heavy-duty, stainless-steel bracket. Speaker shall be mounted behind the grill or mounted on or internal to the front bumper. Bracket shall be Chrome or painted to match speaker. It shall not be necessary for an RRM to crawl underneath the chassis to remove a defective speaker driver or protective screen bezel. An approved waterproof disconnect shall be used and applied to the speaker wires directly behind the

siren speaker. Final mounting location and design shall be determined by the Director, FDNY Radio Repair or their designee.

B. Siren shall be wired to a discreet 12 volt feed in the Radio compartment and additional Blue Sea fuse box shall be added to allow for proper termination. Final wiring and location of device and all components shall be determined during prebuild of pilot vehicle. Ease of servicing shall be considered for all devices. Final location and method to be approved by the Director, FDNY Radio Shop or their designee.

Speaker wires shall match or exceed Federal Signal's specifications for connection to the speaker/driver terminals using two (2) #250 Amp. Faston, plastic-grip receptacles. Wires shall be connected into the siren control module mounted in the radio compartment, as directed.

All exposed wiring running on the outside of the vehicle, shall be run in protective flexi conduit. All exposed wiring run within the interior of the vehicle shall be run in protective wire loom.

The audio output of the radio shall be connected into the siren control module to give audio broadcast capability through the vehicle siren PA system. This audio output shall be adjusted by the vendor as per the siren manufactures specifications. Audio output to the speaker must be clean of noise/hum and clearly understood as per the discretion of the Director, FDNY Radio Repair Shop or their Designee.

C. Audio levels in all modes of siren operation shall comply with all applicable NYC Local Laws and Noise Restrictions

Siren tone selection / programming and integration with the Rumbler is determined by FDNY Fleet Services.

Foot Pedal(s) integration is determined by Fleet Services.

V. PORTABLE RADIO BATTERY CHARGER

A. The Contractor shall furnish and install three (3) Cadex, Model USC 2/25, specially configured for FDNY In-Vehicle Portable Radio Battery Chargers with appropriate insert # 07-711-720-00 or equal to charge Motorola PMNN4504 APX series, batteries. The batteries shall be secured in the charger as to prevent the batteries from ejecting from the charger without user intervention. The charger shall be capable of mounting horizontally or vertically on a wall or flat surface. Power will be provided from a 12 VDC HOT location on the fuse block in the radio compartment, each charger shall be fused independent from another and from other equipment. Actual mounting locations and final wiring configuration shall be determined by the Director, FDNY Radio Shop or their designee.

B. Provide Six (6) Motorola APX8000xe Batteries (Motorola Part #PMNN4504A) with engraving performed at the direction of the direction of the Director, FDNY Radio Shop or their designee.

C. Provide Four (4) Powerwerx Panelpole2 (SKU# PANELPOLE2 / GTIN # 840128906057) or equal devices shall be mounted at the direction of the Director, FDNY Radio Shop or their designee. Various adapters / pigtail connectors will be fabricated at the request of the Director, FDNY Radio Shop or their designee.

D. Two (2) Kussmaul 091-264-SVR Dual USB Charger (USB-A & USB-C 63w) or equal shall be provided in the backstep of the apparatus. Proposed locations: One (1) located adjacent to the Cradlepoint device. One (1) located in close proximity to the PDRC / Rear Screen. Actual mounting locations and final wiring configuration shall be determined by the Director, FDNY Radio Shop or their designee.

VI. D.C. POWER DISTRIBUTION AND CABLE CONNECTORS

A. The Contractor shall furnish and install one (1) 4-gauge wire originating at the input of the battery disconnect switch and terminating at a feed post in the Radio Compartment. This feed post shall be labeled "12 VDC HOT." The 4-gauge wire shall be protected by a 50 Amp circuit breaker. Entire length protected from chafing.

B. The Contractor shall furnish and install one (1) 8-gauge wire, originating at the output of the battery disconnect switch and terminating at a feed post in the radio compartment. This feed post shall be labeled "12 VDC SWITCHED." The 8-gauge wire shall be protected by a 30 Amp circuit breaker. Entire length protected from chafing.

C. A feed post connected to the vehicle electrical ground shall be furnished and located in the radio compartment below or next to the 12 volt feed posts described above. This ground post shall be wired directly to the chassis (frame) of the vehicle using appropriately sized stranded copper cable. This ground shall be wired so that neither the radios, nor MDC will provide the vehicle ground in case of intermittent or actual failure of the grounding system. The feed post shall be labeled "GROUND." Vehicle chassis to ground shall not exceed 1 Ohm

D. All feed posts shall have insulating covers to prevent accidental electrical short circuits and shall be installed to allow easy access for service. All feed posts shall be readily accessible by radio repair mechanics. A radio mechanic shall not have to remove equipment or shelving to access these posts. Locations of all feed posts must be designated by FDNY.

E. Actual connection between the Hot and Switched posts and the radio & MDC equipment shall be done using separate fuse blocks that are mounted in the radio compartment. The fuses shall be of the "ATC" Blade type. Each required component (i.e. radio, MDC, siren, printer, etc.) connection shall have its own fused spot on the block; no multiple connections to one spot are permitted. The fuses should be sized as per the manufacturer's

specification. These fuse blocks shall be installed so that they are readily accessible and clearly labeled for ease of service. These fuse blocks shall be sized to have four (4) additional available fused connections on each block after all equipment has been installed. The fuse blocks shall be Blue Sea or equal grade and have protective cover

F. All terminating connections shall be soldered and mechanically crimped using insulated crimp connectors. Twisting together wires is not permitted. Heat-shrink tubing may be used to protect these crimped connections. All individual wires shall be one contiguous run from source to load; no "butt" connections or extensions are to be used.

G. All radio cables shall be individually run within protective conduit as much as possible. Cables shall not be tie wrapped together within any unexposed area or conduit to allow individual cables to be replaced, should the need arise. Conduit should be sized to allow cables to pass their termination sides and connectors without having to cut or splice cables. Contractor shall factor in any heat generated from POE Ethernet cables. A drag cable shall be included for ease of maintenance at the discretion of the Director, FDNY Radio Shop or their designee

H. Exposed wiring shall be enclosed in flexible wire loom for protection. Securing of loomed cables outside of a protective conduit shall be done using nylon tie wraps. The use of electrical tape for the securing cables and wiring will not be permitted.

I. Provision four (4) 550 MHz CAT 6a Ethernet Cable from the MDC CPU housed area to the Radio compartment location tilt cab run about 40ft cable each.(termination TBD).

J. Provision one (1) 550 MHz CAT 6a Ethernet Cable from the "Dog House/ GPS Module Area" to the Radio compartment.

K. All power cables shall be installed with fuse protection that is readily accessible to FDNY Radio Repair personnel.

L. All cables, wiring, fuse placements, and cable terminations shall be approved by the Director, FDNY Radio Shop or their designee.

VII. ANTENNA, CABLE, AND MOUNTING

A. Install (7) Antennas in the following denominations:
Four (4) NMO mount whip antennas,
(2) All Band Antenna (VHF, UHF, 800Mhz)
(1) 800 MHz
(1) NMO GPS antenna for MDC

Three (3) Bolt down antennas
One (1) Bolt down WIFI / GPS for APX8500 Radio
Two (2) Bolt down Broadband Dome with antenna cables

B. The All Band Antenna Part # is Pulse Larsen NMO150/450/758 (Black) or equal
Covered Frequencies:
VHF Frequency:150-174 MHZ
UHF Frequency: 430-520 MHz
7/800 MHz: 750-870 MHz

C. The 800 whip shall be wide range

Except for the tri-band antenna, the whip antennas shall be one complete piece. There shall be no setscrews used. The contact point between the NMO roof antenna mount and antenna whip shall be the whip itself. No mechanically compressed contacts or spring-loaded contacts are allowed. Antennas shall be mounted on the vehicle roof in a square pattern, separated from each other by maximum allowable distance eighteen inches (18") when possible. The GPS antenna shall be mounted on the vehicle roof, as far as possible from the whip antennas, the edge of the roof, any roof obstruction and in accordance with the manufacturer's recommendation. Final locations to be approved by the Director, FDNY Radio Shop or their designee

D. Arcadian RDANRA-24/71-SQM fixed right angle stubby antenna or equal for each APX8500 Radio. Installed or shipped loose at the direction of the Director, FDNY Radio Shop or their designee

E. Motorola AN000163A01 Stubby Low-Loss GPS / WIFI Antenna for APX8500 or equal

F. The whip antennas shall be mounted a minimum of twelve inches (12") from the vehicle edge and a minimum of eighteen inches (18") from any roof mounted obstruction when design permits, Accommodations and final design must be approved by Director, FDNY Radio Shop or their designee

G. Splicing or joining of antenna cable is unacceptable. All cable shall be continuous from radio component to antenna.

H. Service loops shall be provided on both ends of the antenna cable for ease of service. Length is TBD. Jumpers shall be fabricated and installed at the direction of the Director, FDNY Radio Shop or their designee.

I. Four (4) three-quarter inch (3/4) diameter conduits for antenna cables shall be provided; one for each antenna coax 2 conduits for broadband multi coax sized as needed

J. LMR240 Cable and any other grades of RF cable shall be used as directed by the Director, FDNY Radio Shop or their designee. This will be determined at the Preconstruction conference and throughout the construction period.

K. All conduits be terminated, at both ends, with insulated bushings

L. Sharp bends shall be avoided, Ninety (90) degree elbows or adapters will not be accepted.

M. At the discretion of the Director, FDNY Radio Shop or their designee all cables, adapters, jumpers, and related appurtenances are subject to inspection, testing, and approval. Only Northcomm Technologies, Amphenol or Pasternack RF Connectors are to be used. This includes but is not limited to: male mini UHF straight or right angle, Female QMA and SMA, RP-SMA where applicable. Any deviations must be approved in writing by the Director, FDNY Radio Shop or their designee.

N. All Antenna cables shall be labeled on both cable ends with weatherproof material and in a professional manner as directed by the Director, FDNY Radio Shop or their designee.

O. Manufacturer is responsible for providing cables that are of adequate length to allow for full cab tilt

P. All antenna cabling shall use heat shrinking where applicable

Q. Drawings showing details of compartment locations, access openings, conduit runs, and Antenna roof locations shall be submitted for approval prior to fabrication.
Antenna locations shall be unobstructed by metal walkway or any fixture within a radius of nine inches (9”).

R. All metal parts on the roof of the truck must be grounded to provide a good ground plane for the antenna.

S. It is required that the antenna be tuned properly and that the reflected power be kept at less than 4%, VSWR at less than 1.5: 1

VIII. RADIO COMPARTMENTS

A. One (1) approved vandalproof and weatherproof compartment for FDNY radio equipment shall be provided and installed. The compartment will house the all-band radio to be furnished and installed under this contract. This compartment will also house the Data Radio/Modem, broadband modem and LIND electronic protectors.

B. Interior dimension of each compartment shall be such that all equipment is secured adequately and can be readily serviced by FDNY Radio Repair personnel.

C. Each access door shall be full width and full height of its compartment.

D. Each door shall be provided with a continuous hinge.

E. Each door shall be equipped with a keyed locking mechanism.

F. Three (3) keyed alike radio compartment lock keys per vehicle shall be provided. The key type and manufacturer to be specified by FDNY Radio Repair.

G. T25 Torx Security 10-24 screws shall be used for any access point identified by the Director, FDNY Radio Shop or their designee.

H. Slide out trays shall be supplied for each piece of equipment. (If required)

I. Slide out trays shall be installed horizontally on the steel ball-bearing slides with a lock in/lock out mechanism. (If required)

J. Slide out trays shall be pulled out and pushed in freely when radios are installed; all wires, cables & loom shall be secured for easy access and proper maintenance. (If required)

K. A laminated pictorial diagram will be secured within the radio compartment(s) depicting fuse sizes, use, and fuse box layout, and other items identified by the Director, FDNY radio Shop or their designee. Final illustration and location to be determined by Director, FDNY Radio Shop or their designee

L. The Radio Compartments shall be conditioned as to not exceed the housed equipment's rated and operating specifications.

M. The current apparatus design uses the overhead section of the rear section of the cab above the passenger Seating area in the Passenger / Back step area. The overhead compartment shall be considered weatherproof but must still meet all the requirements stated in this specification. Hinged key locking drop down panel w/ holding cable tether may be substituted for slide out shelving for use on the overhead radio Compartment upon approval by the Director, FDNY Radio Shop or their designee. Pictorial of the current design is available upon request.

N. The overhead Radio compartments shall have ample LED lighting to illuminate the space for service. LED lighting shall not emit any RF and shall NOT be wired to any Radio equipment fusing. Rather it should be wired to the Guest / Perko switch by the chauffer. On/Off toggle switch shall be provided to control the light.

IX. CONDUITS FOR CONTROL CABLES:

A. Individual "Sealtite" Flex conduit runs, or FDNY approved equal shall be Provided for each cable located within the radio compartment, as follows:

B. Power and control cables shall be run through a minimum two inch (2") diameter conduit. The MDC power and control cables shall be run through an independent minimum two inch (2") diameter conduit. Maximum length of control cable conduits shall be fifteen (15) feet. Contractor shall be cognizant of any heat generation due to any Ethernet POE cables used in conduits. Drag line for ease of service and overall design of the conduit shall be at the direction of the Director, FDNY Radio Shop or their designee.

X. CONDUITS FOR ANTENNA CABLES:

A. Four (4) three-quarter inch (3/4) diameter conduits for antenna cables shall be provided; one for each antenna coax 2 conduits for broadband multi coax sized as needed.

B. Maximum length of runs shall be fifteen feet (15")

C. Distance between antenna locations shall be maximum separation possible

D. Antenna locations shall be unobstructed by metal walkway or any type fixture with a radius of nine inches (9”).

E. <u>All conduits be terminated, at both ends, with insulated bushings</u>

- Sharp bends shall be avoided.
- Ninety (90) degree elbows or adapters will not be accepted.
- All conduits shall be provided with approved drag wire inside.
- All conduit installations shall be subject to FDNY approval.
- Drawings showing details of compartment locations, access openings, conduit runs and antenna roof locations shall be submitted for FDNY approval, prior to fabrication.

XI. MISCELLANEOUS INSTALLATION REQUIREMENTS OF COMM EQUIPMENT

A. All mounting hardware used shall be stainless steel machine screws with elastic stop-nuts. Sheet metal screws shall not be permitted.

B. Protective and cosmetic conduit/raceway system for all connecting wires and cables between radio and cabinets, consoles, antennas, and all other communications equipment shall be provided, cab mounted equipment shall be installed in such a manner as to be accessible by both the driver and officer. Location to be approved by the Director, FDNY Radio Shop or their designee. The Contractor shall be responsible to ensure all equipment installed in the cab will not interfere with the operation of passenger protection devices such as seat belts and airbags and OEM functions

C. The radio console shall be in the vehicle cab. Exact location, design and configuration shall be determined during prototype development. The design shall allow both the driver and passenger in the cab to safely access and operate the MDC, two-way radio, PA microphone, and Siren control head. The design shall not restrict access to vehicle features such as temperature and air conditioning controls, cup holders, AM/FM Radio controls, 12v and USB power plug(s), etc. and include venting that will allow for heat dissipation and not allow liquids or debris inside. Design must not interfere with any safety devices or features including, but not limited to Airbags, restraints, or seat movement. Console finish coating(s) shall be resistant to hospital grade cleaning and decontamination solutions. Temperature within the console should mirror the temperature specs for the External Radio cabinet. Custom faceplates or commercially available faceplates along with security screws (Torx T25) may be utilized to secure the control head for the siren, radio(s), and any areas identified by the Director, FDNY Radio Shop or their designee. Service panels shall be provided. The Director, FDNY Radio Shop or their designee shall have final approval on the design, final installation, and layout of equipment. The Contractor shall be responsible for any radio console redesign, reconfiguration or relocation that may be required due to equipment additions, deletions, modifications, or related equipment changes.

D. All antennas shall be installed on the roof of the vehicle. Provide maximum spacing between antennas. Stainless steel antenna housing boxes shall be required; installation

and design shall be directed and approved by the Director, FDNY Radio Shop or their designee or his designee.

E. Antenna mounts shall be Larsen NMOHF with solid conductor high frequency coax as suggested by the Manufacturer. Cables shall be pre terminated with RF fitting by the manufacturer. If the coax must be run in a high heat area (140deg F) and above, High heat coax (500degF) coax must be used and proper heat shielding must be applied.

F. All communications equipment shall include minimum of one (1) year parts and labor warranty, unless otherwise specified. The warranty period will begin upon acceptance of the vehicle by FDNY Fleet Services and not based on vendor date codes or delivery dates. Any spare radio equipment provided under the specification shall be dropped shipped to FDNY. All equipment shall be delivered to the FDNY Radio Shop.

XII. GENERAL REQUIREMENTS FOR RADIO, MDC & ASSOCIATED EQUIPMENT

A. The equipment specifications, configurations, and quantities denoted above represent the current operational needs for this series of vehicles. The FDNY reserves the following rights during the contract period(s):

1. Modify the products, quantities, and configuration of equipment at any time for a variety of reasons, including, but not limited to: Operational concerns, Administrative concerns, Technological concerns, and Product availability. The FDNY also reserves the right to provide FDNY supplied equipment at any time during the contract period(s). In such instances, Change Order(s) will be issued to the Prime Contractor. Prime Contractor and Certified Installer(s) may not initiate any changes to the Communications equipment or configuration without the written consent of the FDNY. **The Director, FDNY Radio Shop or their designee retains the final decision-making authority on all FDNY communications equipment, including, but not limited to: Equipment selection, configuration, installation, and integration into FDNY Network.**

2. **The equipment denoted in this solicitation represents the products and configuration sought by the FDNY at the time this solicitation was crafted. However, due to product and/or feature changes, enhancements, and discontinued products, the initial equipment, ancillary equipment, and incumbent installation / configuration may no longer be appropriate or incompatible with the FDNY environment. As such, it is the prime Contractor's responsibility to maintain a liaison with the FDNY Radio Shop and Fleet Services to determine any product and/or feature changes, enhancements, and discontinued products. In such event(s) Change Order(s) will be issued to the Prime Contractor. Note: Cable length determinations are the responsibility of the Prime Contractor. The Director, FDNY Radio Shop or their designee may be contacted for any concerns regarding these matters.**

3. Unless specified in writing, all Radio equipment including, but not limited to: Radios, MDTs, Modems, Chargers, and peripherals must be installed by a professional Radio

Shop with Motorola Certified Installer(s) and/or Trade Certified Professional installation staff approved by the Director, FDNY Radio Shop or their Designee. Motorola Certified Installer(s) and/or Trade Certified Professional Installation Staff shall retain their Certification throughout the contractual period. If the original installer is not located in the NYC metropolitan area, a second Motorola Solutions certified installer must be identified and approved by the Director, FDNY Radio Repair Shop or their Designee for after installation support and service that is within the NYC metropolitan area.

4. FDNY may require the Prime Contractor to have the Certified Installer(s) attend teleconferences and/or in person conferences, meetings, and inspection trips at various locations, including, but not limited to: FDNY Offices, Vehicle Upfitters and manufacturers. If such attendance is deemed necessary by FDNY, all such costs shall be the responsibility of the Prime Contractor. Inspection Trips by the Certified Installer(s) will coincide with the FDNY inspection trips.

5. The FDNY Radio Shop expects the Prime Contractor and any Subcontractor to use and install high quality electrical equipment that does not cause interference, static, or adverse impact on the FDNY Communications equipment. The FDNY reserves the right to test equipment throughout the contractual term(s) and can be contacted for guidance on these matters.

6. The FDNY Radio Shop may request samples of items including, but not limited to wire, cables, adapters, and brackets to ensure the quality of selected products throughout the contract period.

7. The FDNY Radio Shop reserves the right to pilot various devices, cables, and alter configurations for various administrative, operational, and technological needs throughout the contractual period. Vehicles that have pilot configurations will have “as built” documentation and service placard noting the vehicle as a pilot vehicle. Details to be provided during the preconstruction period and throughout the contractual period.

8. The FDNY Radio Shop may require the Prime Contractor to establish an electronically secured collaborative online workspace for various documents and files to be reviewed and shared by the Prime Contractor and the FDNY. The FDNY reserves the right to limit access to this online workspace for administrative and operational concerns.

9. Submit during prebuild conference(s) and at the ad-hoc request of the FDNY, Shop Drawings detailing the Radio equipment to be installed. This includes, but is not limited to wiring schematics, Antenna layout, fuse schedule, Radio compartment layout, consoles, and a wiring conduit plan overlaid on a mechanical drawing demonstrating access panels, cable length, and serviceability. The final approved drawings and schematics shall be “as-built” and provided to FDNY upon delivery of the vehicle(s).

10. Prime Contractor must notify the FDNY Radio Shop and FDNY Fleet Services via email of any inability to obtain equipment and/or parts or any concerns impacting the Communications equipment during the contract period(s). FDNY points of contact will be provided during the prebuild conferences as well as during the contractual period to account for personnel changes.

11. All Motorola based equipment must be purchased through the NYC Field Office, which is currently Altech Electronics, Brooklyn NY. This is to ensure that the specific FDNY feature set(s) are included. Technical inquiries regarding Motorola products may be made to the NYC office, 335 Adams Street, Brooklyn, NY 11201, Attention: FDNY sales team, (201) 388-0565. Motorola Solutions developed the special product part numbers used for their products in this section and may be accessed as a reference. **The Director, FDNY Radio Shop or their designee retains the final decision-making authority on all FDNY communications equipment, including, but not limited to: Equipment selection, configuration, installation, and integration into FDNY Network.**

12. All radio equipment and peripherals must be installed in a professional manner and using manufacturer's guidelines. Unless specified by the FDNY in writing, all wiring should be "Home Runs" defined as a straight path from device to fuse sources, and without any splices or extensions. Each device shall have its own specific professionally labeled location on the associated fuse box, Wires are to be placed in appropriate, serviceable protective looms to prevent damage from various sources that could be expected in the Fire Service, including, but not limited to extreme heat, moisture, debris, chemical exposure, chafing, and vibration. Wiring looms shall not be bundled individually or in batches with zip ties. The FDNY Radio Shop can be contacted for guidance on these matters.

13. Professional “as-built” documentation of the Radio Communications equipment, including, but not limited to Wiring Diagrams and Antenna Schematics must be provided in format(s) favorable to the FDNY. This may include mountable service schematic(s) for each vehicle delivered. Change Order(s) issued at any time and for any reason, including, but not limited to: Operational concerns, Administrative concerns, and Product availability may impact the accuracy of "as-built” Drawings. As such, it is the Prime Contractor's responsibility to collaborate in timely fashion with the FDNY and Certified Installer(s) to properly document these modifications, present to the FDNY updated documentation reflecting the Change Order(s), provide collaborative testing and inspection, final approval by the FDNY, and ensure a mutually agreeable "cut over" and assimilation of the Change Order(s).

14. Ease of use, safe, proper installation and maintenance of two-way radio equipment is of prime concern for FDNY. Consideration of design shall be given to accessibility of equipment by personnel both for field users as well as Radio Repair mechanics. This shall be further discussed at the Preconstruction Conference as well as during the contract period(s).

15. The Contractor(s) shall be responsible to ensure all equipment installed in the cab and where applicable, module mounted / resource space equipment will not interfere with the operation of protection devices including, but not limited to seat belts, Airbags, and sensors.

16. The Prime Contractor shall work in conjunction with FDNY and the communications equipment vendor to determine the best layout for all cable and equipment installation. The Director, FDNY Radio Repair Shop or their Designee shall have final approval on component material selection, layout and final installation of all radio related equipment.

17. Acceptance of prototype shall not be deemed complete until the electrical load test is completed successfully with all communications equipment installed and operating properly.

18. All equipment and devices are to be factory new and unused. Unless specified in writing by the Director, FDNY Radio Repair Shop or their Designee it is not permitted to use devices that have been decommissioned, repaired / refurbished or that have sustained damage. Nor is it permitted to use devices that have been used as demonstration / sample products or devices not for sale in the USA. All items must carry a USA based Warranty.

19. In order to ensure the correction of any communications equipment related problems that are, or appear to be vehicle related, the Prime Contractor shall work with diligence and good faith with the FDNY, or FDNY's designee, to expeditiously resolve communications equipment or software problems.

20. All communications equipment, including the Siren/PA shall include a minimum one (1) year parts and labor warranty. All non-used items that were supplied by the manufacture from any radio equipment provided under the specification shall be dropped shipped to FDNY Radio Shop. All equipment shall be delivered to the FDNY Radio Shop.

21. If approved by the Director, FDNY Radio Repair Shop or their Designee the vendor shall place any unused items supplied by the manufacture for any radio related equipment into a box labeled "FDNY Radio Repair" and left in the vehicle for the radio shop to recover upon receiving the vehicle. Radio Cabinet Keys and Items whose value exceeds $100 each, or whose combined value exceeds $300 shall not be delivered in this manner but delivered in a secure manner.

22. All delivered equipment shall include packing slips that reflect the Model Number(s), Serial Number(s), Purchase Order Numbers, Contract number(s) and the line item of the purchase order for the individual item or product. Any FDNY approved changes to equipment delivered shall include clear information stating the Purchase Order item line number, the equipment that was originally specified and the complete information on the replacement item. It is the contractor's responsibility to make sure that all line items are referenced to FDNY's satisfaction.

23. At Pilot Model Inspection, Full descriptive and illustrated material regarding vehicle operation, diagnosis, service, repair, wiring/circuits, troubleshooting and parts listing/bill of material regarding all systems and components for the complete 'as built'. This shall be used to facilitate and conduct the pilot model inspection of the apparatus. This shall be provided in electronic format and supplied in hardcopy format at the request of FDNY.

24. The vendor shall supply a document that shows the cross reference between the manufacturer's serial number and the FDNY serial number for each engraved product. The record shall show, at minimum: model, manufacturer's serial number, FDNY serial number, FDNY vehicle number assigned and dates of installation.

25. Equipment installation shall be in accordance with manufacturers recommendations, as a minimum requirement, and shall exceed those requirements where specified. All installed equipment including, but not limited to electronic devices, cables, adapters, and antennas shall be tested for including, but not limited to: integrity, circuit continuity, and other values deemed by the FDNY. Reports shall be generated electronically by the instrument device(s) for each individual vehicle as directed by the FDNY Radio Shop. Final installation design of all communications equipment, peripherals, and siren shall be as directed and approved by the Director, FDNY Radio Repair Shop or designee.

26. All cab mounted equipment shall be installed in such a manner as to be accessible by the driver and front passenger. Location to be approved by the FDNY Director of Radio Repair, or designee. The Contractor shall be responsible to ensure all equipment installed in the cab will not interfere with OEM equipment and Safety features.

    The Prime Contractor and any subcontractors will work with the FDNY to ensure that any wiring diagrams, radio compartment contents, and Radio Compartment keys are always properly secured and not to be shared with anyone without the written consent of the Director, FDNY Radio Shop or their designee**.**

XIII. WARRANTY

1. Equipment and Installation

1A. All radio and electronic equipment installed and/or furnished under this Contract shall carry the manufacturer's standard guarantee for Government and/or Municipal Agencies. But in no case, shall it be less than one (1) year **after vehicle acceptance.** Warranty shall cover both labor and parts.

Note: Upon award, if any electronic equipment make or model number listed in this specification is no longer available, substitution may be permitted. The awarded vendor shall supply written documentation to the Director of Radio Repair via Fleet Services (Send to Supervisor of Apparatus Design as noted below). The documentation shall include, but not be limited to: a listing of the former and replacing part/model #, the reason for the change, and the cost difference (if any) between both units. Failure to provide detailed information may result in non-acceptance.

Any questions regarding the communication equipment or its installation Requirements should be directed to:

Director, FDNY Radio Shop
FDNY Radio Repair Operations
58-65 52nd Road
Woodside, NY 11377
Telephone Number: 718-505-3003

In addition, a copy of all correspondence shall be sent to:

Supervisor of Apparatus Design Unit
FDNY Fleet Services
48-58 35th Street
Long Island City, NY 11101
Telephone Number: 718-784-6500

22. EQUIPMENT SUPPLIED WITH EACH APPARATUS:

22.1 One (1) Akron™ "Apollo" p/n "3421", or equal, portable monitor with 3" female FDNY thread and p/n "3503" mounting bracket for this unit both (shipped loose and delivered to FDNY Bureau of Logistics.)

22.2 One (1) Akron™ p/n "1581", or equal, Siamese with a 2 ½" female FDNY thread swivel inlet & dual outlets with 1 ½" male FDNY threads (shipped loose and delivered to FDNY Bureau of Logistics.) Note: This is in addition to the one described in section 17.

22.3 Two (2) 6" x 10' x 6" **clear** light weight drafting hoses, each with one (1) 6" NST female swivel coupling and one (1) 6" NST male coupling. Final selection of hose subject to FDNY approval (shipped loose and delivered to FDNY Bureau of Logistics). Items shall be purchased from the company holding the current DCAS requirement contract.

22.4 One (1) 6" x 10' x 6" rigid hard suction hose. (shipped loose and delivered to FDNY Bureau of Logistics.) Items shall be purchased from the company holding the current DCAS requirement contract.

22.5 One (1) 20' 5" yellow "Soft Suction" hose with 4.5" FDNY female couplings, model #RC50-450Y-20-FXR-FDNY, or equal. Final selection of hose subject to FDNY approval (Shipped loose and delivered to FDNY Bureau of Logistics). Items shall be purchased from the company holding the current DCAS requirement contract.

22.6 One (1) 6" suction strainer with NST thread. This strainer shall be designed to flow a minimum of 1000 GPM at a ten (10) foot lift (shipped loose and delivered to FDNY Bureau of Logistics. Items shall be purchased from the company holding the current DCAS requirement contract.

22.7 Fittings / adapters: (all shipped loose and delivered to FDNY Bureau of Logistics)

Note: Refer to section 27 for fitting / adapter information & requirements

- Two (2) 4 ½" female FDNY thread x 3" male FDNY thread reducers
- Two (2) 3" female FDNY thread x 2 ½" male FDNY thread reducers
- Two (2) 2 ½" female FDNY thread x 1 ½" male FDNY thread reducers

22. EQUIPMENT SUPPLIED WITH EACH APPARATUS (CONTINUED):

22.8 Two (2) Fire Hooks™, "EXT- H", or equal, holders for 2 ½ gallon extinguishers shipped loose and delivered to FDNY Bureau of Logistics.

22.9 One (1) mounting bracket / holder for a 5-gallon "Ranger Brush Pump™", or equal, fire extinguisher (shipped loose and delivered to FDNY Bureau of Logistics.

22.10 One (1) mounting bracket / holder a twenty (20) pound dry chemical fire extinguisher (shipped loose and delivered to FDNY Bureau of Logistics)

22.11 One (1) Spamco™ p/n "MVB95-120", or equal, mounting bracket for portable foam eductor (shipped loose and delivered to FDNY Bureau of Logistics)

22.12 One (1) Duo-Safety™ Series "900-A-24", or equal, twenty-four (24) foot, two section extension ladder, with rubber safety shoes (shipped in ladder rack on apparatus described in section 15). The ladder shall also have a Fire Research™ "Skull Saver" p/n "SSA100-A23-H", or equal, installed on it.

22.13 Four (4) Zico™ p/n "SAC-44-E", or equal, NFPA compliant folding wheel chocks (shipped loose and delivered to FDNY of Logistics).

22.14 Two (2) brackets with "tulip clip" handle holders, for FDNY six (6) pound axes (shipped loose and delivered to FDNY Bureau of Logistics)

22.15 Two (2) Brightstar Lighthawk™ LED hand light units model "07912FDNY", or equal, (or latest updated model) and one (1) charger base shall be shipped loose and delivered to FDNY Bureau of Logistics. See section 16 for further part number details.

22.16 Two (2) Akron Type "10", or equal, spanner wrenches (shipped loose and delivered to FDNY Bureau of Logistics)

22.17 One (1) jumper cable set as described in section 12 shall be shipped loose and delivered to FDNY Bureau of Logistics.

22.18 Ten (10) cab door keys shipped loose and delivered to FDNY Bureau of Support Services.

22. EQUIPMENT SUPPLIED WITH EACH APPARATUS (CONTINUED):

22.19 Ten (10) #1250 compartment door keys shipped loose and delivered to FDNY Bureau of Support Services.

22.21 "Auto Eject" Mating Plugs: Supply four (4) mating auto eject plug ends for each apparatus ordered on this contract. Further details shall be discussed at the Preconstruction Conference. These shall be shipped to FDNY's Bureau of Support Services.

22.22 Air Hose and Chuck: One (1) fifty (50) foot length, used for inflating tires and pressurizing extinguishers. Equipped with dual foot air chuck, ¼ inch NPT, Amflo™ p/n "101D", or equal. It shall be shipped to FDNY Bureau of Support Services.

22.23 Unistrut™ Hardware Kits: Twenty-four (24) Unistrut™, or equal, spring-loaded lock and bolt kits shall be provided. They shall be shipped to FDNY's Bureau of Support Services.

22.24 Pegboard Hardware: Thirty (30) ¼-20 hex head bolts and twenty (20) 3/8"-20 hex head bolts. They shall be shipped to the FDNY Bureau of Support Services.

22.25 One (1) electronic copy and one (1) original printed copy of the complete "As Built" operator's manual shall be supplied and shipped to FDNY's Bureau of Support Services.

23. WARRANTY INFORMATION:

23.1 Bumper-To-Bumper Warranty: **All warranties shall be the responsibility of the prime vendor for a period of five (5) years, bumper-to-bumper, all inclusive, 100 % parts & labor - no exclusions except for belts, tires, wiper blades and brake pads.**

Note: If an excluded item noted above fails as a result of a covered component failure, then these excluded items shall also be covered under warranty. Additional warranties shall be as follows:

1) Two-Way Radio Equipment: One (1) year warranty, 100% parts & labor.

2) Chassis / Frame Warranty: The chassis / frame & all components thereof shall carry a written lifetime warranty against any / all types of failure with the exclusion of major accident damage.

3) LED Lighting: Shall be covered by a lifetime manufacturer's warranty, (parts / light heads only). Physical replacement of LED lights shall be included in the apparatus manufacturers' five (5) year bumper to bumper warranty. After (5) five years, FDNY shall be responsible for physical replacement, and the vendor shall supply the parts at no charge.

4) Booster Tank: Tank shall be covered by a no-fault lifetime warranty, 100% parts & labor. Each tank shall be marked with a permanent serial number & brief statement, including a contact phone number, regarding the lifetime warranty coverage.

5) Hydraulic Hose Fittings and Valves: Five (5) year warranty against rust and corrosion.

Note: For purposes of the warranty, "Vehicle Warranty" or "Warranty "are defined to include the entire vehicle / apparatus, bumper to bumper, and any component thereof or on, for the time period as noted above. Extended warranties for specified items may be necessary to meet the requirements of this specification. If any warranty period (from the OEM or the component manufacturer) is longer than the time listed in this specification, then the longer warranty time period shall apply.

23. WARRANTY INFORMATION (CONTINUED):

23.1 Bumper-To-Bumper Warranty (Continued):

The prime vendor is responsible for the repair / replacement of any and all items covered under the vehicle warranty. **The apparatus manufacturer shall have an authorized local dealer / representative to facilitate all repairs.** It is the responsibility of the prime vendor to ensure all repairs / replacements are completed as required by the contract, to the satisfaction of FDNY's Bureau of Support Services.

23.2 The apparatus & equipment covered by the warranties are of vital importance to the City of New York / FDNY in providing a heightened level of preparedness & emergency services to the public. All warranty repairs on an out-of-service apparatus shall be completed within thirty (30) working days of prime vendor notification by FDNY. If the warranty work extends beyond thirty (30) days, then the warranty period shall be extended for thirty (30) days **plus** any additional time that the apparatus is at the vendor for repair. Any working days shall include Monday through Saturday inclusive. It is the responsibility of the prime vendor to notify FDNY's Bureau of Support Services upon completion of such work. FDNY shall make all determinations as to when a vehicle/apparatus is out of service.

23.3 All manufacturer's warranty documents, extended warranty documents and delayed warranty start forms shall be delivered to FDNY Bureau of Support Services office prior to or at time of delivery on single apparatus orders – prior to or at time of delivery on multi-unit orders. Failure to comply with this requirement may result in refusal of delivery. **All warranty documents shall be completed by the apparatus manufacturer**.

23. WARRANTY INFORMATION (CONTINUED):

23.4 In order to ensure that such warranty work is, at all times during the period of the warranty, completed within the required time period and at no charge to the City the vendor agrees to provide adequate inside space, equipment parts, and trained personnel. All work that does not require a return to the OEM manufacturer shall be completed at a facility located within a 50-mile radius of the Bureau of Support Services. Field service shall be available 24 hours a day, 7 days a week, year-round. FDNY shall determine which repairs are deemed emergency or critical. Repairs shall be completed at any location or point of breakdown, as directed by FDNY. The OEM service technician/representative must be located and respond from within a 50-mile radius of FDNY's Bureau of Support Services. **Note**: **It is the intent of the FDNY to have the technician arrive at the point of breakdown or required location within ninety (90) minutes and to have repairs deemed critical/emergency in nature completed in a four (4) hour time frame**. The time frame commences with the vendor's notification by FDNY**. Note: this time frame shall include the vendor's travel time, diagnosis, and actual completion of the repair**. In cases where repairs cannot be completed in a four (4) hour time frame, FDNY shall be immediately notified by the vendor.

23.5 A holdback of 2% of the contract amount shall be retained for the entire warranty period, to ensure compliance with the warranty provisions – vendor shall be reimbursed at the end of the warranty period if warranty service is satisfactory

23.6 Service Facility: Prime vendor must maintain adequate indoor, heated facilities and personnel to perform first class warranty work – FDNY apparatus returned for repair shall be kept indoors at all times, except for hydraulic fluid cold weather testing – in the instant of minor warranty repairs the vendor is required to provide service at firehouses or at the FDNY main repair shop, solely at the discretion of FDNY – vendor shall detail in bid (in spaces provided below) submission full description of service vehicles & personnel available for service work, the number of mechanics trained on the proposed apparatus - all required information shall be submitted before award.

Note- See Bidders Certificate for "Service Facility Description" form to be filled out by vendor.

23. WARRANTY INFORMATION (CONTINUED):

23.7 The prime vendor shall be responsible for the pick-up & delivery of all apparatus covered under the warranty. - vendor is required to pick-up and deliver units from any FDNY facility, as directed by FDNY - at the discretion of FDNY a centrally located pick-up/delivery area may be designated – if the unit shall be returned to the factory/manufacturer and the distance is over 500 miles the apparatus shall be trailered at the vendor's expense – adequate insurance coverage, to indemnify the City of New York, shall be maintained by the vendor the entire time the apparatus is in their possession.

23.8 In the event of failure on the part of the vendor to repair, replace or put in first class condition any unit or component thereof, covered by the warranty, within the required time frame FDNY may have the work done by others and offset the cost against any money due or that may become due to the vendor. - in the event there is no money due, the vendor agrees to pay the City such cost.

23.9 Warranty coverage of apparatus, equipment & their component parts shall begin when the unit is **put in service by FDNY**, not on its' delivery date by the prime vendor.

23.10 The prime vendor shall ensure that all equipment and components thereof are of first quality throughout and comply in all respects to the standards set forth in the bid specifications. The prime vendor further warrants all equipment, and parts thereof, against any defects of workmanship, engineering, construction or materials and guarantees to repair or replace, expeditiously, any article that has become inoperative / defective that has not been satisfactorily proven to have been caused by negligence on the part of the user. The minimum time period of this warranty shall be five (5) years, minimum - if the manufacturer's warranty is for a longer period that time shall apply - a longer time period may be required on individual components, as noted in the specification.

23.11 Service & parts shall be available within 24 hours - the prime vendor shall agree to maintain a supply of parts and documentation for a period of ten (10) years after award.

23.12 Where an apparatus or component thereof develops "repeated failures" in service, the vendor will be required to make any necessary engineering changes, repairs, alterations or modifications to guarantee reliability of performance.

23.13 The term "repeated failures" as used herein is defined to mean that: the same apparatus component, assembly or subassembly develops repeated defects, malfunctions and / or breakdowns rendering the apparatus inoperative or requiring repeated shop corrections, service and / or replacements, in 10% or more of the contract quantity in one (1) year of actual operation.

23.14 Minor items, ordinary service adjustments, operational damage due to accidents, misuse, lack of proper maintenance or failure to follow manufacturers' reasonable service and lubrication recommendations are not included or considered under the scope of "repeated failures"

23. WARRANTY INFORMATION (CONTINUED):

23.15 Records will be maintained as to “repeated failures” and source, description of difficulty made available for the vendor’s periodic examination

23.16 For a fair and equitable treatment of “repeated failures”, the vendor when notified of service difficulties will be permitted to make detailed studies, analyze operational conditions and recommend corrections to be made in order to obtain the desired reliability and performance of the apparatus. These studies shall be performed promptly and without unnecessary delay. They must not unnecessarily impede the return to service of the apparatus used in the studies.

23.17 If the prime vendor fails to make the proper changes or corrections, does not render field service after due written notice or delays required changes, alterations, or replacements, the City of New York / FDNY will have such work done and charge all costs involved against any or all monies due the prime vendor. If no money is owed, then the vendor shall reimburse FDNY for the cost of work done.

23.18 These same reliability provisions shall apply to parts supplied by the vendor for spare and / or replacement purposes.

23.19 The prime vendor shall establish a system for reporting to FDNY, all repair work performed by the prime vendor or their authorized agent(s) on all the apparatus / equipment / components covered under the terms of the warranty. The vendor shall provide weekly downtime reports to FDNY, as well as provide other downtime reports as per FDNY request.

23.20 FDNY shall receive detailed copies of all work orders, including parts and repairs done, for work performed under the warranty by the prime vendor or their authorized agents outlining details of all repairs made. Note: these documents shall be sent electronically when the work is completed, and a hard copy as well shall accompany the apparatus upon its return to FDNY following the completion of warranty repairs.

23.21 The vendor is required to update service and parts manuals / books with any modifications resulting from any corrective action.

24. ROAD AND BRAKE ACCEPTANCE TESTS:

24.1 Prior to acceptance, units shall be road and brake tested carrying the equal weight of a full load and a six (6)-person crew.

24.2 FDNY reserves the right to select any number of units to perform the tests described.

24.3 Fuel and weights for test shall be furnished by the prime vendor.

24.4 Proper engine and transmission performance shall be displayed. Apparatus shall be accelerated from a standing start and no delay shall occur.

24.5 The test shall be considered null and void if the apparatus fails any one of the following tests. In this case, a completely new test set shall be performed.

24.6 Each selected unit shall be tested as follows:

24.6.1 With the engine off and a fully evacuated air system, the engine shall be started and sufficient air build-up shall be attained so that the parking brake can be released within sixty (60) seconds. The engine shall be run at 1400 RPM for this test.

24.6.2 With the apparatus not running, parking brake released, air system at 125 PSI, the reservoir shall be capable of supplying a minimum of six (6) full brake applications before parking brake applies.

24.6.3 The apparatus auxiliary braking system shall be tested for proper operation and setup as per FDNY specification:

- Stages 1 & 2: Throttle Off
- Stages 3 & 4: Apply Progressively with Brake Application

24.6.4 From a standing start, on a level roadway, the apparatus shall attain a true speed of thirty-five (35) MPH within twenty-five (25) seconds.

24.6.5 From a speed of 15 MPH, on a level roadway, the apparatus shall attain a true speed of 35 MPH within twenty (20) seconds.

24. ROAD AND BRAKE ACCEPTANCE TESTS (CONTINUED):

24.6.6 Starting from a marked point, to a distance of one (1) mile, the apparatus shall accelerate to a speed of 40 MPH then be brought to a complete stop. The apparatus shall be reaccelerated to 40 MPH and brought to a complete stop, reaccelerated to 40 MPH for completion of the test. The duration of this test shall not exceed one (1) minute, forty-five (45) seconds.

24.6.7 The service brakes shall then be applied, and the apparatus brought to a complete stop.

24.6.8 Apparatus shall be accelerated, again to 40 MPH, and then stopped again by applying the brakes.

24.6.9 Apparatus shall be accelerated to 40 MPH and proceed, at that speed, to a marked point to complete the test.

24.6.10 The apparatus shall be tested to achieve a minimum top speed of 55 MPH.

24.6.11 This test shall be completed in not more than 2 min., 15 sec.

24.6.12 On marked dry pavement, from a speed of 20 MPH, apparatus shall be brought to a complete stop (using service brakes only) in a distance not exceeding 35 feet.

24.6.13 On marked dry pavement, from a speed of 30 MPH, apparatus shall be brought to a complete stop (using service brakes only) in a distance of not more than 50 feet.

24.6.14 Immediately after the above road tests have been completed, the following two (2) hill-climbing tests shall be performed.

24.6.15 On each of these hill-climbing tests, apparatus shall start from rest, at a distance of approximately 50 feet from the header at the foot of the grade.

24. ROAD AND BRAKE ACCEPTANCE TESTS (CONTINUED):

24.6.16 Apparatus shall climb the hill on West 185th Street between Broadway and Wadsworth Avenue, Manhattan, in not more than twenty (20) seconds. Grade is approximately nine (9) percent.

24.6.17 Both service and parking brakes shall separately be capable of securely holding the apparatus (in both directions), with a full load on West 185th Street between Broadway and Wadsworth Avenue, Manhattan.

24.7 Tilt Table Testing: The apparatus "as built" shall meet or exceed the latest edition of NFPA 1900, Section 7.14.3 (and all related subsections) and SAE J2180. Each apparatus purchased shall be tested to meet the following "tilt table" procedures measuring the static rollover threshold for heavy trucks set forth by the current standards:

- Testing shall be performed by the apparatus manufacturer at their facility and certified by an authorized independent third-party firm.

- The apparatus shall be tilted at a minimum of 27 degrees evaluating the level of lateral acceleration required to roll the apparatus over in a steady turning situation. The apparatus shall be loaded to the full GVWR and tested in both directions.

- In addition to receiving a certificate of compliance, FDNY also requires a wheel-end loading certification listing the weight on each wheel, with the apparatus on the tilt table.

- All tilt table testing shall exceed NFPA 1900, Section 7.14.3 (and all related subsections). The results of the wheel-end loading shall certify the apparatus, at the time of its manufacture, is in compliance, with side-to-side weight distributions. The apparatus when loaded to its estimated in-service weight, shall have a side-to-side tire load variation of no more than 5% of the total tire load for that axle.

Note: Test results for each apparatus shall be supplied upon delivery to FDNY.

25. FIRE PUMP TEST:

25.1 Prior to delivery, each / every apparatus purchased shall be given a fire pump test, as described in section 27, at the factory.

25.2 At time of delivery, each / every apparatus purchased shall be re- tested, as described in section 27, at a location to be determined by FDNY. This shall be referred to as the "Official Pump Test"

25.3 "Official Pump Test" shall be conducted in the presence of FDNY/DCAS representatives and responsible representative(s) of the manufacturer.

25.4 Prime vendor shall provide operators for test

25.5 Prime vendor shall provide fuel for the apparatus for test.

25.6 Pressure gauges and flow meters shall be accurately calibrated, by manufacturer, prior to beginning of official acceptance tests.

25.7 Test shall be performed with an empty booster tank unless directed otherwise by FDNY.

25.8 All emergency / warning lights shall be "On" during test.

25.9 Test shall start and run consecutively without shutting down of apparatus or any other interruption. If test is stopped for any reason, it will be considered a "failure"

25.10 If any one part of the test "fails", the whole test will be considered a "failure" and the apparatus will need to be completely re-tested after deficiency is corrected

25.11 During the test, if a major deficiency or malfunction is noted, test shall be stopped and considered a "failure". FDNY shall determine if the deficiency or malfunction is considered "major".

25.12 All gauges / warning devices on the apparatus, to include but not be limited to engine coolant temp, engine oil pressure, voltmeter and pump trans temp shall remain in their "normal operating" ranges throughout the entire test. FDNY shall determine if a gauge / warning device is indicating a "major" deficiency or malfunction.

25. FIRE PUMP TEST (CONTINUED):

25.13 At no time during this test shall the temperature of the pump transmission oil exceed 230 degrees Fahrenheit.

25.14 During test, apparatus shall be inspected for obvious leaks including but not limited to engine, transmission, fire pump & trans and intake / discharge plumbing. If FDNY considers any leak to be "major", test shall be stopped and considered a "failure".

25.15 Proper performance of pressure governor shall be demonstrated during entire duration of test

25.16 Function test shall be performed on all intake / discharge valves

25.17 Test shall be made while taking suction through the right side 6" inlet equipped with a Siamese connecter, using the needed amount of 6" x 10' hard suction hose

25.18 If before or during the test, the maximum lift exceeds eight (8) feet, and the manufacturer wants to start / continue, this shall be acceptable with FDNY providing the apparatus meets the rated capacity during the entire test. If at any time the apparatus does not meet rated capacity, the test will be considered a "failure" and shall be rescheduled.

25.19 Prime vendor shall be responsible for obtaining information on the tide tables of the pump site.

25.20 Test Procedures:

<u>Part 1- (Priming Device Test)</u>

- With the apparatus set up for pump test, the primer pump shall be operated as per manufacturer's instructions until the fire pump is primed and ready to discharge water
- The interval from the time the primer is started until the time the fire pump is ready to discharge water shall be noted
- The time required to prime fire pump shall not exceed sixty (60) seconds

25. FIRE PUMP TEST (CONTINUED):

25.20 Test Procedures (Continued):

Part 2- (Pumping Test)

A) Pump shall supply not less than 2,000 GPM with a pump pressure of 160 PSI and shall maintain this discharge for two (2) hours.

B) Immediately after completion of the above, a "pumping engine overload test" shall be performed. This shall consist of pumping at not less than 2,000 GPM at 165 PSI, for at least ten (10) minutes.

C) Immediately after completion of the above, the apparatus shall pump 1500 GPM at 200 PSI for thirty (30) minutes.

D) Immediately after completion of the above, the apparatus shall pump 1000 GPM at 320 PSI for thirty (30) minutes.

E) Immediately after completion of the above, the apparatus shall pump 250 GPM at 600 PSI for five (5) hours.

Part 3- (Pressure Control System Test)

A) Pressure governor shall be set to operate at 150 PSI, and a flow of 2000 GPM shall be obtained. At this time any / all discharges shall be closed (not faster than 3 seconds, not slower than 10 seconds). The rise in discharge pressure shall not exceed thirty (30) PSI.

B) At this time the original pumping conditions of 150 PSI and a flow of 2000 GPM shall be reestablished. Without any change made to the discharge valve settings, the pressure governor shall be set to operate at ninety (90) PSI, at this time any / all discharges shall be closed (not faster than 3 seconds, not slower than 10 seconds). The rise in discharge pressure shall not exceed thirty (30) PSI.

C) Pressure governor shall be set to operate at 250 PSI, and a flow of 1000 GPM shall be obtained. At this time any / all discharges shall be closed (not faster than 3 seconds, not slower than 10 seconds). The rise in discharge pressure shall not exceed thirty (30) PSI.

25. FIRE PUMP TEST (CONTINUED):

25.20 Test Procedures (Continued):

Part 4- (Vacuum Test)

A) The vacuum test shall consist of subjecting fire pump and related plumbing to a vacuum of 22 inches by means of the priming pump system. This shall be done with all intake valves open, all intakes capped or plugged, all discharge valves closed, and all discharge caps / plugs removed.

B) Vacuum reading shall not drop more than 10 inches in a five (5) minute time frame.

- The primer system shall not be used after the five (5) minute test has begun.

25.21 Right after completion of test, the vendor shall be responsible for washing off the saltwater spray on the entire apparatus and flushing the fire pump and all plumbing with “fresh” water.

26. FITTINGS & THREADED WATER FLOW APPLIANCES SPEC:

FDNY SEPTEMBER 2018

SPECIFICATIONS for THREADED WATER FLOW APPLIANCES for FDNY

I. INTENT: This specification describes threaded appliances of the rocker lug, long handle type, for use with New York City Fire Department water flow products.

II. DESIGN and SIZE:

1. Appliances shall be of one design and shall be classified by thread size as follows:
   3/4", 1", 1-1/2", 2", 2-1/2", 3", 4", 4-1/2", 5", 6"

2. Size, thread type and style shall be as specified at the time of solicitation.

III. WORKMANSHIP:

1. Appliance parts shall be made from extruded, seamless aluminum alloy 6061-T6, stainless steel or brass as stated on line items.

2. Gaskets shall be made of natural or synthetic rubber or a combination of these materials or polyvinyl chloride having a 65 plus or minus 5 durometer hardness, and must meet all NFPA standards.

3. Ball bearings, if used for swivel attachments, shall be of non-magnetic stainless steel.

4. Appliances shall be free from burrs and shall be finished and fitted in a workmanship manner throughout. All swiveling sections shall turn freely by hand. If expansion rings are used, they shall be smooth and well rounded.

5. All component parts that require assembly and or attachment for rigid or swivel functions shall be assembled using either a swedging process or expansion ring and stainless-steel ball bearing design. Either design must meet minimum test pressures described here in.

IV. CONSTRUCTION:

1. Design and Dimensions: Appliance assemblies and dimensions shall conform to specific size requested in each line item of the solicitation. Unless specified, all items shall be provided with standard rocker lug. Special needs are detailed in descriptions.

2. Component Parts: Appliance parts shall consist of any combination of the following parts:
   female rigid threaded sections
   female swivel threaded sections
   male rigid threaded sections
   rubber gaskets for rigid females
   rubber gaskets for female swivels

3. Threads: Unless otherwise stated, all shall equipment shall be FDNY (Fire Department of New York) threads. Sixty (60) degree V-shaped profile with eight threads per inch except the 4-1/2" coupling which shall be four threads per inch. All threads shall be cut back so that the engaging threads have a full section, Highbie cut or blunt start thread, with indicators on adjacent lugs.

3.1 Table I - FDNY Thread Dimensions - Male (inches)

COUP-LING SIZE	MAJOR DIA.		PITCH DIA.		MINOR DIA.		TRUNCATION			
							CREST		ROOT	
	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.
1-1/2	2.100	2.090	2.000	1.995	1.900	1.890	0.0041	0.0028	0.0054	0.0041
2-1/2	3.030	3.020	2.930	2.925	2.830	2.820	0.0041	0.0028	0.0054	0.0041
3	3.630	3.620	3.530	3.525	3.430	3.420	0.0041	0.0028	0.0054	0.0041
4	4.610	4.600	4.510	4.505	4.410	4.400	0.0041	0.0028	0.0054	0.0041
4-1/2	5.800	5.790	5.600	5.595	5.400	5.390	0.0082	0.0055	0.0110	0.0082

3.2 Table II - FDNY Thread Dimensions - Female (inches)

COUP-LING SIZE	MAJOR DIA.		PITCH DIA.		MINOR DIA.		TRUNCATION			
							CREST		ROOT	
	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.
1-1/2	2.130	2.120	2.025	2.020	1.930	1.920	0.0054	0.0041	0.0041	0.0028
2-1/2	3.060	3.050	2.955	2.950	2.860	2.850	0.0054	0.0041	0.0041	0.0028
3	3.660	3.650	3.555	3.550	3.460	3.450	0.0054	0.0041	0.0041	0.0028
4	4.640	4.630	4.535	4.530	4.440	4.430	0.0054	0.0041	0.0041	0.0028
4-1/2	5.840	5.830	5.635	5.630	5.440	5.430	0.0110	0.0082	0.0082	0.0055

4. All threads and dimensions shall be inspected after hard coat anodized finishing.

V. PHYSICAL PROPERTIES:

1. Hydrostatic Pressure:

1.1 Standard appliances (low pressure) shall withstand a hydrostatic pressure of 1,000 p.s.i.g. when tested in accordance with NFPA 1962 and 1963. This test pressure represents a minimum for design.

1.2 Where specified in the line item of the solicitation, HIGH PRESSURE fittings will be required to meet a hydrostatic pressure test of 2,000 p.s.i.g. All high-pressure line item Appliances shall be made from 6061-T6 aluminum alloy extrusion. This shall be machined and finished to all of the standards specified here in.

1.3 All fittings tested at 1,000 p.s.i.g. or 2,000 p.s.i.g. shall not leak.

2. Crush Resistance: Appliances shall not distort, bind, or become inoperative when subjected to a 3,000-pound radial compressive load when tested in accordance with NFPA 1962 and 1963.

3. Torque Resistance: Lugs on Appliances shall withstand a torque of 250 ft. lbs. without distortion or breakage when tested in accordance with NFPA 1962 and 1963.

4. Rough Usage Resistance: Appliances shall be able to withstand a 6-foot drop for three times onto a concrete surface (landing on swivel if present) without cracking, undergoing distortion, binding, or becoming inoperative as required by NFPA 1963.

VI. FINISH:

1. Unless otherwise specified, all non-mating surfaces shall be satin or polished finished. Inside of all parts shall be finished. All edges shall be rounded.

2. Standard appliances shall be hard coat anodized per MIL-A-8625F Type III Hard Anodized Class 1. In addition, all bearing surfaces and threads shall be treated with a non-toxic dry film corrosion inhibiting lubricant where needed.

3. All "High Pressure" appliances shall be powder coated WHITE color over the hard coat anodized, as per above.

4. Marine fittings, not specified as brass, shall be finished with a Poly-Lube Teflon penetrated hard coat anodizing process or equal (referred to as Marine Hard Coat). This process must protect all fittings from corrosion, wear resistance and oxidation due to extreme exposure to saltwater environment. This process must provide significantly more protection than that offered by the standard hard anodizing process.

VII. MARKING:

1. All markings shall be on the swivel or body of the appliance. All markings shall be die stamped or laser imprinted 0.010 - 0.015 inch. All markings shall be permanent.

1. All characters shall be a minimum of 1/4" high.

3. On one side - all appliances shall be marked with size and thread type exactly as described in contract solicitation and/or purchase order line item using the fraction, not the decimal character.

   3.1 When more than one size must be marked, the markings must be done in the direction as noted in marking diagram.

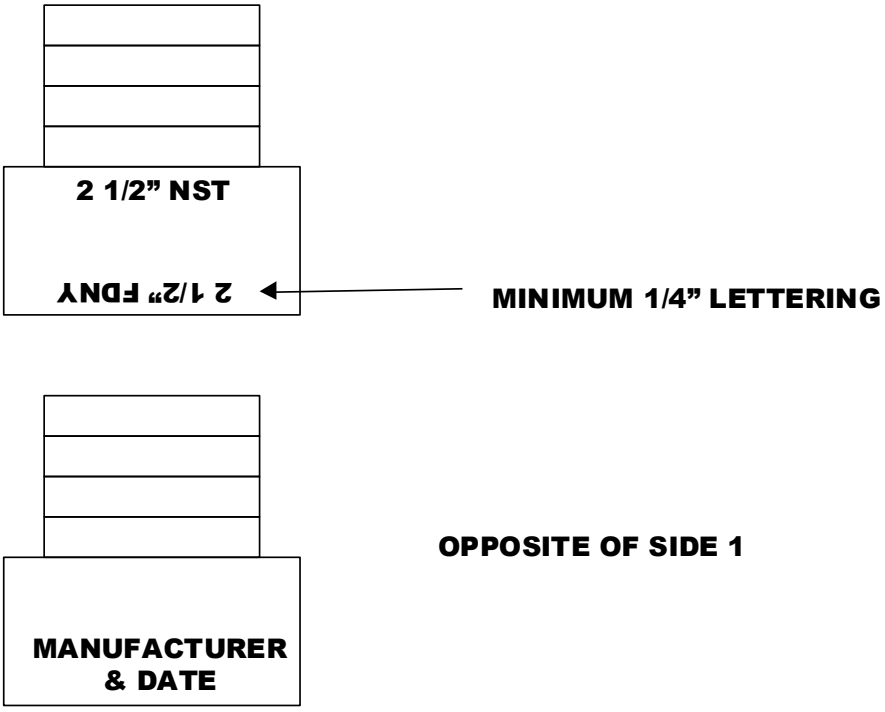
4. On opposite side - all appliances shall be marked with the manufacturers name, logo, or trademark and date manufactured.

   4.1 All High-Pressure appliances shall be additionally marked with the letter 'HP' above the manufacturers mark and date.

   4.2 All Marine appliances, both brass and Marine Hard Coat finish, shall be additionally marked with 'MARINE' above the manufacturers mark and date.

   4.3 At the request of FDNY, fittings shall be laser etched or engraved with bar code and corresponding part number.

5. Fire Department of New York City Marking Specification Diagram.



VIII. PACKING:

1. Packing shall be in accordance with the best commercial practice and as specified.

2. Thread ends shall be protected to guard against damage.

IX. IDENTIFICATION:

1. Shipping containers shall be plainly marked with the name of the contents, appliance size, quantity contained, name of contractor and purchase order number. Unless specified, no mixed lots varying in origin, brand or trademark, will be accepted against any contract and or purchase order.

X. DCAS QUALITY ASSURANCE CERTIFICATIONS & REQUIREMENTS

1. The following certifications and requirements must be sent to DCAS BQA for each delivery and must accompany each delivery made to FDNY.

    1.1 Material certification checklist required.

    1.2 Material test reports (MTRS) for each part, with physical and chemical characteristics required.

    1.3 Certification required for hard coat anodized and all other process finishes.

2. The manufacturer at his expense, shall make all the necessary templates and purchase certified gauges so that the parts are made to the approved specification and are interchangeable.

    2.1 The manufacturer must check and calibrate all gauges.

27. ENGINEERING CONFERENCES / INSPECTIONS:

27.1 Engineering inspections shall be performed by representatives of FDNY and the NYC Department of Citywide Administrative Services (DCAS). Inspections shall be performed at appropriate stages of production, as selected by FDNY. Within sixty (60) calendar days of contract award, the prime vendor shall deliver an accurate production schedule to FDNY.

27.2 Pilot Model:

- The first production unit, completed under this contract, shall be designated as the "pilot model".
- The pilot model shall be inspected at the factory / plant at which it is built
- The purpose of the pilot model inspection shall be to determine that the apparatus is constructed in compliance with the specifications contained herein, and to give final approval to any detail or accessory in regard to their type, quality and location on the apparatus.
- Any delays in obtaining approval of the pilot model shall be charged against delivery time.

27.3 Pre-Construction Conference:

Where: FDNY Fleet Services 48-58 35 Street, Long Island City, NY 11101

When: Immediately after award of contract

Who: Qualified engineers of chassis & body, FDNY and DCAS personnel

Duration: One (1) day chassis & one (1) day body / fire pump

27.4 Fire pump test at manufacturer's plant: (see section 17)

Where: Fire pump manufacturer's plant

When: Before start of construction of pilot model

Who: Qualified engineers of fire pump, FDNY and DCAS personnel

Duration: One (1) day

27. ENGINEERING CONFERENCES / INSPECTIONS (CONTINUED):

27.5 Build Process Inspections**:**

Where: Body builder's or prime vendor's facility

When: At various stages during the build process. Actual inspection items to be determined at the Preconstruction Conference and as the build process progresses.

Who: Prime vendor, body manufacturer, FDNY and DCAS personnel.

Note: an inspection of both the cab and body skeletons shall be conducted at the OEM's facility. At this time, the radio installation shall be complete and functional checks shall be conducted of the equipment installed.

- Full descriptive and illustrated material regarding apparatus operation, diagnosis, service, repair, air system, wiring/circuits, bulb chart and schematic, troubleshooting and parts listing/bill of material regarding all systems and components for the complete apparatus 'As Built' shall be supplied at the inspection of the pilot model, in order to facilitate and conduct the inspection. This shall be provided in electronic format, and also supplied in hardcopy format at the request of FDNY.

Note: If is necessary to re-inspect the apparatus after a failed inspection, then the total cost of the trip for FDNY and DCAS personnel shall be paid for by the vendor.

27.6 This schedule may be modified at the discretion of FDNY and/or DCAS.

27.7 FDNY / DCAS reserves the right to be present for the "AER" testing, or other equivalent mandated testing.

27.8 The prime vendor shall have the capability of conducting three-dimensional remote inspections at FDNY request. This shall be accomplished using Matterport™ Pro 2, or equal, 360-degree 3D color camera system with a valid continuous subscription. The system shall have the capability of a "virtual walkaround" of the apparatus from all angles and views. In addition, any video and audio feed shall be available for future viewing by FDNY and/or DCAS personnel. This system shall be used to supplement in-person inspections. Further details shall be discussed at the Preconstruction Conference.

28. DELIVERY SCHEDULE / DELIVERY POINT:

General plans and data……. Days* 60

Pilot model inspection……. Days*….600….

Pilot model delivered……. 30 days thereafter

Delivery of the completed 2nd unit……45 days after delivery of the pilot model.

Delivery of subsequent units…30 days thereafter. 1 per week until completion of purchase order.

***** Calendar days of the perforated date of the multi-part carbon Interleafed purchase order or, for electronic system-generated purchase orders, the printed date that the order was accepted into the City's Financial Management System (FMS).

Note: Liquidated damages are in effect for all items of this bid schedule:

Two hundred ($200.00) dollars per day for each apparatus delivered after the contract delivery due date as stated above.

Notwithstanding any provisions contained in this contract, the New York City Fire Department, in conjunction with, and the approval of the City of New York, Department of Citywide Administrative Services, may adjust the delivery schedule based on pilot inspections or changes/amplifications in the specifications. This provision shall also apply to engineering changes required for compliance with applicable NFPA standards or federal, state or city motor vehicle safety standards.

Note: If the vendor is late in delivering the apparatus, this additional time shall be added to the warranty.

Example: If the apparatus has a five (5) year warranty and is delivered thirty (30) days late, then the apparatus warranty shall now be five (5) years and thirty (30) days in length.

28. DELIVERY SCHEDULE / DELIVERY POINT (CONTINUED):

Note: Final acceptance by FDNY and/or DCAS shall be contingent upon: 1) Actual delivery to FDNY, 2) All inspection deficiencies corrected, and 3) All requirement equipment provided by the vendor as listed in this specification. Final acceptance will not be considered for incomplete vehicle deliveries/orders.

Delivery point for the apparatus ordered under this specification is:

Fire Department, City Of New York
Fleet Services Division
48-58 35th Street
Long Island City, New York 11101

Note: A copy of the final plans and drawings shall be sent to the NYC Department of Citywide Administrative Services (DCAS), Bureau of Quality Assurance (BQA).

29. REQUIRED DOCUMENTATION TIMELINES:

With Vendor's Bid:

1) Written certification for fire service use for chassis frame, engine, transmission, driveline retarder, axles, suspension, fire pump, steering gear, brakes, booster tank and tires, and other items upon FDNY request.

Within ten (10) days of FDNY request:

1) Certified "AER", or other equivalent mandated testing results, torque, and horsepower curves for the engine.

Within thirty (30) days after award of contract:

1) Monthly report of progress starting thirty (30) days after receipt of contract. The report shall detail progress on the pilot model and indicate percentage of completion on each of the succeeding units.

29. REQUIRED DOCUMENTATION TIMELINES (CONTINUED):

At the Preconstruction Conference:

1) General shop drawing showing all key dimensions including turning radius.
2) Line loading diagram with bending moment and shear curve.
3) Complete schematic of brake system arrangement.
4) Written certification of all approved fuels.
5) Computer generated diagram of drive line, engine, transmission and all respective angles.
6) Certified charging curve.
7) Complete electrical system load calculation.
8) Proposed electrical system layout showing all circuits and breakers.
9) Detailed engineering drawings of the cab showing power plant arrangement and cab mounting configuration.
10) Drawing including full description and locations of all components of the emergency radiator sprinkler system.
11) Detailed weldment prints and diagrams.
12) Full conceptual drawings of the engine enclosure.
13) Detailed blueprints of fire pump controls and manifold detail.
14) Detailed blueprints of fire pump controls and manifold detail.
15) A detailed drawing of the booster tank.
16) A schematic of fire pump, all plumbing including intakes/outlets, and the entire pump panel layout.
17) Five (5) copies of three-view dimension drawings showing the complete chassis with the body and equipment mounted.
18) Descriptive literature for chassis, engine, transmission, body, and all auxiliary equipment.
19) Detailed multi-view drawings, engineering drawings and/or pictures of complete unit that the vendor is bidding.
23) Detailed weight distribution chart/drawing.

At The Time Of Apparatus Manufacture:

1) Certification that engine complies with all applicable requirements.
2) Apparatus manufacturer's certificate for the bumper to bumper warranty.
3) Original equipment manufacturer certificates for any component in order to meet or exceed the bumper-to-bumper warranty.
4) Certificate on emergency lights as per NFPA 1900 as they pertain to this specification.
5) Certificate on electrical load test as per NFPA 1900 as they pertain to spec.
6) Certificate of compliance with applicable provisions of ANSI 92.2, 2001.
7) Fire pump certification as per NFPA 1900 as they pertain to spec.
8) Certificate of compliance with other NFPA regulations as they pertain to this spec.
9) "As Built" line sheets listing all model/part numbers for components.
10) Original OEM approval for engine, transmission, driveline retarder, axles, and suspension.
11) Application engineering review (AER).
12) Manufacturer’s certification that any modifications to the frame rail do not affect rigidity.
13) All accessories, equipment, warranty forms, warranty delay start forms, books, manuals, and spare parts.

29. REQUIRED DOCUMENTATION TIMELINES (CONTINUED):

At The Pilot Model Inspection:

1) Full descriptive and illustrated material regarding apparatus operation, diagnosis, service, repair, air system, wiring/circuits, troubleshooting and parts listing/bill of material regarding all systems and components for the complete apparatus 'As Built'.

Upon Delivery Of Each Apparatus:

1) Written check-off list of preventive maintenance inspection signed by the inspector.
2) Certification of compliance for the vehicle's side-to-side weight distributions
3) Wheel-end loading certification listing the weight on each wheel with the apparatus on the tilt table.
4) Tilt table test results.
5) Performance "SCAAN".
6) Coded wiring diagrams and schematics for complete apparatus, As Built.
7) Two (2) screw-in, threaded eyes, and bolts to cover the bolt eye holes for the manual cab tilt.
8) Documentation from the pump manufacturer certifying the finished pump mounting in the chassis.
9) One (1) pint of red and one (1) pint of white touch up paint. Each bottle shall have a built-in brush applicator.

30. LINE ITEMS:

30.1 Electronic Diagnostic Media, Manuals and Books: The vendor shall supply **both** hard copy and electronic parts, service, and diagnostic/troubleshooting information. All books and manuals must be original printings. Photostat or fax copies are not acceptable. Hard copy manuals shall be in three (3) ring binder format for ease of updating. If cd discs are available in addition to hardcopy manuals, both formats shall be provided. If a requested format is not available, then the vendor shall supply an FDNY approved substitute**.**

30.2 Operators Manual: Shall be separate from service & parts manuals. Manuals shall include but not be limited to:

- Operational instructions for **all** modes of operation
- Operational instructions for **all** accessories
- Safety procedures for **all** modes of operation / accessories
- Description of **all** controls, switches, levers, gauges
- Description of **all** indicator lights, warning lights & alarms
- Description of daily operational checks
- Complete list of fluid types, levels, and capacities
- Explanation of "emergency jump start" system
- Complete diagram & part number list of all bulbs

30.3 Service Manuals: If a service manual refers to another manual to aid in aforesaid procedures, these manuals shall also be supplied.

- Service manuals shall cover in complete detail all aspects of service, maintenance, troubleshooting, and overhaul procedures shall be provided with each purchase order. They shall include but not be limited to frame, chassis, ABS brakes & air system, drive train, driveline retarder, radiator & cooling system, p/s system, cab, HVAC system, body, doors, glass, electrical, charging system, wiring, fire pump & related items.

- Engine service manuals shall be provided. They shall cover in complete detail all aspects of service, maintenance, troubleshooting, and overhaul of engine and related items.

- Transmission service manuals shall be provided. They shall cover in complete detail all aspects of service, maintenance, troubleshooting, and overhaul of transmission and related items.

30.4 Parts Manuals: "As Built" parts manuals shall be provided**.** They shall provide complete parts information, part numbers, part diagrams with exploded views, and any other information related to obtaining replacement parts, including an interchange between the manufacturer's part numbers and the supplier's part numbers as well as a list of replacement part numbers, and their commercial equal if available, for all filters, belts, hoses & light bulbs used on the apparatus. A parts price list shall also be provided. **Parts manuals shall cover the entire apparatus, including every accessory.**

30. LINE ITEMS (CONTINUED):

30.5 Diagnostic Equipment: Supply all appropriate OEM software, interface adapters, and cables for engine, transmission and abs systems diagnosis, troubleshooting and repair. All software shall be the most up to date model/edition at time of apparatus delivery and include all necessary pin #s and / or activation codes, compatible with Panasonic Tough Book model # FZ40-EZ-0ABM or latest updated model. **Updates and subscriptions shall be supplied for the duration of the apparatus warranty. Software shall be full feature, full capability versions. "Lite" versions of software programs are not acceptable.**

It shall be the vendor's responsibility to keep FDNY up to date with the latest subscriptions, revision/updates and software programs. In addition, the vendor shall also be responsible for maintaining an updated, on demand database detailing all expiration dates of subscriptions and software programs. Further details shall be discussed at the Preconstruction Conference

30.6 Schematics: Schematics shall be provided "**As Built"**, and identify in complete detail, every aspect of the system it is representing

- Wiring schematics that identifies **every** electrical device, circuit, and all wiring of the **entire** apparatus
- Air system schematics and fuel system schematics
- Fire pump & related plumbing schematics
- Laminated hose legend cards shall be provided detailing hose type, diameter, length, and fitting type/size for ease of identification when replacement is needed.

Note: Schematics / diagrams shall be scalable and properly sized to print correctly on the current in use FDNY fleet services plotter printer so that they can be readily replicated as needed. Further details shall be discussed at the Preconstruction Conference.

30.7 Illustrated Light Bulb Chart / Schematic: The vendor shall supply a complete, 'As Built', illustrated light schematic / layout chart in the operator's manual. The information contained shall include, but not be limited to: ● The light's location and function on the apparatus ●The manufacturer of the lighting device ● The industry trade number and / or manufacturer's part number of the replacement bulb and / or fixture. ● Lighting manufacturer's lighting program code(s). In addition, the vendor shall supply two (2) large laminated versions of these same documents for use by fleet maintenance personnel. All charts shall be subject to FDNY approval.

30.8 "Blue Print Style" Electrical Schematics: The vendor shall supply complete full color, "blue print style" As Built, complete continuous electrical schematics. The schematics shall show all circuits in a continuous manner from the front of the apparatus to the rear and show the entire apparatus on one sheet. All termination and junction points/connections shall also be shown. Final size, design and layout shall be approved by FDNY.

30. LINE ITEMS (CONTINUED):

30.9 Electrical Component Locator: The vendor shall supply laminated "As Built" electrical component locator schematics. Schematic shall show a pictorial representation of the apparatus along with a descriptive location of all electrical components. Final design shall be approved by FDNY.

30.10 Complete listing of all belts, hoses, filters, bulbs & light heads used on the apparatus shall be provided.

30.11 Schematics, parts lists, and other service / reference literature shall be laminated as directed by FDNY so that they endure repeated use, handling and maintain legibility. New documentation shall be provided for any updates. All updated documents shall be laminated.

30.12 Provide a training video that shall cover the operation of the entire apparatus. Video chapters shall cover individual systems of the apparatus. Video layout and format shall be approved by FDNY.

30.13 Training: The prime vendor shall develop a plan to provide comprehensive, hands-on OEM drive train diagnostic and repair training. Prime vendor shall furnish, FDNY approved, comprehensive training sessions within forty-five (45) days of FDNY request. All training shall be conducted at an FDNY designated facility. FDNY reserves the right to videotape and record all training sessions at the FDNY facility.

30.14 The prime vendor shall provide diagnostic methods, typical and complex repairs, and a step-based repair methodology. Prime vendor shall furnish workbooks and training manuals at the commencement of each course.

30.15 All course instructors shall have teaching experience and first-hand knowledge of the curriculum. Any instructor who, in the opinion of FDNY is not performing satisfactorily shall be removed from service under the contract within two (2) business days, pursuant to oral notification by FDNY. In such an event, the prime vendor shall supply a replacement instructor who has qualifications to perform the required tasks. The instructor may utilize a short film or video to supplement training. However, the medium shall not be used as a substitute for instructor training and hands-on demonstrations

30. LINE ITEMS (CONTINUED):

30.16 The following training shall be provided:

A) Training shall include but not be limited to proficient use of the laptop & related software for operation, troubleshooting, system diagnostics, and adjustments of the electronic systems: engine, transmission.

B) Operation, troubleshooting, system diagnostics, and adjustments of the charging system & low voltage fast idle system.

C) Operation, troubleshooting, system diagnostics, and adjustments of the fire pump pressure governing system.

D) Operation, troubleshooting, system diagnostics, and adjustments of: the electrical & mechanical components of driveline retarder & ABS system.

30.17 2000 GPM High Pressure Pumper Option:

***Note: The vendor shall provide only the price difference to upgrade from a 2000 GPM Pumper to a 2000 GPM High Pressure Pumper in their bidder's certificate.**

- GVWR shall be 49,800 pounds, minimum.

- Rear Axle: Shall be a Dana™ model "S26-190", or equal, 27,000 GAWR, minimum.

- Rear Suspension: Neway-Holland™ "AD Series", or equal, mono-pivot angular beam air-ride type, rated at 27,000 pounds, minimum.

- Rear Tires: Four (4) rear tires shall be Goodyear™ "Endurance MSD", or equal, 12R22.5 rated for all weather traction - load range "H" – tubeless radial - mounted on 22.5" x 8.25" wheels - tires shall be rated at 6,780 pounds each, minimum.

- Fire Pump:

  - Shall be a Waterous™ "CMU/CGV/C20C", or equal. Pump shall be manufacturer's latest design, three-stage centrifugal fire pump, capable of meeting or exceeding all FDNY requirements and tests.

  - The pump and all related plumbing shall be hydrostatically tested to a pressure of 600 PSI and the high-pressure section of the pump and all related plumbing to 700 PSI

30. LINE ITEMS (CONTINUED):

30.17 2000 GPM High Pressure Pumper Option (Continued):

● Pump Transmission:

- Provide a Waterous™ heavy duty "C" Series p/n "C20C", or equal, chain drive type pump transmission.

● Right Side Discharges:

- There shall be two (2) 3" discharges located on the R/S pump panel, one (1) of which shall be designated for high pressure as directed by FDNY
- Each outlet shall be equipped with a 3" female N.P.T. x 3" male FDNY thread adapter
- Two (2) 45-degree aluminum elbows, with 3" female FDNY thread x 3" male FDNY thread, shall be provided. One (1) of which shall be suitable for high pressure.

●Rear Discharge:

- There shall be one (1) 3" high pressure discharge located at the rear of the apparatus, as directed by FDNY. Outlet shall be equipped with a 3" female N.P.T. x 3" male FDNY thread adapter. One (1) 45-degree high pressure aluminum elbow with 3" female FDNY thread x 3" male FDNY thread, shall be provided.
- Color markings shall be as follows:

  R/S 3" Discharge H.P.----- **Green** (Labeled #9)
  Rear 3" H.P. ---------- **Brown** (Labeled #8)

Operators Pump Panels:

● L/S Pump Panel Gauges:

- One (1) Master High Pressure Gauge

●Master Pressure Gauges:

- Master high-pressure gauge shall have a 6" diameter with a range from 0 to 1000 PSI and be located to the right of the master pressure gauge. It shall be equipped with a clearly labeled "dampening" device to help keep needle steady during operation.

30. LINE ITEMS (CONTINUED):

30.17 2000 GPM High Pressure Pumper Option (Continued):

●L/S Pump Panel Controls:

- One (1) High Pressure Outlets Control (to engage discharges)
- One (1) High Pressure Mechanical Seal Drain
- One (1) High Pressure Pump Drain

● L/S Pump Panel Indicator Lights / Warning Devices:

- One (1) **Amber** High-Pressure Outlets Engaged Indicator Light

●R/S Pump Panel Inlets / Outlets:

- Two (2) 3" outlets, one (1) shall be designated for high pressure

● R/S Pump Panel Controls:

- Two (2) drains (#8 and #9 H.P. outlets)

● Flowmeters/Pressure Gauges: For high pressure discharges shall be Fire Research™ "FPA401 Insight Ultimate", or equal. Digital flowmeter display shall read 0-9,999 GPM., and analog pressure gauge shall read 0 – 1000 PSI.

Fire Pump Test:

- Test Procedures:

Part 1- (Priming Device Test)

- With the apparatus set up for pump test, the primer pump shall be operated as per manufacturer's instructions until the fire pump is primed and ready to discharge water.
- The interval from the time the primer is started until the time the fire pump is ready to discharge water shall be noted.
- The time required to prime fire pump shall not exceed sixty (60) seconds.

30. LINE ITEMS (CONTINUED):

30.17 2000 GPM High Pressure Pumper Option (Continued):

Fire Pump Test (Continued):

Part 2- (Pumping Test)

A) Pump shall supply not less than 2,000 GPM with a pump pressure of 160 PSI and shall maintain this discharge for two (2) hours.

B) Immediately after completion of the above, a "pumping engine overload test" shall be performed. This shall consist of pumping at not less than 2,000 GPM at 165 PSI, for at least ten (10) minutes.

C) Immediately after completion of the above, the apparatus shall pump 1500 GPM at 200 PSI for thirty (30) minutes.

D) Immediately after completion of the above, the apparatus shall pump 1000 GPM at 320 PSI for thirty (30) minutes.

E) Immediately after completion of the above, the apparatus shall pump 250 GPM at 600 PSI for four (4) hours.

F) Immediately after completion of the above, the apparatus shall be engaged into high pressure mode and pump 500 GPM at 700 PSI for two (2) hours.

Part 3- (Pressure Control System Test)

A) Pressure governor shall be set to operate at 150 PSI, and a flow of 2000 GPM shall be obtained. At this time any / all discharges shall be closed (not faster than 3 seconds, not slower than 10 seconds). The rise in discharge pressure shall not exceed thirty (30) PSI.

B) At this time the original pumping conditions of 150 PSI and a flow of 2000 GPM shall be reestablished. Without any change made to the discharge valve settings, the pressure governor shall be set to operate at ninety (90) PSI, at this time any / all discharges shall be closed (not faster than 3 seconds, not slower than 10 seconds). The rise in discharge pressure shall not exceed thirty (30) PSI.

C) Pressure governor shall be set to operate at 250 PSI, and a flow of 1000 GPM shall be obtained. At this time any / all discharges shall be closed (not faster than 3 seconds, not slower than 10 seconds). The rise in discharge pressure shall not exceed thirty (30) PSI.

30. LINE ITEMS (CONTINUED):

30.17 2000 GPM High Pressure Pumper Option (Continued):

Fire Pump Test (Continued):

Part 4- (Vacuum Test)

A) The vacuum test shall consist of subjecting fire pump and related plumbing to a vacuum of 22 inches by means of the priming pump system. This shall be done with all intake valves open, all intakes capped or plugged, all discharge valves closed, and all discharge caps / plugs removed.

B) Vacuum reading shall not drop more than 10 inches in a five (5) minute time frame.

- The primer system shall not be used after the five (5) minute test has begun.
- Right after completion of test, vendor shall be responsible for washing of the saltwater spray on entire apparatus and flushing the fire pump and all plumbing with “fresh” water.

31. F.D.N.Y. BIDDERS CERTIFICATE

THE DATA CONTAINED HEREIN IS FOR THE PURPOSE OF EVALUATING THE BIDDER'S INTENT TO MEET THE REQUIREMENTS OF THE SPECIFICATION. THE BIDDER CERTIFIES THAT THE PRODUCTS AND ITEMS SPECIFIED HEREIN ARE THE MINIMUM THAT WILL BE SUPPLIED. ACCEPTANCE OF THIS BIDDER CERTIFICATE DOES NOT RELIEVE THE PRIME VENDOR OF THEIR OBLIGATION TO MEET REQUIREMENTS OF THE SPECIFICATION. ALL INFORMATION SUPPLIED HEREIN SHALL BE FROM CURRENT MANUFACTURER' LITERATURE.

BIDDER MUST COMPLY WITH ALL MATERIAL REQUIREMENTS OF THE SPECIFICATIONS. **DO NOT LEAVE ANY BLANK SPACES.**

NOTE: THE VENDOR SHAL SUBMIT A BIDDERS' CERTIFICATE FOR BOTH THE 2000 GPM PUMPER AND THE 2000 GPM HIGH PRESSURE PUMPER.

SERVICE FACILITY DESCRIPTION:

NUMBER OF EMPLOYEES: _____

NUMBER OF ROAD SERVICE EMPLOYEES_____

NUMBER OF ROAD SERVICE VEHICLES: _____

DOLLAR AMOUNT OF RELATED INVENTORY ON HAND: _____

NUMBER OF APPARATUS / VEHICLES THAT CAN BE STORED INSIDE: _____

LOCATION OF SERVICE FACILITY: _____

NOTE: IN ADDITION TO THE ABOVE-MENTIONED INFORMATION, AT THE TIME OF BID SUBMISSION, THE VENDOR MUST HAVE A CURRENTLY OPERATING ROAD SERVICE FACILITY AND PROPERLY TRAINED PERSONNEL.

THE VENDOR SHALL SUPPLY A DETAILED ROAD SERVICE PLAN WITH THEIR BID SUBMISSION. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO: FACILITY DESCRIPTION AND CAPABILITIES, YEARS IN OPERATION, EMPLOYEE QUALIFICATIONS AND EMPLOYEE EXPERIENCE.

BIDDER'S SHEET 2000 GPM PUMPER:

CHASSIS:

MAKE_____MODEL_____ CAB TYPE _____

GROSS VEHICLE WEIGHT RATING (GVWR)_____

COMPLETED APPARATUS DIMENSIONS (INCHES):

OVERALL HEIGHT _____ OVERALL WIDTH_____

OVERALL LENGTH_____ WHEELBASE_____

CA_____ AC_____ BBC_____TURNING RADIUS_____

ANGLE OF APPROACH_____ ANGLE OF DEPARTURE_____

GROUND CLEARANCE_____

(THE VENDOR SHALL PROVIDE A TURNING RADIUS CHART SHOWING ALL ASPECTS OF THE TURNING RADIUS AS WELL AS SHOP DRAWINGS SHOWING ALL KEY DIMENSIONS WITH THEIR BID SUBMISSION).

FRAME:

TYPE OF STEEL_____ MINIMUM YIELD STRENGTH _____

RESISTING BENDING MOMENT_____ INCH -LBS.

TYPE OF REINFORCEMENT_____

COMBINED RESISTING BENDING MOMENT_____INCH LBS

TERMINATING POINTS OF REINFORCEMENT: FRONT_____TO_____

ENGINE:

MAKE_____ MODEL_____LITERS / CUBIC INCHES_____

GROSS HORSEPOWER _____ @ RPM_____

GROSS TORQUE _____@ RPM_____

TRANSMISSION:

MAKE_____ MODEL_____ # SPEEDS_____

MAXIMUM HP RATING_____ GROSS TORQUE RATING_____

BIDDER'S SHEET 2000 GPM PUMPER (CONTINUED) :

ALTERNATOR: list all output ratings at engine RPM

MAKE _____ MODEL_____ MAXIMUM AMPS_____@ RPM_____

RATED OUTPUT TEMPERATURE RANGE_____ °F - _____ °F

_____AMPS @ 800 RPM _____AMPS @ 1500 RPM _____AMPS @ 2500 RPM

ELECTRICAL:

BATTERY MANUFACTURER_____MODEL_____

BATTERY CCA_____ RESERVE CAPACITY_____MINS

FRONT AXLE:

MAKE_____ MODEL_____ OEM RATED CAPACITY_____ LBS

OEM DATA BOOK OPTION #_____

FRONT SUSPENSION:

RATED CAPACITY_____ LBS TYPE SPRING_____

OEM DATA BOOK OPTION # _____

REAR AXLE:

MAKE_____ MODEL_____

OEM RATED CAPACITY_____ LBS.

SINGLE OR DOUBLE REDUCTION_____ RATIO (S)_____

OEM DATA BOOK OPTION #_____

BIDDER'S SHEET 2000 GPM PUMPER (CONTINUED) :

REAR SUSPENSION:

RATED CAPACITY_____ LBS TYPE SPRING _____

HELPER SPRINGS CAPACITY _____LBS TYPE SPRING_____

OEM DATA BOOK OPTION #_____

FRONT TIRES:

MANUFACTURER_____ SIZE_____MODEL_____

TREAD TYPE: _____LOAD RANGE _____

MAXIMUM LOAD _____ LBS. AT _____PSI

REAR TIRES:

MANUFACTURER_____SIZE_____MODEL_____

TREAD TYPE: _____LOAD RANGE _____

MAXIMUM LOAD _____ LBS. AT _____PSI

BRAKES:

FRONT: MAKE_____ TYPE_____ SIZE_____

REAR: MAKE_____ TYPE_____ SIZE_____

ANTI-LOCK SYSTEM _____

CAB:

MAKE_____ MODEL_____

LENGTH_____ WIDTH_____

TYPE MATERIAL _____

BIDDER'S SHEET 2000 GPM PUMPER (CONTINUED) :

BODY:

MAKE_____ MODEL_____

TYPE MATERIAL _____ LENGTH _____

WIDTH _____ INSTALLED OVERALL HEIGHT_____

FIRE PUMP:

MAKE_____ MODEL_____ CAPACITY_____

APPARATUS WEIGHT:

CURB WEIGHT FRONT_____ LBS.

CURB WEIGHT REAR_____ LBS.

AVAILABLE PAYLOAD CAPACITY_____ LBS

(BIDDER SHALL SUPPLY PROPOSED WEIGHT DISTRIBUTION DRAWINGS WITH THEIR BID SUBMISSION)

BIDDER'S SHEET 2000 GPM HIGH PRESSURE PUMPER:

CHASSIS:

MAKE_____MODEL_____ CAB TYPE _____

GROSS VEHICLE WEIGHT RATING (GVWR)_____

COMPLETED APPARATUS DIMENSIONS (INCHES):

OVERALL HEIGHT _____ OVERALL WIDTH_____

OVERALL LENGTH_____ WHEELBASE_____

CA_____ AC_____ BBC_____TURNING RADIUS_____

ANGLE OF APPROACH_____ ANGLE OF DEPARTURE_____

GROUND CLEARANCE_____

(THE VENDOR SHALL PROVIDE A TURNING RADIUS CHART SHOWING ALL ASPECTS OF THE TURNING RADIUS AS WELL AS SHOP DRAWINGS SHOWING ALL KEY DIMENSIONS WITH THEIR BID SUBMISSION).

FRAME:

TYPE OF STEEL_____ MINIMUM YIELD STRENGTH _____

RESISTING BENDING MOMENT_____ INCH -LBS.

TYPE OF REINFORCEMENT_____

COMBINED RESISTING BENDING MOMENT_____INCH LBS

TERMINATING POINTS OF REINFORCEMENT: FRONT_____TO_____

ENGINE:

MAKE_____ MODEL_____LITERS / CUBIC INCHES_____

GROSS HORSEPOWER _____ @ RPM_____

GROSS TORQUE _____@ RPM_____

TRANSMISSION:

MAKE_____ MODEL_____ # SPEEDS_____

MAXIMUM HP RATING_____ GROSS TORQUE RATING_____

BIDDER'S SHEET 2000 GPM HIGH PRESSURE PUMPER (CONTINUED):

ALTERNATOR: list all output ratings at engine RPM

MAKE _____ MODEL_____ MAXIMUM AMPS_____@ RPM_____

RATED OUTPUT TEMPERATURE RANGE_____ °F - _____ °F

_____AMPS @ 800 RPM _____AMPS @ 1500 RPM _____AMPS @ 2500 RPM

ELECTRICAL:

BATTERY MANUFACTURER_____MODEL_____

BATTERY CCA_____ RESERVE CAPACITY_____MINS

FRONT AXLE:

MAKE_____ MODEL_____ OEM RATED CAPACITY_____ LBS

OEM DATA BOOK OPTION #_____

FRONT SUSPENSION:

RATED CAPACITY_____ LBS TYPE SPRING_____

OEM DATA BOOK OPTION # _____

REAR AXLE:

MAKE_____ MODEL_____

OEM RATED CAPACITY_____ LBS.

SINGLE OR DOUBLE REDUCTION_____ RATIO (S)_____

OEM DATA BOOK OPTION #_____

BIDDER'S SHEET 2000 GPM HIGH PRESSURE PUMPER (CONTINUED):

REAR SUSPENSION:

RATED CAPACITY_____ LBS TYPE SPRING _____

HELPER SPRINGS CAPACITY _____LBS TYPE SPRING_____

OEM DATA BOOK OPTION #_____

FRONT TIRES:

MANUFACTURER_____ SIZE_____MODEL_____

TREAD TYPE: _____LOAD RANGE _____

MAXIMUM LOAD _____ LBS. AT _____PSI

REAR TIRES:

MANUFACTURER_____SIZE_____MODEL_____

TREAD TYPE: _____LOAD RANGE _____

MAXIMUM LOAD _____ LBS. AT _____PSI

BRAKES:

FRONT: MAKE_____ TYPE_____ SIZE_____

REAR: MAKE_____ TYPE_____ SIZE_____

ANTI-LOCK SYSTEM _____

CAB:

MAKE_____ MODEL_____

LENGTH_____ WIDTH_____

TYPE MATERIAL _____

BIDDER'S SHEET 2000 GPM HIGH PRESSURE PUMPER (CONTINUED):

BODY:

MAKE_____ MODEL_____

TYPE MATERIAL _____ LENGTH _____

WIDTH _____ INSTALLED OVERALL HEIGHT_____

FIRE PUMP:

MAKE_____ MODEL_____ CAPACITY_____

APPARATUS WEIGHT:

CURB WEIGHT FRONT_____ LBS.

CURB WEIGHT REAR_____ LBS.

AVAILABLE PAYLOAD CAPACITY_____ LBS

(BIDDER SHALL SUPPLY PROPOSED WEIGHT DISTRIBUTION DRAWINGS WITH THEIR BID SUBMISSION)

NOTE: WHERE ANY PORTIONS OF THE COMPLETE APPARATUS IS TO BE INSTALLED BY OTHER THAN THE BIDDER OR CHASSIS MANUFACTURER (OEM), THE BIDDER SHALL INDICATE BELOW THE NAMES OF THE ENTITY/SUBCONTRACTOR PERFORMING SUCH INSTALLATION AND THE LOCATION OF THEIR FACILITY.
(USE SEPARATE SHEET IF NECESSARY, TO LIST **ALL** SUBCONTRACTORS)

_____	_____
NAME OF BIDDER FIRM	SUBCONTRACTOR FIRM
_____	_____
ADDRESS	ADDRESS
_____	_____
ADDRESS	ADDRESS
( )_____	( )_____
TELEPHONE #	TELEPHONE #
_____	_____
PRINT NAME OF AUTHORIZED REPRESENTATIVE	PRINT NAME OF AUTHORIZED REPRESENTATIVE
_____	_____
SIGNATURE	SIGNATURE
_____	_____
TITLE	TITLE

:

Bid Number: 2600092 (Apparatus, 2000GPM Pumper)

THE CITY OF NEW YORK
DEPARTMENT OF CITYWIDE ADMINISTRATIVE SERVICES
OFFICE OF CITYWIDE PROCUREMENT

Manufacturer's Certificate

_____ certifies that:

We manufacture the commodities specified in the attached bid document. We manufacture these commodities at the manufacturing plant(s) located at:

_____

_____

_____

_____

FURTHERMORE:

We authorize _____
Name and Address of Firm or Individual

_____

as our distributor to furnish our products, as listed in the attached bid document. We agree to supply said distributor/individual such quantities of our products as may be required.

Date: _____

_____
Manufacturer

_____
Signature

_____
Print Name

_____
Title

_____
Official Contact E-Mail or Phone

* **NOTE:** Although this Certificate is not required to be completed by bid submission, it will be requested at the discretion of the City if required to determine Vendor eligibility.

ATT: BIDDER

PLEASE RETAIN ON FILE

THE NEW YORK CITY PURCHASE CONTRACT
DEPARTMENT OF CITYWIDE ADMINISTRATIVE SERVICES
DIVISION OF MUNICIPAL SUPPLY SERVICES
MUNICIPAL BUILDING, NEW YORK, N.Y. 10007

PART I
GENERAL DEFINITIONS

The definitions set forth in Chapter 1, Section 1-01 of the Procurement Policy Board Rules shall apply to this Contract.

1. "Agency" is the particular department, board, bureau, office or other City subdivision organizing and supervising procurement; i.e., solely the Department of Citywide Administrative Services.

2. "Agency Chief Contracting Officer" means the position delegated authority by the Agency Head to organize and supervise the procurement activity of subordinate agency staff in conjunction with the City Chief Procurement Officer; i.e., the Agency Chief Contracting Officer of the Department of Citywide Administrative Services or a delegated representative.

3. "Agency Head" is a term referring to heads of city, county, borough, or other office, administration, department, division, bureau, board or commission, or a corporation, institution or agency of government, the expenses of which are paid in whole or in part from the City treasury; i.e., the Agency Head of the Department of Citywide Administrative Services or a delegated representative.

4. "Blanket Order" is a purchase order issued to a vendor by an agency with a "not to exceed" amount and without specific quantities and delivery dates. This enables the agency to make purchases at different times and in varying amounts from a requirement contract by means of shipping instructions, the total expenditures not to exceed the amount of the blanket order.

5. "City" is the City of New York.

6. "City Chief Procurement Officer" means the position delegated authority by the Mayor to coordinate and oversee the procurement activity of mayoral agency staff, including the Agency Chief Contracting Officers (ACCO) and any offices which have oversight responsibility for the procurement of construction, computer and computer services.

7. "Commissioner" means the Commissioner of the Department of Citywide Administrative Services of the City of New York or any Deputy or Assistant Commissioner who has been delegated authority.

8. "Comptroller" means the Comptroller of the City.

9. "Contract" includes the bid book, the invitation for bids, these general definitions, the instructions to bidders, the general conditions, the special conditions, the affirmations, the bid and schedule of quantities and prices, the drawings and specifications, the Budget Director's Certificate when applicable, any special instructions to bidders, together with all addenda, change orders or modifications, all provisions required by law to be inserted in this Contract whether actually inserted or not, purchase order or notice of award, performance and payment bonds when required, and notice to proceed with work, when applicable.

10. "Date of Contract Award" shall be the date of Notice of Award, if issued, or otherwise the perforated date of Purchase Order.

11. "Department" means the Department of Citywide Administrative Services, City of New York.

12. "Division" means the Division of Municipal Supply Services, Department of Citywide Administrative Services.

13. "Goods" are the subject matter of this contract and include but are not limited to supplies, articles, commodities, equipment, materials, merchandise or wares, together with any labor, services or other work necessary for performance of the Contract.

14. "Law" or "Laws" shall include but not be limited to the Constitution of the State of New York, the New York City Charter, the New York City Administrative Code, a statute of the United States or of the State of New York, a local law of the City of New York, and any ordinance, rule or regulation having the force of law.

15. "Schedule" is the contract schedule of quantities, prices, specifications and descriptions contained in the Bid document.

16. "Seller," "Supplier," "Contractor," "Vendor" or "Bidder" is the person, firm or corporation awarded this Contract and obligated to furnish and deliver the Goods to the City in accordance with all the terms and conditions of the Contract.

17. "Time of Performance" means the specific time or times indicated in the Contract at which or within which delivery or other performance is to be completed.

PART II
STANDARD INSTRUCTIONS TO BIDDERS

THESE INSTRUCTIONS ARE STANDARD FOR ALL CONTRACTS FOR GOODS ISSUED BY THE DIVISION OF MUNICIPAL SUPPLY SERVICES. THE DIVISION OF MUNICIPAL SUPPLY SERVICES MAY DELETE, SUPERSEDE OR MODIFY ANY OF THESE STANDARD INSTRUCTIONS FOR A PARTICULAR CONTRACT BY INDICATING SUCH CHANGE IN THE BID BOOK, THE SPECIAL INSTRUCTIONS TO BIDDERS OR IN THE SCHEDULE.

1. CONTRACT - INTERPRETATION AND EXAMINATION

1.1 Request for Interpretation or Correction. Prospective bidders must examine the Contract Documents carefully and before bidding must request the Agency Chief Contracting Officer in writing for an interpretation or correction of every patent ambiguity, inconsistency or error therein which should have been discovered by a reasonably prudent bidder. Such interpretation or correction, as well as any additional contract provisions the Agency Chief Contracting Officer may decide to include, will be issued in writing by the Agency Chief Contracting Officer as an addendum to the contract, which will be sent by mail or delivered to, and acknowledged by, each person recorded as having received a copy of the contract documents from the Contract Clerk, and which will also be posted at the place where the contract documents are available for the inspection of prospective bidders. Upon such mailing or delivery and posting, such addendum shall become a part of the contract documents, and binding on all bidders, whether or not actual notice of such addendum is shown.

Only the written interpretation or correction given by the Agency Chief Contracting Officer is binding. Bidders are warned that no other Officer, agent or employee of the City is authorized to give information concerning, or to explain or interpret, the contract.

1.2 The documents, samples, and any other elements comprising this Contract are intended mutually to explain and complement one another. Any factual conflicts between or among the separate elements, any errors or omissions, or any doubt as to the requirements of this Contract shall be resolved or corrected in writing by the Agency Chief Contracting Officer. The Seller shall have no power unilaterally to make any such resolutions or corrections. Such resolutions or corrections by the Agency Chief Contracting Officer shall be final and conclusive upon the Seller. If Seller fails to bring any conflict, error, or omission to the attention of the Agency Chief Contracting Officer prior to submission of its bid, Seller shall be deemed to have contracted to produce the goods and perform the work in the most expensive manner using only the best material and workmanship.

1.3 Priority of Documents in the Bid. Should there be conflicting provisions in the documents of this contract the order of precedence shall be: (1) Schedule of Quantities, (2) Specifications, (3) Drawings, (4) Special Instructions, (5) General Conditions and (6) Standard Instructions.

When there is a variation in the description of an item, between the specification, sample, or catalog or model number, the description contained in the specification section of these documents will prevail. If description and drawings conflict, the drawings shall prevail.

Drawings or samples, even though approved subsequent to the award, shall not be deemed a waiver or modification of the specifications unless this Contract has been modified as provided in Section 9 of the General Conditions (Part III).

2. BIDS

2.1 Form of Bid. All bids shall be submitted on forms furnished by the City. Such forms, and envelopes in which to submit bids, may be obtained at the place designated in the advertisement. No alteration, erasure or addition is to be made to the typewritten or printed matter of the bid documents. Such changes shall be of no force and effect and may be grounds for rejection of the bid.

2.2 Submission of Bids. A bid will not be accepted if it is received in the Division of Municipal Supply Services after the time scheduled for the opening. This applies to bids sent by mail as well as to those delivered by hand. If a vendor chooses to use special delivery service it will be the responsibility of the vendor to ensure that the bid is delivered directly to the Division of Municipal Supply Services' Bid Room. Bids must indicate on the outside envelope the bid number and bid opening date; otherwise the bid will not be accepted and will not be opened.

2.3 Prices, Extensions and Discounts.

(a) The Bidder shall insert against each item which it proposes to furnish and deliver the price per stated unit and the extensions. In the event of a discrepancy between the unit price and the extension, the unit price will govern. If discount bids are requested, and there is an error in the extension of the total, the discount offered will govern.

(b) Cash discounts will not be considered in determining the low bidder.

2.4 Sales, Excise and Federal Transportation Taxes. Unless this Contract indicates otherwise, the City is exempt from the payment of any sales, excise or federal transportation taxes. The price bid, whether computed as a net unit price or based upon a trade discount from catalog list prices, must be exclusive of taxes and will be so

construed. The purchase order may be accepted in lieu of a Sales Tax Exemption Certificate.

2.5 Delivery Charges. All prices bid must be on the basis of F.O.B. delivery point, unloaded, inside and assembled unless otherwise indicated in this Contract.

2.6 Containers and Reels. All containers and reels shall become the property of the City unless otherwise specified. When containers or reels are returnable, they will be returned at the Seller's expense; otherwise they will be paid for by the City at the rate agreed upon in this Contract.

2.7 Manufacturers' Warranties and Guaranties. Unless otherwise indicated in this Contract, the Seller shall issue or obtain all manufacturers' warranties and guaranties of all equipment and materials required by this Contract in the name of the City of New York and shall deliver same to the City.

2.8 Variable Quantities and Delivery Points. The quantities and delivery points set forth in this Contract will be subject to one of the following variations which will be indicated in the Bid Book.

(a) Type "A" Contract. The Agency Chief Contracting Officer during the term of this Contract may increase or decrease the quantity of any item or class; however, any contract increases which cumulatively exceed the greater of ten percent (10%) of the total cost of this contract or $100,000 must be approved in writing by the City Chief Procurement Officer. Delivery points are limited to those indicated in the Bid Book unless modified by mutual agreement of the parties.

(b) Type "B" Contract. The Agency Chief Contracting Officer reserves the right, during the term of this Contract, to order such quantities for such delivery points and under such conditions as may be indicated in the Bid Book. Unless otherwise indicated in the Bid Book, the City may order up to 100% more of the base quantity set forth in the bid.

(c) Type "C" Contract: (Requirement Contract). A requirement contract is a contract for an indefinite amount of goods to be furnished at specified times, or as ordered, that establishes unit prices, usually of a fixed price type. Generally, an approximate quantity or the best information available as to quantity is stated in the solicitation. The contract may provide a minimum quantity the City is obligated to order and may also provide for a maximum quantity provision that limits the City's obligation to order. The Agency Chief Contracting Officer may, with the consent of Seller, extend the term of this Contract up to an additional 120 days.

2.9 Proprietary Information/Trade Secrets.

The bidder shall identify those portions of their bid that they deem to be confidential, proprietary information or trade secrets, and provide justification why such materials shall not be disclosed by the City. All materials the bidder desires to remain confidential shall be clearly indicated by stamping the pages on which such information appears, at the top and bottom thereof with the word "Confidential." Such materials stamped "Confidential" must be easily separable from the non-confidential sections of the bid.

All such materials so indicated shall be reviewed by the Agency and any decision not to honor a request for confidentiality shall be communicated in writing to the bidder. For those bids which are unsuccessful, all such confidential materials shall be returned to the bidder. Prices, makes and model or catalog numbers of the items offered, deliveries, and terms of payment shall be publicly available after bid opening regardless of any designation of confidentiality made by the bidder.

3. BIDDER QUALIFICATIONS

3.1 Evidence of Ability.

(a) Before or after making an award of contract, the City reserves the right to inspect the premises where Goods are manufactured, prepared or stored. When the source of production is outside the City of New York, the Agency Chief Contracting Officer may demand the submission of satisfactory evidence that the Goods proposed for delivery are in every respect what they are represented to be.

(b) The Bidder shall, upon request, submit evidence that will prove to the satisfaction of the Agency Chief Contracting Officer that it is qualified and able to furnish the Goods on which it bids and deliver them in the manner and time specified. It shall also furnish evidence that it has secured the necessary licenses, permits or certificates, required by any legislative or regulatory body having jurisdiction, to carry on the business of furnishing the Goods on which the bid was submitted.

(c) If the evidence required in paragraphs (a) and (b) of this sub-section is not furnished, or if, upon examination of such evidence or other inspection of the plant or premises, it is found that the Bidder does not comply with the requirements set forth in this Contract, the Agency Chief Contracting Officer shall have the right to reject the bid in whole or in part. Should the non-compliance be discovered after the award is made, the Agency Chief Contracting Officer shall have the right to cancel and terminate this Contract and/or declare the Seller in default, in addition to any other remedies provided

by contract or at law or equity.

(d) In addition to any other requirement of this Contract, the Agency Chief Contracting Officer may request the Bidder to submit a sworn statement or submit to an oral examination setting forth such information as may be deemed necessary by the Agency Chief Contracting Officer to determine the Bidder's ability and responsibility to perform the work and supply the Goods in accordance with the Contract.

3.2 Financial Qualifications.

(a) The Agency may require any bidder or prospective bidder to furnish all books of account, records, vouchers, statements or other information concerning the bidder's financial status for examination as may be required by the agency to ascertain bidder's responsibility and capability to perform the contract.

(b) If the bidder fails or refuses to supply any of the documents or information set forth in paragraph (a) hereof or fails to comply with any of the requirements thereof, the Agency Chief Contracting Officer may reject the bid.

3.3 Examination before Award. The City reserves the right, before making an award, to conduct examinations to determine whether or not the Goods proposed to be furnished meet the requirements set forth in the Contract. If any such examination shows that the Contract requirements are not complied with, or that Goods proposed to be furnished do not meet the requirements called for, the Agency Chief Contracting Officer may reject such bid, and may award the Contract to the lowest responsible Bidder. It is distinctly understood, however, that nothing in the foregoing shall mean or imply that it is obligatory upon the City to make any examinations before awarding a Contract. It is further understood that the making or waiving of any such examination in no way relieves the Seller from fulfilling all requirements and conditions of this Contract.

4. SPECIFICATIONS AND SAMPLES

4.1 Specifications and "Or Equal" Bidding. Written specifications may be used to describe the Goods required. The Bidder must comply with all material requirements of the specifications. When the name of a manufacturer, a brand name, manufacturer's catalog number, or "as per sample" is used as the bid standard along with salient characteristics in describing an item followed by "or equal," this description is used to indicate quality, performance and other essential characteristics of the Goods required. If bidding on make, model, brand or sample specified, the words "or equal" should be stricken out by the Bidder. All bidders are presumed to be bidding on the make, model, brand or sample specified unless they submit, either on the line provided therefor, or in a letter attached to the bid, all of the following: manufacturer's name, catalog number and any other information necessary to prove that an intended substitution of Goods is equal in

all essential respects to the bid standard. The Bidder must prove to the satisfaction of the Agency Chief Contracting Officer that its designated substitute is equal to the bid standard and salient characteristics in all material respects; otherwise, its bid will be rejected. The City reserves the right to consider material, characteristics which it, in its sole discretion, deems intrinsic to the nature of the product even though such characteristic has not been listed as salient.

Whenever Goods are indicated in the specifications or schedules by a catalog description, or by a trademark or trade name or by the name of any particular patentee, manufacturer, or dealer, such description shall mean the Goods indicated or any equal thereto in all essential respects as shall be determined by the City, except when the Goods are purchased according to an Acceptable Brands List or are indicated as brand specific only, no equal will be accepted.

4.2 Unused Goods. Unless specifically noted in this Contract, all Goods must be new and unused, however, vendors are encouraged to use secondary or recycled materials in the manufacture of products to the maximum extent practicable without jeopardizing the performance or intended end use of the product unless such use is precluded due to health and welfare or safety requirements or product specifications contained herein.

4.3 Submission of Samples, Pilot Models and Drawings. Samples and descriptive literature shall not be submitted unless expressly requested elsewhere in the contract or contract documents. Any unsolicited samples or descriptive literature which are submitted shall not be examined or tested and shall not be deemed to vary any of the provisions of this contract. When samples, pilot models or drawings are requested from the Bidder or required by this Contract, they shall be delivered by the Bidder, properly identified, within fifteen (15) calendar days of the request unless this Contract indicates a different time. If the Bidder fails to deliver the same in a timely manner, the Agency Chief Contracting Officer shall have the right to deem the bid non-responsive or to cancel and terminate the contract.

Samples, drawings and pilot models requested by the City shall be submitted to the 18th floor, Municipal Building, New York, New York 10007, unless some other place is indicated. Samples, drawings and pilot models shall be submitted free of charge.

(a) Samples and Pilot Models. If in the judgment of the City the sample or pilot model submitted is not in accordance with the requirements prescribed in the bid documents, the City may reject the bid. If an award has been made, the City may cancel the contract at the expense of the Seller.
A sample or pilot model may be held by the City during the entire term of the contract and for a reasonable period thereafter for comparison with deliveries. At the conclusion of the holding period the sample or pilot model shall be removed by the Bidder at the Bidder's expense within thirty (30) days of written request by the City. If Bidder fails to remove them within the thirty (30) day

period, then the sample or pilot model shall become the sole property of the City and the City shall have the right to dispose of them at no cost or liability to the City and the Bidder shall have no right of action for damages or any right to an accounting therefor. The City will not be responsible for any samples or pilot models which are destroyed or damaged by examination.

(b) Drawings and Plans. Approval by the Agency Chief Contracting Officer of drawings and/or plans of details for any Goods or installation will not relieve the Seller from its responsibility for furnishing the Goods or installation of proper dimensions, size, quantity and quality to efficiently perform the work and carry out the requirements and intent of the layout of descriptive drawings forming a part of the bid documents. Such approval shall not relieve the Seller from responsibility for design or other errors of any sort in the drawings or plans.

Drawings, plans and copies thereof prepared by Seller specifically in the performance of this Contract shall be submitted to the City prior to payment and shall become the property of the City for use by the City in any manner whatsoever, without further compensation, including as specifications for future bids and contracts. Unless otherwise provided in this Contract, Seller also retains a proprietary interest in any such drawings and plans.

4.4 Acceptable Brands List. When Goods are purchased under an "Acceptable Brands List," the Agency Chief Contracting Officer reserves the right, before or after the award, to call for samples and s/he may remove any brand from the "Acceptable Brands List" which has been found to have changed in quality since the date on which the list was compiled. If such change is discovered prior to this award, the bid may be rejected; if the change takes place or is discovered after this Contract has been awarded, this Contract may be considered breached by the Seller.

5. AWARD

5.1 Item and Class Awards. Awards may be made by item or class in the interest of the City as determined by the Agency Chief Contracting Officer. When class bids are indicated in the Contract, the Bidder must bid on each item in the class. A Bidder desiring to bid "no charge" on an item in a class must so indicate; otherwise the bid for the class will be construed as incomplete and may be rejected. The Agency Chief Contracting Officer, nevertheless, reserves the right to delete an item(s) from a class and award the remaining items on a class basis, in the interest of the City. When a class bid shows evidence of unbalanced bid prices, such bid may be rejected.

5.2 Mistake in Bids:

(a) Mistakes Discovered Before Bid Opening

A bidder may correct mistakes discovered before the time and date set for bid opening by withdrawing or correcting the bid as provided in Section 5.8, below.

(b) Mistakes Discovered Before Award

1. In accordance with Chapter Three, Section 3-02(m) of the Procurement Policy Board Rules, if a bidder alleges a mistake in bid after bid opening and before award, the bid may be corrected or withdrawn upon written approval of the Agency Chief Contracting Officer if the following conditions are met:

(i) Minor Informalities. Minor informalities in bids are matters of form rather than substance evident from the bid document, or insignificant mistakes that can be waived or corrected without prejudice to other bidders; that is, the effect on price, quantity, quality, delivery, or contractual conditions is negligible. The Contracting Officer may waive such informalities or allow the bidder to correct them depending on which is in the best interest of the City.

(ii) Mistakes Where Intended Correct Bid is Evident. If the mistake and the intended correct bid are clearly evident on the face of the bid document, the bid shall be corrected to the intended correct bid and may not be withdrawn.

(iii) Mistakes Where Intended Correct Bid is Not Evident. A bidder may be permitted to withdraw a low bid if:

(a) a mistake is clearly evident on the face of the bid document but the intended correct bid is not similarly evident; or

(b) the bidder submits proof of evidentiary value which clearly and convincingly demonstrates that a mistake was made.

(c) Mistakes Discovered after Award. Mistakes shall not be corrected after award of the contract except where the City Chief Procurement Officer subject to the approval of Corporation Counsel makes a written determination that it would be unconscionable not to allow the mistake to be corrected.

5.3 Rejection of Bids:

(a) Rejection of Individual Bids. The Agency may reject a bid if:

1. The bidder fails to furnish any of the information required pursuant to Division of Labor Services or Vendex requirements hereof; or if

2. The bidder is determined to be not responsible pursuant to the Procurement Policy Board Rules; or if

3. The bid is determined to be non-responsive pursuant to the Procurement Policy Board Rules; or if

4. The bid, in the opinion of the Agency Chief Contracting Officer, contains unbalanced bid prices and is thus non-responsive.

(b) Rejection of All Bids. The Agency, upon written approval by the Agency Chief Contracting Officer, may reject all bids and may elect to resolicit bids if in its sole opinion it shall deem it in the best interest of the City so to do.

(c) Rejection of All Bids and Negotiation With All Responsible Bidders. The Agency Head may determine that it is appropriate to cancel the Invitation for Bids after bid opening and before award and to complete the acquisition by negotiation pursuant to applicable PPB rules.

5.4 "Foreign" Goods. If a Bidder proposes to furnish any item which is not produced, fabricated or processed in the United States or its territorial possessions, it must write the word "foreign" and the country of origin of such item in the Bid Book, and failure to do such may be a ground for rejection of such Goods. Unless the designated standard is of foreign origin, failure on the part of the Bidder to designate an item as foreign will be construed to indicate that the item offered is domestic.

5.5 Low Tie Bids.

(a) When two or more low responsive bids from responsible bidders are identical in price, meeting all the requirements and criteria set forth in the Invitation For Bids, the Agency Chief Contracting Officer will break the tie in the following manner and order of priority:

(i) Award to a certified New York City small minority or woman-owned business entity bidder;

(ii) Award to a New York City bidder;

(iii) Award to a certified New York State small, minority or woman-owned business bidder;

(iv) Award to a New York State bidder.

(b) If two or more bidders still remain equally eligible after application of paragraph (a) above, award shall be made by a drawing by lot limited to those bidders. The bidders involved shall be invited to attend the drawing. A witness shall be present to verify the drawing and shall certify the results on the bid tabulation sheet.

5.6 Alternate Products. A Bidder may not bid multiple products for one bid item. If a Bidder offers more than one, only the lowest price offering will be considered. If the price offerings are identical, only the first item listed will be considered.

5.7 Waiving Informalities. The Agency Chief Contracting Officer reserves the right to waive any informality, technicalities, irregularities and omissions in a bid when the Agency Chief Contracting Officer deems such waiver to be in the interest of the City.

5.8 Pre-Opening Modification or Withdrawal of Bids. Bids may be modified or withdrawn by written notice received in the office designated in the contract for receipt of bids, before the time and date set for the bid opening. A telegraphic, mailgram or facsimile withdrawal shall be effective provided it was received in the manner set forth in Section 3-02(j) of the Procurement Policy Board Rules. If a bid is withdrawn in accordance with this section, the bid security, if any, shall be returned to the bidder.

5.9 Late Bids, Late Withdrawals and Late Modifications. Any bid received at the place designated in the solicitation after the time and date set for receipt of bids is late and shall not be considered. Any request for withdrawal or modification received at the place designated in the solicitation after the time and date set for receipt of bids is late and shall not be considered. The exception to this provision is that a late modification of a successful bid that makes the bid terms more favorable to the City shall be considered at any time it is received.

5.10 Bid Evaluation and Award. In accordance with the New York City Charter, the Procurement Policy Board Rules and the terms and conditions contained herein, this contract shall be awarded, if at all, to the responsible bidder whose bid meets the requirements and evaluation criteria set forth in the Invitation for Bids, and whose bid price is either the most favorable bid price or, if the Invitation For Bids so states, the most favorable evaluated bid price or award to other than the lowest responsible bidder pursuant to Section 3-02(o) of the PPB Rules. A bid may not be evaluated for any requirement or criterion that is not disclosed in the Invitation For Bids.

Restrictions. No negotiations with any bidder shall be allowed to take place except

under the circumstances and in the manner set forth in the Procurement Policy Board Rules. Nothing in the rule shall be deemed to permit a contract award to a bidder submitting a higher quality item than that designated in the Invitation For Bids if that bid is not also the most favorable bid.

5.11 Right to Appeal Determinations of Non-Responsiveness or Non-Responsibility and Right to Protest Solicitations and Award. The bidder has the right to appeal a determination of non-responsiveness or non-responsibility and has the right to protest a solicitation and award. For further information concerning these rights, the bidder is directed to Chapter 2, Sections 2-07, 2-08 and 2-10 of the Procurement Policy Board Rules.

PART III
GENERAL CONDITIONS

1. PERFORMANCE

The Seller shall furnish and deliver the Goods in the manner and to the destination and within the delivery time herein specified. The Seller shall accept as full compensation therefor the sums set forth opposite the respective Goods called for in the Bid Book, which sums are amounts at which the Contract was awarded to the Seller at the letting thereof.

2. TIME OF PERFORMANCE

2.1 Extending Time of Performance. The Time of Performance may be extended in either of the following ways:

(a) If the performance of the Seller is delayed by an act or omission of the City, the Seller shall be allowed a reasonable extension in the Time of Performance, and no claim for the delay or damages resulting therefrom shall be made by or allowed to the Seller.

(b) If the performance of the Seller is delayed for any other cause beyond the control of either party, an extension of time may be granted by the Agency Chief Contracting Officer solely at his/her discretion. The Seller shall not be responsible for delay resulting from its failure to deliver if neither the fault nor negligence of the Seller, its officers, employees or agents contributed to such delay and the delay is due directly to acts of God, wars, acts of public enemies or other similar cause beyond the control of the Seller, or to strikes, fires or floods, including strikes, fires or floods affecting its subcontractors or materialmen where no alternate source of supply is available to the Seller. Should such excusable delay inconvenience the City by creating an emergency thus necessitating the purchase of the Goods involved elsewhere, which necessity shall be conclusively determined by the Agency Chief Contracting

Officer, the Agency Chief Contracting Officer shall have the right to purchase such Goods elsewhere without liability to the Seller. To the extent such purchases are made, the City shall be relieved of the obligation to purchase the Goods from the Seller and the Seller shall be relieved of the obligation to furnish such Goods to the City.

2.2 Application. Upon written application by the contractor, the Agency Chief Contracting Officer may grant an extension of time for performance of the contract. Said application must state, at a minimum, in detail, each cause for delay, the date the cause of the alleged delay occurred, and the total number of delay in days attributable to such cause. The ruling of the Agency Chief Contracting Officer shall be final and binding as to the allowance of an extension and the number of days allowed.

2.3 Non-Waiver. The delivery and acceptance of any Goods after the Time of Performance shall not be deemed a waiver of the right of the Agency Chief Contracting Officer to terminate this Contract or to require the delivery of any undelivered Goods in accordance with this Contract or any other remedy whether contractual or otherwise stated in law or in equity.

3. TERMS AND CONDITIONS OF PERFORMANCE

3.1 Competent Workers. The Seller shall employ only competent workers in the performance of this Contract. The Seller's performance of this Contract, or of any other work, shall not cause or result in a suspension of, delay in, or strike upon the work to be performed hereunder by any of the trades working hereon or on any other contracts with the City. If, in the opinion of the Agency Chief Contracting Officer, the Seller violates such obligation, the Agency Chief Contracting Officer, in his/her sole discretion and at his/her option, may either demand that any incompetent workers be replaced and not again employed in the performance of this Contract, which demand shall be complied with by the Seller, or may, upon notification to the Seller, consider the Seller in default.

3.2 Unsatisfactory Performance. If, in the opinion of the Agency Chief Contracting Officer, either the Seller's performance is unsatisfactory or is not being carried out with due diligence, the Seller shall immediately remedy such performance. Failure of the Seller to so conform will be deemed a material breach of this Contract.

3.3 Substitution of Goods. In the event a specified manufacturer's commodity listed in the Seller's bid document becomes unavailable or cannot be supplied to the City by the Seller for any reason (except as provided for in 2.1(b) above) a product deemed by the Agency Chief Contracting Officer to be the equal of the specified commodity must be substituted by the Seller at no additional cost or expense to the City.

3.4 Purchase Order Binding When Mailed. Unless terminated or cancelled by the Agency Chief Contracting Officer pursuant to the authority vested in him/her, purchase orders

shall be effective and binding upon the Seller when placed in the mail prior to the termination of the contract period, addressed to the Seller at the address shown on the award.

3.5 Termination or Suspension of Contract. Where the Agency Chief Contracting Officer deems it to be in the interest of the City, the Agency Chief Contracting Officer may terminate or suspend the performance of this Contract in whole or in part, for the convenience of the City.

4. DELIVERY

4.1 Notice to Seller to Deliver. No delivery shall become due or be acceptable without a written order or shipping instruction by the City, unless otherwise provided in this Contract. Such order or shipping instruction will contain the quantity, time of delivery and other pertinent data. However, on items urgently required, the Seller may be given telephone notice, to be confirmed by an order in writing. If an urgent delivery is required within a shorter period than the delivery time specified in this Contract and if the Seller is unable to comply therewith, the Agency Chief Contracting Officer reserves the right to obtain such delivery from others without penalty or prejudice to the City or to the Seller.

4.2 Delivery Time. Unless otherwise stipulated in this Contract, delivery shall be made between 9 a.m. and 4 p.m., Monday to Friday inclusive. However, on Goods required for daily consumption, or where the delivery is an emergency, a replacement, or is overdue, the convenience of the Agency and the City's inspector shall govern. If, in calculating the number of days from the order date, the delivery date falls on a Saturday, Sunday or holiday, delivery shall be made not later than the next succeeding business day.

4.3 Seller's Advice of Manufacture or Delivery. The Seller shall notify the Agency at least twenty-four (24) hours in advance of delivery.

5. INSPECTION

5.1 Right to Inspect. The City shall have the right to inspect the Goods at the point or points of delivery. The City reserves the right to make additional inspection(s) at the plant of the manufacturer, packer or Seller or its supplier(s). The exercise by the City of the right of inspection shall in no way be deemed a waiver by the City of any right later to reject, revoke acceptance, or recover damages for Goods accepted which are not in fact free from patent or latent defects, or of the Seller's obligation to deliver conforming Goods.

5.2 Removal of Non-Conforming Goods. The Seller shall remove any non-conforming Goods or part thereof at Seller's own expense within a reasonable time not to exceed

thirty (30) days after notification of any rejection or revocation of acceptance. The City shall have the right to dispose of rejected Goods left longer than thirty (30) days at no cost or liability to the City and the Seller shall have no right of action for damages or any right to an accounting therefor.

5.3 No Obligation to Minimize Seller's Damage. The City shall be under no obligation to sell or resell any rejected Goods, whether perishable or non-perishable or whether or not such Goods are threatened to or do depreciate in value, in order to minimize the Seller's damages.

5.4 Costs of Additional Inspections. The Seller shall bear the reasonable cost of all further inspections required by reason of any rejection or revocation of acceptance.

5.5 Risk of Loss. Title and risk of loss shall not pass from the Seller to the City until the Goods have been received by the ordering Agency and accepted by the City. Mere acknowledgment by Agency personnel of the delivery or receipt of goods (as in a signed bill of lading) shall not be deemed or construed as acceptance of the Goods received. The Seller bears the risk of loss of all Goods until inspected and accepted; if acceptance is revoked the Seller bears the risk of loss thereafter.

5.6 Right to Cure. Any right of the Seller to "cure," as defined in the New York Uniform Commercial Code, shall be employed by the Seller within a reasonable time. Such reasonable time as determined by the Agency Chief Contracting Officer shall be conclusive on the Seller.

6. NON-DELIVERY AND REJECTIONS

6.1 Rejected Goods. The City may withhold or revoke acceptance of or reject any Goods which are found, upon examination, not to conform to the terms of this Contract. With respect to food and drugs, no written notice of rejection need be given, whereas in all other instances such notice will be in writing.

6.2 Labels. All Goods which are customarily labeled or identified must have securely affixed thereto the original unmutilated label or marking of the manufacturer. Failure to comply with this requirement may be considered sufficient cause for rejection.

When a label or marking is required by any regulatory agency, it must be affixed to all Goods delivered under this Contract.

6.3 Health Regulations. Any food, drug or other Goods which are found to be unwholesome or otherwise unfit for human consumption or use, shall not be removed by the Seller until examined by the appropriate public authorities. If condemned, such Goods shall be disposed of by the Seller in accordance with the rules and regulations of the appropriate public authorities.

Should the Seller fail to make disposal within twenty-four (24) hours after appropriate orders to do so, the City may make such disposal and charge the Seller for the cost involved.

6.4 Liquidated Damages - Delayed or Defaulted Deliveries.

(a) It is not the intention of the City to assess liquidated damages unless they are specifically provided for in this Contract.

(b) Where the "Cover" provision of subsection 6.5 hereinbelow is invoked, the liquidated damages will be assessed as provided therein and will be calculated from the original delivery due date to the date delivery is due from the new Seller.

6.5 Cover (Buying Against Contract).

(a) If the Seller fails to perform in accordance with this Contract, the Agency Chief Contracting Officer may obtain such Goods or any part thereof from other sources with or without public letting, as s/he may deem advisable, and, with no obligation to Seller to mitigate damages. If the price paid in obtaining the goods from other sources is greater than this Contract's price, the difference, plus the reletting cost and the liquidated damages, if any, will be charged against the Seller. If such price is less, the Seller shall have no claim to the difference, but the reletting cost and the liquidated damages will become charges against the Seller.

(b) The reletting cost is hereby determined to be two hundred and fifty ($250) dollars.

6.6 Collection of Charges. All charges becoming due under the provisions of subsection 6.4 hereinabove "Liquidated Damages - Delayed or Defaulted Deliveries" and subsection 6.5 hereinabove "Cover" shall be deducted from current obligations that are due or may become due to the Seller. In the event that collection is not made as provided above, the Seller shall pay to the City on demand the amount of such charges.

7. PAYMENTS

7.1 Weights and Measures. All weights and measures called for shall be net and shall be determined at the point of delivery unless the Bid Book indicates otherwise.

7.2 Payments

(a) It is the policy of the City to process contract payments efficiently and

expeditiously to assure payment in a timely manner to firms and organizations who do business with the City.

(b) Payments will be made for the net number of conforming units accepted at the price bid per unit. Proper invoices, when submitted, will be payable within thirty (30) days after either receipt of invoice(s) or acceptance of the Goods, whichever date is later. When periodic deliveries are made during the month, such invoices will be payable within thirty (30) days after either the end of the month or the receipt of invoices or acceptance of the Goods, whichever date is latest.

(c) If public necessity requires the use of any Goods which are subsequently found not to comply with the specification requirements, and if no definite deductions are prescribed, the City will make such deductions as it shall determine to be reasonable.

(d) In any case where a question of non-performance of a contract arises, payment may be withheld in whole or in part at the discretion of the Agency Chief Contracting Officer. Should the amount withheld be finally paid, a cash discount for prompt payment originally offered may be taken by the City as if no delay in payment had occurred.

(e) Any claim by or on behalf of the City against the Seller may be deducted by the City from any money due the Seller. If no such deduction or only a partial deduction is made in such fashion the Seller shall pay to the City the amount of such claim or the portion of the claim still outstanding, on demand.

7.3 Prompt Payment

The Prompt Payment provisions set forth in Chapter 4, Section 4-06 of the Procurement Policy Board Rules in effect at the time of this solicitation will be applicable to payments made by New York City agencies only under this contract. The provisions require the payment to contractors of interest on payments made after the required payment date except as set forth in subdivisions c(3) and d(3), (4), (5) and (6) of Section 4-06 of the Rules.

The contractor must submit a proper invoice to receive payment, except where the contract provides that the contractor will be paid at predetermined intervals without having to submit an invoice for each scheduled payment.

Determinations of interest due will be made in accordance with the provisions of Section 4-06 of the Procurement Policy Board Rules and General Municipal Law §3-a.

Pursuant to the Prompt Payment provisions of the Procurement Policy Board Rules, the

Division may designate this contract and the items specified herein as subject to a longer acceptance period to afford a practicable opportunity for testing, installation and inspection. For purposes of vendor payment in such case, the actual date of acceptance by the Division's Bureau of Quality Assurance shall substitute for the Invoice Received/Acceptance Date (IRA Date).

8. FINAL PAYMENT-ESTOPPEL

8.1 Acceptance by Seller is Release. Except for the Seller's right to claim any sums retained by the City under the maintenance or guarantee provisions of this Contract, the acceptance by the Seller, or any person claiming under Seller, of the final payment, whether such payment be made pursuant to any order or judgment of any Court or otherwise, shall constitute and operate as a release to the City from all claims of and liability to the Seller, its representatives or assigns for anything theretofore done or furnished for or relating to or arising out of this Contract and the work done hereunder, and for any prior act, omission, neglect or default on the part of the City or any of its officers, agents or employees.

8.2 No Interest Allowed. No interest shall be allowed on the amount certified, or audited, by the City as the final payment or on any part thereof which the City is ready and willing to pay, except as provided in subsection 7.3 herein above.

8.3 City Not Estopped. Neither the City, nor any department, or officer or employee thereof, shall be precluded or estopped by any return or certificate made or given by any officer, inspector, employee, agent or appointee of the City, or under any provision of this Contract, from showing at any time, either before or after the complete performance and acceptance of the performance of this Contract and the last payment hereunder, the actual quantity and nature of the Goods delivered by the Seller, or any person under this Contract; or from showing at any time that any certificate upon which the payment is made for any or all of the Goods is untrue or incorrect, or improperly made in any particular, or that the Goods or any part thereof delivered by the Seller do not conform to this Contract. The City shall have the right to demand and recover from the Seller such damages as it may suffer by reason of Seller's failure to comply with this Contract notwithstanding any return or certificate and payment in accordance therewith, signed by any official of the City, and such right of the City shall include recovery for any payment made for any or all of the Goods delivered and accepted.

8.4 Statement of Claim. Seller, however, shall not be barred from commencing an action for breach of contract under this provision provided that a detailed and verified statement of claim is served upon the contracting agency and Comptroller not later than forty (40) days after the mailing of such final payment. The statement shall specify the items upon which the claim will be based and any such claim shall be limited to such items. Should the provisions of this subsection conflict with those of Section 12, the provisions of Section 12 shall control.

9. MODIFICATION

9.1 Waiver. Waiver by the Department of a breach of any provision of this Contract shall not be deemed to be a waiver of any other or subsequent breach and shall not be construed to be a modification of the terms of the Contract unless and until the same shall be agreed to in writing by the City as required and attached to the original Contract.

9.2 Contract Changes. Changes may be made to this contract only as duly authorized by the Agency Chief Contracting Officer or his or her designee. Vendors deviating from the requirements of an original purchase order or contract without a duly approved change order document, or written contract modification or amendment, do so at their own risk. All such changes, modifications and amendments will become a part of the original contract.

Contract changes will be made only for work necessary to complete the work included in the original scope of the contract, and for non-material changes to the scope of the contract. Changes are not permitted for any material alteration in the scope of work. Contract changes may include any contract revision deemed necessary by the Contracting Officer.

The contractor shall be entitled to a price adjustment for extra work performed pursuant to a written change order. If any part of the contract work is necessarily delayed by a change order, the contractor will be entitled to an extension of time for performance. Adjustments to price shall be computed in one or more of the following ways: (i) by agreement of a fixed price; (ii) by unit prices specified in the contract; (iii) by time and material record; and/or (iv) in any other manner approved by the City Chief Procurement Officer.

Where the cost of the change order has been negotiated in the absence of established cost history, the costs are subject to verification by post audit. If the post-audit reveals that the contractor's costs for the change order work were inaccurately stated during negotiations, the agency shall recoup the amount by which the costs were inaccurately stated by proportionately reducing the price of the change order. This remedy is not exclusive and in addition to all other rights and remedies of the City.

Except in the case of requirement contracts, any contract increases which cumulatively exceed the greater of 10% or $100,000 must be approved in writing by the City Chief Procurement Officer. Any contract amendment which either amends a unit price, cancels required units, or adds a new type of unit item to contract must be approved in writing by the Agency Chief Contracting Officer.

9.3 Price Adjustments for Type "C" Requirement Contracts. Where a requirement contract

contains price adjustment provisions, contract changes shall be made in accordance with those provisions. Where no price adjustment provisions are specified, the City may seek a price decrease where there is evidence that market pricing is lower than contract pricing. If a vendor does not agree to the price adjustment, in addition to any other remedy of the City under this contract, the City may terminate the contract with ninety (90) days' written notice.

9.4 Pricing.

A. The Contractor shall whenever requested by the Commissioner during the contract, including but not limited to the time of bidding, submit cost or pricing data and formally certify that, to the best of its knowledge and belief, the cost or pricing data submitted was accurate, complete, and current as of a specified date. The contractor shall be required to keep its submission of cost and pricing data current until the contract has been completed.

B. The price of any change order, or contract modification subject to the conditions of paragraph A, shall be adjusted to exclude any significant sums by which the City finds that such price was based on cost or price data furnished by the supplier which was inaccurate, incomplete, or not current as of the date agreed upon between the parties.

C. Time of Certification. The Contractor must certify that the cost or pricing data submitted are accurate, complete, and current as of a mutually determined date.

D. Refusal to Submit Data. When any Contractor refuses to submit the required data to support a price, the Contracting Officer shall not allow the price.

E. If the City finds that a price or cost reduction should be made, the Contractor agrees not to raise the following matters as a defense:

(a) The Contractor was a sole source supplier or otherwise in a superior bargaining position and thus the price of the Contract would not have been modified even if accurate, complete and current cost or pricing data had been submitted;

(b) The City should have known that the cost or pricing data in issue were defective even though the contractor took no affirmative action to bring the character of the data to the attention of the City;

(c) The Contract was based on an agreement about the total cost of the contract and there was no agreement about the cost of each item procured under the contract.

10. ASSIGNMENT

10.1 Written Consent Required. The Seller shall not assign, transfer, convey, sublet or in any other way dispose of this Contract or any part thereof, or assign any of the monies due or to become due under the Contract, without previous written consent of the Agency Chief Contracting Officer endorsed upon or attached to copies of this Contract. Any such assignment, transfer, conveyance or other disposition without such consent shall be void.

10.2 Contract Voidable. If the Seller shall, without the previous written consent of the Agency Chief Contracting Officer, assign, transfer, convey, sublet or otherwise dispose of this Contract to any person, firm or corporation, this Contract may be revoked and annulled and be held void at the sole discretion of the Agency Chief Contracting Officer, and the City shall thereupon be relieved and discharged from any and all liabilities and obligations to the Seller growing out of this Contract, and to its assignee or transferee; provided that nothing herein contained shall be construed to hinder, prevent, or affect an assignment by the Seller for the benefit of its creditors made pursuant to the statutes of the State of New York.

11. COMPLIANCE WITH LAWS AND INDEMNIFICATION

11.1 Compliance with Laws. The Seller shall comply with all local, State and Federal laws, and rules and regulations.

11.2 This Contract is subject to applicable provisions of Federal, State and Local Laws and Executive Orders requiring affirmative action and equal employment opportunity.

11.3 Safe Working Conditions. The Seller shall maintain safe working conditions during the performance of this Contract. Failure to maintain such conditions constitutes a breach of a material provision of this Contract.

11.4 Seller Indemnification. The Seller shall defend, indemnify and hold the City, its officers and employees harmless from any and all claims (even if the allegations of the lawsuit are without merit) or judgments for damages on account of any injuries or death to any person or damage to any property and from costs and expenses to which the City, its officers and employees may be subjected or which it may suffer or incur allegedly arising out of or in connection with any operations of the Seller and/or its subcontractors to the extent resulting from any negligent act of commission or omission, any intentional tortious act, or failure to comply with the provisions of this Contract or of the laws. Insofar as the facts or law relating to any claim would preclude the City from being completely indemnified by the Seller, the City shall be partially indemnified by the Seller to the fullest extent permitted by law.

12. PERIOD OF LIMITATION

No action shall lie or be maintained against the City upon any claim arising out of this Contract unless such action be commenced within one (1) year from acceptance of final payment, termination of contract or accrual of cause of action, whichever is earlier.

13. INFRINGEMENT - VENDOR WARRANTY

The Seller shall deliver the Goods specified free from the claim of any third party by way of infringement including but not limited to patent, copyright, trade secrets, or the like. The submission of a bid is deemed to be a warranty by the Seller that Seller has inspected the specifications and has determined that no claim of any third party by way of infringement or otherwise will result from compliance with the specifications. The Seller shall indemnify and hold the City harmless against any such claim regardless of whether or not the infringement arises out of compliance with the specifications. The City may retain any funds due or to become due to the Seller sufficient to meet all claims arising from such infringements. The sufficiency of such amount shall be conclusively determined by the Comptroller.

14. AUDIT BY THE DEPARTMENT, AGENCY AND CITY

14.1 Invoices Subject to Audit. All vouchers or invoices presented for payment to be made hereunder, and the books, records and accounts upon which said vouchers or invoices are based, are subject to audit by the Department, Agency and the Comptroller of the City of New York pursuant to the powers and responsibilities as conferred by the New York City Charter and Administrative Code of the City of New York, as well as all orders and regulations promulgated pursuant thereto.

14.2 Submission of Records. The Seller shall submit any and all documentation and justification in support of expenditures or fees under this Contract as may be required by the Department, Agency and the Comptroller so that they may evaluate the reasonableness of the charges and shall make its records available to the Department, Agency and the Comptroller as they consider necessary.

14.3 Final Payment. The Seller shall not be entitled to final payment under this Contract until all requirements have been satisfactorily met.

15. DEFAULT

Agency Chief Contracting Officer's Right to Declare Seller in Default. In addition to any other remedy provided to the City pursuant to this Contract, the Agency Chief Contracting Officer shall have the right to declare the Seller in default if Seller fails to provide the Goods in accordance with any provisions of
this Contract, including but not limited to the specifications, the delivery schedule, or

other conditions of performance.

16. REGISTRATION OF CONTRACTS

16.1 Office of Comptroller. With the exception of a requirement contract, this Contract shall not be binding or of any force unless it has been registered on the books of the Office of the Comptroller, indicating that there remains unexpended and unapplied a balance of the appropriation or fund applicable hereto sufficient to pay the estimated expense of performing this Contract.

16.2 Requirement Contract. All requirement contracts shall be registered with the Comptroller without an appropriation or identification of a fund applicable thereto.

17. COMMUNICATIONS

All communications addressed to the Seller and delivered at Seller's residence or place of business as given in Seller's bid, or deposited so addressed in a postpaid wrapper in any post office regularly maintained by the Post Office Department, shall be sufficient service thereof upon the Seller for the purposes of this Contract. The place so designated may be changed only by a writing executed and acknowledged by the Seller and delivered to the Agency Chief Contracting Officer. Personal service of communications upon the Seller shall not be precluded or rendered inoperative by any provision of this Contract.

18. INCREASE OR REDUCTION OF QUANTITIES

The City reserves the right, at any time prior to the award of a specific quantity contract, to alter in good faith the quantities listed in the bid documents with the approval of the lowest responsible bidder.

The unit prices shall not vary notwithstanding any increase or reduction in the quantities to be delivered hereunder, and no claims for damages shall be made by or allowed to the Seller by reason of such increase or reduction, except that when a trade discount bid is based on quantities or totals, prices will vary in accordance with the trade discounts bid herein, on which basis this Contract is awarded, or unless otherwise authorized by this Contract.

19. APPROVALS AND CERTIFICATIONS

19.1 Approvals. This Contract shall be neither binding nor effective unless:

(a) Approved by the Mayor pursuant to the provisions of Executive Order No. 42, dated October 9, 1975, in the event the Executive Order requires such approval;

(b) Certified by the Mayor (Mayor's Fiscal Committee created pursuant to Executive Order No. 43, dated October 14, 1975) that performance thereof will be in accordance with the City's financial plan, if required;

19.2 Approvals Not in Lieu of Other Requirements.

The requirements of this Section of this Contract shall be in addition to, and not in lieu of, any approval or authorization otherwise required for this Contract to be effective and for the expenditure of City Funds.

20. ANTITRUST

The Seller hereby assigns, sells, and transfers to the City all right, title and interest in and to any claims and causes of action arising under the antitrust laws of the State of New York or of the United States relating to the particular Goods or services purchased or procured by the City under this Contract.

21. SEVERABILITY AND HEADINGS

The clauses and provisions of this Contract are intended to be severable. The unconstitutionality or unconscionability of any term, clause or provision shall in no way defeat the effect of any other term, clause or provision. Section and other headings are inserted for convenience only and shall not be used in any way to construe the terms of this Contract.

22. CONFLICT OF LAWS

All disputes which involve this Contract shall be governed by the laws of the State of New York.

23. CHOICE OF LAW, CONSENT TO JURISDICTION AND VENUE

23.1 Law of New York State. This Contract shall be deemed to be executed in the City of New York, State of New York, regardless of the domicile of the Seller, and shall be governed by and construed in accordance with the laws of the State of New York.

23.2 Venue in City. The parties agree that any and all claims asserted by or against the City arising under this Contract or related thereto shall be heard and determined either in the courts of the United States located in New York City ("Federal Courts") or in the courts of the State of New York ("New York State Courts") located in the City and County of New York. To effect this agreement and intent, the Seller agrees:

(a) If the City initiates any action against the Seller in Federal Court or in New York State Court, service of process may be made on the Seller either in person, wherever the Seller may be found, or by registered mail addressed to the Seller

at its address as set forth in this Contract, or to such other address as the Seller may provide to the City in writing in accordance with this Contract.

(b) A summons in any action arising out of this Contract may issue from any Court of the State of New York having jurisdiction of the subject matter and service of the summons and complaint against the Seller, served as herein provided, shall be deemed personal service upon the Seller within the State of New York if a copy of each is sent by certified mail addressed to the Seller at the place stated in this Contract, or if such address has been changed pursuant to Section 18, to such changed address.

(c) Within thirty (30) days after the date of mailing, a copy of the summons and complaint shall be filed with the clerk of the Court in which the action is pending, along with the mailing receipt issued by the Post Office or the affidavit of any officer or employee of the City showing that the summons and complaint were mailed as herein provided. Service shall be complete ten (10) days after such papers are filed.

(d) With respect to any action between the City and the Seller in New York State Court, the Seller hereby expressly waives and relinquishes any rights it might otherwise have (i) to move to dismiss on grounds of forum non conveniens; (ii) to remove to Federal Court; and (iii) to move for a change of venue to a New York State Court outside New York County.

(e) With respect to any action between the City and the Seller in Federal Court located in New York City, the Seller expressly waives and relinquishes any right it might otherwise have to move to transfer the action to a United States Court outside the City of New York.

(f) If the Seller commences any action against the City in a court located other than in the City and State of New York, upon request of the City, the Seller shall either consent to a transfer of the action to a court of competent jurisdiction located in the City and State of New York or, if the court where the action is initially brought will not or cannot transfer the action, the Seller shall consent to dismiss such action without prejudice and may thereafter re-institute the action in a court of competent jurisdiction in New York City.

23.3 Unenforceable Provision. If any provision(s) of this Section is (are) held unenforceable for any reason, each and all other provision(s) shall nevertheless remain in full force and effect.

24. EMERGENCY

24.1 Suspension or Termination. Whenever, in the opinion of the Agency Chief Contracting

Officer, an emergency situation arises during the performance of this Contract, the Agency Chief Contracting Officer may either suspend or terminate this Contract in whole or in part without liability being incurred by either the City or the Seller.

24.2 Right to Purchase Goods. Pursuant to such decision by the Agency Chief Contracting Officer, where this Contract is terminated in whole or in part, the Agency Chief Contracting Officer may purchase such Goods the delivery of which has been cancelled (in replacement for those called for in this Contract).

25. VENDOR INTEGRITY

The Seller agrees that in the event the Seller or any of its principals or officers are indicted for or otherwise charged with any crime or become the subject of any anti-trust action related to the conduct of the business of the Seller or the award of or performance under any contract or agreement with a government entity or if any supervisory employee of the Seller is indicted based upon facts arising out of the award of or affecting performance under this Contract then the Agency Chief Contracting Officer, in his/her sole discretion, may terminate this Contract by notifying Seller, in writing. In the event of termination of this Contract, the Seller shall not be entitled to any damages or payments for Goods not delivered by date of termination.

26. VENDOR GUARANTEE

The Seller guarantees that the equipment offered is standard new equipment, current model of regular stock product with all parts regularly used with the type of equipment offered; also that no attachment or part has been substituted or applied contrary to the manufacturer's recommendations and standard practice. Every unit, including any substituted or replacement unit delivered, must be guaranteed against faulty material and workmanship for a period of one year from and after the date the unit is accepted unless otherwise specified. Notwithstanding the foregoing, when the manufacturer's standard guarantee for the unit or any component thereof exceeds one year, the longer guarantee period shall apply to such unit or component thereof delivered under the City's contract. Furthermore, the Seller agrees to extend its warranty period with regard to any unit delivered by the cumulative periods of time, after notification, during which the unit requires servicing or replacement (down time) or is in the possession of the Seller, its agents, officers or employees. If during the regular or extended warranty periods faults develop, the Seller shall promptly repair or upon demand, replace the defective unit or component part affected. All costs for labor and material and transportation incurred to repair or replace defective goods during the warranty periods shall be borne solely by the Seller, and the City shall in no event be liable or responsible therefor. In the event of failure on the part of the Seller to replace or put in first-class condition any such equipment within thirty (30) calendar days from date of notice the City may have the work done by others and offset the cost against money due, or that may become due to the Seller, or if there be no money due, the Seller agrees to pay the City such cost.

27. NO CLAIM AGAINST OFFICERS, AGENTS OR EMPLOYEES

No claim whatsoever shall be made by the Seller against any officer, agent or employee of the City for, or on account of, anything done or omitted in connection with this Contract.

28. FUND AVAILABILITY

All contracts awarded by the Agency Chief Contracting Officer shall be executory only to the extent of funds available to each Agency for the purchase of the Goods.

29. ENTIRE AGREEMENT

The written Contract contains all the terms and conditions agreed upon by the parties hereto, and no other agreement, oral or otherwise, regarding the subject matter of this Contract shall be deemed to exist or to bind any of the parties hereto, or to vary any of the terms contained herein.

30. PROVISIONS FOR COOPERATIVE PURCHASING ARRANGEMENTS AND FOR EXTENSION OF REQUIREMENT CONTRACTS FOR USAGE BY OTHER GOVERNMENT/QUASI-GOVERNMENTAL AGENCIES

All agencies of the City of New York, the Department of Education, Health and Hospitals Corporation, and the New York City Housing Authority, are entitled to use this contract. In addition, any governmental or quasi-governmental agency that has executed a cooperative purchasing Memorandum of Understanding with the City may utilize this contract with the consent of the vendor provided the agency pays any additional delivery charges outside the metropolitan area as agreed upon with the vendor. These agencies are called "participating agencies." Participating agencies and the contractor understand and acknowledge that the responsibility in regard to performance of any such contract or any condition or term thereunder by either such party thereto shall be borne and is expressly assumed by the participating agency and the contractor and not the agency letting this contract.

PART IV
SPECIAL CONDITIONS

1. NONDISCRIMINATION

1.1 Executive Order No. 50 (1980). This Contract is subject to the requirements of New York City Charter Chapter 56, §§ 1305 et seq. (“Chapter 56”), Executive Order No. 50 (1980) ("E.O. 50"), and the Rules and Regulations promulgated thereunder. No contract will be awarded unless and until these requirements have been complied with in their entirety. By signing this Contract, the Seller agrees that it:

(a) will not discriminate against any employee or applicant for employment because of race, creed, color, national origin, sex, age, disability, marital status, sexual orientation, affectional preference or citizenship status, with respect to all employment decisions including, but not limited to recruitment, hiring, upgrading, demotion, downgrading, transfer, training, rates of pay or other forms of compensation, layoff, termination, and all other terms and conditions of employment;

(b) will not discriminate in the selection of subcontractors on the basis of the owners', partners' or shareholders' race, color, creed, national origin, sex, age, disability, marital status, sexual orientation, affectional preference or citizenship status;

(c) will state in all solicitations or advertisements for employees placed by or on behalf of the Seller that all qualified applicants will receive consideration for employment without regard to race, creed, color, national origin, sex, age, disability, marital status, sexual orientation, affectional preference or citizenship status, or that it is an equal opportunity employer;

(d) will send to each labor organization or representative of workers with which it has a collective bargaining agreement or other contract or memorandum of understanding, written notification of its equal employment opportunity commitments under Chapter 56 and E.O. 50 and the rules and regulations promulgated thereunder; and

(e) will furnish before the contract is awarded all information and reports, including an Employment Report, which are required by Chapter 56, E.O. 50, the rules and regulations promulgated thereunder, and orders of the Director of the Division of Labor Services ("DLS"). Copies of all required reports are available upon request from the contracting agency; and

(f) will permit DLS to have access to all relevant books, records and accounts for the purposes of investigation to ascertain compliance with such rules, regulations, and orders.

(g) Seller understands that in the event of its noncompliance with the nondiscrimination clauses of this Contract or with any of such rules, regulations, or orders, such noncompliance shall constitute a material breach of this Contract and noncompliance with Chapter 56, E.O. 50 and the rules and regulations promulgated thereunder. After a hearing held pursuant to the rules of DLS, the Director may direct the imposition by the contracting agency head of any or all of the following sanctions:

(i) disapproval of the Seller;

(ii) suspension or termination of all or parts of this Contract and/or of payments therefor;

(iii) declaring the Seller in default; or

(iv) in lieu of any of the foregoing sanctions, the Director may impose an employment program.

(h) The Director of DLS may recommend to the contracting agency head that a seller who has repeatedly failed to comply with Chapter 56, E.O. 50 and the rules and regulations promulgated thereunder be declared nonresponsible.

(i) The Seller agrees to include the provisions of the foregoing paragraphs in every subcontract or purchase order in excess of $100,000 to which it becomes a party unless exempted by Chapter 56, E.O. 50 and the rules and regulations promulgated thereunder, so that such provisions will be binding upon each subcontractor or vendor. The Seller will take such action with respect to any subcontract or purchase order as may be directed by the Director of the Division of Labor Services as a means of enforcing such provisions including sanctions for noncompliance.

(j) The Seller further agrees that it will refrain from entering into any contract or contract modification subject to Chapter 56, E.O. 50 and the rules and regulations promulgated thereunder with a subcontractor who is not in compliance with the requirements of Chapter 56, E.O. 50 and the rules and regulations promulgated thereunder.

1.2 New York Labor Law Section 220-e:

(a) In the hiring of employees for the performance of work under this Contract or any subcontract hereunder, neither the Seller, subcontractor, nor any person acting on behalf of the Seller or subcontractor shall by reason of race, creed, color, disability, sex or national origin discriminate against any citizen of the State of New York who is qualified and available to perform the work to which the employment relates;

(b) Neither the Seller, subcontractor, nor any person acting on his behalf shall in any manner discriminate against or intimidate any employee hired for the performance of work under this Contract on account of race, creed, color, disability, sex or national origin;

(c) There may be deducted from the amount payable to the Seller by the City under this Contract a penalty of fifty (50) dollars for each person for each calendar day during which such person was discriminated against or intimidated in violation

of the provisions of this Contract; and

(d) This Contract may be cancelled or terminated by the City and all monies due or to become due hereunder may be forfeited for a second or any subsequent violation of the terms or conditions of this subsection of this Contract.

(e) The aforesaid provisions of this subsection covering every contract for or on behalf of the State or a municipality for the manufacture, sale or distribution of materials, equipment or supplies shall be limited to operations performed within the territorial limits of the State of New York.

1.3 New York City Administrative Code Section 6-108:

(a) It shall be unlawful for any person engaged in the construction, alteration or repair of buildings or engaged in the construction or repair of streets or highways pursuant to a contract with the City or engaged in the manufacture, sale or distribution of Goods pursuant to a contract with the City to refuse to employ or to refuse to continue in any employment any person on account of the race, color or creed of such person.

(b) It shall be unlawful for any person or any servant, agent or employee of any person described in subdivision (a) above to ask, indicate or transmit, orally or in writing, directly or indirectly, the race, color, creed or religious affiliation of any person employed or seeking employment from such person, firm or corporation.

(c) Disobedience of the foregoing provisions shall be deemed a violation of a material provision of this Contract.

(d) Any person, or employee, manager or owner of or officer of a firm or corporation who shall violate any of the provisions of this subsection shall, upon conviction thereof, be punished by a fine of not more than one hundred ($100) dollars or by imprisonment for not more than thirty (30) days, or both.

2. LABOR LAW REQUIREMENTS

2.1 Section 6-109 of the Administrative Code of The City of New York.

(a) Section 6-109(a).

(i) Except for those employees whose minimum wage is required to be fixed by Section 220 of the Labor Law of the State of New York, all persons employed by the Seller and any subcontractor in the manufacture or furnishing of supplies, materials or equipment, or the

furnishing of work, labor or services used in the performance of this Contract will be paid, without subsequent deduction or rebate unless expressly authorized by law, not less than the sum mandated by law.

(ii) No part of the work, labor or services will be performed or rendered by the Seller in any plants, factories, buildings or surroundings or under working conditions which are unsanitary or hazardous or dangerous to the health and safety of employees engaged in the performance of this Contract. Compliance with the safety, sanitary and factory inspection laws of the state in which the work is to be performed shall be prima facie evidence of compliance with this paragraph.

(iii) For any breach or violation of any of the representations and stipulations required in any Contract under the provisions of this subsection, the party responsible therefor shall be liable to the City for liquidated damages, which may be withheld from any amounts due on any such Contracts or may be recovered in suits brought by the Corporation Counsel in the name of the City, in addition to damages for any other breach of such Contract, a sum equal to the amount of any underpayment of wages due to any employee engaged in the performance of such Contract. In addition, the Department of Citywide Administrative Services or any other agency entering into such Contract shall have the right to cancel the Contract for any violation of this subsection and enter into other contracts for the completion of the original Contract, charging any additional cost to the original Seller. All sums withheld or recovered as deductions, rebates, refunds, or underpayments of wages in violation of the provisions of this subsection shall be held in a special deposit account and shall be paid without interest, on order of the Executive Director for Economic Development, directly to the employees who have been paid less than minimum rates of pay as set forth in such Contracts and on whose account such sums were withheld or recovered, provided that no claims by employees for such payments shall be entertained unless made within one year from the date of actual notice to the Seller of the withholding or recovery of such sums by the City.

(b) Section 6-109(b).

The provisions of subdivision (a) of section 6-109 shall not apply to contracts for the furnishing or purchase of agricultural or farm products processed for first sale by the original producers; nor shall subdivision (a) of section 6-109 apply to any work performed on any contract outside of the United States or its territories.

2.2 Worker's Compensation Laws

If this Contract be of such a character that the employees engaged thereon are required to be insured by the provisions of the New York Worker's Compensation Law, and acts amendatory thereto, the same shall be void and of no effect unless the Seller shall secure compensation for the benefit of, and keep insured during the life of this Contract such employees in compliance with the provisions of said law.

3. INVESTIGATIONS

3.1 The parties to this Contract agree to cooperate fully and faithfully with any investigation, audit or inquiry conducted by a State of New York (State) or City of New York (City) governmental agency or authority that is empowered directly or by designation to compel the attendance of witnesses and to examine witnesses under oath, or conducted by the Inspector General of a governmental agency that is a party in interest to the transaction, submitted bid, submitted proposal, contract, lease, permit, or license that is the subject of the investigation, audit or inquiry.

3.2 (a) If any person who has been advised that his or her statement, and any information from such statement, will not be used against him or her in any subsequent criminal proceeding refuses to testify before a grand jury or other governmental agency or authority empowered directly or by designation to compel the attendance of witnesses and to examine witnesses under oath concerning the award of or performance under any transaction, agreement, lease, permit, contract, or license entered into with the City, the State, or any political subdivision or public authority thereof, or the Port Authority of New York and New Jersey, or any local development corporation within the City, or any public benefit corporation organized under the laws of the State of New York, or;

(b) If any person refuses to testify for a reason other than the assertion of his or her privilege against self incrimination in an investigation, audit or inquiry conducted by a City or State governmental agency or authority empowered directly or by designation to compel the attendance of witnesses and to take testimony under oath, or by the Inspector General of the governmental agency that is a party in interest in, and is seeking testimony concerning the award of, or performance under, any transaction, agreement, lease, permit, contract, or license entered into with the City, the State, or any political subdivision thereof or any local development corporation within the City, then;

3.3 (a) The Agency Chief Contracting Officer or Agency Head whose agency is a party in interest to the transaction, submitted bid, submitted proposal, contract, lease, permit, or license shall convene a hearing, upon not less than five (5) days written notice to the parties involved to determine if any penalties should attach

for the failure of a person to testify.

(b) If any non-governmental party to the hearing requests an adjournment, the Agency Chief Contracting Officer or Agency Head who convened the hearing may, upon granting the adjournment, suspend any contract, lease, permit, or license pending the final determination pursuant to 3.5 below without the City incurring any penalty or damages for delay or otherwise.

3.4 The penalties which may attach after a final determination by the Agency Chief Contracting Officer or Agency Head may include but shall not exceed:

(a) The disqualification for a period not to exceed five (5) years from the date of an adverse determination for any person, or any entity of which such person was a member at the time the testimony was sought, from submitting bids for, or transacting business with, or entering into or obtaining any contract, lease, permit or license with or from the City; and/or

(b) The cancellation or termination of any and all such existing City contracts, leases, permits or licenses that the refusal to testify concerns and that have not been assigned as permitted under this agreement, nor the proceeds of which pledged, to an unaffiliated and unrelated institutional lender for fair value prior to the issuance of the notice scheduling the hearing, without the City incurring any penalty or damages in account of such cancellation or termination; monies lawfully due for Goods delivered, work done, rentals, or fees accrued prior to the cancellation or termination shall be paid by the City.

3.5 The Agency Chief Contracting Officer or Agency Head shall consider and address in reaching his/her determination and in assessing an appropriate penalty the factors in paragraphs 3.5(a) and 3.5(b) below. S/he may also consider, if relevant and appropriate, the criteria established in paragraphs 3.5(c) and 3.5(d) below in addition to any other information which may be relevant and appropriate:

(a) The party's good faith endeavors or lack thereof to cooperate fully and faithfully with any governmental investigation or audit, including but not limited to the discipline, discharge, or disassociation of any person failing to testify, the production of accurate and complete books and records, and the forthcoming testimony of all other members, agents, assignees or fiduciaries whose testimony is sought.

(b) The relationship of the person who refused to testify to any entity that is a party to the hearing, including, but not limited to, whether the person whose testimony is sought has an ownership interest in the entity and/or the degree of authority and responsibility the person has within the entity.

(c) The nexus of the testimony sought to the subject entity and its contracts, leases, permits or licenses with the City.

(d) The effect a penalty may have on an unaffiliated and unrelated party or entity that has a significant interest in an entity subject to penalties under 3.4 above, provided that the party or entity has given actual notice to the Agency Chief Contracting Officer or Agency Head upon the acquisition of the interest, or at the hearing called for in 3.3(a) above gives notice and proves that such interest was previously acquired. Under either circumstance the party or entity must present evidence at the hearing demonstrating the potential adverse impact a penalty will have on such person or entity.

3.6 Definitions for purposes of this section shall include the following:

(a) The term "license" or "permit" as used herein shall be defined as a license, permit, franchise or concession not granted as a matter of right.

(b) The term "person" as used herein shall be defined as any natural person doing business alone or associated with another person or entity as a partner, director, officer, principal or employee.

(c) The term "entity" as used herein shall be defined as any firm, partnership, corporation, association, or person that receives monies, benefits, licenses, leases, or permits from or through the City or otherwise transacts business with the City.

(d) The term "member" as used herein shall be defined as any person associated with another person or entity as a partner, director, officer, principal or employee.

3.7 In addition to and notwithstanding any other provision of this Contract the Agency Chief Contracting Officer or Agency Head may in his or her sole discretion terminate this Contract upon not less than three (3) days written notice in the event Seller fails to promptly report in writing to the Commissioner of Investigation of the City of New York any solicitation of money, goods, requests for future employment or other benefit or thing of value, by or on behalf of any employee of the City or other person, firm, corporation or entity for any purpose which may be related to the procurement or obtaining of this Contract by the contractor, or affecting the performance of this Contract.

4. TOXIC SUBSTANCES - MATERIAL SAFETY DATA SHEETS

Under the New York State Labor Law, Article 28 (the Right to Know Law), Section 876, any manufacturer, importer, producer or formulator of any substance sold for any use within the

state must provide, upon request, specific information on the health hazards and proper handling of such substances. The City of New York, in order to meet its responsibilities under the Law as an employer, requires that manufacturers and suppliers submit such information in the form of a Material Safety Data Sheet for any toxic substance or product containing a toxic substance for any item for which Seller submits a bid. Any questions regarding the toxicity of a substance or the requirements of a Material Data Sheet should be addressed to the New York State Bureau of Toxic Assessment.

5. PARTICIPATION IN AN INTERNATIONAL BOYCOTT

5.1 The Seller agrees that neither the Seller nor any affiliate is participating or shall participate in an international boycott in violation of the provisions of the Export Administration Act of 1979, as amended, or the regulations of the United States Department of Commerce promulgated thereunder.

5.2 Upon the final determination by the Commerce Department or any other agency of the United States as to, or conviction of the Seller or an affiliated company thereof, participation in an international boycott in violation of the provisions of the Export Administration Act of 1979, as amended, or the regulations promulgated thereunder, the Comptroller may, at his/her option, render forfeit and void this Contract.

5.3 The Seller shall comply in all respects, with the provisions of Section 6-114 of the Administrative Code of the City of New York and the rules and regulations issued by the Comptroller thereunder.

6. MACBRIDE PRINCIPLES PROVISIONS

ARTICLE I. MACBRIDE PRINCIPLES

NOTICE TO ALL PROSPECTIVE CONTRACTORS

Local Law No. 34 of 1991 became effective on September 10, 1991 and added section 6-115.1 to the Administrative Code of the City of New York. The local law provides for certain restrictions on City contracts to express the opposition of the people of the City of New York to employment discrimination practices in Northern Ireland and to encourage companies doing business in Northern Ireland to promote freedom of workplace opportunity.

Pursuant to Section 6-115.1, prospective contractors for contracts to provide goods or services involving an expenditure of an amount greater than ten thousand dollars, or for construction involving an amount greater than fifteen thousand dollars, are asked to sign a rider in which they convenant and represent, as a material condition of their contract, that any business in Northern Ireland operations conducted by the contractor and any individual or legal entity in which the contractor holds a ten percent or greater ownership interest and any individual or legal entity that holds a ten percent or greater ownership interest in the contractor will be conducted in accordance with the MacBride

Principles of nondiscrimination in employment.

Prospective contractors are not required to agree to these conditions. However, in the case of contracts let by competitive sealed bidding, whenever the lowest responsible bidder has not agreed to stipulate to the conditions set forth in this notice and another bidder who has agreed to stipulate to such conditions has submitted a bid within five percent of the lowest responsible bid for a contract to supply goods, services or construction of comparable quality, the contracting entity shall refer such bids to the Mayor, the Speaker or other officials, as appropriate, who may determine, in accordance with applicable law and rules, that it is in the best interest of the city that the contract be awarded to other than the lowest responsible bidder pursuant to Section 313(b)(2) of the City Charter.

In the case of contracts let by other than competitive sealed bidding, if a prospective contractor does not agree to these conditions, no agency, elected official or the Council shall award the contract to that bidder unless the entity seeking to use the goods, services or construction certifies in writing that the contract is necessary for the entity to perform its functions and there is no other responsible contractor who will supply goods, services or construction of comparable quality at a comparable price.

PART A

In accordance with section 6-115.1 of the Administrative Code of the City of New York, the contractor stipulates that such contractor and any individual or legal entity in which the contractor holds a ten percent or greater ownership interest and any individual or legal entity that holds a ten percent or greater ownership interest in the contractor either (a) have no business operations in Northern Ireland, or (b) shall take lawful steps in good faith to conduct any business operations they have in Northern Ireland in accordance with the MacBride Principles, and shall permit independent monitoring of their compliance with such principles.

PART B

For purposes of this section, the following terms shall have the following meanings:

1. "MacBride Principles" shall mean those principles relating to nondiscrimination in employment and freedom of workplace opportunity which require employers doing business in Northern Ireland to:

   (1) increase the representation of individuals from underrepresented religious groups in the work force, including managerial, supervisory, administrative, clerical and technical jobs;

   (2) take steps to promote adequate security for the protection of employees from underrepresented religious groups both at the workplace and while traveling to and from work;

(3) ban provocative religious or political emblems from the workplace;

(4) publicly advertise all job openings and make special recruitment efforts to attract applicants from underrepresented religious groups;

(5) establish layoff, recall and termination procedures which do not in practice favor a particular religious group;

(6) abolish all job reservations, apprenticeship restrictions and different employment criteria which discriminate on the basis of religion;

(7) develop training programs that will prepare substantial numbers of current employees from underrepresented religious groups for skilled jobs, including the expansion of existing programs and the creation of new programs to train, upgrade and improve the skills of workers from underrepresented religious groups;

(8) establish procedures to assess, identify and actively recruit employees from underrepresented religious groups with potential for further advancement; and

(9) appoint a senior management staff member to oversee affirmative action efforts and develop a timetable to ensure their full implementation.

ARTICLE II. ENFORCEMENT OF ARTICLE I.

The contractor agrees that the covenants and representations in Article I above are material conditions to this contract. In the event the contracting entity receives information that the contractor who made the stipulation required by this section is in violation thereof, the contracting entity shall review such information and give the contractor an opportunity to respond. If the contracting entity finds that a violation has occurred, the entity shall have the right to declare the contractor in default and/or terminate this contract for cause and procure the supplies, services or work from another source in any manner the entity deems proper. In the event of such termination, the contractor shall pay to the entity, or the entity in its sole discretion may withhold from any amounts otherwise payable to the contractor, the difference between the contract price for the uncompleted portion of this contract and the cost to the contracting entity of completing performance of this contract either itself or by engaging another contractor or contractors. In the case of a requirement contract, the contractor shall be liable for such difference in price for the entire amount of supplies required by the contracting entity for the uncompleted term of its contract. In the case of a construction contract, the contracting entity shall also have the right to hold the contractor in partial or total default in accordance with the default provisions of this contract, and/or may seek debarment or suspension of the contractor. The rights and remedies of the entity hereunder shall be in addition to, and not in lieu of, any rights and remedies the entity has pursuant to this contract or by operation of law.

7. RESOLUTION OF DISPUTES

7.1 Except as provided in 7.1(a) and 7.1(b) below, all disputes between the City and the vendor that arise under, or by virtue of, this contract shall be finally resolved in accordance with the provisions of this section and Section 4-09 of the Rules of the Procurement Policy Board ("PPB Rules"). This procedure shall be the exclusive means of resolving any such disputes.

(a) This section shall not apply to disputes concerning matters dealt with in other sections of the PPB Rules or to disputes involving patents, copyrights, trademarks, or trade secrets (as interpreted by the courts of New York State) relating to proprietary rights in computer software.

(b) For construction and construction-related services this section shall apply only to disputes about the scope of work delineated by the contract, the interpretation of contract documents, the amount to be paid for extra work or disputed work performed in connection with the contract, the conformity of the vendor's work to the contract, and the acceptability and quality of the vendor's work; such disputes arise when the Engineer, Resident Engineer, Engineering Audit Officer, or other designee of the Commissioner makes a determination with which the vendor disagrees.

7.2 All determinations required by this section shall be clearly stated, with a reasoned explanation for the determination based on the information and evidence presented to the party making the determination. Failure to make such determination within the time required by this section shall be deemed a non-determination without prejudice that will allow application to the next level.

7.3 During such time as any dispute is being presented, heard, and considered pursuant to this section, the contract terms shall remain in full force and effect and the vendor shall continue to perform work in accordance with the contract and as directed by the Agency Chief Contracting Officer ("ACCO") or Engineer, Resident Engineer, Engineering Audit Officer, or other designee of the Commissioner. Failure of the vendor to continue the work as directed shall constitute a waiver by the vendor of any and all claims being presented pursuant to this section and a material breach of contract.

7.4 Presentation of Dispute to Agency Head.

(a) Notice of Dispute and Agency Response. The vendor shall present its dispute in writing ("Notice of Dispute") to the Agency Head within the time specified herein, or, if no time is specified, within thirty (30) days of receiving written notice of the determination or action that is the subject of the dispute. This notice requirement shall not be read to replace any other notice requirements contained in the contract. The Notice of Dispute shall include all the facts,

evidence, documents, or other basis upon which the vendor relies in support of its position, as well as a detailed computation demonstrating how any amount of money claimed by the vendor in the dispute was arrived at. Within thirty (30) days after receipt of the complete Notice of Dispute, the ACCO or, in the case of construction or construction-related services, the Engineer, Resident Engineer, Engineering Audit Officer, or other designee of the Commissioner, shall submit to the Agency Head all materials he or she deems pertinent to the dispute. Following initial submissions to the Agency Head, either party may demand of the other the production of any document or other material the demanding party believes may be relevant to the dispute. The requested party shall produce all relevant materials that are not otherwise protected by a legal privilege recognized by the courts of New York State. Any question of relevancy shall be determined by the Agency Head whose decision shall be final. Willful failure of the vendor to produce any requested material whose relevancy the vendor has not disputed, or whose relevancy has been affirmatively determined, shall constitute a waiver by the vendor of its claim.

(b) Agency Head Inquiry. The Agency Head shall examine the material and may, in his or her discretion, convene an informal conference with the vendor and the ACCO and, in the case of construction or construction-related services, the Engineer, Resident Engineer, Engineering Audit Officer, or other designee of the Commissioner, to resolve the issue by mutual consent prior to reaching a determination. The Agency Head may seek such technical or other expertise as he or she shall deem appropriate, including the use of neutral mediators, and require any such additional material from either or both parties as he or she deems fit. The Agency Head's ability to render, and the effect of, a decision hereunder shall not be impaired by any negotiations in connection with the dispute presented, whether or not the Agency Head participated therein. The Agency Head may or, at the request of any party to the dispute, shall compel the participation of any other vendor with a contract related to the work of this contract and that vendor shall be bound by the decision of the Agency Head. Any vendor thus brought into the dispute resolution proceeding shall have the same rights and obligations under this section as the vendor initiating the dispute.

(c) Agency Head Determination. Within thirty (30) days after the receipt of all materials and information, or such longer time as may be agreed to by the parties, the Agency Head shall make his or her determination and shall deliver or send a copy of such determination to the vendor and ACCO and, in the case of construction or construction-related services, the Engineer, Resident Engineer, Engineering Audit Officer, or other designee of the Commissioner, together with a statement concerning how the decision may be appealed.

(d) Finality of Agency Head Decision. The Agency Head's decision shall be final and binding on all parties, unless presented to the Contract Dispute Resolution Board ("CDRB") pursuant to this section. The City may not take a petition to the CDRB. However, should the vendor take such a petition, the City may seek, and the CDRB may render, a determination less favorable to the vendor and more favorable to the City than the decision of the Agency Head.

7.5 Presentation of Dispute to the Comptroller. Before any dispute may be brought by the vendor to the CDRB, the vendor must first present its claim to the Comptroller for his or her review, investigation, and possible adjustment.

(a) Time, Form, and Content of Notice. Within thirty (30) days of receipt of a decision by the Agency Head, the vendor shall submit to the Comptroller and to the Agency Head a Notice of Claim regarding its dispute with the agency The Notice of Claim shall consist of (i) a brief statement of the substance of the dispute, the amount of money, if any, claimed and the reason(s) the vendor contends the dispute was wrongly decided by the Agency Head, (ii) a copy of the decision of the Agency Head, and (iii) a copy of all materials submitted by the vendor to the agency, including the Notice of Dispute. The vendor may not present to the Comptroller any material not presented to the Agency Head, except at the request of the Comptroller.

(b) Agency Response. Within thirty (30) days of receipt of the Notice of Claim, the agency shall make available to the Comptroller a copy of all material submitted by the agency to the Agency Head in connection with the dispute. The agency may not present to the Comptroller any material not presented to the Agency Head, except at the request of the Comptroller.

(c) Comptroller Investigation. The Comptroller may investigate the claim in dispute and, in the course of such investigation, may exercise all powers provided in sections 7-201 and 7-203 of the New York City Administrative Code. In addition, the Comptroller may demand of either party, and such party shall provide, whatever additional material the Comptroller deems pertinent to the claim, including original business records of the vendor. Willful failure of the vendor to produce within fifteen (15) days any material requested by the Comptroller shall constitute a waiver by the vendor of its claim. The Comptroller may also schedule an informal conference to be attended by the supplier, agency representatives, and any other personnel desired by the Comptroller.

(d) Opportunity of Comptroller to Compromise or Adjust Claim. The Comptroller shall have forty-five (45) days from his or her receipt of all materials referred to in 7.5(c) to investigate the disputed claim. The period for investigation and compromise may be further extended by agreement between the vendor and the

Comptroller, to a maximum of ninety (90) days from the Comptroller's receipt of all the materials. The vendor may not present its petition to the CDRB until the period for investigation and compromise delineated in this paragraph has expired. In compromising or adjusting any claim hereunder, the Comptroller may not revise or disregard the terms of the contract between the parties.

7.6 Contract Dispute Resolution Board. There shall be a Contract Dispute Resolution Board composed of:

(a) the chief administrative law judge of the Office of Administrative Trials and Hearings ("OATH") or his/her designated OATH administrative law judge, who shall act as chairperson, and may adopt operational procedures and issue such orders consistent with this section as may be necessary in the execution of the CDRB's functions, including, but not limited to, granting extensions of time to present or respond to submissions;

(b) the City Chief Procurement Officer ("CCPO") or his/her designee; any designee shall have the requisite background to consider and resolve the merits of the dispute and shall not have participated personally and substantially in the particular matter that is the subject of the dispute or report to anyone who so participated , and

(c) a person with appropriate expertise who is not an employee of the City. This person shall be selected by the presiding administrative law judge from a prequalified panel of individuals, established and administered by OATH, with appropriate background to act as decision-makers in a dispute. Such individuals may not have a contract or dispute with the City or be an officer or employee of any company or organization that does, or regularly represent persons, companies, or organizations having disputes with the City.

7.7 Petition to CDRB. In the event the claim has not been settled or adjusted by the Comptroller within the period provided in this section, the vendor, within thirty (30) days thereafter, may petition the CDRB to review the Agency Head determination.

(a) Form and Content of Petition by Vendor. The vendor shall present its dispute to the CDRB in the form of a Petition, which shall include (i) a brief statement of the substance of the dispute, the amount of money, if any, claimed, and the reason(s) the vendor contends that the dispute was wrongly decided by the Agency Head; (ii) a copy of the decision of the Agency Head; (iii) copies of all materials submitted by the vendor to the agency; (iv) a copy of the decision of the Comptroller, if any, and (v) copies of all correspondence with, and material submitted by the vendor to, the Comptroller's Office. The vendor shall concurrently submit four complete sets of the Petition: one to the Corporation Counsel (Attn: Commercial and Real Estate Litigation Division), and three to

the CDRB at OATH's offices, with proof of service on the Corporation Counsel. In addition, the vendor shall submit a copy of the statement of the substance of the dispute, cited in (i) above, to both the Agency Head and the Comptroller.

(b) Agency Response. Within thirty (30) days of receipt of the Petition by the Corporation Counsel, the agency shall respond to the statement of the vendor and make available to the CDRB all material it submitted to the Agency Head and Comptroller. Three complete copies of the agency response shall be submitted to the CDRB at OATH's offices and one to the vendor. Extensions of time for submittal of the agency response shall be given as necessary upon a showing of good cause or, upon the consent of the parties, for an initial period of up to thirty (30) days.

(c) Further Proceedings. The Board shall permit the vendor to present its case by submission of memoranda, briefs, and oral argument. The Board shall also permit the agency to present its case in response to the vendor by submission of memoranda, briefs, and oral argument. If requested by the Corporation Counsel, the Comptroller shall provide reasonable assistance in the preparation of the agency's case. Neither the vendor nor the agency may support its case with any documentation or other material that was not considered by the Comptroller, unless requested by the CDRB. The CDRB, in its discretion, may seek such technical or other expert advice as it shall deem appropriate and may seek, on it own or upon application of a party, any such additional material from any party as it deems fit. The CDRB, in its discretion, may combine more than one dispute between the parties for concurrent resolution.

(d) CDRB Determination. Within forty-five (45) days of the conclusion of all submissions and oral arguments, the CDRB shall render a decision resolving the dispute. In an unusually complex case, the CDRB may render its decision in a longer period of time, not to exceed ninety (90) days, and shall so advise the parties at the commencement of this period. The CDRB's decision must be consistent with the terms of the contract. Decisions of the CDRB shall only resolve matters before the CDRB and shall not have precedential effect with respect to matters not before the CDRB.

(e) Notification of CDRB Decision. The CDRB shall send a copy of its decision to the vendor, the ACCO, the Corporation Counsel, the Comptroller, the CCPO, the Office of Construction, the PPB, and, in the case of construction or construction-related services, the Engineer, Resident Engineer, Engineering Audit Officer, or other designee of the Commissioner. A decision in favor of the vendor shall be subject to the prompt payment provisions of the PPB Rules. The Required Payment Date shall be thirty (30) days after the date the parties are formally notified of the CDRB's decision.

(f) Finality of CDRB Decision. The CDRB's decision shall be final and binding on all parties. Any party may seek review of the CDRB's decision solely in the form of a challenge, filed within four months of the date of the CDRB's decision, in a court of competent jurisdiction of the State of New York, County of New York pursuant to Article 78 of the Civil Practice Law and Rules. Such review by the court shall be limited to the question of whether or not the CDRB's decision was made in violation of lawful procedure, was affected by an error of law, or was arbitrary and capricious or an abuse of discretion. No evidence or information shall be introduced or relied upon in such proceeding that was not presented to the CDRB in accordance with Section 4-09 of the PPB Rules.

7.8 Any termination, cancellation, or alleged breach of the contract prior to or during the pendency of any proceedings pursuant to this section shall not affect or impair the ability of the Agency Head or CDRB to make a binding and final decision pursuant to this section.

8. VENDEX QUESTIONNAIRES

Pursuant to Administrative Code §6-116.2 and Section 2-08(e) of the Rules of the Procurement Policy Board (9 RCNY §2-08), bidders may be obligated to submit completed VENDEX questionnaires. Generally, if this bid is $100,000 or more, or if this bid when added to the sum total of all contracts, concessions and franchises the bidder has received from the City and any subcontracts received from City contractors over the past twelve months, equals or exceeds $100,000, VENDEX questionnaires must be completed and submitted by those bidders selected for award and reviewed by the Department of Investigation prior to award. Any questions concerning this requirement must be submitted to the Agency Chief Contracting Officer or the contact person for this contract.

Failure to submit the required VENDEX questionnaires may result in a finding of non-responsiveness which would preclude a bidder from being awarded this contract.

Pursuant to Section 2-08(e)(8) of the Rules of the Procurement Policy Board, whenever the City Chief Procurement Officer has permitted the filing of some or all of the required information within thirty (30) days after the registration of the contract, the submission of the required information within the required time period is a material term and condition of the contract and the City may terminate the contract without penalty to the City in the event of violation of the condition. The Mayor or his/her designee may determine on the basis of the belatedly filed information that it is in the best interest of the City to terminate the contract. The Comptroller or his/her designee may determine that the belatedly filed information reveals matters which if provided earlier would have provided a basis for an objection to registration of the contract by the Comptroller, and the Mayor or his/her designee may determine that he/she would have agreed with such determination and may terminate the contract. Notwithstanding any provision of this Agreement to the contrary, if the City terminates this Agreement pursuant

to the provisions, the City shall have no obligation to pay to the Seller any amounts representing lost or anticipated profits, and shall retain any other rights it has in law or contract to recover monies paid to the Seller prior to termination of this Agreement.

Pursuant to Section 2-08(e)(9) of the Rules of the Procurement Policy Board, whenever a late filing of required VENDEX information, i.e., within thirty (30) days after the registration of the contract, is permitted and the vendor fails to submit the required information within the required time period, that fact shall be communicated to the City Chief Procurement Officer and the Comptroller and shall be included in the VENDEX data base. Until the information has been filed with the City Chief Procurement Officer:

(i) No further contract shall be awarded to that vendor;

(ii) The vendor shall be ineligible to bid or propose or otherwise be awarded a further contract; and

(iii) No payments shall be made to the vendor for performance on that contract unless authorized in writing by the City Chief Procurement Officer.

9. INSTALLATIONS

9.1 Labor Law. The Seller specifically agrees, as required by Labor Law Sections 220 and 220-d, as amended, that with respect to public work contracts:

(a) No laborer, workman, or mechanic, in the employ of the contractor, subcontractor or other person doing or contracting to do the whole or any part of the work contemplated by the contract shall be permitted or required to work more than eight hours in any one calendar day or more than five days in one week, except in the emergencies set forth in the Labor Law.

(b) The wages paid for a legal day's work shall be not less than the prevailing rate of wages as defined by law.

(c) The minimum hourly rate of wage to be paid shall not be less than that stated in the specifications, and any redetermination of the prevailing rate of wages after the contract is approved shall be deemed to be incorporated herein by reference as of the effective date of redetermination and shall form a part of these contract documents.

(d) The Labor Law provides that the contract may be forfeited and no sum paid for any work done thereunder on a second conviction for willfully paying less than:

(1) The stipulated wage scale as provided in Labor Law, Section 220, subdivision 3, as amended, or

(2) Less than the stipulated minimum hourly wage scale as provided in Labor Law, Section 220-d, as amended.

9.2 Seller's Obligations.

(a) Bidders shall acquaint themselves with conditions to be found at the site and shall assume all responsibility for placing and installing the equipment in the required locations.

(b) Where the Invitation For Bids involves performance of services on City facilities, all bidders are urged and expected to inspect the site where services are to be performed and to satisfy themselves as to all general and local conditions that may affect the cost of performance of the Contract. In no event will a failure to inspect a site constitute grounds for withdrawal of a bid after opening or for a claim after award of the Contract.

(c) All materials used in the installation shall be of good quality and shall be free from any and all defects which would mar the appearance of the equipment or render it structurally unsound.

(d) The Seller shall protect the site from damage for all its work and shall repair damages or injury of any kind caused by the Seller, its employees, officers or agents.

(e) Work shall be performed so as to cause the least inconvenience to the City, and its Agencies and with proper consideration for the rights of other contractors or workers. The Seller shall promptly perform its work and shall coordinate its activities with those of other contractors.

(f) Installation shall include the furnishing of any equipment, rigging and materials required to install or replace the contract item in the proper location. If any alteration, dismantling or excavation, or the like is required to effect installation, the Seller shall thereafter promptly restore the structure or site to its original condition.

(g) Materials, equipment or supplies shall be stored at the site only with the approval of the using Agency and at the Seller's sole risk. In general, such on-site storage should be avoided to prevent possible damage to or loss of the material.

(h) The Seller shall clean up and remove all debris and rubbish from its work as required or directed. Upon completion of the work the premises shall be left in a neat unobstructed condition, the buildings broom clean, and everything in satisfactory repair and order.

10. LAW INSERTED

It is the intent and understanding of the parties to this Contract that each and every provision of law required to be inserted in this Contract shall be and is inserted herein. Furthermore, it is hereby stipulated that every such provision is deemed to be inserted herein, and if, through mistake or otherwise, any provision is not inserted herein or is not inserted in correct form, then this Contract shall forthwith, upon the application of either party, be amended by such insertion so as to comply strictly with the law and without prejudice to the rights of either party.

11. BREACH OF CONTRACT

Any breach or violation of any of the subdivisions of this Part IV entitled "Special Conditions" shall be deemed a breach or violation of a material provision of this Contract.

12. PROHIBITION ON PURCHASE OR USE OF TROPICAL HARDWOODS

Tropical hardwoods, as defined in Section 165-b of the State Finance Law shall not be utilized in the performance of this contract except as expressly permitted by the foregoing provisions of law.

PART V
AFFIRMATIONS

THE SELLER AFFIRMS AND DECLARES THAT:

1. NO OTHER PERSON INTERESTED.

The Seller is of lawful age and is the only one interested in this bid and that no other person, firm or corporation has any interest in this bid or in the Contract.

2. CERTIFICATIONS

By submission of its bid, each Seller and each person signing on behalf of any Seller certifies, and in the case of a joint bid each party thereto certifies as to its own organization, under penalty of perjury, that to the best of its knowledge and belief:

2.1 No Collusion. The prices in this 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;

2.2 Prices Not Disclosed. Unless otherwise required by law, the prices which have been

quoted in this bid have not been knowingly disclosed by the Seller and will not knowingly be disclosed by the Seller prior to opening, directly or indirectly, to any other bidder or to any competitor;

2.3 No Attempt to Restrict Competition. No attempt has been made or will be made by the Seller to induce any other person, partnership or corporation to submit or not to submit a bid for the purpose of restricting competition.

3. NO INTEREST BY CITY OFFICER OR EMPLOYEE.

No member of the Council, or other officer or employee or person whose salary is payable in whole or in part from the City Treasury is directly or indirectly interested in this bid or in the Goods for which this bid is submitted or in the performance of this Contract, or in any portion of the profits thereof.

4. COMPLIANCE WITH SECTION 6-109 OF ADMINISTRATIVE CODE

The Seller, as an individual, or as a member, partner, director or officer of the Bidder, if the same be a firm, partnership or corporation, executes this document expressly warranting and representing that the Seller is not disqualified under the provisions of Section 6-109 of the Administrative Code for the award of this Contract and that should this bid be accepted by the City and this Contract awarded to it, it and its subcontractors engaged in the performance of this Contract: (i) will comply with the provisions of Section 6-109 of the Administrative Code of the City of New York in relation to minimum wages; and (ii) have complied with the provisions of said Section 6-109 and said rules and regulations since their respective effective dates insofar as applicable to the Seller and to its subcontractors.

4.1 If there has been a breach or violation of the aforesaid Section 6-109 or of the aforesaid rules and regulations, the Seller must state the time, place and circumstances of such breach or violation on the bid form submitted.

4.2 In the event of breach or violation of any of the foregoing, the Seller may be subject to damages, liquidated or otherwise, and cancellation of this Contract in whole or in part.

5. NON-DISCRIMINATION

The Seller, as an individual, or as a member, partner, director or officer of the bidder, if the same be a firm, partnership or corporation, executes this document expressly warranting and representing that should this bid be accepted by the City and this Contract awarded to it, it and its subcontractors engaged in the performance thereof (i) will comply with the provisions of Section 6-108 of the Administrative Code of the City of New York and the nondiscrimination provisions of Section 220-e of the New York State Labor Law; (ii) have complied with the provisions of the aforesaid laws since their respective effective dates; and (iii) will post notices to be furnished by the City, setting forth the requirements of the aforesaid laws in prominent

and conspicuous places in each and every plant, factory, building and structure where employees engaged in the performance of this Contract can readily view it, and will continue to keep such notices posted until the supplies, materials and equipment, or work, labor and services required to be furnished or rendered by the Seller have been finally accepted by the City.

6. NO PAYMENT OR GIFT

The Seller, if an individual bidder, or if the bidder be a firm, partnership or corporation, by executing this document as a member, partner, director or officer and on behalf of such firm, partnership or corporation, represents and warrants that no payment, gift or thing of value has been made, given or promised to obtain this or any other Contract between the parties. The Seller makes such representations and warranties to induce the City to enter into this Contract and the City relies upon such representations and warranties in the execution hereof. For breach or violation of such representations or warranties, the Agency Chief Contracting Officer shall have the right to annul this Contract without liability, entitling the City to recover all monies paid hereunder and the Seller shall not make claims for, or be entitled to recover, any sum or sums due under this Contract. This remedy, if effected, shall not constitute the sole remedy afforded the City for the falsity or breach, nor shall it constitute a waiver of the City's right to claim damages or refuse payment or to take any other action provided for by law or pursuant to this Contract.

New York City Mayoral Executive Order No. 39 Rider

City Fleet and Truck Safety Requirements for City Contractors

[Instruction to Agencies: Please attach this Rider to the following agreements: (1) Procurement Contracts that meet the criteria set forth in Executive Order 39 of February 1, 2024; and (2) to the March 2017 version of the New York City Standard Construction Contract.]

Section 1.01 Background

This rider is included in the Agreement and made a part thereof pursuant to the provisions of Mayoral Executive Order 39 of 2024.

Section 1.02 Definitions

A. Capitalized terms not otherwise defined in this rider shall have the meaning ascribed to them in the Agreement.

B. Agreement: The agreement between the City and the Contractor, to which this rider has been added and made a part.

C. City-contracted Vehicle means a Truck (as hereinafter defined) or any other motor vehicle that the Contractor anticipates providing in accordance with this Agreement or using in performing its obligations under this Agreement on a weekly or more frequent basis, including those anticipated to be provided or used by subcontractors under subcontracts having an estimated value of $2,000,000 or more.

D. Contracting Agency: the City agency or office through which the City of New York has entered into this Agreement.

E. Contractor: the entity providing services under this Agreement.

F. Executive Order: Mayoral Executive Order 39 of 2024, as it may be amended.

G. High Vision Truck: A Truck with a cab-over or cab-forward design wherein the driver sits in front of the front axle and opposed to conventional cab design wherein the engine and front axle are in front of the driver. The distance from the forward of the center of the vehicle bumper at which the driver can see the top of a 3-foot cone shall not exceed eight feet and the distance beyond the exterior of the passenger side door at which the driver can first see the top of the 4-foot cone shall not exceed six feet.

H. Registration: Registration of this Agreement pursuant to Section 328 of the New York City Charter.

I. Telematics: Automatic vehicle location systems that track vehicle location and speed and alert the driver and another designated person(s) to such location and speed in real time.

J. Truck: A City-contracted Vehicle with a manufacturer's gross vehicle weight rating exceeding 10,000 pounds. The term does not include off-road construction vehicles.

K. Truck Surround Cameras: A system of cameras, sensors, and alerts placed on a Truck that provides a Truck operator with a full view of all four sides of the Truck.

L. Vehicle Safety Plan: A plan with regard to City-contracted Vehicles, approved by the Contracting Agency, that includes the components listed in Section 2.03(A) through (F) of this rider.

Section 2.01 Vehicle Requirements

All City-contracted Vehicles shall conform to the following requirements:

A. Truck Surround Cameras: All Trucks, other than High Vision Trucks, shall be outfitted with truck surround cameras in accordance with the following schedule:
   a. Contracts involving 10 or fewer Trucks: No later than 12 months from Registration.
   b. Contracts involving more than 10 Trucks: No later than 18 months from Registration.
   c. New or replacement Truck acquired after work under this Agreement has begun: Truck must be outfitted with Truck Surround Cameras within 12 months from the date of first using of the Truck.
   d. Contractor must submit to the Contracting Agency photographic and purchase order evidence, that is satisfactory to the Contracting Agency, of compliance with this Paragraph (A).

B. Truck Side-guards: Contractor shall provide side-guards for City-contracted Vehicles as applicable pursuant to Section 6-141 of the New York City Administrative Code.

C. Telematics: All City-contracted Vehicles must be installed with Telematics. Data gathered by Telematics must be made available in a manner that is satisfactory to the Contracting Agency.

Section 2.02 Safety Requirements

Contractor shall provide the following:

A. Licensing: Contractors shall ensure proper licensing for all drivers who operate City-contracted Vehicles. Contractors shall ensure that all drivers operating City-contracted Vehicles are enrolled in the New York State License Notification System (LENS) and that all out-of-state licenses are being monitored by Contractor. Contractor must notify the Contracting Agency of any license suspensions and/or arrests tied to unsafe or illegal vehicle operation by any drivers of City-contracted Vehicles.

B. Training: Contractor must provide the Contracting Agency documentation, satisfactory to the Contracting Agency, showing:
    a. That all drivers of City-contracted Vehicles have taken a New York State approved defensive driving class within six months after Registration; or
    b. That all drivers of City-contracted Vehicles have attended a New York State-approved defensive driving class within 3 years prior to Registration; or
    c. That all drivers of City-contracted Vehicles have received alternative safe driver training acceptable to the Contracting Agency that is documented to the satisfaction of the Contracting agency.

C. Crash tracking: Contractors must notify the Contracting Agency of any and all collisions that take place involving City-contracted Vehicles while performing services under this Agreement.

Section 2.03 Vehicle Safety Plan

Within one month after Registration, the Contractor must submit, for review and approval, to Contracting Agency, at the address set forth in the Agreement for notices to the City, and DCAS Fleet (C/O Chief Fleet Management Officer, 23rd Floor South, Municipal Building, 1 Centre Street, NY, NY 10007) a proposed vehicle safety plan that shall include at the minimum the components listed in Paragraphs (A) through (E) below. If directed by the Contracting Agency, Contractor shall revise said proposed vehicle safety plan in accordance with the directions of the Contracting Agency, and until the Contracting Agency issues its approval thereof, Contractor shall submit a revised proposed vehicle safety plan to the Contracting Agency in each case, within 15 days after receipt by Contractor of directions to that effect from the Contracting Agency. Upon approval of the proposed vehicle safety plan, said proposed plan shall be considered the Vehicle Safety Plan and Contractor shall comply with the terms thereof. Each second anniversary of the approval of the Vehicle Safety Plan the Contractor shall submit an update thereof. The Vehicle Safety Plan shall include at the minimum the following components:

A. Vehicle List: List of City-contracted Vehicles, including the year, make, model, VIN and license plate number of each City-contracted Vehicle;

B. Safety Training: Documentation showing that all drivers of City-contracted Vehicles have completed the training detailed in section 2.02(B) of this Rider;

C. Technology: A list of all relevant technology investments installed on City-contracted vehicles, including but not limited to the technology listed in section 2.01 of this Rider;

D. Crash Tracking: An explanation of Contractor's process of monitoring and reviewing collisions including plans to notify Contracting Agency of collisions that take place while performing services under this Agreement; and

E. Corrective Action: A corrective action program for drivers of City-contracted Vehicles that engage in unsafe or dangerous driving behaviors and license monitoring.

F. Additional Safety Measures: Contractor must indicate if there are any additional safety technologies, safety practices, training, or other procedures that are utilized for City-contracted vehicles during the term of this Agreement.

Section 3.01 Liquidated Damages

A. Contractor acknowledges that its failure to comply with the provisions of this Vehicle Safety Plan will cause loss and damage to the City, the precise extent of which is difficult to ascertain in monetary terms. For this reason, the parties desire to provide fair and reasonable compensation to the City for such losses, which compensation shall not be construed as a penalty. It is therefore agreed that, in addition to any other liquidated damages that the Contractor shall be required to pay to the City in accordance with the provisions of the Agreement, Contractor shall pay to the City the following:
    a. The sum of $500.00 for each instance of a failure by the Contractor to submit a Vehicle Safety Plan in accordance with the provisions of Section 2.03.
    b. The sum of $500.00 for each instance of a failure by the Contractor to comply with the provisions of Section 2.02(A) [Licensing].
    c. The sum of $500.00 for each instance of a failure by the Contractor to comply with the provisions of Section 2.02(B) [Training].
    d. The sum of $500.00 for each instance of a failure by the Contractor to comply with the provisions of Section 2.02(C) [Crash Tracking].
    e. The sum of $500.00 for each instance of a failure by the Contractor to comply with the provisions of Section 2.01(C) [Telematics].

f. The sum of $3,000 for each instance of a failure by the Contractor to comply with the provisions of Section 2.01(A).
g. The Contracting Agency will provide at least 5 working days of notice to the Contractor and opportunity to rectify before implementing these liquidated damages.

B. Liquidated damages received pursuant to this Agreement are not intended to be nor shall they be treated as either a partial or full waiver or discharge of the City's right to indemnification, or the Contractor's obligation to indemnify the City, or to any other remedy provided for in this Agreement or by Law. The City may deduct and retain out of the monies which may become due under this Agreement, the amount of any such liquidated damages; and in case the amount which may become due hereunder shall be less than the amount of liquidated damages suffered by the City, the Contractor shall be liable to pay the difference.

New York City Mayoral Executive Order No. 39 Rider

City Fleet and Truck Safety Requirements for City Contractors

Version: 11/19/24

[Instruction to Agencies: Please attach this Rider to the following agreements: (1) Procurement Contracts that meet the criteria set forth in Executive Order 39 of February 1, 2024; and (2) to the March 2017 version of the New York City Standard Construction Contract.]

Section 1.01 Background

This rider is included in the Agreement and made a part thereof pursuant to the provisions of Mayoral Executive Order 39 of 2024.

Section 1.02 Definitions

A. Capitalized terms not otherwise defined in this rider shall have the meaning ascribed to them in the Agreement.

B. Agreement: The agreement between the City and the Contractor, to which this rider has been added and made a part.

C. City-contracted Vehicle means a Truck (as hereinafter defined) or any other motor vehicle that the Contractor anticipates providing in accordance with this Agreement or using in performing its obligations under this Agreement on a weekly or more frequent basis[1]. This includes those vehicles anticipated to be provided or used by subcontractors to fulfill the scope of a subcontract for work to be performed under a contract that is subject to the Executive Order, regardless of monetary value of the subcontract, if the vehicle is utilized on a weekly or more frequent basis.

D. Contracting Agency: the City agency or office through which the City of New York has entered into this Agreement.

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[1] The following vehicles are not considered City-contracted vehicles and are thus not subject to Executive Order 39: any motor vehicle or truck that is utilized pursuant to (1) contracts registered prior to July 1, 2024, including the renewal, extension, or modification of such contracts; (2) an agency on-call emergency contract; (3) an emergency procurement made pursuant to section 3-06 of title 9 of the Rules of the City of New York or pursuant to an executive order of the Mayor or Governor issued under section 24 or section 29-A of the New York State Executive Law; (4) intergovernmental contracts; (5) government-to-government contracts between the City and any State or Federal government agency; and (6) a contract for utilities, as identified in subdivision (b) of section 825 of the New York City Charter.

E. Contractor: the entity providing services under this Agreement.

F. Executive Order: Mayoral Executive Order 39 of 2024, as it may be amended.

G. High Vision Truck: A Truck with a cab-over or cab-forward design wherein the driver sits in front of the front axle as opposed to conventional cab design wherein the engine and front axle are in front of the driver. The distance from the forward of the center of the vehicle bumper at which the driver can see the top of a 3-foot cone shall not exceed eight feet and the distance beyond the exterior of the passenger side door at which the driver can first see the top of the 4-foot cone shall not exceed six feet.

H. Registration: Registration of this Agreement pursuant to Section 328 of the New York City Charter.

I. Telematics: Automatic vehicle location systems that track vehicle location and speed and alert the driver and another designated person(s) to such location and speed in real time.

J. Truck: A City-contracted Vehicle with a manufacturer's gross vehicle weight rating exceeding 10,000 pounds. The term does not include off-road construction vehicles.

K. Truck Surround Cameras: A system of cameras, sensors, and alerts placed on a Truck that provides a Truck operator with a full view of all four sides of the Truck.

L. Vehicle Safety Plan: A plan with regard to City-contracted Vehicles, approved by the Contracting Agency, that includes the components listed in Section 2.03(A) through (F) of this rider.

Section 2.01 Vehicle Requirements

All City-contracted Vehicles shall conform to the following requirements:

A. Truck Surround Cameras: All Trucks, other than High Vision Trucks, shall be outfitted with truck surround cameras in accordance with the following schedule:
   a. Contracts involving 10 or fewer Trucks: No later than 12 months from Registration.
   b. Contracts involving more than 10 Trucks: No later than 18 months from Registration.
   c. New or replacement Truck acquired after work under this Agreement has begun: Truck must be outfitted with Truck Surround Cameras within 12 months from the date of first using such Truck.
   d. Contractor must submit to the Contracting Agency photographic and purchase order evidence, that is satisfactory to the Contracting Agency, of compliance with this Paragraph (A).

B. Truck Side-guards: Contractor shall provide side-guards for City-contracted Vehicles as applicable pursuant to Section 6-141 of the New York City Administrative Code.

C. Telematics: All City-contracted Vehicles must be installed with Telematics. Data gathered by Telematics must be made available in a manner that is satisfactory to the Contracting Agency.

Section 2.02 Safety Requirements

Contractor shall provide the following:

A. Licensing: Contractors shall ensure proper licensing for all drivers who operate City-contracted Vehicles. Contractors shall ensure that all drivers operating City-contracted Vehicles are enrolled in the New York State License Notification System (LENS) and that all out-of-state licenses are being monitored by Contractor. Contractor must notify the Contracting Agency of any license suspensions and/or arrests tied to unsafe or illegal vehicle operation by any drivers of City-contracted Vehicles.

B. Training: Contractor must provide the Contracting Agency documentation, satisfactory to the Contracting Agency, showing:
    a. That all drivers of City-contracted Vehicles have taken a New York State approved defensive driving class within six months after Registration; or
    b. That all drivers of City-contracted Vehicles have attended a New York State-approved defensive driving class within 3 years prior to Registration; or
    c. That all drivers of City-contracted Vehicles have received alternative safe driver training acceptable to the Contracting Agency that is documented to the satisfaction of the Contracting agency.

C. Crash tracking: Contractors must notify the Contracting Agency of any and all collisions that take place involving City-contracted Vehicles while performing services under this Agreement.

Section 2.03 Vehicle Safety Plan

Within one month after Registration, the Contractor must submit, for review and approval, to Contracting Agency, at the address set forth in the Agreement for notices to the City, and DCAS Fleet (C/O Chief Fleet Management Officer, 23rd Floor South, Municipal Building, 1 Centre Street, NY, NY 10007) a proposed vehicle safety plan that shall include at the minimum the components listed in Paragraphs (A) through (E) below. If directed by the Contracting Agency,

Contractor shall revise said proposed vehicle safety plan in accordance with the directions of the Contracting Agency, and until the Contracting Agency issues its approval thereof, Contractor shall submit a revised proposed vehicle safety plan to the Contracting Agency in each case, within 15 days after receipt by Contractor of directions to that effect from the Contracting Agency. Upon approval of the proposed vehicle safety plan, said proposed plan shall be considered the Vehicle Safety Plan and Contractor shall comply with the terms thereof. Each second anniversary of the approval of the Vehicle Safety Plan the Contractor shall submit an update thereof. The Vehicle Safety Plan shall include at the minimum the following components:

A. Vehicle List: List of City-contracted Vehicles, including the year, make, model, VIN and license plate number of each City-contracted Vehicle;

B. Safety Training: Documentation showing that all drivers of City-contracted Vehicles have completed the training detailed in section 2.02(B) of this Rider;

C. Technology: A list of all relevant technology investments installed on City-contracted vehicles, including but not limited to the technology listed in section 2.01 of this Rider;

D. Crash Tracking: An explanation of Contractor's process of monitoring and reviewing collisions including plans to notify Contracting Agency of collisions that take place while performing services under this Agreement;

E. Corrective Action: A corrective action program for drivers of City-contracted Vehicles that engage in unsafe or dangerous driving behaviors and license monitoring; and

F. Additional Safety Measures: Contractor must indicate if there are any additional safety technologies, safety practices, training, or other procedures that are utilized for City-contracted Vehicles during the term of this Agreement.

Section 3.01 Liquidated Damages

A. Contractor acknowledges that its failure to comply with the provisions of this Vehicle Safety Plan will cause loss and damage to the City, the precise extent of which is difficult to ascertain in monetary terms. For this reason, the parties desire to provide fair and reasonable compensation to the City for such losses, which compensation shall not be construed as a penalty. It is therefore agreed that, in addition to any other liquidated damages that the Contractor shall be required to pay to the City in accordance with the provisions of the Agreement, Contractor shall pay to the City the following:
    a. The sum of $500.00 for each instance of a failure by the Contractor to submit a Vehicle Safety Plan in accordance with the provisions of Section 2.03.

b. The sum of $500.00 for each instance of a failure by the Contractor to comply with the provisions of Section 2.02(A) [Licensing].
c. The sum of $500.00 for each instance of a failure by the Contractor to comply with the provisions of Section 2.02(B) [Training].
d. The sum of $500.00 for each instance of a failure by the Contractor to comply with the provisions of Section 2.02(C) [Crash Tracking].
e. The sum of $500.00 for each instance of a failure by the Contractor to comply with the provisions of Section 2.01(C) [Telematics].
f. The sum of $3,000 for each instance of a failure by the Contractor to comply with the provisions of Section 2.01(A).
g. The Contracting Agency will provide at least 5 working days of notice to the Contractor and opportunity to rectify before implementing these liquidated damages.

B. Liquidated damages received pursuant to this Agreement are not intended to be nor shall they be treated as either a partial or full waiver or discharge of the City's right to indemnification, or the Contractor's obligation to indemnify the City, or to any other remedy provided for in this Agreement or by Law. The City may deduct and retain out of the monies which may become due under this Agreement, the amount of any such liquidated damages; and in case the amount which may become due hereunder shall be less than the amount of liquidated damages suffered by the City, the Contractor shall be liable to pay the difference.

TELEMATICS AND Intelligent Speed Assistance (ISA)

DCAS utilizes telematics for live tracking, tied to OBD2 port or other data port, on all on-road fleet units except at NYPD which employs a separate system.

Effective 2026, DCAS will implement active intelligent Speed Assistance (ISA) on all fleet vehicles except lights and sirens emergency vehicles and storm emergency vehicles, such as DSNY plow trucks.

At DCAS instruction, the vendor will install these units into new vehicles prior to BQA quality control sign-off of the vehicles. The vendor will install the technology currently utilized by DCAS.
As of May 2026, DCAS utilizes Geotab for telematics devices through an AT&T contract and Mag Tec for intelligent speed assistance (ISA). The Geotab and Mactec devices have a partial integration. DCAS will notify vehicle suppliers of any change to this technology or suppliers.

The specifications and requirements of the telematics and the telematics/ISA will be provided to vendors when eligible orders are made. DCAS will instruct the vendor as to which vehicle orders these requirements will apply to. These requirements will not apply to all vehicles. DCAS will provide the vehicle suppliers with approved vendors for install of this technology. DCAS must pre-approve the costs that will be charged to install this technology, which DCAS already procures through separate contracts. Testing and verification of system connectivity and functioning will be coordinated by DCAS in conjunction with the approved telematics/ISA vendor.

INSURANCE RIDER FOR AGREEMENTS USING THE CITYWIDE PURCHASE CONTRACT

The following terms ("Rider") supplement those of the Citywide Purchase Contract. Defined terms shall take the same meaning as indicated in the Citywide Purchase Contract.

Section 1 Agreement to Insure

The Bidder shall maintain the following types of insurance if and as indicated in Schedule A (with the minimum limits and special conditions specified in Schedule A) throughout the term of this Contract, including any applicable guaranty period. All insurance shall meet the requirements set forth in this Rider. Wherever this Rider requires that insurance coverage be "at least as broad" as a specified form (including all ISO forms), there is no obligation that the form itself be used, provided that the Bidder can demonstrate that the alternative form or endorsement contained in its policy provides coverage at least as broad as the specified form.

Section 2 Workers' Compensation, Disability Benefits, and Employers' Liability Insurance

A. The Bidder shall maintain workers' compensation insurance, employers' liability insurance, and disability benefits insurance, in accordance with Law on behalf of, or in regard to, all employees providing services under this Contract

B. Within 10 Days of award of this Contract or as otherwise specified by the Department, and as required by N.Y. Workers' Compensation Law §§ 57 and 220(8), the Bidder shall submit proof of Bidder's workers' compensation insurance and disability benefits insurance (or proof of a legal exemption) to the Department in a form acceptable to the New York State Workers' Compensation Board. ACORD forms are not acceptable proof of such insurance. The following forms are acceptable:

1. Form C-105.2, *Certificate of Workers' Compensation Insurance*;

2. Form U-26.3, *State Insurance Fund Certificate of Workers' Compensation Insurance*;

3. Form SI-12, *Certificate of Workers' Compensation Self-Insurance*;

4. Form GSI-105.2, *Certificate of Participation in Worker's Compensation Group Self-Insurance*;

5. Form DB-120.1, *Certificate of Disability Benefits Insurance*;

6. Form DB-155, *Certificate of Disability Benefits Self-Insurance*;

7. Form CE-200 – *Affidavit of Exemption*;

8. Other forms approved by the New York State Workers' Compensation Board; or

9. Other proof of insurance in a form acceptable to the City.

Section 3 Other Insurance

A. *Commercial General Liability Insurance.* The Bidder shall maintain commercial general liability insurance in the amounts specified in Schedule A covering operations under this Contract. Coverage must be at least as broad as the coverage provided by the most recently issued ISO Form CG 00 01, primary and non-contributory, and "occurrence" based rather than "claims-made." Such coverage shall list the City, together with its officials and employees, and any other entity that may be listed on Schedule A as an additional insured with coverage at least as broad as the most recently issued ISO Form CG 20 10 or CG 20 26 and, if construction is performed as part of the Contract, ISO Form CG 20 37.

B. *Commercial Automobile Liability Insurance.* If indicated in Schedule A and/or if vehicles are used in the provision of services under this Contract, the Bidder shall maintain commercial automobile liability insurance for liability arising out of ownership, maintenance or use of any owned, non-owned, or hired vehicles to be used in connection with this Contract. Coverage shall be at least as broad as the most recently issued ISO Form CA 00 01. If vehicles are used for transporting hazardous materials, the commercial automobile liability insurance shall be endorsed to provide pollution liability broadened coverage for covered vehicles (endorsement CA 99 48) as well as proof of MCS-90.

C. Professional Liability Insurance.

1. If indicated in Schedule A, the Bidder shall maintain and submit evidence of professional liability insurance or errors and omissions insurance appropriate to the type(s) of such services to be provided under this Contract. The policy or policies shall cover the liability assumed by the Bidder under this Contract arising out of the negligent performance of professional services or caused by an error, omission, or negligent act of the Bidder or anyone employed by the Bidder.

2. All subcontractors of the Bidder providing professional services under this Contract for which professional liability insurance or errors and omissions insurance is reasonably commercially available shall also maintain such insurance in the amount specified in Schedule A. At the time of the request for subcontractor approval, the Bidder shall provide to the Department, evidence of such professional liability insurance on a form acceptable to the Department.

3. Claims-made policies will be accepted for professional liability insurance. All such policies shall have an extended reporting period option or automatic coverage of not less than two years. If available as an option, the Bidder shall purchase extended

reporting period coverage effective on cancellation or termination of such insurance unless a new policy is secured with a retroactive date, including at least the last policy year.

D. *Crime Insurance.* If indicated in Schedule A, the Bidder shall maintain crime insurance during the term of the Contract in the minimum amounts listed in Schedule A. Such insurance shall include coverage, without limitation, for any and all acts of employee theft including employee theft of client property, forgery or alteration, inside the premises (theft of money and securities), inside the premises (robbery or safe burglary of other property), outside the premises, computer fraud, funds transfer fraud, and money orders and counterfeit money. The policy shall name the Bidder as named insured and shall list the City as loss payee as its interests may appear.

E. *Cyber Liability Insurance.* If indicated in Schedule A, the Bidder shall maintain cyber liability insurance covering losses arising from operations under this Contract in the amounts listed in Schedule A. The City shall approve the policy (including exclusions therein), coverage amounts, deductibles or self-insured retentions, and premiums, as well as the types of losses covered, which may include but not be limited to: notification costs, security monitoring costs, losses resulting from identity theft, and other injury to third parties. If additional insured status is commercially available under the Bidder's cyber liability insurance, the insurance shall cover the City, together with its respective officials and employees, as additional insured.

F. *Other Insurance.* The Bidder shall provide such other types of insurance in the amounts specified in Schedule A.

Section 4 General Requirements for Insurance Coverage and Policies

A. Unless otherwise stated, all insurance required by this Rider must:

1. be provided by companies that may lawfully issue such policies;

2. have an A.M. Best rating of at least A- / VII, a Standard & Poor's rating of at least A, a Moody's Investors Service rating of at least A3, a Fitch Ratings rating of at least A- or a similar rating by any other nationally recognized statistical rating organization acceptable to the New York City Law Department unless prior written approval is obtained from the New York City Law Department; and

3. be primary (and non-contributing) to any insurance or self-insurance maintained by the City (not applicable to professional liability insurance/errors and omissions insurance) and any other entity listed as an additional insured in Schedule A.

B. The Bidder shall be solely responsible for the payment of all premiums for all required insurance policies and all deductibles or self-insured retentions to which such policies are subject, whether or not the City is an insured under the policy.

C. There shall be no self-insurance program, including a self-insurance retention, exceeding $10,000.00, with regard to any insurance required under Section 3 of this Rider unless approved in writing by the Commissioner. Any such self-insurance program shall provide the City and any other additional insured listed on Schedule A with all rights that would be provided by traditional insurance required under this Rider, including but not limited to the defense obligations that insurers are required to undertake in liability policies.

D. The limits of coverage for all types of insurance for the City, including its officials and employees, and any other additional insured listed on Schedule A that must be provided to such additional insured(s) shall be the greater of (i) the minimum limits set forth in Schedule A or (ii) the limits provided to the Bidder as named insured under all primary, excess, and umbrella policies of that type of coverage.

Section 5 Proof of Insurance

A. For each policy required under this Rider, the Bidder shall file proof of insurance and, where applicable, proof that the City, including its officials and employees, is an additional insured with the Department within ten Days of award of this Contract. The following proof is acceptable:

1. A certificate of insurance accompanied by a completed certification of insurance broker or agent (included in Schedule A of this Rider) and any endorsements by which the City, including its officials and employees, have been made an additional insured; or

2. A copy of the insurance policy, including declarations and endorsements, certified by an authorized representative of the issuing insurance carrier.

B. Proof of insurance confirming renewals of insurance required under Section 3 must be submitted to the Department prior to the expiration date of the coverage. Such proof must meet the requirements of Section 5(A).

C. The Bidder shall provide the City with a copy of any policy required under this Rider upon the demand for such policy by the Commissioner or the New York City Law Department.

D. Acceptance by the Commissioner of a certificate or a policy does not excuse the Bidder from maintaining policies consistent with all provisions of this Rider (and ensuring that subcontractors maintain such policies) or from any liability arising from its failure to do so.

E. If the Bidder receives notice, from an insurance company or other person, that any insurance policy required under this Rider shall expire or be cancelled or terminated for any reason, the Bidder shall immediately forward a copy of such notice to both the address referred to in Schedule A and to the New York City Comptroller, Attn: Office of Contract

Administration, Municipal Building, One Centre Street, Room 1005, New York, New York 10007.

Section 6 Miscellaneous

A. Whenever notice of loss, damage, occurrence, accident, claim, or suit is required under a policy required by this Rider, the Bidder shall provide the insurer with timely notice thereof on behalf of the City. Such notice shall be given even where the Bidder may not be covered under such policy if this Contract requires that the City be an additional insured (for example, where one of Bidder's employees was injured). Such notice shall expressly specify that "this notice is being given on behalf of the City of New York, including its officials and employees, as additional insured" (such notice shall also include the name of any other entity listed as an additional insured on Schedule A) and contain the following information to the extent known: the number of the insurance policy; the name of the named insured; the date and location of the damage, occurrence, or accident; the identity of the persons or things injured, damaged, or lost; and the title of the claim or suit, if applicable. The Bidder shall simultaneously send a copy of such notice to the City of New York c/o Insurance Claims Specialist, Affirmative Litigation Division, New York City Law Department, 100 Church Street, New York, New York 10007. If the Bidder fails to comply with the requirements of this paragraph, the Bidder shall indemnify the City, together with its officials and employees, and any other entity listed as an additional insured on Schedule A for all losses, judgments, settlements and expenses, including reasonable attorneys' fees, arising from an insurer's disclaimer of coverage citing late notice by or on behalf of the City together with its officials and employees, and any other entity listed as an additional insured on Schedule A.

B. The Bidder's failure to maintain any of the insurance required by this Rider shall constitute a material breach of this Contract. Such breach shall not be waived or otherwise excused by any action or inaction by the City at any time.

C. Insurance coverage in the minimum amounts required in this Rider shall not relieve the Bidder or its subcontractors of any liability under this Contract, nor shall it preclude the City from exercising any rights or taking such other actions as are available to it under any other provisions of this Contract or Law.

D. With respect to insurance required by Section 3 and Schedule A (but not including professional liability/errors and omissions insurance), the Bidder waives all rights against the City, including its officials and employees, and any other entity listed as an additional insured on Schedule A for any damages or losses that are covered under any insurance required under this Rider (whether or not such insurance is actually procured or claims are paid thereunder) or any other insurance applicable to the operations of the Bidder and/or its subcontractors in the performance of this Contract.

If Bidder uses any subcontractors who will make or participate in any delivery under this Contract, Bidder shall require that those subcontractors obtain insurance meeting the

requirements of this Rider. In the event the Bidder requires any subcontractor to maintain insurance with regard to any operations under this Contract and requires such subcontractor to list the Bidder as an additional insured under such insurance, the Bidder shall ensure that such entity also list the City, including its officials and employees, and any other entity listed as an additional insured on Schedule A as an additional insured. With respect to commercial general liability insurance, such coverage must be at least as broad as the most recently issued ISO form CG 20 26.

SCHEDULE A

Types of Insurance (per Rider in its entirety, including listed paragraph)	Minimum Limits and Special Conditions
■ Workers' Compensation § 2 ■ Disability Benefits Insurance § 2 ■ Employers' Liability § 2	Statutory amounts.
■ Commercial General Liability § 3(A)	$1,000,000.00 per occurrence $1,000,000.00 personal & advertising injury (unless waived in writing by the Department) $2,000,000.00 aggregate $2,000,000 products/completed operations Additional Insureds: 1. City of New York, including its officials and employees, and 2. _____ 3. _____
■ Commercial Auto Liability § 3(B)	$1,000,000.00 per accident combined single limit If vehicles are used for transporting hazardous materials, the Contractor shall provide pollution liability broadened coverage for covered vehicles (endorsement CA 99 48) as well as proof of MCS 90
☐ Professional Liability/Errors & Omissions § 3(C)	$1,000,000.00 per claim

☐ Crime Insurance § 3(D)	$_____Employee Theft/Dishonesty $_____Computer Fraud $_____Funds Transfer Fraud $_____Client Coverage $_____Forgery or Alteration $_____Inside the Premises (theft of money and securities) $_____Inside the Premises (robbery or safe burglary of other property) $_____Outside the Premises $_____ Money Orders and Counterfeit Money City of New York is a loss payee as its interests may appear
☐ CyberLiability Insurance §3(E)	*[If there is a significant cyber risk, please consult with the Law Department about specific insurance requirements.]*
☐ [OTHER]	*[If other type(s) of insurance need to be required under the Contract, the Contracting Agency should (a) check the box and fill in the type of insurance in left-hand column, and (b) in this right-hand column, specify appropriate limit(s) and appropriate Named Insured and Additional Insured(s).]*
☐ [OTHER]	*[If other type(s) of insurance need to be required under the Contract, the Contracting Agency should (a) check the box and fill in the type of insurance in left-hand column, and (b) in this right-hand column, specify appropriate limit(s) and appropriate Named Insured and Additional Insured(s).]*
Notice	
Department's Mailing Address and Email Address for Notices	

Bidder's Mailing Address and Email Address for Notices	

CERTIFICATES OF INSURANCE

Instructions to New York City Agencies, Departments, and Offices

All certificates of insurance (except certificates of insurance solely evidencing Workers' Compensation Insurance, Employer's Liability Insurance, and/or Disability Benefits Insurance) must be accompanied by one of the following:

(1) the Certification by Insurance Broker or Agent on the following page setting forth the required information and signatures;

-- OR --

(2) copies of all policies as certified by an authorized representative of the issuing insurance carrier that are referenced in such certificate of insurance. If any policy is not available at the time of submission, certified binders may be submitted until such time as the policy is available, at which time a certified copy of the policy shall be submitted.

CITY OF NEW YORK
CERTIFICATION BY INSURANCE BROKER OR AGENT

The undersigned insurance broker or agent represents to the City of New York that the attached Certificate of Insurance is accurate in all material respects.

_____
[Name of broker or agent (typewritten)]

_____
[Address of broker or agent (typewritten)]

_____
[Email address of broker or agent (typewritten)]

_____
[Phone number/Fax number of broker or agent (typewritten)]

_____
[Signature of authorized official, broker, or agent]

_____
[Name and title of authorized official, broker, or agent (typewritten)]

State of .....)
) ss.:
County of .....)

Sworn to before me this_____day of_____20___

_____
NOTARY PUBLIC FOR THE STATE OF _____