GOVERNMENT OF THE DISTRICT OF COLUMBIA

STANDARD CONTRACT PROVISIONS

FOR USE WITH

DISTRICT OF COLUMBIA GOVERNMENT
SUPPLIES AND SERVICES CONTRACTS

March 2007

OFFICE OF CONTRACTING AND PROCUREMENT
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STANDARD CONTRACT PROVISIONS

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1. Covenant Against Contingent Fees:

The Contractor warrants that no person or selling agency has been employed or retained to solicit or secure the contract upon an agreement or understanding for a commission, percentage, brokerage, or contingent fee, excepting bona fide employees or bona fide established commercial or selling agencies maintained by the Contractor for the purpose of securing business. For breach or violation of this warranty, the District will have the right to terminate the contract without liability or in its discretion to deduct from the contract price or consideration or otherwise recover, the full amount of the commission, percentage, brokerage, or contingent fee.

2. Shipping Instructions – Consignment:

Unless otherwise specified in this Invitation for Bids/Request for Proposals, each case, crate, barrel, package, etc., delivered under this contract must be plainly stencil marked or securely tagged, stating the Contractor's name, contract number and delivery address as noted in the contract. In case of carload lots, the Contractor shall tag the car, stating Contractor's name and contract number. Any failure to comply with these instructions will place the material at the Contractor's risk. Deliveries by rail, water, truck or otherwise, must be within the working hours and in ample time to allow for unloading and if necessary, the storing of the materials or supplies before closing time. Deliveries at any other time will not be accepted unless specific arrangements have been previously made with the contact person identified in the contract at the delivery point.

3. Patents:

The Contractor shall hold and save the District, its officers, agents, servants, and employees harmless from liability of any nature or kind, including costs, expenses, for or on account of any patented or unpatented invention, article, process, or appliance, manufactured or used in the performance of this contract, including their use by the District, unless otherwise specifically stipulated in the contract.

4. Quality:

Contractor's workmanship shall be of the highest grade, and all materials provided under this Contract shall be new, of the best quality and grade, and suitable in every respect for the purpose intended.

5. Inspection Of Supplies:

(a) Definition. "Supplies," as used in this clause, includes, but is not limited to raw materials, components, intermediate assemblies, end products, and lots of supplies.

(b) The Contractor shall be responsible for the materials or supplies covered by this contract until they are delivered at the designated point, but the Contractor shall bear all risk on rejected materials or supplies after notification of rejection. Upon the Contractor's failure to cure within ten (10) days after date of notification, the District may return the rejected materials or supplies to the Contractor at the Contractor's risk and expense.

(c) The Contractor shall provide and maintain an inspection system acceptable to the District covering supplies under this contract and shall tender to the District for acceptance only supplies that have been inspected in accordance with the inspection system and have been found by the Contractor to be in conformity with contract requirements. As part of the

system, the Contractor shall prepare records evidencing all inspections made under the system and the outcome. These records shall be kept complete and made available to the District during contract performance and for as long afterwards as the contract requires. The District may perform reviews and evaluations as reasonably necessary to ascertain compliance with this paragraph. These reviews and evaluations shall be conducted in a manner that will not unduly delay the contract work. The right of review, whether exercised or not, does not relieve the Contractor of the obligations under this contract.

(d) The District has the right to inspect and test all supplies called for by the contract, to the extent practicable, at all places and times, including the period of manufacture, and in any event before acceptance. The District will perform inspections and tests in a manner that will not unduly delay the work. The District assumes no contractual obligation to perform any inspection and test for the benefit of the Contractor unless specifically set forth elsewhere in the contract.

(e) If the District performs inspection or test on the premises of the Contractor or subcontractor, the Contractor shall furnish, and shall require subcontractors to furnish, without additional charge, all reasonable facilities and assistance for the safe and convenient performance of these duties. Except as otherwise provided in the contract, the District will bear the expense of District inspections or tests made at other than Contractor's or subcontractor's premises; provided, that in case of rejection, the District will not be liable for any reduction in the value of inspection or test samples.

(1) When supplies are not ready at the time specified by the Contractor for inspection or test, the Contracting Officer may charge to the Contractor the additional cost of inspection or test.

(2) Contracting Officer may also charge the Contractor for any additional cost of inspection or test when prior rejection makes re-inspection or retest

(f) The District has the right either to reject or to require correction of nonconforming supplies. Supplies are nonconforming when they are defective in material or workmanship or otherwise not in conformity with contract requirements. The District may reject nonconforming supplies with or without disposition instructions.

(g) The Contractor shall remove supplies rejected or required to be corrected. However, the Contracting Officer may require or permit correction in place, promptly after notice, by and at the expense of the Contractor. The Contractor shall not tender for acceptance corrected or rejected supplies without disclosing the former rejection or requirement for correction, and when required, shall disclose the corrective action taken.

(h) If the Contractor fails to remove, replace, or correct rejected supplies that are required to be replaced or corrected within ten (10) days, the District may either (1) by contract or otherwise, remove, replace or correct the supplies and charge the cost to the Contractor or (2) terminate the contract for default. Unless the Contractor corrects or replaces the supplies within the delivery schedule, the Contracting Officer may require their delivery and make an equitable price reduction. Failure to agree to a price reduction shall be a dispute.

(i) If this contract provides for the performance of District quality assurance at source, and if requested by the District, the Contractor shall furnish advance notification of the time (i) when Contractor inspection or tests will be performed in accordance with the terms and conditions of the contract, and (ii) when the supplies will be ready for District inspection.

(j) The District request shall specify the period and method of the advance notification and the District representative to whom it shall be furnished. Requests shall not require more than 2 business days of advance notification if the District representative is in residence in the Contractor's plant, nor more than 7 business days in other instances.

(k) The District will accept or reject supplies as promptly as practicable after delivery, unless otherwise provided in the contract. District failure to inspect and accept or reject the supplies shall not relieve the Contractor from responsibility, nor impose liability upon the District, for non-conforming supplies.

(l) Inspections and tests by the District do not relieve the Contractor of responsibility for defects or other failures to meet contract requirements discovered before acceptance. Acceptance shall be conclusive, except for latent defects, fraud, gross mistakes amounting to fraud, or as otherwise provided in the contract.

(m) If acceptance is not conclusive for any of the reasons in subparagraph (l) hereof, the District, in addition to any other rights and remedies provided by law, or under provisions of this contract, shall have the right to require the Contractor (1) at no increase in contract price, to correct or replace the defective or nonconforming supplies at the original point of delivery or at the Contractor's plant at the Contracting Officer's election, and in accordance with a reasonable delivery schedule as may be agreed upon between the Contractor and the Contracting Officer; provided, that the Contracting Officer may require a reduction in contract price if the Contractor fails to meet such delivery schedule, or (2) within a reasonable time after receipt by the Contractor of notice of defects or noncompliance, to repay such portion of the contract as is equitable under the circumstances if the Contracting Officer elects not to require correction or replacement. When supplies are returned to the Contractor, the Contractor shall bear the transportation cost from the original point of delivery to the Contractor's plant and return to the original point when that point is not the Contractor's plant. If the Contractor fails to perform or act as required in (1) or (2) above and does not cure such failure within a period of 10 days (or such longer period as the Contracting Officer may authorize in writing) after receipt of notice from the Contracting Officer specifying such failure, the District will have the right to return the rejected materials at Contractor's risk and expense or contract or otherwise to replace or correct such supplies and charge to the Contractor the cost occasioned the District thereby.

6. <u>Inspection Of Services:</u>

(a) Definition. "Services" as used in this clause includes services performed, workmanship, and material furnished or utilized in the performance of services.

(b) The Contractor shall provide and maintain an inspection system acceptable to the District covering the services under this contract. Complete records of all inspection work performed by the Contractor shall be maintained and made available to the District during contract performance and for as long afterwards as the contract requires.

(c) The District has the right to inspect and test all services called for by the contract, to the extent practicable at all times and places during the term of the contract. The District will perform inspections and tests in a manner that will not unduly delay the work.

(d) If the District performs inspections or tests on the premises of the Contractor or subcontractor, the Contractor shall furnish, without additional charge, all reasonable facilities and assistance for the safety and convenient performance of these duties.

(e) If any of the services do not conform to the contract requirements, the District may require the Contractor to perform these services again in conformity with contract requirements, at no increase in contract amount. When the defects in services cannot be corrected by performance, the District may require the Contractor to take necessary action to ensure that future performance conforms to contract requirements and reduce the contract price to reflect value of services performed.

(f) If the Contractor fails to promptly perform the services again or take the necessary action to ensure future performance in conformity to contract requirements, the District may (1) by contract or otherwise, perform the services and charge the Contractor any cost incurred by the District that is directly related to the performance of such services, or (2) terminate the contract for default.

7. <u>Waiver:</u>

The waiver of any breach of the contract will not constitute a waiver of any subsequent breach thereof, or a waiver of the contract.

8. <u>Default:</u>

(a) The District may, subject to the provisions of paragraph (c) below, by written notice of default to the Contractor, terminate the whole or any part of this contract in any one of the following circumstances:

(1) If the Contractor fails to make delivery of the supplies or to perform the services within the time specified herein or any extension thereof; or

(2) If the Contractor fails to perform any of the other provisions of this contract, or so fails to make progress as to endanger performance of this contract in accordance with its terms, and in either of these two circumstances does not cure such failure within a period of ten (10) days (or such longer period as the Contracting Officer may authorize in writing) after receipt of notice from the Contracting Officer specifying such failure.

(b) In the event the District terminates this contract in whole or in part as provided in paragraph (a) of this clause, the District may procure, upon such terms and in such manner as the Contracting Officer may deem appropriate, supplies or service similar to those so terminated, and the Contractor shall be liable to the District for any excess costs for similar supplies or services; provided, that the Contractor shall continue the performance of this contract to the extent not terminated under the provisions of this clause.

(c) Except with respect to defaults of subcontractors, the Contractor shall not be liable for any excess costs if the failure to perform the contract arises out of causes beyond the control and without the fault or negligence of the Contractor. Such causes may include, but are not restricted to, acts of God or of the public enemy, acts of the District or Federal Government in either their sovereign or contractual capacity, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, and unusually severe weather; but in every case the failure to perform must be beyond the control and without fault or negligence of the Contractor. If the failure to perform is caused by the default of the subcontractor, and if such default arises out of causes beyond the control of both the Contractor and the subcontractor, and without the fault or negligence of either of them, the Contractor shall not be liable for any excess cost for failure to perform, unless the supplies or services to be furnished by the subcontractor were obtainable from other sources in sufficient time to permit the Contractor to meet the required delivery schedule.

(d) If this contract is terminated as provided in paragraph (a) of this clause, the District, in addition to any other rights provided in this clause, may require the Contractor to transfer title and deliver to the District, in the manner and to the extent directed by the Contracting Officer, (i) completed supplies, and (ii) such partially completed supplies and materials, parts, tools, dies, jigs, fixtures plans, drawing information, and contract rights (hereinafter called "manufacturing materials") as the Contractor has specifically produced or specifically acquired for the performance of such part of this contract as has been terminated; and the Contractor shall, upon direction of the Contracting Officer, protect and preserve property in possession of the Contractor in which the District has an interest. Payment for completed supplies delivered to and accepted by the District will be at the contract price. Payment for manufacturing materials delivered to and accepted by the District will be at the contract price. Payment for manufacturing materials delivered to and accepted by the District and for the protection and preservation of property shall be in an amount agreed upon by the Contractor and Contracting Officer; failure to agree to such amount shall be a dispute concerning a question of fact within the meaning of the clause of this contract entitled "Disputes". The District may withhold from amounts otherwise due the Contractor for such completed supplies or manufacturing materials such sum as the Contracting Officer determines to be necessary to protect the District against loss because of outstanding liens or claims of former lien holders.

(e) If, after notice of termination of this contract under the provisions of this clause, it is determined for any reason that the Contractor was not in default under the provisions of this clause, or that the default was excusable under the provisions of this clause, the rights and obligations of the parties shall, if the contract contains a clause providing for termination of convenience of the District, be the same as if the notice of termination had been issued pursuant to such clause. See Clause 20 for Termination for Convenience of the District.

(f) The rights and remedies of the District provided in this clause shall not be exclusive and are in addition to any other rights and remedies provided by law or under this contract.

(g) As used in paragraph (c) of this clause, the terms "subcontractor(s) means subcontractor(s) at any tier.

9. Indemnification:

The Contractor agrees to defend, indemnify and hold harmless the District, its officers, agencies, departments, agents, and employees (collectively the "District") from and against any and all claims, losses, liabilities, penalties, fines, forfeitures, demands, causes of action, suits, costs and expenses incidental thereto (including cost of defense and attorneys' fees), resulting from, arising out of, or in any way connected to activities or work performed by the Contractor, Contractor's officers, employees, agents, servants, subcontractors, or any other person acting for or by permission of the Contractor in performance of this Contract. The Contractor assumes all risks for direct and indirect damage or injury to the property or persons used or employed in performance of this Contract. The Contractor shall also repair or replace any District property that is damaged by the Contractor, Contractor's officers, employees, agents, servants, subcontractors, or any other person acting for or by permission of the Contractor while performing work hereunder.

The indemnification obligation under this section shall not be limited by the existence of any insurance policy or by any limitation on the amount or type of damages, compensation or benefits payable by or for Contractor or any subcontractor, and shall survive the termination of this Contract. The District agrees to give Contractor written notice of any claim of indemnity under this section. Additionally, Contractor shall have the right and sole authority to control the defense or settlement of such claim, provided that no contribution or action by the District is required in connection with the settlement. Monies due or to become due the Contractor under the contract may be retained by the District as necessary to satisfy any outstanding claim which the District may have against the Contractor.

10. Transfer:

No contract or any interest therein shall be transferred by the parties to whom the award is made; such transfer will be null and void and will be cause to annul the contract.

11. Taxes:

(a) The Government of the District of Columbia is exempt from and will not pay Federal Excise Tax, Transportation Tax, and the District of Columbia Sales and Use Taxes.

(b) Tax exemption certificates are no longer issued by the District for Federal Excise Tax. The following statement may be used by the supplier when claiming tax deductions for Federal Excise Tax exempt items sold to the District.

"The District of Columbia Government is Exempt from Federal Excise Tax – Registration No. 52-73-0206-K, Internal Revenue Service, Baltimore, Maryland."

Exempt From Maryland Sales Tax, Registered With The Comptroller Of The Treasury As Follows:

a) Deliveries to Glenn Dale Hospital – Exemption No. 4647

b) Deliveries to Children's Center – Exemption No. 4648

c) Deliveries to other District Departments or Agencies – Exemption No. 09339

"The District of Columbia Government is Exempt from Sales and Use Tax – Registration No. 53-600, The District of Columbia Office of Tax and Revenue."

12. Appointment of Attorney:

(a) The bidder/offeror or contractor (whichever the case may be) does hereby irrevocably designate and appoint the Clerk of the District of Columbia Superior Court and his successor in office as the true and lawful attorney of the Contractor for the purpose of receiving service of all notices and processes issued by any court in the District of Columbia, as well as service of all pleadings and other papers, in relation to any action or legal proceeding arising out of or pertaining to this contract or the work required or performed hereunder.

(b) The bidder/offeror or contractor (whichever the case may be) expressly agrees that the validity of any service upon the said Clerk as herein authorized shall not be affected either by the fact that the contractor was personally within the District of Columbia and otherwise subject to personal service at the time of such service upon the said Clerk or by the fact that the contractor failed to receive a copy of such process, notice or other paper so served upon the said Clerk provided the said Clerk shall have deposited in the United States mail, registered and postage prepaid, a copy of such process, notice, pleading or other paper addressed to the bidder/offeror or contractor at the address stated in this contract.

13. District Employees Not To Benefit:

Unless a determination is made as provided herein, no officer or employee of the District will be admitted to any share or part of this contract or to any benefit that may arise therefrom, and any contract made by the Contracting Officer or any District employee authorized to execute contracts in which they or an employee of the District will be personally interested shall be void, and no payment shall be made thereon by the District or any officer thereof, but this provision shall not be construed to extend to this contract if made with a corporation for its general benefit. A District employee shall not be a party to a contract with the District and will not knowingly cause or allow a business concern or other organization owned or substantially owned or controlled by the employee to be a party to such a contract, unless a written determination has been made by the head of the procuring agency that there is a compelling reason for contracting with the employee, such as when the District's needs cannot reasonably otherwise be met. (DC Procurement Practices Act of 1985, D.C. Law 6-85, D.C. Official Code, section 2-310.01, and Chapter 18 of the DC Personnel Regulations)

The Contractor represents and covenants that it presently has no interest and shall not acquire any interest, direct or indirect, which would conflict in any manner or degree with the performance of its services hereunder. The Contractor further covenants not to employ any person having such known interests in the performance of the contract.

14. Disputes:

A. All disputes arising under or relating to this contract shall be resolved as provided herein.

B. Claims by a Contractor against the District.

Claim, as used in Section B of this clause, means a written assertion by the Contractor seeking, as a matter of right, the payment of money in a sum certain, the adjustment or interpretation of contract terms, or other relief arising under or relating to this contract. A claim arising under a contract, unlike a claim relating to that

contract, is a claim that can be resolved under a contract clause that provides for the relief sought by the claimant.

(a) All claims by a Contractor against the District arising under or relating to a contract shall be in writing and shall be submitted to the Contracting Officer for a decision. The contractor's claim shall contain at least the following:

(1) A description of the claim and the amount in dispute;

(2) Any data or other information in support of the claim;

(3) A brief description of the Contractor's efforts to resolve the dispute prior to filing the claim; and

(4) The Contractor's request for relief or other action by the Contracting Officer.

(b) The Contracting Officer may meet with the Contractor in a further attempt to resolve the claim by agreement.

(c) For any claim of $50,000 or less, the Contracting Officer shall issue a decision within sixty (60) days from receipt of a written request from a Contractor that a decision be rendered within that period.

(d) For any claim over $50,000, the Contracting Officer shall issue a decision within ninety (90) days of receipt of the claim. Whenever possible, the Contracting Officer shall take into account factors such as the size and complexity of the claim and the adequacy of the information in support of the claim provided by the Contractor.

(e) The Contracting Officer's written decision shall do the following:

(1) Provide a description of the claim or dispute;

(2) Refer to the pertinent contract terms;

(3) State the factual areas of agreement and disagreement;

(4) State the reasons for the decision, including any specific findings of fact, although specific findings of fact are not required and, if made, shall not be binding in any subsequent proceeding;

(5) If all or any part of the claim is determined to be valid, determine the amount of monetary settlement, the contract adjustment to be made, or other relief to be granted;

(6) Indicate that the written document is the contracting officer's final decision; and

(7) Inform the Contractor of the right to seek further redress by appealing the decision to the Contract Appeals Board.

(f) Any failure by the Contracting Officer to issue a decision on a contract claim within the required time period will be deemed to be a denial of the claim, and will authorize the commencement of an appeal to the Contract Appeals Board as authorized by D.C. Official Code § 2-309.04.

(g) (1) If a Contractor is unable to support any part of his or her claim and it is determined that the inability is attributable to a material misrepresentation of fact or fraud on the part of the Contractor, the Contractor shall be liable to the District for an amount equal to the unsupported part of the claim in addition to all costs to the District attributable to the cost of reviewing that part of the Contractor's claim.

(2) Liability under paragraph (g)(1) shall be determined within six (6) years of the commission of the misrepresentation of fact or fraud.

(h) The decision of the Contracting Officer shall be final and not subject to review unless an administrative appeal or action for judicial review is timely commenced by the Contractor as authorized by D. C. Official Code § 2-309.04.

(i) Pending final decision of an appeal, action, or final settlement, a Contractor shall proceed diligently with performance of the contract in accordance with the decision of the Contracting Officer.

C. Claims by the District against a Contractor

(a) Claim as used in Section C of this clause, means a written demand or written assertion by the District seeking, as a matter of right, the payment of money in a sum certain, the adjustment of contract terms, or other relief arising under or relating to this contract. A claim arising under a contract, unlike a claim relating to that contract, is a claim that can be resolved under a contract clause that provides for the relief sought by the claimant.

(b) (1) All claims by the District against a Contractor arising under or relating to a contract shall be decided by the Contracting Officer.

(2) The Contracting Officer shall send written notice of the claim to the Contractor. The Contracting Officer's written decision shall do the following:

(a) Provide a description of the claim or dispute;

(b) Refer to the pertinent contract terms;

(c) State the factual areas of agreement and disagreement;

(d) State the reasons for the decision, including any specific findings of fact, although specific findings of fact are not required and, if made, shall not be binding in any subsequent proceeding;

(e) If all or any part of the claim is determined to be valid, determine the amount of monetary settlement, the contract adjustment to be made, or other relief to be granted;

(f) Indicate that the written document is the Contracting Officer's final decision; and

(g) Inform the Contractor of the right to seek further redress by appealing the decision to the Contract Appeals Board.

(3) The decision shall be supported by reasons and shall inform the Contractor of its rights as provided herein.

(4) The authority contained in this clause shall not apply to a claim or dispute for penalties or forfeitures prescribed by statute or regulation which another District agency is specifically authorized to administer, settle, or determine.

(5) This clause shall not authorize the Contracting Officer to settle, compromise, pay, or otherwise adjust any claim involving fraud.

(c) The decision of the Contracting Officer shall be final and not subject to review unless an administrative appeal or action for judicial review is timely commenced by the Contractor as authorized by D.C. Official Code §2-309.04.

(d) Pending final decision of an appeal, action, or final settlement, the Contractor shall proceed diligently with performance of the contract in accordance with the decision of the Contracting Officer.

15. Changes:

The Contracting Officer may, at any time, by written order, and without notice to the surety, if any, make changes in the contract within the general scope hereof. If such change causes an increase or decrease in the cost of performance of this contract, or in the time required for performance, an equitable adjustment shall be made. Any claim for adjustment under this paragraph must be asserted within ten (10) days from the date the change is offered; provided, however, that the Contracting Officer, if he or she determines that the facts justify such action, may receive, consider and adjust any such claim asserted at any time prior to the date of final settlement of the contract. If the parties fail to agree upon the adjustment to be made, the dispute shall be determined as provided in the Disputes clause at Section 18. Nothing in this clause shall excuse the Contractor from proceeding with the contract as changed.

16. Termination For Convenience Of The District:

(a) The District may terminate performance of work under this contract in whole or, from time to time, in part if the Contracting Officer determines that a termination is in the District's interest. The Contracting Officer shall terminate by delivering to the Contractor a Notice of Termination specifying the extent of termination and effective date.

(b) After receipt of a Notice of Termination, and except as directed by the Contracting Officer, the Contractor shall immediately proceed with the following obligations, regardless of any delay in determining or adjusting any amounts due under this clause:

(1) Stop work as specified in the notice.

(2) Place no further subcontracts or orders (referred to as subcontracts in this clause) for materials, services, or facilities, except as necessary to complete the continued portion of the contract.

(3) Terminate all contracts to the extent they relate to the work terminated.

(4) Assign to the District, as directed by the Contracting Officer, all rights, title and interest of the Contractor under the subcontracts terminated, in which case the District will have the right to settle or pay any termination settlement proposal arising out of those terminations.

(5) With approval or ratification to the extent required by the Contracting Officer, settle all outstanding liabilities and termination settlement proposals arising from the termination of subcontracts. The approval or ratification will be final for purposes of this clause.

(6) As directed by the Contracting Officer, transfer title and deliver to the District (i) the fabricated or unfabricated parts, work in process, completed work, supplies, and other materials produced or acquired for the work terminated, and (ii) the completed or partially completed plans, drawings, information, and other property that, if the contract has been completed, would be required to be furnished to the District.

(7) Complete performance of the work not terminated.

(8) Take any action that may be necessary, or that the Contracting Officer may direct, for the protection and preservation of the property related to this contract that is in the possession of the Contractor and in which the District has or may acquire an interest.

(9) Use its best efforts to sell, as directed or authorized by the Contracting Officer, any property of the types referred to in subparagraph (6) above; provided, however, that the Contractor (i) is not required to extend credit to any purchaser and (ii) may acquire the property under the conditions prescribed by, and at prices approved by, the Contracting Officer. The proceeds of any transfer or disposition will be applied to reduce any payments to be made by the District under this contract, credited to the price or cost of the work, or paid in any other manner directed by the Contracting Officer.

(c) After the expiration of ninety (90) days (or such longer period as may be agreed to) after receipt by the Contracting Officer of acceptable inventory schedules, the Contractor may submit to the Contracting Officer a list, certified as to quantity and quality of termination inventory not previously disposed of excluding items authorized for disposition by the Contracting Officer. The Contractor may request the District to remove those items or enter into an agreement for their storage. Within fifteen (15) days, the District will accept title to those items and remove them or enter into a storage agreement. The Contracting Officer may verify the list upon removal of the items, or if stored, within forty five (45) days from submission of the list, and shall correct the list, as necessary, before final settlement.

(d) After termination, the Contractor shall submit a final termination settlement proposal to the Contracting Officer in the form and with the certification prescribed by the Contracting Officer. The Contractor shall submit the proposal promptly, but no later than one year from the effective date of termination, unless extended in writing by the Contracting Officer upon written request of the Contractor within this one year period. However, if the Contracting Officer determines that the facts justify it, a termination settlement proposal may be

received and acted on after one year or any extension. If the Contractor fails to submit the proposal within the time allowed, the Contracting Officer may determine, on the basis of information available, the amount, if any, due to the Contractor because of the termination and shall pay the amount determined.

(e) Subject to paragraph (d) above, the Contractor and the Contracting Officer may agree upon the whole or any part of the amount to be paid because of the termination. The amount may include a reasonable allowance for profit on work done. However, the agreed amount, whether under this paragraph (e) or paragraph (f) below, exclusive of costs shown in subparagraph (f)(3) below, may not exceed the total contract price as reduced by (1) the amount of payment previously made and (2) the contract price of work not terminated. The contract shall be amended, and the Contractor paid the agreed amount. Paragraph (f) below shall not limit, restrict, or affect the amount that may be agreed upon to be paid under this paragraph.

(f) If the Contractor and the Contracting Officer fail to agree on the whole amount to be paid because of the termination work, the Contracting Officer shall pay the Contractor the amounts determined by the Contracting Officer as follows, but without duplication of any amounts agreed on under paragraph (e) above:

(1) The contract price for completed supplies or services accepted by the District (or sold or acquired under subparagraph (b)(9) above) not previously paid for, adjusted for any saving of freight and other charges.

(2) The total of :

(i) The costs incurred in the performance of the work terminated, including initial costs and preparatory expense allocable thereto, but excluding any costs attributable to supplies or services paid or to be paid under subparagraph (f)(1) above;

(ii) The cost of settling and paying termination settlement proposals under terminated subcontracts that are properly chargeable to the terminated portion of the contract if not included in subparagraph (f)(1) above; and

(iii) A sum, as profit on subparagraph f(1) above, determined by the Contracting Officer to be fair and reasonable; however, if it appears that the Contractor would have sustained a loss on the entire contract had it been completed, the Contracting Officer shall allow no profit under this subparagraph (iii) and shall reduce the settlement to reflect the indicated rate of loss.

(3) The reasonable cost of settlement of the work terminated, including-

(i) Accounting, legal, clerical, and other expenses reasonably necessary for the preparation of termination settlement proposals and supporting data;

(ii) The termination and settlement of subcontractors (excluding the amounts of such settlements); and

(iii) Storage, transportation, and other costs incurred, reasonably necessary for the preservation, protection, or disposition of the termination inventory.

(g) Except for normal spoilage, and except to the extent that the District expressly assumed the risk of loss, the Contracting Officer shall exclude from the amounts payable to the Contractor under paragraph (f) above, the fair value as determined by the Contracting Officer, of property that is destroyed, lost, stolen, or damaged so as to become undeliverable to the District or to a buyer.

(h) The Contractor shall have the right of appeal, under the Disputes clause, from any determination made by the Contracting Officer under paragraphs (d), (f) or (j), except that if the Contractor failed to submit the termination settlement proposal within the time provided in paragraph (d) or (j), and failed to request a time extension, there is no right of appeal. If the Contracting Officer has made a determination of the amount due under paragraph (d), (f) or (j), the District will pay the Contractor (1) the amount determined by the Contracting Officer if there is no right of appeal or if no timely appeal has been taken, or (2) the amount finally determined on an appeal.

(i) In arriving at the amount due the Contractor under this clause, there shall be deducted:

(1) All unliquidated advances or other payments to the Contractor under the termination portion of the contract;

(2) Any claim which the District has against the Contractor under this contract; and

(3) The agreed price for, or the proceeds of sale of, materials, supplies, or other things acquired by the Contractor or sold under the provisions of this clause and not recovered by or credited to the District.

(j) If the termination is partial, the Contractor may file a proposal with the Contracting Officer for an equitable adjustment of the price(s) of the continued portion of the contract. The Contracting Officer shall make any equitable adjustment agreed upon. Any proposal by the Contractor for an equitable adjustment under this clause shall be requested within ninety (90) days from the effective date of termination unless extended in writing by the Contracting Officer.

(k) (1) The District may, under the terms and conditions it prescribes, make partial payments and payments against costs incurred by the Contractor for the terminated portion of the contract, if the Contracting Officer believes the total of these payments will not exceed the amount to which the Contractor shall be entitled.

(2) If the total payments exceed the amount finally determined to be due, the Contractor shall repay the excess to the District upon demand together with interest computed at the rate of 10 percent (10%) per year. Interest shall be computed for the period from the date the excess payment is received by the Contractor to the date the excess payment is repaid. Interest shall not be charged on any excess payment due to a reduction in the Contractor's termination settlement proposal because of retention or

other disposition of termination inventory until 10 days after the date of the retention or disposition, or a later date determined by the Contracting Officer because of the circumstances.

(l) Unless otherwise provided in this contract or by statute, the Contractor shall maintain all records and documents relating to the terminated portion of this contract for 3 years after final settlement. This includes all books and other evidence bearing on the Contractor's costs and expenses under this contract. The Contractor shall make these records and documents available to the District, at the Contractor's office, at all reasonable times, without any direct charge. If approved by the Contracting Officer, photographs, micrographs, or other authentic reproductions may be maintained instead of original records and documents.

17. Recovery Of Debts Owed The District:

The Contractor hereby agrees that the District may use all or any portion of any consideration or refund due the Contractor under the present contract to satisfy, in whole or part, any debt due the District.

18. Retention and Examination Of Records:

The Contractor shall establish and maintain books, records, and documents (including electronic storage media) in accordance with generally accepted accounting principles and practices which sufficiently and properly reflect all revenues and expenditures of funds provided by the District under the contract that results from this solicitation.

The Contractor shall retain all records, financial records, supporting documents, statistical records, and any other documents (including electronic storage media) pertinent to the contract for a period of three (3) years after termination of the contract, or if an audit has been initiated and audit findings have not been resolved at the end of three (3) years, the records shall be retained until resolution of the audit findings or any litigation which may be based on the terms of the contract.

The Contractor shall assure that these records shall be subject at all reasonable times to inspection, review, or audit by Federal, District, or other personnel duly authorized by the Contracting Officer.

The Contracting Officer, the Inspector General and the District of Columbia Auditor, or any of their duly authorized representatives shall, until three years after final payment, have the right to examine any directly pertinent books, documents, papers and records of the Contractor involving transactions related to the contract.

19. Non-Discrimination Clause:

(a) The Contractor shall not discriminate in any manner against any employee or applicant for employment that would constitute a violation of the District of Columbia Human Rights Act, approved December 13, 1977, as amended (D. C. Law 2-38; D. C. Official Code §2-1402.11) (2001 Ed.)("Act" as used in this Section). The Contractor shall include a similar clause in all subcontracts, except subcontracts for standard commercial supplies or raw materials. In addition, Contractor agrees and any subcontractor shall agree to post in conspicuous places, available to employees and applicants for employment, notice setting forth the provisions of this non-discrimination clause as provided in Section 251 of the Act.

(b) Pursuant to rules of the Office of Human Rights, published on August 15, 1986 in the D. C. Register, Mayor's Order 2002-175 (10/23/02), 49 DCR 9883 and Mayor's Order 2006-151 (11/17/06), 52 DCR 9351, the following clauses apply to this contract:

(1) The Contractor shall not discriminate against any employee or applicant for employment because of actual or perceived: race, color, religion, national origin, sex, age, marital status, personal appearance, sexual orientation, gender identity or expression, familial status, family responsibilities, disability, matriculation, political affiliation, genetic information, source of income, or place of residence or business. Sexual harassment is a form of sex discrimination which is prohibited by the Act. In addition, harassment based on any of the above protected categories is prohibited by the Act.

(2) The Contractor agrees to take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their actual or perceived: race, color, religion, national origin, sex, age, marital status, personal appearance, sexual orientation, gender identity or expression, familial status, family responsibilities, disability, matriculation, political affiliation, genetic information, source of income, or place of residence or business.

The affirmative action shall include, but not be limited to the following:

(a) employment, upgrading or transfer;

(b) recruitment, or recruitment advertising;

(c) demotion, layoff, or termination;

(d) rates of pay, or other forms of compensation; and

(e) selection for training and apprenticeship.

(3) The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the Contracting Agency, setting forth the provisions in subsections (b)(1) and (b)(2) concerning non-discrimination and affirmative action.

(4) The Contractor shall, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment pursuant to the non-discrimination requirements set forth in subsection (b)(2).

(5) The Contractor agrees to send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided by the contracting agency, advising the said labor union or workers' representative of that contractor's commitments under this nondiscrimination clause and the Act, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

(6) The Contractor agrees to permit access to his books, records and accounts pertaining to its employment practices, by the Chief Procurement Officer or designee, or the Director of Human Rights or designee, for purposes of investigation to ascertain compliance with this chapter, and to require under terms of any subcontractor agreement each subcontractor to permit access of such subcontractors' books, records, and accounts for such purposes.

(7) The Contractor agrees to comply with the provisions of this chapter and with all guidelines for equal employment opportunity applicable in the District of Columbia adopted by the Director of the Office of Human Rights, or any authorized official.

(8) The Contractor shall include in every subcontract the equal opportunity clauses, subsections (b)(1) through (b)(9) of this section, so that such provisions shall be binding upon each subcontractor or vendor.

(9) The Contractor shall take such action with respect to any subcontract as the Contracting Officer may direct as a means of enforcing these provisions, including sanctions for noncompliance; provided, however, that in the event the Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the contracting agency, the Contractor may request the District to enter into such litigation to protect the interest of the District.

20. <u>Definitions:</u>

The terms Mayor, Chief Procurement Officer, Contract Appeals Board and District will mean the Mayor of the District of Columbia, the Chief Procurement Officer of the District of Columbia or his/her alternate, the Contract Appeals Board of the District of Columbia, and the Government of the District of Columbia respectively. If the Contractor is an individual, the term Contractor shall mean the Contractor, his heirs, his executor and his administrator. If the Contractor is a corporation, the term Contractor shall mean the Contractor and its successor.

21. <u>Health And Safety Standards:</u>

Items delivered under this contract shall conform to all requirements of the Occupational Safety and Health Act of 1970, as amended ("OSHA"), and Department of Labor Regulations under OSHA, and all Federal requirements in effect at time of bid opening/proposal submission.

22. <u>Appropriation Of Funds:</u>

The District's liability under this contract is contingent upon the future availability of appropriated monies with which to make payment for the contract purposes. The legal liability on the part of the District for the payment of any money shall not arise unless and until such appropriation shall have been provided.

23. <u>Buy American Act:</u>

(a) The Buy American Act (41 U.S.C. §10a) provides that the District give preference to domestic end products.

"Components," as used in this clause, means those articles, materials, and supplies incorporated directly into the end products.

"Domestic end product," as used in this clause, means, (1) an unmanufactured end product mined or produced in the United States, or (2) an end product manufactured in the United States, if the cost of its components mined, produced, or manufactured in the United States, exceeds 50 percent of the cost of all its components. Components of foreign origin of the same class or kind as the products referred to in paragraphs (b)(2) or (3) of this clause shall be treated as domestic. Scrap generated, collected, and prepared for processing in the United States is considered domestic.

"End products," as used in this clause, means those articles, materials, and supplies to be acquired for public use under this contract.

(b) The Contractor shall deliver only domestic end products, except those-

(1) For use outside the United States;

(2) That the District determines are not mined, produced, or manufactured in the United States in sufficient and reasonably available commercial quantities of a satisfactory quality;

(3) For which the District determines that domestic preference would be inconsistent with the public interest; or

(4) For which the District determines the cost to be unreasonable.

24. <u>Service Contract Act of 1965:</u>

(a) <u>Definitions.</u> "Act," as used in this clause, means the Service Contract Act of 1965, as amended (41 U.S.C. §351, *et seq.).*

(1) "Contractor," as used in this clause, means the prime Contractor or any subcontractor at any tier.

(2) "Service employee," as used in this clause, means any person (other than a person employed in a bona fide executive, administrative, or professional capacity as defined in 29 CFR 541) engaged in performing a District contract not exempted under 41 U.S.C. §356, the principal purpose of which is to furnish services in the United States, as defined in section 22.1001 of the Federal Acquisition Regulation. It includes all such persons regardless of the actual or alleged contractual relationship between them and a contractor.

(b) <u>Applicability.</u> To the extent that the Act applies, this contract is subject to the following provisions and to all other applicable provisions of the Act and regulations of the Secretary of Labor (20 CFR part 4). All interpretations of the Act in Subpart C of 29 CFR 4 are incorporated in this contract by reference. This clause does not apply to contracts or subcontracts administratively exempted by the Secretary of Labor or exempted by 41 U.S.C. §356, as interpreted in Subpart C of 29 CFR 4.

(c) <u>Compensation</u>.

(1) Each service employee employed in the performance of this contract by the Contractor or any subcontractor shall be paid not less than the minimum monetary wages and shall be furnished fringe benefits in accordance with the wages and fringe benefits determined by the Secretary of Labor or the Secretary's authorized representative, as specified in any wage determination attached to this contract.

(2) If a wage determination is attached to this contract, the Contractor shall classify any class of service employees not listed in it, but to be employed under this contract (i.e., the work to be performed is not performed by any classification listed in the wage determination) so as to provide a reasonable relationship (i.e., appropriate level of skill comparison) between such unlisted classifications and the classifications listed in the wage determination. Such conformed class of employees shall be paid the monetary wages and furnished the fringe benefits as are determined pursuant to the procedures in this paragraph. This conforming procedure shall be initiated by the Contractor prior to the performance of contract work by the unlisted class of employee.

(a) The Contractor shall submit Standard Form (SF) 1444, Request for Authorization of Additional Classification and Rate, to the Contracting Officer no later than 30 days after the unlisted class of employee performs any contract work. The Contracting Officer shall review the proposed classification and rate and promptly submit the completed SF 1444 (which must include information regarding the agreement or disagreement of the employees' authorized representatives or the employees themselves together with the agency recommendation), and all pertinent information to the Wage and Hour Division, Employment Standards Administration (ESA), Department of Labor. The Wage and Hour Division will approve, modify, or disapprove the action or render a final determination in the event of disagreement within 30 days of receipt or will notify the Contracting Officer within 30 days of receipt that additional time is necessary;

(b) The final determination of the conformance action by the Wage and Hour Division shall be transmitted to the Contracting Officer who shall promptly notify the Contractor of the action taken. Each affected employee shall be furnished by the Contracting Officer with a written copy of such determination or it shall be posted as a part of the wage determination;

(c) The process of establishing wage and fringe benefit rates that bear a reasonable relationship to those listed in a wage determination cannot be reduced to any single formula. The approach used may vary from wage determination to wage determination depending on the circumstances. Standard wage and salary administration practices which rank various job classifications by pay grade pursuant to point schemes or other job factors may, for example, be relied upon. Guidance may also be obtained from the way different jobs are rated under Federal pay systems (Federal Wage Board Pay System and the General

Schedule) or from other wage determinations issued in the same locality. Basic to the establishment of any conformable wage rate(s) is the concept that a pay relationship should be maintained between job classifications based on the skill required and the duties performed;

(d) In the case of a contract modification, an exercise of an option, or extension of an existing contract, or in any other case where a Contractor succeeds to a contract under which the classification in question was previously conformed pursuant to this clause, a new conformed wage rate and fringe benefits may be assigned to the conformed classification by indexing (*i.e*., adjusting) the previous conformed rate and fringe benefits by an amount equal to the average (mean) percentage increase (or decrease, where appropriate) between the wages and fringe benefits specified for all classifications to be used on the contract which are listed in the current wage determination, and those specified for the corresponding classifications in the previously applicable wage determination. Where conforming actions are accomplished in accordance with this paragraph prior to the performance of contract work by the unlisted class of employees, the Contractor shall advise the Contracting Officer of the action taken but the other procedures in this clause need not be followed;

(e) No employee engaged in performing work on this contract shall in any event be paid less than the currently applicable minimum wage specified under section 6(a)(1) of the Fair Labor Standards Act of 1938, as amended;

(f) The wage rate and fringe benefits finally determined under this clause shall be paid to all employees performing in the classification from the first day on which contract work is performed by them in the classification. Failure to pay the unlisted employees the compensation agreed upon by the interested parties or finally determined by the Wage and Hour Division retroactive to the date such class of employees commenced contract work shall be a violation of the Act and this contract;

(g) Upon discovery of failure to comply with this clause, the Wage and Hour Division shall make a final determination of conformed classification, wage rate, and/or fringe benefits which shall be retroactive to the date such class or classes of employees commenced contract work.

(3) If the term of this contract is more than 1 year, the minimum wages and fringe benefits required for service employees under this contract shall be subject to adjustment after 1 year and not less often than once every 2 years, under wage determinations issued by ESA.

(4) The Contractor can discharge the obligation to furnish fringe benefits specified in the attachment or determined under paragraph (2) of this clause by furnishing any equivalent combinations of bona fide fringe

benefits, or by making equivalent or differential cash payments, in accordance with Subpart B and C of 29 CFR 4.

(d) Minimum wage: In the absence of a minimum wage attachment for this contract, the Contractor shall not pay any service or other employees performing this contract less than the minimum wage specified by section 6(a)(1) of the Fair Labor Standards Act of 1938, as amended (29 U.S.C. §206). Nothing in this clause shall relieve the Contractor of any other legal or contractual obligation to pay a higher wage to any employee.

(e) Successor contracts: If this contract succeeds a contract subject to the Act under which substantially the same services were furnished and service employees were paid wages and fringe benefits provided for in a collective bargaining agreement, then, in the absence of a minimum wage attachment to this contract, the Contractor may not pay any service employee performing this contract less than the wages and benefits, including those accrued and any prospective increases, provided for under that agreement. No Contractor may be relieved of this obligation unless the limitations of 29 CFR 4.1c(b) apply or unless the Secretary of Labor or the Secretary's authorized representative:

(1) Determines that the agreement under the predecessor was not the result of arms-length negotiations; or

(2) Finds, after a hearing under 29 CFR 4.10, that the wages and benefits provided for by that agreement vary substantially from those prevailing for similar services in the locality or determines, as provided in 29 CFR 4.11, that the collective bargaining agreement applicable to service employees employed under the predecessor contract was not entered into as a result of arm's length negotiations. Where it is found in accordance with the review procedures provided in 29 CFR 4.10 and 4.11 and parts 6 and 8 that some or all of the wages and fringe benefits contained in a predecessor Contractor's collective bargaining agreement are substantially at variance with those which prevail for services of a character similar in the locality, and that the collective bargaining agreement applicable to service employees employed under the predecessor contract was not entered into as a result of arm's length negotiations, the Department will issue a new or revised wage determination setting forth the applicable wage rates and fringe benefits. Such determination shall be made part of the contract or subcontract, in accordance with the decision of the Administrator, the Administrative Law Judge, or the Board of Service Contract Appeals, as the case may be, irrespective of whether such issuance occurs prior to or after the award of a contract or subcontract (53 Comp. Gen. 401 (1973)). In the case of a wage determination issued solely as a result of a finding of substantial variance, such determination shall be effective as of the date of the final administrative decision.

(f) Notification to employees: The Contractor shall notify each service employee commencing work on this contract of a minimum wage and any fringe benefits required to be paid, or shall post a notice of these wages and benefits in a prominent and accessible place at the worksite, using such poster as may be provided by the Department of Labor.

(g) Safe and sanitary working conditions: The Contractor shall not permit services called for by this contract to be performed in buildings or surroundings or under working conditions provided by or under the control or supervision of the Contractor that are unsanitary, hazardous, or dangerous to the health or safety of service employees. The Contractor shall comply with the health standards applied under 29 CFR Part 1925.

(h) Records: The Contractor shall maintain for 3 years from the completion of work, and make available for inspection and transcription by authorized ESA representatives, a record of the following:

(1) For each employee subject to the Act:

(a) Name and address;

(b) Work classification or classifications, rate or rates of wages and fringe benefits provided, rate or rates of payments in lieu of fringe benefits, and total daily and weekly compensation;

(c) Daily and weekly hours worked; and

(d) Any deductions, rebates, or refunds from total daily or weekly compensation.

(2) For those classes of service employees not included in any wage determination attached to this contract, wage rates or fringe benefits determined by the interested parties or by ESA under the terms of paragraph (c)(3) of this clause. A copy of the report required by paragraph (e) of this clause will fulfill this requirement.

(3) Any list of the predecessor Contractor's employees which had been furnished to the Contractor as prescribed by this clause. The Contractor shall also make available a copy of this contract for inspection or transcription by authorized representatives of the Wage and Hour Division. Failure to make and maintain or to make available these records for inspection and transcription shall be a violation of the regulations and this contract, and in the case of failure to produce these records, the Contracting Officer, upon direction of the Department of Labor and notification to the Contractor, shall take action to cause suspension of any further payment or advance of funds until the violation ceases. The Contractor shall permit authorized representatives of the Wage and Hour Division to conduct interviews with employees at the worksite during normal working hours.

(i) Pay periods: The Contractor shall unconditionally pay to each employee subject to the Act all wages due free and clear and without subsequent deduction (except as otherwise provided by law or regulations, 29 CFR part 4), rebate, or kickback on any account. These payments shall be made no later than one pay period following the end of the regular pay period in which the wages were earned or accrued. A pay period under this Act may not be of any duration longer than semi-monthly.

(j) Withholding of payments and termination of contract: The Contracting Officer shall withhold from the prime Contractor under this or any other District contract

with the prime contractor any sums the Contracting Officer, or an appropriate officer of the Labor Department, decides may be necessary to pay underpaid employees. In the event of failure to pay any employees subject to the Act all or part of the wages or fringe benefits due under the Act, the Contracting Officer may, after authorization or by direction of the Department of Labor and written notification to the Contractor, take action to cause suspension of any further payment or advance of funds until such violations have ceased. Additionally, any failure to comply with the requirements of this clause may be grounds for termination for default. In such event, the District may enter into other contracts or arrangements for completion of the work, charging the Contractor in default with any additional cost.

(k) Subcontracts: The Contractor agrees to insert this clause in all subcontracts.

(l) Contractor's report:

(1) If there is a wage determination attachment to this contract and any classes of service employees not listed on it are to be employed under the contract, the Contractor shall report promptly to the Contracting Officer the wages to be paid and the fringe benefits to be provided each of these classes, when determined under paragraph (c) of this clause.

(2) If wages to be paid or fringe benefits to be furnished any service employees under the contract are covered in a collective bargaining agreement effective at any time when the contract is being performed, the Contractor shall provide to the Contracting Officer a copy of the agreement and full information on the application and accrual of wages and benefits (including any prospective increases) to service employees working on the contract. The Contractor shall report when contract performance begins, in the case of agreements then in effect, and shall report subsequently effective agreements, provisions, or amendments promptly after they are negotiated.

(m) Contractor's Certification: By entering into this contract, the Contractor (and officials thereof) certifies that neither it (nor he or she) nor any person or firm who has a substantial interest in the Contractor's firm is a person or firm ineligible to be awarded District contracts by virtue of the sanctions imposed under section 5 of the Act. No part of this contract shall be subcontracted to any person or firm ineligible for award of a District contract under section 5 of the Act. The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. §1001.

(n) Variations, tolerances, and exemptions involving employment: Notwithstanding any of the provisions in paragraphs (c) through (l) of this clause, the following employees may be employed in accordance with the following variations, tolerances, and exemptions authorized by the Secretary of Labor.

(1)(i) In accordance with regulations issued under Section 14 of the Fair Labor Standards Act of 1938 by the Administrator of the Wage and Hour Division, ESA (29 CFR 520, 521, 524, and 525), apprentices, student learners, and workers whose earning capacity is impaired by age or by physical or mental deficiency or injury, may be employed at wages lower than the minimum wages otherwise required by section 2(a)(1) or 2(b)(1)

of the Service Contract Act, without diminishing any fringe benefits or payments in lieu of these benefits required under section 2(a)(2) of the Act.

(ii) The Administrator will issue certificates under the Act for employing apprentices, student-learners, handicapped persons, or handicapped clients of sheltered workshops not subject to the Fair Labor Standards Act of 1938, or subject to different minimum rates of pay under the two acts, authorizing appropriate rates of minimum wages, but without changing requirements concerning fringe benefits or supplementary cash payments in lieu of these benefits.

(iii) The Administrator may also withdraw, annul, or cancel such certificates under 29 CFR 525 and 528.

(2) An employee engaged in an occupation in which the employee customarily and regularly receives more than $30 a month in tips shall be credited by the employer against the minimum wage required by section 2(a)(1) or section 2(b)(1) of the Act, in accordance with regulations in 29 CFR 531. However, the amount of credit shall not exceed 40 percent of the minimum rate specified in section 6(a)(1) of the Fair Labor Standards Act of 1938 as amended.

25. <u>Cost and Pricing Data:</u>

(a) This paragraph and paragraphs b through e below shall apply to contractors or offerors in regards to: (1) any procurement in excess of $100,000, (2) any contract awarded through competitive sealed proposals, (3) any contract awarded through sole source procurement, or (4) any change order or contract modification. By entering into this contract or submitting this offer, the Contractor or offeror certifies that, to the best of the Contractor's or offeror's knowledge and belief, any cost and pricing data submitted was accurate, complete and current as of the date specified in the contract or offer.

(b) Unless otherwise provided in the solicitation, the offeror or Contractor shall, before entering into any contract awarded through competitive sealed proposals or through sole source procurement or before negotiating any price adjustments pursuant to a change order or modification, submit cost or pricing data and certification that, to the best of the Contractor's knowledge and belief, the cost or pricing data submitted was accurate, complete, and current as of the date of award of this contract or as of the date of negotiation of the change order or modification.

(c) If any price, including profit or fee, negotiated in connection with this contract, or any cost reimbursable under this contract, was increased by any significant amount because (1) the Contractor or a subcontractor furnished cost or pricing data that were not complete, accurate, and current as certified by the Contractor, (2) a subcontractor or prospective subcontractor furnished the Contractor cost or pricing data that were not complete, accurate, and current as certified by the Contractor, or (3) any of these parties furnished data of any description that were not accurate, the price or cost shall be reduced accordingly and the contract shall be modified to reflect the reduction.

(d) Any reduction in the contract price under paragraph c above due to defective data from a prospective subcontractor that was not subsequently awarded, the subcontract shall be limited to the amount, plus applicable overhead and profit markup, by which (1) the actual subcontract or (2) the actual cost to the Contractor, if there was no subcontract, was less than the prospective subcontract cost estimate submitted by the Contractor; provided that the actual subcontract price was not itself affected by defective cost or pricing data.

(e) Cost or pricing data includes all facts as of the time of price agreement that prudent buyers and sellers would reasonably expect to affect price negotiations significantly. Cost or pricing data are factual, not judgmental, and are therefore verifiable. While they do not indicate the accuracy of the prospective Contractor' s judgment about estimated future costs or projections, cost or pricing data do include the data forming the basis for that judgment. Cost or pricing data are more than historical accounting data; they are all the facts that can be reasonably expected to contribute to the soundness of estimates of future costs and to the validity of determinations of costs already incurred.

(f) The following specific information should be included as cost or pricing data, as applicable:

(1) Vendor quotations;

(2) Nonrecurring costs;

(3) Information on changes in production methods or purchasing volume;

(4) Data supporting projections of business prospects and objectives and related operations costs;

(5) Unit – cost trends such as those associated with labor efficiency;

(6) Make or buy decisions;

(7) Estimated resources to attain business goals;

(8) Information on management decisions that could have a significant bearing on costs.

(g) If the offeror or contractor is required by law to submit cost or pricing data in connection with pricing this contract or any change order or modification of this contract, the Contracting Officer or representatives of the Contracting Officer shall have the right to examine all books, records, documents and other data of the Contractor (including computations and projections) related to negotiating, pricing, or performing the contract, change order or modification, in order to evaluate the accuracy, completeness, and currency of the cost or pricing data. The right of examination shall extend to all documents necessary to permit adequate evaluation of the cost or pricing data submitted, along with the computations and projections used. Contractor shall make available at its office at all reasonable times the materials described above for examination, audit, or reproduction until three years after the later of:

(1) final payment under the contract;

(2) final termination settlement; or

(3) the final disposition of any appeals under the disputes clause or of litigation or the settlement of claims arising under or relating to the contract.

26. <u>Multiyear Contract:</u>

If this contract is a multiyear contract, then the following provision is made part of this contract:

If funds are not appropriated or otherwise made available for the continued performance in a subsequent year of a multiyear contract, the contract for the subsequent year shall be terminated, either automatically or in accordance with the termination clause of the contract. Unless otherwise provided for in the contract, the effect of termination is to discharge both the District and the Contractor from future performance of the contract, but not from the existing obligations. The Contractor shall be reimbursed for the reasonable value of any non-recurring costs incurred but not amortized in the price of the supplies or services delivered under the contract.

27. <u>Termination Of Contracts For Certain Crimes And Violations:</u>

(a) The District may terminate without liability any contract and may deduct from the contract price or otherwise recover the full amount of any fee, commission, percentage, gift, or consideration paid in violation of this title if:

(1) The Contractor has been convicted of a crime arising out of or in connection with the procurement of any work to be done or any payment to be made under the contract; or

(2) There has been any breach or violation of:

(A) Any provision of the Procurement Practices Act of 1985, as amended, or

(B) The contract provision against contingent fees.

(b) If a contract is terminated pursuant to this section, the Contractor:

(1) May be paid only the actual costs of the work performed to the date of termination, plus termination costs, if any; and

(2) Shall refund all profits or fixed fees realized under the Contract.

(c) The rights and remedies contained in this are in addition to any other right or remedy provided by law, and the exercise of any of them is not a waiver of any other right or remedy provided by law.

Tractor Drawn Aerial Truck

Requirements

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SECTION 1: GENERAL REQUIREMENTS:

A.) TRAINING:

The contractor shall provide a factory certified technician to perform initial training onsite (Training Division – 4600 Shepherd Parkway, S.W., Washington, D.C. 20032) or a designated site established by the Apparatus Division Chief) for each (all) vehicle(s). The technician shall be thoroughly familiar with the operation of all components of the vehicle as outlined in these requirements. Vehicle operator training will commence the first full week following the delivery of the vehicle(s) and will last for four (4) consecutive 8 hour days. Vehicle mechanical training shall be conducted for two (2) additional consecutive 8 hour days which will encompass both the day and evening shifts on dates specified by the COTR. The technician shall be capable of making repairs to the vehicle. Any deficiency causing the vehicle to be in a truck down (out-of-service) condition or causes an interruption in training will be considered a "critical failure". These repairs, for purposes of this section, must be made within 24 hours which will place the vehicle back into a fully operational condition.

B.) WARRANTY AND WARRANTY REPAIRS:

1.) WARRANTIES:

The contractor shall provide 10 year cab, 10 year body, 20 year Aerial Device, and 5 year bumper to bumper on the vehicle.

2.) WARRANTY REPAIRS:

a.) CRITICAL FAILURE:

The DCFEMS defines a critical failure as a failure:

i) of a system or component that prevents the continued operation of the vehicle for the purpose for which it's intended;

ii) of a system or component that impacts on another system or component that prevents the continued operation of the vehicle for the purpose for which it's intended;

iii) that could jeopardize the safety of the personnel utilizing the vehicle.

The criteria outlined in N.F.P.A. 1915, Sections 2.1.4.1 through 2.1.4.8 establishes the minimum standard that could reduce the operational safety and performance of the apparatus and will serve as a basis for DCFEMS to determine if the warranty period failure is a critical failure and thus would fall under the requirements of this section.

THE CONTRACTOR SHALL REPAIR ALL CRITICAL FAILURES, UNDER THIS SECTION, WITHIN *48* HOURS AFTER NOTIFICATION BY THE COTR. If necessary to affect the ***48*** hour repair of a critical failure, a factory certified technician shall be dispatched to the DCFEMS repair facility upon notification of the critical **failure.** The

contractor shall ensure that the designated warranty repair facility is aware of this requirement .

b.) NON-CRITICAL REPAIRS:

The DCFEMS will provide a list of non-critical repairs needed for each vehicle to the contractor when they occur. DCFEMS will negotiate the timely resolution for non-critical repairs with the contractor. The length of time needed by the technician to complete the repairs shall be estimated by the contractor. Any repair that is found to be required, but is agreed by the COTR and the contractor not to be a warranty covered repair shall be estimated and approved by the COTR before the repair is made.

3.) THIRD PARTY TESTING:

Third party testing shall be done on the completed aerial ladder. That is after all modifications have been made to the device. This is to be done by UL Underwriters Laboratories. **No Exceptions**. All NFPA 1901 3rd Party Testing on the Vehicle shall be done by UL Underwriters Laboratories. **No Exception**.

SECTION 2: DRAWINGS, DISKETTES & WRITTEN DOCUMENTS:

A. NUMBER OF DRAWINGS:

Within 10 days following contract award, the contractor shall provide, to the COTR, 4 sets of line drawings of the items specified below. The drawings are to be at least 22" x 34". In addition to the drawings, the contractor shall provide computer aided design drawings on CD ROM disks in a format that is able to be imported to TurboCad7 (File extensions *.TCW, *.DXF, *.DWF, *.DWG) and shall include relevant symbol libraries.

B. SCOPE OF DRAWINGS:

1) A ***detailed*** drawing giving 5 views of apparatus (Right Side, Left Side, Front, Rear, and Top). This drawing shall include all mounted and manufactured items that are specified by these requirements.

2) A separate drawing shall be provided for the dimensions outlined in C below.

3) A ***detailed*** drawing of the cab interior, both side views and top down, which include dimensions, step heights and a graphic layout of the interior.

4) A ***detailed*** drawing of the complete front cab interior which includes all switch panels, dash panels, controls and mountings. All items are to be labeled as to function.

5) A ***detailed*** drawing of the complete rear cab interior which includes the location of all windows, fold down seats, bench seats, and any other items that would be mounted thereon.

6) A ***detailed*** drawing of any shop manufactured items contained in these requirements shall be provided.

7) A ***detailed*** drawing of the tiller interior, including dimensions and all items mounted therein.

8) A ***detailed*** drawings of the operators pedestal including all controls and indicators.

9) A ***detailed*** drawing of ladder banking and other equipment mounting. (rear view).

10) A ***detailed*** drawing of the aerial and outrigger hydraulic systems.

11) A ***detailed*** drawing of the jack pad mounting bracket showing how the pads will be mounted, carried and secured while on the truck.

C. DRAWING REQUIREMENTS:

The contractor shall provide a drawing, both hard copy and diskette, that includes, at a minimum the following body/chassis dimensions:

1) **Heights:** Ground to top of running boards, Ground to top of compartments, Ground to highest projection (front and rear), Ground to lowest projection (front & rear) (ground clearance), Ground to center of side mounted extension ladders, Ground to bottom of tiller cage.

2) **Lengths:** Overall length, length of tractor, length of trailer, wheelbase, from front bumper to face of cab, from front bumper to center of front wheel, from center of front wheel to rear of cab, from rear of cab to front of trailer, from center of rear tractor wheel to first trailer compartment, from center of front and rear tractor wheels to center of tiller wheels, from center of fifth wheel to center of rear trailer wheel, from center of rear wheel to rear of tiller cage, from rear of tiller cage to maximum open length of tiller doors, from tip of aerial ladder to front of tiller cage.

3) **Widths:** Body (cab). Body including bumper. Body to outermost projections (mirrors). Trailer

4) **Engineering:** Angles of approach & departure. Breakover. Turning radius. Center of gravity from both front and side views.

5) These drawing shall include dimensions of all compartments & troughs.

D. GENERAL:

1) All drawings, both hard copy and diskette, shall be made to scale.

2) Updates and modifications shall be made by E-mail. The contractor shall return updated drawings by E-Mail to the Department (**Wayne.Branch@DC.Gov**) for their review and comments. This exchange of computer aided design information shall continue until a final set of line drawings is agreed upon to the end that there is a reduction in the amount of hard copy drawings produced and exchanged. After a final set of drawings is agreed to, the contractor shall provide 4 sets of final drawings, as outlined above to COTR.

E. FINAL ACCEPTANCE DRAWINGS AND DOCUMENTS:

The contractor shall, following the final acceptance of the vehicle and any corrections or modifications, provide to the COTR, 3 updated and complete sets of drawings and written specifications as outlined in A, B & C above.

G. MEETINGS AND CORESPONDENCE:

All meetings, phone conversations or other discussions regarding the awarded contract and the construction of the vehicle, changes and modifications shall be followed by a written summary of the meeting, phone conversation or discussion. This summary shall be prepared as mutually agreed by the parties involved and forwarded to all parties involved upon completion. The parties shall review the summary to ensure that the contents are accurate.

Prior to beginning production, a pre-construction meeting shall be held at the contractor's facility. Engineering and production personnel shall be made available to address any issues that need resolution prior to construction.

SECTION 3: GENERAL DIMENSIONS:

1. The overall height of the apparatus, including any additional lights and air conditioning units shall be as low as possible but shall not exceed 131". Cab and Body width not to exceed 96".

2. The wheelbase of the apparatus tractor shall be as short a possible but shall not exceed 155".

3. The overall length of the apparatus shall be as short a possible but shall not exceed 685".

SECTION 4: HOSE CAPACITIES:

1. There shall be a ladder pipe hose storage bin mounted on top of the compartments on the trailer deck for storage of 100' of 3" hose. There shall also be a mounting bracket supplied in this location for the fly pipe ladder pipe assembly. The ladder pipe assembly when mounted shall in NO way interfere with the 120V lighting on the tip of the fly section of the aerial ladder. "**NO EXCEPTION**"
    1. Three 3 nylon seat belt style straps with Velcro fasteners shall be provided for the hose storage bin.

SECTION 5: LADDER COMPLIMENT AND SPECIFICATIONS:

A. AERIAL LADDER:

1. The aerial ladder shall be of steel or aluminum construction, subject to the following minimums;
    a.) 100' minimum height,
    b.) Rated at 250 lb. minimum Tip Load at 0 degree elevation.
    c.) Provide any lifting or rappelling / rope rescue devices that are available and made for the Aerial Ladder that is bid.

2. The ladder shall include, mounted on the top of the fly section:
   a.) 1-110V quartz flood light mounted on the same side as the operators pedestal, the light shall be a Magnafire 650 Watt light with a protective grill.
   b.) 1- intercom, Fire Research **ICA-900**,
   c.) 2- folding steps,
   d.) 1- #L5-15 receptacle,
   e.) 1- #L5-30 receptacle,
   f.) 1- fiberglass handled pick head axe with mounting brackets, (See Appendix A)
   g.) 1- 6' ceiling hook with mounting brackets. (See Appendix A)
   h.) 1- Mounting bracket for a Haligan bar shall be provided. (A Firemark FPB-3 30" Pro- Bar shall be provided and mounted)

3. The ladder shall be painted silver/blue-gray PPG-35913 metallic with a fluorescent red tip.

4. 1 spotlight mounted on the aerial bed section at or near the base of the ladder on the same side as the operators pedestal.

5. 1 bed section mounted, 3" waterway with manually controlled ladder pipe attached (See Appendix A for ladder pipe model). It shall terminate with a 2 ½" female NST swivel fitting with a zinc screen and with sufficient room to attach a clappered Siamese. The winch control for the bed pipe shall be painted the same color as the aerial ladder.

6. 1 Fire Research intercom mounted on control pedestal.

7. 1 weatherproof David Clark headset connection and a University speaker connected to apparatus radio. (See electrical requirements at K-9)

8. Turntable guard rails with safety chains. The center guard rail shall be removable. The turntable shall be provided with a Bustin Steel Overlay for an aggressive surface.

9. The aerial ladder shall be at least 1 degree below horizontal when bedded.

8. 2 – 132" x 16.25" (approximate minimum dimensions) painted job color red metal placards shall be provided and mounted, 1 each side if the bed section of the aerial ladder. Lettering shall be determined at pre-construction meeting. (Washington D.C.)

10. The aerial hydraulic system shall use an ISO type 45 hydraulic fluid. The maximum operating temperature for the fluid shall not exceed 250 degrees F.

B. GROUND LADDERS:

1. Ground ladders shall be of the Duo Safety brand mounted horizontally in the trailer body beneath the aerial ladder and the tiller cab with the following model numbers and lengths:

   a) 1 - #1525A 45' 3 section extension ladder.
   b) 1 - #1200A 35' - 2 section extension ladder.
   c) 1 - #1200A 30' - 2 section extension ladder.
   d) 1 - #585A 10' folding ladder.
   e) 1 - #300A 15' combination ladder .

2. Additional Ladders:

   a) 1 - #1200A - 30' 2 section extension ladder mounted vertically on the left side above the body compartmentation.
   b) 1 - #875A 16' roof ladder mounted inboard of the 30' 2 section extension ladder mounted vertically on the left side above the body compartmentation.
   c) 1 - #900A - 24' 2 section extension ladder mounted vertically on the right side above the body compartmentation.
   d) 1 - #875A 16' roof ladder mounted inboard of the 24' 2 section extension ladder mounted vertically on the right side above the body compartmentation.
   e) 1 – Little Giant style ladder shall be provided and mounted on the right side of upper deck walkway along side of the aerial ladder. Model 17 product 10102 Type 1A.

   NOTE: All ground ladders will be provided with a minimum of a ½" diameter Halyard.

3. Ground ladders shall be secured by a cam lock system.

4. Ground ladders shall have labeling indicating the length of the ladder. There shall also be a label indicating the length where the ladder is stored as well.

5. There shall also be labels placed on the rear to identify ladder length as well as work lights (LED) and a switch for the lights as well.

SECTION 6: AERIAL CONTROL PEDESTAL:

1. A tip overload warning device shall be provided.

2. Adequate lighting shall be provided to illuminate the control area and stepping areas during night time operations. LED lighting shall be provided.

3. Pressure gauges shall be provided to indicate both the system pressure and the bottom cylinder hoist pressure. A maximum hydraulic fluid temperature label shall be provided next to the hydraulic fluid temperature gauge.

4. A rung alignment light shall be provided.

5. A Ladder load chart shall be provided specific to the vehicle, not a generic type chart.

6. A ladder overload buzzer and flashing light shall be provided.

7. A lighted angle indicator shall be provided.

8. 3 control handles shall be provided, 1 for rotation, 1 for hoist or elevation and 1 for extension. The control handles shall have a locking mechanism to prevent inadvertent activation.

9. An aerial ladder hour meter shall be provided.

10. Switching for ladder lights shall be provided.

11. An emergency override rotation limit switch and red light shall be provided.

12. An emergency pump switch shall be provided.

13. A throttle switch shall be provided.

14. A low voltage indicator shall be provided.

15. A foot peddle shall be provided that must be depressed to perform aerial operations.

16. The control pedestal shall be provided with a latchable cover and stays to keep it in an open position when opened and in a closed position when closed.

17. Turntable alignment arrows and lights shall be provided. The arrows shall be covered in red scotchlite, diamond grade or similar reflective material.

18. There shall be a weather proof University radio speaker mounted recessed in the control pedestal. (See radio requirements)

19. A removable cover shall be provided over the rotation motor unless it is mounted directly under the ladder when in a bedded position.

20. The Jack control compartments shall both be the same size and shall have an LED light inside the compartment. There shall be a tractor position indicator light in each compartment as well as a hydraulic pressure and temperature gauge. There shall also be a Maximum hydraulic fluid temperature label and a label for the EPU stating "**Operate for ____ minutes, Let Cool for ____ minutes."** This will be at every location that an EPU switch is located. There will also be drain holes for water provided in the floor of these compartments as well.

21. The red warning light and the white ground illumination light for each jack shall be a LED style light.

22. There shall be a 4" round Whelen LED underbody light mounted in a Truck-Lite rubber boot in the gooseneck area (1) One each side to illuminate the ground jack area.

SECTION 7: GENERAL BODY REQUIREMENTS:

A. BODY

1. **Stainless Steel** construction of the body **ONLY** will be accepted. Composite materials shall not be used in the construction of the cab or body or used as exterior or interior skin. An **Aluminum Cab** will be allowed.

2. The front bumper is to be a Wrap Around Steel and angled at its corners and be painted job color red. The bumper extension shall not exceed what is required to accommodate the Federal Q siren with the cab tilt taken into consideration. The gravel pan shall be a

minimum of 3/16” aluminum tread plate. The warning lights shall be recessed mounted into the sides of the bumper extension.

3. The corners of any surface where cables from cable reel may come in contact shall be rounded and covered with a brushed aluminum or stainless steel covering to prevent paint/body damage and damage to the cable.

4. The running boards shall be a minimum of 3/16” aluminum treadplate and have grip strut inserts and protected by rub rails, also the lower part of the body shall be provided with rub rails. The rub rails will be manufactured out of Black Poly material. All marker lights in running boards will not only be recessed in the rub rails but will be recessed into the running boards and rear step as well.

5. All walking surfaces shall meet NFPA tread requirements. The turntable surface shall have a Bustin steel or similar aggressive tread overlay. Additional support shall be installed beneath any decking on the vehicle. Flexing of decks and walking surfaces will be unacceptable.

6. Fender liners shall be provided at all wheel locations. The fender liners shall be stainless steel or aluminum. The rear fender liners shall provide enough clearance as to accommodate snow chains when required.

7. The vendor shall provide 6 Southpark LFS-46C fold up steps. FEMS will indicate were the additional steps will be located at the pre-construction meeting.

8. The vendor shall provide eight (8) exterior handrails. They shall be Hanson brand #4000 or equivalent 1.25" diameter stainless steel with knurled finish or rubber inserts or coverings. Interior grab handles shall be the Hansen 930-0000/0001 types. In addition to the standard handrail and grab handle locations, FEMS will indicate were the eight (8) additional handrail and grab handle locations will be located. The contractor shall provide the 8 additional handrail/grab handles in the total amount for each vehicle. Knurled aluminum hand rails will not be allowed due to cuts to hands from damaged hand rails while entering and exiting the cab.

9. The apparatus shall be equipped with 4 ZICO Model SAC-44 <u>collapsible</u> chocks and be mounted on the underside of the body, one in front and one to the rear of the driver’s side rear wheels and one in front and one to the rear of the officers side rear wheels utilizing Model SQCH-44-H folding chock holders. The wheel chock storing brackets shall be mounted as close to the underbody as possible in such a way that they do not hang down excessively.

10. Cab warning devices shall be provided with buttons on both right hand and left hand side of the rear of the apparatus. The buttons shall be mounted to the vehicle. Remote cords shall not be permitted. They shall be appropriately labeled: 1 – Stop, 2 – Go, 3 – Back Up.

11. Provide a polished chrome lighted license plate bracket for the rear of vehicle.

12. Furnish and mount as directed devices and mounting brackets listed in appendix A.

13. There shall be a mounting bracket for the ladderpipe located on the deck above the trailer compartments. (See Appendix A for ladder pipe and hose). There shall be no interference with the Magnafire light mounted on the tip of the aerial ladder. The hose box will need to be cut down or moved back so the light does not hit the ladderpipe in its mounting bracket.

14. An air outlet ***with an open/closed valve and labeled as such shall be provided and*** connected to the auxiliary tank, it is to be provided mounted recessed in a box of the left side drivers door step well area of the cab. The outlet is to be in such a position to easily make a connection with an air hose. This outlet is to be located and protected in such a manner that it will not be damaged. There shall be a 50' section of air hose supplied along with a combination tire fill / air pressure gauge. The air hose, air chuck adapter and combination tire/air fill gauge shall be completely assembled.

B. COMPARTMENTS:

1. All compartment doors shall be vertically hinged unless otherwise specified. All full height compartment doors shall be vertically hinged double doors. All lower trailer doors shall be double doors.

2. All compartment doors shall be numbered using 1-1/2" numbers, gold scotchlite with black shadow.

3. An additional locking compartment, located behind the driver, on the cab shall be provided. A Hansen #1250 key shall be used. This compartment may serve as a lockable medical storage compartment. Vendors who cannot meet this requirement may propose a locking medical storage box in the cab. This compartment shall be provided with 1-120V A/C GFI Duplex outlet and 1-12V Cigarette lighter plug furnished on the rear wall of the compartment and to be accessible from the interior of the cab. The contractor shall provide a proposed location and drawing.

4. All compartment doors shall utilize Eberhard D handle latches. All passive doors on double door compartments shall utilize handle or lever style latches. No pull devices shall be utilized. Handles shall be easily accessed from the ground. All compartment doors shall be lockable and keyed the same. Using a #1250 key. There also must be a gasket or sealing device used to keep dissimilar metals from contacting each other in the area of the "D" handle latches to prevent corrosion. The Active door shall be furnished with a latching mechanism at both the top and the bottom of each door and an access panel shall be provided on the inside of the door panel to gain access to the linkage. The Passive door will be latched at the top with a lever or handle on the inside of the door to release it. The doors shall all be provided with stainless steel hasps for padlocks to be installed at a later date. **Heavy Duty Cleveland Door Stays shall be provided.**

5. .75" finished marine plywood panels shall be provided on the floor of each lower trailer compartment. These panels shall be raised from the compartment floor utilizing .5" thick neoprene or similar slats or feet. They shall be easily removable.

6. Adjustable shelves shall be provided in all compartments on both the Tractor and the trailer. One (1) shelf per lower trailer compartment and two (2) shelves per high trailer compartment. .75" finished marine plywood panels shall be provided on the floor of each

shelf. These panels shall be raised from the shelf floor utilizing .5” thick neoprene or similar slats or feet. These shelves shall be easily removable. Stainless steel Uni-Strut shall be mounted to the compartment wall and used for mounting the adjustable shelves.

7. The 4 full height compartments shall have slide master 500lb. Roll out compartment trays mounted on the floor of the compartment. The sliding trays shall extend ½ the distance of the total through width of each compartment. These trays shall have latches to secure the tray in the full open and full closed position. The sides of the trays shall be provided with Red / White DOT diamond style reflective tape so they can be seen at night time when the tray is extended out beyond the side of the vehicle. The transverse section of these compartments shall be covered in black Turtle Tile. All shelves shall be provided with a clear coat finish.

8. 4 - wheel well air bottle compartments for Scott 1 hour, carbon Air-Pak 50 cylinders shall be provided in the tiller wheel wells. These compartments shall be free of sharp edges and appropriately lined so as to prevent damage to the composite bottles. The doors shall be stainless steel with a “D” handle style latch.

9. All compartment doors shall have welded inner panels.

10. All compartment interiors shall be lighted and the lights shall be Whelen PSCOCDCR LED lights (high intensity). Compartment lights that are mounted under shelves shall be provided with a water proof style plug in the wiring so that the shelf can be easily removed if necessary. This is only in the high trailer compartments. The high side transverses compartments shall have a minimum of 6 lights in each of the 4 compartments and the low side compartments shall have a minimum of 4 lights in each compartments.

11. Ceiling hook mounting shall be of the aluminum or stainless steel tube type. Eight mounting ports for ceiling hooks shall be provided at rear of trailer for 3 - 6', 2 - 8', 1 - 10', 1 - 12' & 1 - 14 hooks. (See appendix A for hooks)

12. All compartments shall be adequately ventilated and no water shall enter a compartment through the vents.

13. A tool box, mounted to the rear of the tractor compartment, shall be provided. This tool box top shall be considered a stepping surface and shall have a Bustin steel or similar aggressive tread overlay. This overlay shall cover as much of the surface as possible with only a space left to facilitate opening the compartment top. The floor of this compartment shall be covered with Turtle Tile.

14. A removable weatherproof storage box with cover, raising arms and latches shall be provided and mounted on top of the generator enclosure. The box must be of such dimension that it does not interfere with the aerial ladder when the ladder is lowered over the cab. The box shall have handles mounted on both right and left sides to facilitate removal. The box is to be secured in such a manner that it may be easily removed when access to the generator compartment is required. The floor shall be covered in Turtle Tile and shall be able to hold a Partner K-12 style saw. The Saw dimensions are 33” L x 19” H x 10” W.

15. Mounting shall be provided for a monitor nozzle assembly on the deck of the trailer. The Department shall specify the mounting location.

16. All walking surfaces shall be substantially reinforced so as to prevent flexing when under a live load.

17. Any additional compartment space options that are available on the tractor shall be provided that is not asked for or specified. This is to maximize all available un used available space on the tractor.

18. All compartment doors shall be provided with stainless steel hasps so that pad locks can be installed on the doors at a later date.

SECTION 8: GENERAL CAB REQUIREMENTS:

A. CAB EXTERIOR:

1. The cab shall be a 6 person tilt cab constructed of **Stainless Steel or Aluminum** and be provided with short barrier style cab doors. The step lights for each cab door shall be a LED style light. The fluid used for the cab tilt shall be Dexron III or Equivalent.

2. Cab door latches shall be of the locking recessed paddle type on both the interior and exterior. They shall be Tri-Mark TM202 key. The interior paddle latch shall have the locking mechanism incorporated into the paddle latch assembly. Pin style locks on the top of the door will be unacceptable. Doors straps shall be provided and be made of heavy duty nylon style strapping. A minimum of 8 keys shall be provided per vehicle.

3. Where specified by the District, cab doors shall have Hanson brand #4000 or equivalent 1.25" diameter stainless steel handrails or with rubber inserts or coverings. Where specified by the District, grab handles shall be the Hansen 930-0000/0001 types and be provided. Knurled aluminum will not be accepted.

4. The side windows in the crew area of the cab shall be a two way horizontal or vertical slider. The rear wall windows in the cab shall be at least 12" x 17" and shall be of the sliding type (horizontally sliding). These windows shall slide inboard so as to provide visibility by members exiting the crew cab.

5. A Federal Q siren shall be mounted in such a manner as not to protrude beyond the bevel of the front bumper. The siren shall be controlled by a foot switch at both the drivers & officers' position. The switches shall be mounted at a location specified by the District. The siren brake shall be located in a position that it can be easily operated by both the officer and driver or two switches shall be provided. The siren mounting shall be substantially reinforced. A Linemaster (632S) heavy duty foot pedal shall be used to activate the siren. The siren foot pedal shall be mounted outboard of the air horn foot pedal.

6. The vehicle shall have a "school bus" bubble style mirror. Grote mfg. Model 28063 stainless steel assembly, mounted on the cab to provide visibility across the front of the apparatus. This mirror shall be mounted as far to the outside right front corner of the cab roof as possible to prevent the cornering mirror from obstructing the officer's view of the road when in a seated position.

7. The vehicle mirrors shall be west coast style polished frame mirrors with a separately mounted round convex mirror. The Mirror arms shall be cut down to allow the truck to fit in a narrow firehouse door opening. The convex mirrors shall have a minimum diameter of 8" or be the Velvac rectangular type (6"x5"). Lang Mekra Mirrors 7" x 16" west coast style and 6" x 8 " convex style mirrors or Velvac 2010 stainless steel remote control / heated mirror with a convex mirror minimum of 8" round can be provided if necessary to meet NFPA 1901-2009.

8. The crew cab roof shall have four (4) manual roof vents. The vents shall be located over the driver, officer and 2 rear jump seats. The vents shall be built into the cab roof structure so as to prevent damage or caving in when inadvertently stepped on. Inserts shall not be permitted.

9. Flexible, non-metallic front bumper sight rods shall be furnished. They shall be 44" in height.

10. The cab roof shall be made of or overlaid with aluminum diamond plate and be considered a walking surface.

11. A Kussmaul or equivalent auto-eject charging receptacle and charging level indicator shall be mounted in the driver's step well area below the cab door. The cover shall be red in color.

12. There shall be rollout style trays provided for the batteries or sufficient access provided to change all of the batteries without tilting the cab.

B. CAB INTERIOR:

1. SEATING:

a) Driver's seat – Shall be a Seats Incorporated Magnum 100 Knee action air ride driver's seat with high back styling and Cordura Fabric (Preferred) or Imperial 1200 cloth black upholstery. The driver's seat shall be mounted as far back as possible to allow for maximum front to back adjustment. Alteration to the width of the locking medical storage compartment may be necessary to accomplish. Seats Inc. Part # 181173JN400.

b) Officer's and crew's seats - Three (3) Bostrom 400 Series Tanker 450 SCBA seats with high back styling and black Dura-wear cloth upholstery shall be supplied. There shall be a compartment below the officer's seat, which opens from the front for mounting of a District supplied radio. The officer's seat shall be moved back as far as possible. The Bostrom part number for the SCBA seat is as follows: P/N 224000-665F Tanker 450/N Black Durawear w/DCFD logo. The seat shall have the "Secure All SCBA Locking System" incorporated into it.

c) All SCBA seats shall have opening headrests. The seat must be capable of mounting a Scott Air-Pak 50 breathing apparatus with integral personal alert devices.

d) SCBA brackets, outlined in the loose equipment section, shall be mounted.

e) The vendor shall propose a location for the mounting of two additional S.C.B.A during pre-construction meeting.

f) There shall be One (1) Bostrom Tanker 400CT Flip Up style tanker seat with a Secure All SCBA Locking System style seat shall be provided next to the EMS cabinet on the rear wall of the cab covered in black dura-wear material located in the crew cab area right hand center section between the crew cab doors. DCFD's own part number from Bostrom is 220000-0665F. The seat will be mounted on the left side inboard forward facing position adjacent to the medical compartment.

g) There shall be 2 fold down seats located opposite the rear facing jump seats covered in black durawear material. Reinforced stitching methods shall be used to prevent material from tearing. Mounting bolts/fasteners shall not protrude into the cushion.

h) Any latches used on the officer's side of the dash shall be a recessed type latch or a butterfly style latch that is rounded over smooth on the top to prevent anything from getting caught on the latch and possibly releasing it.

i) The head liner shall be covered in the same Dura-Wear type material that the seat are and shall be red / black tweed in color.

j) There shall be a Safety Vision Safe Drive Mini DVR Mobile Digital Video Recorder installed in the cab and mounted to the driver's side windshield. Exact mounting location will be determined at pre-construction conference. Licensed to DCFD and provided with all necessary software and equipment.

2. MEDICAL COMPARTMENT:

a) A compartment shall be provided inside the crew area of the cab for storage of EMS equipment that needs to be stored in a climate controlled atmosphere. Contained within this compartment shall be a small lock box provided 9"Hx 8"Wx 5-5/8"D that has 12 volt d/c power to it to operate a key fob lock/security device. This shall be powered directly off the battery. The box is a Medi-Dose Inc. part # NC-1501 1-800-523-8966.

b) The dimensions of the compartment shall be approximately 17"W x 15"D x 47"H based on the interior floor to ceiling dimension of the cabs interior.

c) The compartment shall be manufactured and fabricated out of Stainless Steel or Aluminum and the interior shall be painted white and clear coated so that it can be decontaminated if necessary. The exterior shall be either painted in spatter to match the interior of the cab or covered in Aluminum treadplate.

d) Five (5) Whelen PSCOCDCR LED compartment lights shall be provided.

e) The preferred mounting location would be against the rear wall of the cab on the right hand side center area between the rear crew cab entrance doors.

f) There shall be Three (3) fully adjustable shelves provided.

g) There shall be a 120V GFI duplex outlet provided and connected to the shore line and the generator.

h) There shall be Two (2) 12V power point plugs provided in this compartment also.

i) The VRS control box shall be mounted on the floor of this compartment on a slide out tray.

j) The compartment door shall be a swing out style door.

k) The lower front and sides shall be adequately ventilated for the VRS equipment.

CONTROLS:

a) Cab dash gauge Instruments shall be Beede Gauges. An Engine hour meter shall be provided.

b) There shall be a fast idle switch located on the dash board or the main switch panel set for 1000 rpm.

c) The cab shall have a flashing red Whelen model 5SR00FRR “compartment open" light and buzzer. This shall be operational at all times when the parking brake is released. The light and buzzer shall be appropriately marked.

d) There shall be a horn and warning buzzer button between the cab and the tiller cage, which is also connected to a light that will be used to signal the movement of the vehicle. It shall be appropriately labeled: “1 – Stop, 2 – Go, 3 – Back-Up” in both the cab and tiller cage. There shall also be the same provided on both sides of the rear of the trailer as well.

e) There shall be a Fire Research ICA-900 Intercom provided between the driver and the tiller cage. Controls for the driver shall be mounted within easy reach of the driver when he is seated in the driver’s seat.

f) 4 (four) 750 watt, 120 volt qwik-raze Magnafire 3000 lights with grills shall be furnished and installed as follows: One each side at rear of tractor roof, externally mounted, inboard of the outside edge of the cab roof. Light head to face side of unit. One each side on trailer body (exact location to be determined at pre-construction meeting). These lights will be fixed, non-telescoping. These lights are to be powered by the 120v system and shall be able to be turned off and on, independently, from a location in the cab that is easily accessible to both the driver and officer or 2 sets of switches provided and at the generator panel as well. Momentary style switches with an indicator light shall be used for ALL off / on switches for the lights and the generator. Switches shall be provided for both the driver and the officer.

g) The main generator shall be able to be turned on/off with a switch from both the cab and side control box. Momentary style switches with an indicator light shall be used. ***There shall be a generator ON/OFF switch and light for both the driver and the officer.***

h) The Air horn control shall be of the halyard type and shall have 3 pull chains/cords which shall be angled so as to be operated by either the driver or officer and the third one is to hang straight down and have a rubber ball mounted on the end to weigh it down. The

chain/cord mounting shall be substantially reinforced and the chain/cord shall be rubber covered/coated. ***Heavy duty "S" style hooks shall be used to attach the chains so they do not wear out under heavy use.*** Any springs used shall be of the heavy duty type so as to resist deformity under heavy use. The air operating valve shall be a pull down type. A foot switch shall also be provided for the driver and the officer. Linemaster (632S) heavy duty foot pedals shall be used as the foot switch. The foot pedal shall be mounted inboard of the siren foot pedal.

i) There shall be an additional emergency parking brake control located on the officers side of the dash, with a guard to provide auxiliary emergency braking should the driver become incapacitated.

j) All audible and visual alarms shall be clearly marked as to function. Additionally, all audible alarms shall have distinctly different sounds. The vendor shall provide a reference guide for any coded alarms.

k) The accelerator pedal shall be angled or separated away from the brake pedal a sufficient distance so as to prevent accidental activation of the brakes and/or the accelerator.

l) There will be a speedometer provided for the officer's side of the dash board. Exact mounting location will be decided at the pre-construction conference.

m) There shall be a digital clock provided in the dash board area either the overhead or lower dash area.

n) Two defroster fans shall be provided on the dashboard area.

OTHER INTERIOR REQUIREMENTS:

a) All door glass shall be of the electric switch operated type and shall be able to be lowered fully. A switch shall be provided for the driver to operate the officer's window. The motor shall be easily replaceable. Roll down windows may also be provided as an option and the hand crank shall be of the screw in style retainer.

b) The entire inner door panel for each door shall be finished in stainless steel. The upper door panel shall have the window regulator incorporated into it as one complete unit for ease of replacement. The stainless steel door panels shall be held in place with hex head bolts. There shall also be an access panel provided to disconnect any door latching linkage as necessary to allow easy removal of the combination door panel / window regulator.

c) The cab shall have the standard insulation package with maximum additional heat and noise insulation for the entire cab and engine compartment.

d) The cab shall be air conditioned. The air conditioning condensing unit(s) located on top of the cab shall be protected by a diamond plate shield, angled at the front, which will prevent damage from limbs and other low hanging objects. Drainage for the condenser shall be provided that drains the condenser condensation to the ground and does not permit water to enter the cab when the cab is in the normal down position or raised position.

e) The vendor shall specify the type and cooling capacity of proposed air conditioners.

f) The tiller cage shall be provided with 2 fans.

g) The tiller cage interior lighting shall consist of a ceiling mounted light, and shall be a Whelen #70RCSFDR Red / White Dome Light *LED* fixture in a two light combination fixture with both a red and normal (white) light capability. The lights shall be individually switched.

h) The cab interior lighting shall consist of a total of four ceiling mounted lights, one near each seat position, and shall be a Whelen #70RCSFDR Red / White Dome Light LED fixture in a two light combination fixture with both a red and normal (white) light capability. The white lights are to be switched (on/off) with the crew cab door and by individual switch. Lights are to be able to be operated without getting out of the seat. The red light shall be controlled by an individual switch. If recessed into the cab ceiling toggle switches are available they shall be provided.

i) The vehicle shall have in-cab fluid level check, with in cab fluid access where practical. The dipstick handles shall be color coded and marked. The fill accesses shall be marked and identified. Red / Transmission, Yellow / Motor Oil, Blue / Power Steering. The sticks shall have the appropriate hot and cold detents and markings. **All fluids shall be able to be checked and filled with out tilting the cab.**

j) The contractor shall provide mounting, which is easily accessible for both the driver and officer, for 12 sets of building keys. The contractor shall provide a proposed location and drawing. This shall be a brushed stainless steel plate with 12 eyebolts. Location will be determined at pre-construction conference.

k) The contractor shall provide a map box to be mounted on the engine dog house with (3) removable dividers, drop down cover & latch. The contractor shall provide a proposed location and drawing during the pre-construction meeting. The map box shall be mounted slightly raised up off of the deck of the engine cover to allow the door to fully open. The box is to be finished in black linex.

l) There shall be a hand held spot light, Mobile Patrol model 2150-1, mounted in a bracket on the engine cover.

m) There shall be a grab handle mounted on the Engine cover, Officer's side.

n) The officer and driver shall have Hansen 930-0000/0001 grab handles located in such a manner as to easily and safely facilitate mounting and dismounting the apparatus. These grab handles shall be mounted on or near the door posts of both the officer's and driver's positions. The handle on the driver's door post shall be installed at such a height that it will not interfere with the turning of the steering wheel regardless of the position of the steering wheel.

o) The engine cover shall be covered with Black Linex or other suitable durable material. The dash board panels in front of the driver and the officer shall be covered in black linex also. The interior rear wall of the crew cab shall be finished in aluminum treadplate.

p) There shall be a map light, Sunnex model #HS-762-00, mounted on the officer's side of the overhead dash area.

q) A vehicle fluid information plate shall be mounted in the cab. This will list ALL fluids and capacities for the vehicle.

r) A David – Clark vehicle intercom system shall be provided and connected to the radio system. There shall be 5 interior positions, one position located at the aerial control pedestal and one position in the tiller cage. This connection shall be fully weather proofed (see radio requirements.) Hanger hooks shall be provided at each David Clark headset location. A Fire Com hook shall be used and mounting location will be determined at the final inspection. There shall be a total of 2 hooks mounted in the tiller cage.

SECTION 9: TILLER CAB AND OTHER REQUIREMENTS:

1. **Tiller Cab:** The tiller cab shall be provided with the following:

   a.) An electric window defroster / heater;
   b.) Starter interlock;
   c.) Seat belt "not-fasten" switch which has a flashing Whelen model 5SA00FAR light with amber lens in the crew cab to indicate that the tiller seat belt is not fastened; this light shall be connected to the parking brake.
   d.) A Bostrom Suspension seat;
   e.) 2 way intercom between the crew cab and tillerman, FRC ICA-900.
   f.) David Clark jack position connected to the apparatus radio;
   g.) Bubble side windows;
   h.) 2 fans;
   i.) Grab handles;
   j.) West coast style mirrors; Vel Vac with the Vel Vac rectangular convex mirror.
   k.) The interior and exterior of the Tiller Cage shall be painted job color RED.
   l.) L.E.D. light as outlined above
   m.) A bar across rear tiller sliding window which prevents seat from breaking glass when seat is fully back.
   n.) The tiller access ladder shall be provided with recessed mounted LED step light for each step.

2. Outriggers: The maximum distance between outriggers, when fully extended shall not exceed 185".

3. Tiller steering: The tiller steering shall be power assisted and set to a minimum of 23 degrees left and right and provided with a power assist cylinder.

4. Tiller suspension: The tiller suspension shall be air ride, not conventional springs.

5. Exterior Labeling and tagging system – The apparatus shall be equipped with permanent etched zinc verbiage tags used to identify, instruct or warn the operator. These tags must be specifically designed and manufactured to withstand the service environment of the apparatus; and carry a warranty similar to that provided for the exterior paint and finishes of the apparatus.

6. All interior controls, gauges and alarms shall be labeled as to function.

7. All air tanks, fill reservoirs and diagnostic connections shall be appropriately labeled all air tanks shall be equipped with cables attached to the drain valves and run to the outside edge of the apparatus body and labeled as such.

SECTION 10: THE CHASSIS, ENGINE AND ELECTRICAL COMPONENTS:

A.) CHASSIS:

AIR SYSTEM AND BRAKES:

1. The vehicle shall be provided with ABS Disk brakes either 6 Channel or a system designed for a Tractor Drawn Aerial Ladder with automatic traction control. A mud and snow switch shall be provided.

2. There shall be a switch provided behind the dash panel for a mechanics over ride starter switch attached to the buzzer system so the truck can be started by a mechanic from the driver's seat.

3. The air dryer shall be a WABCO System Saver 1200.

4. The brakes shall be EX-225 disc brakes (17") Automatic slack adjustors shall be furnished on all brakes. Brake system chambers/adjuster arms shall be selected to maximize system performance by proportioning braking to match front/rear weight distribution of the completed, loaded vehicle, with specific approval by Rockwell required. A copy of the approval letter shall be furnished to FEMS prior to beginning construction.

5. A dedicated tank for the release of the parking brake shall be furnished. The location of the releasing mechanism or switch shall be easily accessible to the driver on the dash.

6. A pressure protected auxiliary air tank is required for operation of all air devices beyond the brakes, for example the air outlet located on the tractor and the air horns. It shall be of such capacity as to provide for near constant use without unduly draining the air system.

7. There shall be an air horn shut off valve provided and labeled as such, located near the driver's position.

8. A set of front Glad Hands for towing shall be provided in lieu of an auxiliary air inlet. They shall be labeled one (Red) and one (Blue). They shall be mounted behind the left hand side of the front bumper extension.

9. The air lines to and from the air compressor / governor shall be furnished with compression style fittings. All chassis air lines shall be provided with compression style fittings as well. **Quick disconnect style fittings will be unacceptable**.

B.) FRAME, SUSPENSION AND WEIGHT DISTRIBUTION:

ATTACHMENT J.2 AERIAL TRUCK SPECIFICATIONS

1. The frame shall have a minimum RBM of 1.9 million. The frame and ALL undercarriage area as well as the components shall be painted job color red.

2. Springs shall be semi-elliptical in design with bronze bushings and utilize heavy duty, double acting shock absorbers. The shocks shall be mounted on approximately a minimum of a 70 degree angle on the front axle. This suspension shall be specially designed for the extra severe duty of rough city road surfaces. The front springs shall be a "Straight Rate Progressive Rate Reverse Arch Spring.

3. The weight distribution for the completed vehicle with a full operational load shall be as follows:
   Front: 30% (+/- 5%)
   Trailer: 40% (+/-5%)
   Tiller: 30% (+/-5%)
   Left to Right 7%
   Any ballasting information, to achieve the above weight distributions, shall be provided to the COTR.

4. Wheels are to be hub piloted. Tires: Tractor Front - Michelin XZY 315 80R 22.5 x XZY3
   Dual Rear Tractor Michelin - 12R 22.5 x XDNZ
   Tiller – Michelin 315 80R 22.5 XZY3
   NOTE: All wheels shall be Alcoa Dura- Brite finish.

5. The vehicle shall be provided with Stemco front axle oil seals and Stemco Advantage 2,000 tiller axle oil seals.

6. The vehicle shall be provided with automatic traction control. With a deep mud and snow switch.

7. To prevent electrolysis, insulators shall be provided at any place where dissimilar metals meet.

8. Front, Rear, and Tiller axle mud flaps shall be furnished. They shall be Heavy Duty Rubber type.

9. Extra heavy duty cut plate style towing eyes shall be furnished on both the front and the rear of the vehicle and be painted job color red. The eyes shall be directly connected to the frame. These eyes shall be capable of supporting the pulling of the vehicle when fully loaded. The front eyes shall face upward or forward.

10. The angles of approach, departure shall not be less than 15 degrees. The break over angle will be shown on the drawing provided with the bid.

11. The tractor and trailer chassis shall be lubricated by a VOGEL lubrication system. The installation will be such that the manifolds are easily accessible, and do not block access to any other component. These lines shall be free from stress. The lubricant reservoir shall be easily accessible for checking and refilling by way of an access door. A drum pump and a drum of Vogel Lube shall be provided. The Aerial system lubrication points shall be connected to the Vogel lubrication system wherever possible. The 5th wheel assembly shall be connected to the Vogel Lube system if possible. The pins on the 5th wheel shall be greaseable style pins.

12. All Power steering hoses are to be the high pressure type. **No copper tubing is to be used.**

13. Axle vent tubes are to be extended up to between the frame rails so that water and debris cannot enter them.

14. Automatic Heavy Duty drop down snow chains shall be provided. They shall be capable of working when driving in both forward and reverse.

C.) ENGINE: Cummins or Detroit Diesel

<u>Option1: Cummins ENGINE</u>

1. Specifications:

a.) The chassis shall be powered by a 2010 emissions compliant Cummins ISX11.9 diesel engine as described below:

Model	ISX11.9
Number of Cylinders	Six
Bore and Stroke	5.11 x 5.91 in
Displacement Liter (Cu. In.)	11.9 (729)
Rated BHP	500 @ 1800 RPM
Torque	1645 ft.lb. @ 1200 RPM
Governed RPM	2100
Oil Capacity / Type	12 gallons / SAE CJ-4
Fuel Requirement	Ultra low sulfur diesel (15 ppm max.)

b.) Standard equipment on the engine shall include the following:

Selective Catalytic Reduction (SCR) after treatment
Cooled Exhaust Gas Recirculation system
Fan – 32”, 11 blade
Charge air cooling
High pressure, common rail fuel system
Fuel filter with check valve and water separator
Fuel strainer
Governor – electronic, interact system
Injectors – electronically controlled full authority injection
Lube oil cooler – integral
Lube oil filter – full flow
Starting motor – 12 volt Denso double reduction
Turbocharger – variable geometry type
Air compressor – Wabco 18.7 CFM

c.) The engine exhaust system shall be a horizontal design constructed from heavy-duty truck components. Flexible couplings shall be utilized to absorb the torque and vibration of the engine. The outlet shall be directed to the forward side of the rear wheels, exiting the right side, with a straight tip. A heat-absorbing sleeve shall be

used on the exhaust pipe in the engine compartment area to reduce stored heat, providing protection for the alternator, and also to protect hands when checking or adding oil in the engine compartment.

d.) A SCR chamber shall be installed in “stacked” series with the DPF chamber on the right side of the vehicle, immediately behind the cab and shall ingest urea from a remote storage tank providing a catalytic reaction with diesel exhaust particulates, called Diesel Exhaust Fluid, it is a solution of 2/3 water and 1/3 urea that reacts with NOx to create nitrogen and water. The urea tank shall be equipped with a level sensor, heater and alarm to prevent run-out or freezing.

2. <u>ENGINE AND CHARGED AIR COOLING SYSTEMS</u>

a.) A serpentine core type radiator with continuous louvered copper fin design shall be provided. Radiator shall be fitted with formed steel side frames. The top tank shall have a built-in de-aeration system. A drain shall be located at the lowest point.

b.) The engine charged air heat exchanger shall be located directly in front of the radiator and be bolted to its side rails. It shall be all aluminum-brazed construction. Air cooler shall be cross flow design with cast aluminum side tanks, horizontal inlet and outlet at top and aluminum louvered serpentine external air fins. Cooler tubers shall also be constructed of aluminum and have internal fins that eliminate laminar airflow.

c.) The charge air cooler and the radiator shall be produced by the same manufacturer as a single assembly to provided continuity throughout the cooling system. This shall ensure a certified “balanced” package for the chassis engine air and fluid cooling systems.

d.) The radiator and charger cooler shall be mounted to the chassis stub. Fabricated mounting bracket for the fans ring shall be attached to the front of the engine in a manner so that it “floats” with the engine and increases the fan’s efficiency by tightening the tip clearance. This mounting design eliminates engine fan and radiator shroud contact due to engine torque movement and promotes more efficient airflow. The radiator and charger cooler shall be held in place at the bottom by two (2) large bolts equipped with anti-stress rubber biscuits. The top of the radiator shall be supported by two (2). ¾” tubular braces, bolted to the chassis stub. Anti-vibration rubber biscuits shall be installed at the top threaded end of the braces where they attach to the radiator.

3. <u>ENGINE COOLING CERTIFICATION</u>

"EPQ" (End Product Questionnaire) certification shall be provided by the apparatus manufacturer and shall be done on a completed unit (after pump and complete body installation). Incomplete certifications (chassis only) shall not be acceptable.

4. <u>WARRANTY</u>

5 year or 100,000 mile warranty on the ISX engine.

5. EXHAUST HEAT SHIELDS

a.) Heat shields shall be provided as needed to prevent damage to body and wiring from excessive exhaust temperatures. The exhaust pipe shall be wrapped in multi-layered insulation blankets, from just aft of the turbo down to inlet side of the DPF. Each blanket shall have a fiberglass inner layer and a silicone impregnated fiberglass cloth outer layer

b.) The cab shall receive a minimum of a 1.25" thick foil back insulation blanket under the crew floor to reduce floor temperatures.

c.) All harnesses and cables, in proximity to exhaust system components, shall be protected with insulation.

6. EXHAUST

A SCR chamber shall be installed in “stacked” series with the DPF chamber on the right side of the vehicle, immediately behind the cab and shall ingest urea from a remote storage tank providing a catalytic reaction with diesel exhaust particulates.

7. AIR COMPRESSOR

A Wabco 18.7 cfm air compressor shall be furnished. The air compressor shall be gear driven off the engine.

8. FLEETGUARD/DAVCO FUEL WATER SEPARATOR with ALARM & HEATER

A Fleetguard FH230 Series (Davco Fuel Pro 382) top load 7 micron filter with fuel water separator, water sensor alarm, and 12 VOLT fuel heater shall be provided. The filtering system shall be remote mounted on the chassis and shall include the check valve. The standard engine fuel filters shall be removed from the engine. The system shall have the following features:

- Self priming port, single filter system (replaces primary and secondary filters)
- Drain valve
- Aluminum cylinder (acts as fuel coolant)

Option 2: Detroit Diesel ENGINE

1. Specifications:

a.) The chassis shall be powered by an electronically controlled engine as described below:

Make: Detroit Diesel
Model: DD13
Power: 500 hp at 1800 rpm
Torque: 1650 lb-ft at 1200 rpm
Governed Speed: 2080 rpm
Emissions Level: EPA 2010
Fuel: Diesel
Cylinders: Six (6)
Displacement: 781 cubic inches (12.8L)

Starter: Delco 39MT
Fuel Filters: Dual cartridge style with check valve, water separator, and water in fuel sensor
Coolant Filter: Cartridge style with shut off valves on the supply and return line

2. ENGINE WARRANTY

The engine shall come with a **five (5) year or 100,000 mile** warranty provided by the Detroit Diesel Corporation.

3. EXHAUST SYSTEM

The exhaust system shall include a diesel particulate filter (DPF) and a selective catalytic reduction (SCR) device to meet current EPA standards. The exhaust system shall be stainless steel from the turbo to the inlet of the SCR device and shall be 5.00" in diameter. An insulation wrap shall be provided on all exhaust pipe between the turbo and SCR to minimize the transfer of heat to the cab. The exhaust shall terminate horizontally ahead of the passenger side rear wheels. A tailpipe diffuser shall be provided to reduce the temperature of the exhaust as it exits. Heat deflector shields shall be provided to isolate chassis and body components from the heat of the tailpipe diffuser.

4. DIESEL EXHAUST FLUID TANK

a.) A 4.5 gallon diesel exhaust fluid (DEF) tank shall be provided and mounted in the driver's side body forward of the rear axle. The tank shall be constructed of 16-gauge type 304- L stainless steel. A .50" drain plug shall be provided in a low point of the tank for drainage.
b.) A fill inlet shall be located on the driver's side of the body and be covered with a hinged, spring loaded, stainless steel door that is marked "Diesel Exhaust Fluid Only".
c.) The tank shall meet the engine manufacturers requirement for 10 percent expansion space in the event of tank freezing.
d.) The tank shall include an integrated heater unit that utilizes engine coolant to thaw the DEF in the event of freezing.

1. The engine shall be provided with an active fan clutch.

2. The Starter shall be a Denzo brand starter.

3. Cooling capacity for Maximum achievable BHP at any RPM.

4. The radiator shall have brass tubes, copper fins and bolted steel top and bottom tanks. The radiator flush plug with anti-seize shall be mounted on the side of the radiator.

5. All radiator and heater hoses shall be made of EPDM or Silicone material in place of the standard hoses. Pressure compensating constant tension clamps shall be used to eliminate hose pinching and cold leakage on all hoses over 1".

6. A Fuel Pro 382, Davco fuel Pro 382, or Fleetguard FH230 Filter system shall be provided. A brush guard shall be provided to protect the filter if it is exposed.

7. An electric fuel primer pump shall be furnished and mounted directly to a frame rail or cross member.

8. A stainless steel fuel tank shall be provided and be at least of a 50 gallon (65 gallon preferred) Capacity with a Protect-O-Seal fuel cap and flash arrestor. The fuel cap shall be threaded onto the fill neck with a pin actuated flip-up top. A fuel line shut-off shall be provided. A low fuel warning indicator shall be provided in the Engine Status Center. This warning shall not inadvertently activate when fuel is “sloshing” around in tank. **Labeled “Diesel Fuel Only”** on the tank and / or at the fill cap.

9. Provide and install appropriate V.I.T. (Vehicle Information Transmitter)/Candometer fueling devices. Contact Mr. Lee Christiansen at E.J. Ward Inc. (210) 824-7383 for information and pricing.

10. Engine protections shall be set for ramp down not shut down.

11. 300 amp. Alternator minimum. (N.F.P.A. 260A). Niehoff Model 524 pad mounted or equivalent pad mounted.

12. For all oils, fluids and lubricants used by the vehicle, the vendor shall supply FEMS with the MSDS.

13. All engine fluid check/fill locations shall be color coded and labeled. **Red / Transmission Yellow / Engine Oil Blue / Power Steering.**

14. The vehicle shall be equipped with Delco or Delphi 1150 batteries. A total of 6 Group 31 batteries shall be furnished. Corrosion resistant flooring or matting will be provided and the battery boxes shall be lined with black linex. A set of jumper studs shall also be provided and covered with a red (+) and a black (-) rubber caps on both the studs and the nuts on the rear side of the stud.

15. A placard shall be mounted on the driver’s door indicating the ***ALL*** fluid capacities and types of fluids used throughout the vehicle. For all oils, fluids and lubricants used by the vehicle, the vendor shall supply the COTR with the MSDS.

16. Install a Neiderman Exhaust removal magnet receiver and the associated components to remote activate the system in the firehouses.

D.) TRANSMISSION:

1. Transmission – Allison World 4000EVS P with the Prognostics turned on.

2. Retarder – Telma Retarder stages will be indicated by the COTR. There shall be an on/off switch with indicator light and retarder stage indicator lights mounted on the dashboard. The Stages shall be 1 and 2 off of the Accelerator and 3 and 4 off of the Brake Pedal.

3. A TC541 torque converter.

4. Keypad shifter with the mode switch enabled.

5. Transynd transmission fluid.

6. The transmission dipstick is to have hot and cold level detent markings and color coded **RED**.

7. The transmission shall be equipped with oil level and temperature sensors.

8. The driveline is to be provided with mechanic's "U" Joints.

9. The Prognostics shall be turned on.

E.) ELECTRICAL WIRING AND COMPONENTS:

WIRING:

1. Extreme care shall be exercised to provide for easy serviceability of the system in future years.

2. Circuit connections shall be made on a barrier style terminal block, utilizing stud and nut fasteners for positive mechanical connections or a modular plug system. The District reserves the right to approve the modular plug system.

3. All wiring terminals shall be closed barrel style. These shall be machine crimped to insure uniform and positive connections throughout the wiring harness. Soldered connections or the use of "Scotch-Lock" type fasteners is not acceptable. ***NO butt connectors shall be used.***

4. To insure minimal voltage drop and secure connections, **NO** splices shall be allowed in the wiring harness.

5. There shall be service loops at all junction points.

6. There shall be direct access to all junction points.

7. All wiring shall be a minimum of 14 AWG with SXL insulation.

8. All cables larger than 10 AWG shall have the terminals mechanically crimped to insure a minimal voltage drop. The vendor shall submit the crimping method and tool used for crimping to the COTR for approval prior to construction.

9. All wire loom is to be rated at 250 degrees F., minimum.

10. In lieu of the electrical requirements 1 through 8, a written 10 year bumper to bumper electrical system warranty may be furnished at no cost to FEMS. This warranty shall be furnished prior to beginning construction.

11. 1/0 Braided copper ground straps are to be installed between the engine and cab, the engine and frame, tractor frame and trailer frame, trailer body and trailer frame

12. All switch panels shall be labeled and grouped by function.

13. The electrical system shall be calculated and wired in such a manner that no power spikes occur during the use of any electrically operated component installed on the vehicle. Additionally, the vendor shall ensure that the system manager delays power flow to all 12v lighting at engine start-up until the start-up power has stabilized.

14. All terminal connection points shall be adequately protected against accidental contact.

15. The wiring shall be mounted in protective nylon loom in all areas. All wiring shall be specially harnessed with wire locks and clipped to body members using rubber covered, metal retention clips. All wiring shall be hidden to prevent unauthourized access. Wiring harnesses between the cab and the body shall be in Carflex or Sealtight conduit for protection. Wiring clamps shall be rubber lined securely bolted to chassis frame and body. Plastic ties may be used to form bundles, but should not be used to secure bundles to vehicle. The Carflex or Sealtight will terminate with a water tight connector designed for the type of conduit used inside of the wiring terminal box for the cab and the body. " **NO EXCEPTION**" Plastic junction boxes and connectors will **NOT** be permitted. **PMA style WATER TIGHT conduit will be an acceptable alternative to the sealtight or carflex, however it shall be provided with Deutch connectors on the ends that are sealed all the way up to and including the connector. Heat shrink tubing shall NOT be accecptable for sealing the end of the harness at the Deutch connector.**

16. Wiring shall not be secured to brake lines and/or fuel lines.

17. Where wire passes through sheet metal, large rubber grommets shall be used to protect both the wiring and the wire looms. All electrical connections shall be with mechanical type fasteners. Where pigtails from lights are connected WeatherPak type connectors shall be used.

18. All 12 volt wiring to the rear of the body shall be routed down each side of the exterior body compartments in enclosed electrical raceways over the exterior compartment doors. Raceways shall be enclosed full length, easily accessible and protected from damage.

19. 12 volt wiring from the cab to the body shall be connected at a weathertight box designed for this purpose and / or the main terminal panel box. At this point all wiring shall be split, so that the body may be removed from the chassis at a later date. The main wiring harness shall be run in Carflex or Sealtight, or equivalent conduit (PMA).

20. Additional secondary terminal panels shall be installed in each rear corner compartment, and a separate panel in the cab. Only automatic reset circuit breakers shall be used in the electrical installation for the body wiring.

21. All wiring shall be color, function, and number coated throughout the installation. The function and numbering system shall correspond with the electrical wiring as built schematic furnished with the apparatus.

22. Extreme care must be taken in the installation to avoid engine manifold, engine exhaust, and muffler areas that could expose the wiring to severe overheating during long periods of operation. Proper insulation and heat deflection panels must be installed in such areas.

23. All compartment door and cab door pin switches as well as any exterior switches shall be weatherproof.

24. All circuit grounding must be accomplished by using grounding busses attached directly to the chassis frame. It is anticipated that only 3 to 4 busses will be required for the entire vehicle.

F.) NFPA 1901 / 2009 REQUIREMENTS:

1. All certification shall be performed by a certification organization accredited for inspecting and testing systems of fire apparatus in accordance with ISO/IEC 17020 or ISO/IEC Guide 65.

2. A Vehicle Data Recorder shall be provided which will log the following:
   A. Vehicle Speed (MPH)
   B. Acceleration (MPH/sec)
   C. Deceleration (MPH/sec)
   D. Engine Speed (RPM)
   E. Engine throttle Position
   F. ABS Event
   G. Seat Occupied Status
   H. Seat Belt Status
   I. Master optical warning device switch position
   J. Time
   K. Date

3. Rollover Stability Requirements
   A. Apparatus shall be equipped with a stability control system
      OR
   B. Vehicle remains stable to 26.5 degrees tilt table verification calculated or measured CG.

4. Tire pressure monitoring system. Each tire shall be equipped with a visual indicator for tire pressure or a monitoring system for tire pressure.

5. Optical and audible warning system certifications.

6. Additional loose equipment requirements:
   A. Five (5) fluorescent orange traffic cones.
   B. Five illuminated warning devices.
   C. One (1) traffic vest for each seated position. DCFD will provide exact style, supplier and part number at pre-construction.
   D. AED will be supplied by DCFD.

7. A permanent label in the driving compartment will specify the maximum tire speed.

8. DPF / Regeneration will be manually initiated by activation of a switch located in the driver's area. A switch shall be provided at the driver's area that will inhibit DPF regeneration until switch is reset or engine is reset. The DPF icon is visible to the driver when seated during activation. The high exhaust system temperature icon is visible to the driver when seated. A diffuser will be required on the exhaust. Exhaust temperature not to exceed 851 degrees F

and a warning label shall be placed on the apparatus in the area of the exhaust to prevent burn injuries to the firefighters working on or around the apparatus.

9. Seat belt web length requirements will be Type 2 pelvic and upper torso restraint shall be a minimum of 110" and Type 1 lap belt for pelvic restraint shall be a minimum of 60". The belts will be Bright Red in color.

10. A Seat Belt Warning System shall be provided and consist of both an audible and visual warning device from the driver and the officer position indicating the following:
    A. Buckled and senses occupant
    B. Buckled and no occupant
    C. Unbuckled and senses occupant
    D. Unbuckled and no occupant

11. Fire Helmet restraints shall be provided. A location for helmet storage shall be provided and compliant with the 9G restraint requirements if stored in the driving or crew compartments. A label stating: **"DO NOT WEAR HELMET WHILE SEATED"** shall be visible from each seating position.

12. Cab Integrity Testing shall be required. All cabs with a GVWR greater than 26,000 lbs. shall meet either SAE J2420 regulations or ECE Regulation 29.

13. Cab rear view mirrors used by the driver shall be adjustable from the driver's position. **(Bus style mirrors will NOT be acceptable for DCFD applications.)**

14. Any Access ladders provided shall have at least 8" clearance between the rung and body or obstruction.

15. All handrails and handholds shall be constructed and mounted so that three (3) points of contact can be maintained at all times while ascending and descending.

16. Reflective Striping shall be as follows:
    A. At least 50% of the rear of the apparatus shall be equipped with retro reflective striping.
    B. The stripe shall be 6" in width.
    C. The colors will be red #983-72 and yellow #983-71 3M Diamond Grade.

17. Ground Ladders shall not be subject to exposure to heat sources of 212 degrees F or greater.

18. Receiver and anchors for rope and removable winches shall be as follows:
    A. Receivers for removable winches shall be designed to provide a 2.0 to 1 straight line pull no yield safety factor.
    B. Receivers or anchors installed for use with rope operations shall be designed to provide at least 9,000 lbs. no yield condition.

19. New Intake Pressure Gauge requirements as follows:
    A. Intake pressure gauge shall read from 30 in. of Hg vacuum to at least a gauge pressure of 300 PSI (600 PSI preferred by DCFD).

B. Gauge graduation lines on vacuum side every1 in. Hg with major and intermediate lines emphasized and figures at least every 10 in. Hg.

20. Caps for intake / outlet connections for 4.0” or smaller must remain secured to the apparatus.

21. If equipped with an Aerial Device the following Horizontal and Vertical Height ratings shall apply:
    A. Rated horizontal reach of the aerial may be less than the extended length of the aerial that is used to determine the rated vertical height.
    B. The minimum rated capacity shall remain constant throughout the entire operating envelope of the aerial device.

22. Envelope Control Technology as follows:
    A. Allows for Aerial Operational window to be controlled by system.
    B. Aerial weight reductions with shorter horizontal reach.

23. Stabilizer Position and Aerial Operations:
    A. Aerial devices can be operated over the side with stabilizers not fully deployed if:
        i. An indicator is present at the operators position indicating maximum extension in relation to angle of operation based on position of stabilizers.

24. Line Voltage Electrical Systems:
    A. The neutral conductor shall be colored white or gray.
    B. The neutral conductor shall be bonded to the vehicle frame.

25. Winches shall be equipped with:
    A. Clutch assembly to permit free spooling and quick removal of the wire, cable, or synthetic rope.
    B. Free spooling clutch shall be accessible without reaching under the apparatus.

26. Three (3) Classifications of trailers:
    A. Type 1
        i. Trailers designed to remain connected throughout the response event and are dependent on each other for electrical power and conspicuity.
    B. Type 2
        i. Trailers designed to allow separation after arrival at the response and are not dependent on each other for electrical power and conspicuity.
    C. Type 3
        i. Open trailers designed to transport other vehicles, equipment, or containers that will be removed from the trailer after arrival.

27. Low voltage warning devices for Type 1 & 2 trailers shall be connected to the red hazard light in the driving compartment. (DCFD would prefer the installation of an additional light to serve this purpose if allowable).

28. Optical warning devices for trailers:
    A. Type 1 trailers shall meet all requirements of NFPA considering combined vehicle and trailer as a single unit.
    B. Type 2 trailers shall meet all requirements of NFPA considering the trailer as a single unit.
    C. Type 3 trailers shall meet all requirements of NFPA for lower sides and rear zones (B,C,D).

29. Reflective Markings for Trailers:
    A. Type 1 trailers shall meet all requirements of NFPA considering combined vehicle and trailer as a single unit.
    B. Type 2 trailers shall meet all requirements of NFPA considering the trailer as a single unit.

30. A statement of Exceptions Document shall be provided.

31. Continuous Electrical Load requirements for apparatus equipped to tow a trailer, an additional 45 amps shall be added to the minimum continuous electrical load. A larger size alternator may be required and additional components for load management maybe required as well.

32. Compartment lights and work lights shall meet a 2fc requirement.

33. Cab doors shall have a minimum of 96 sq. in. of reflective striping installed.

SECTION 11 THIRD PARTY TESTING

UNDERWRITERS LABORATORIES INC. will do ALL 3rd Party Testing NO Exception. This should include the UL Total Vehicle assessment.

A.) GENERAL

1. The completed apparatus with an aerial device and/or fire pump shall be tested at the manufacturer's approved facility and certified by an independent testing organization approved by the purchaser. NO EXCEPTIONS.

2. The contractor shall have in effect a complete and documented quality control program that will ensure complete compliance with the requirements of NFPA 1901, 2009 Edition.
3. All test work for aerial devices outlined in Section19.24 of NFPA 1901, 2009 Edition including nondestructive testing shall be conducted, NO EXCEPTIONS.
4. All test work for fire pumps outlined in Section 16.13 of NFPA 1901, 2009 Edition shall be conducted, NO EXCEPTIONS.
5. All test work for fixed power sources outlined in Section 22.15.7 of NFPA 1901, 2009 Edition shall be conducted, NO EXCEPTIONS.

B.) INDEPENDENT TESTING ORGANIZATION REQUIREMENTS:

1. Testing shall be conducted by a nationally recognized testing laboratory recognized by OSHA in accordance with the OSHA regulations set forth at 29 Code of Federal

Regulations set forth at 29 Code of Federal Regulations, Section 1910.7, Appendix A, "OSHA Recognition Process for Nationally Recognized Testing Laboratories." NO EXCEPTIONS.

2. Results of tests shall be certified by an independent testing organization, the third-party organization shall be accredited for inspection and testing systems 2 on fire apparatus in accordance with ISO/IEC 17020, *General criteria for the operation of various types of bodies performing inspection*. NO EXCEPTIONS.
3. The independent testing organization shall comply with the following American Society for Testing and Materials Standards. NO EXCEPTIONS.
   (a.) ASTM E543, "Standard Practice for Determining the Qualifications for Nondestructive Testing Laboratories"
   (b.) ASTM E548, "Preparation of Criteria for Use in the Evaluation of Testing Laboratories and Inspection Bodies."
4. The independent testing organization shall have not less than 20 years of experience in factory aerial device safety inspection and 40 years of experience in automotive fire apparatus safety testing.
5. The independent testing organization shall not represent, be associated with, nor be a manufacturer or repairer of automotive fire apparatus, no exceptions.
6. The aerial device shall be inspected and tested by the independent testing organization in accordance with the requirements outlined in NFPA 1901, Standard for Automotive Fire Apparatus, 2009 Edition. This includes all testing outlined in NFPA 1911, Standard for the Inspection, Maintenance, Testing, and the Retirement of In-Service Automotive Fire Apparatus 2007 Edition, Chapter 19, including nondestructive testing. NO EXCEPTIONS.
7. The examination and test report provided to the contractor from the independent testing organization shall specify the point of inspection and the results of such examinations and test. The test report, as required by NFPA 1911, Chapter 19, shall include the following:
   (a.) When the torque verification of mounting bolts, as required by NFPA 1911, Chapter 19, is performed, the bolt size, grade, and torque specification shall be recorded.
   (b.) When NDT is conducted, the test record will indicate the NDT method used in each area inspected.
   (c.) Where NFPA 1911, Chapter 19 requires measurements be taken such as bearing clearance and backlash, cylinder drift, relief pressure, ladder section twist, hardness readings, baserail thickness, extension brake drift, winch drift, and the like, these measurements shall be recorded in the test record in order that a year-to-year comparison can be made.
8. All test work for fire pumps outlined in Section 16.13 of NFPA 1901, 2009 Edition shall be conducted, NO EXCEPTIONS.
9. All test work for fixed power sources outlined in Section 22.15.7 of NFPA 1901, 2009 Edition shall be conducted, NO EXCEPTIONS.
10. The independent testing organization shall submit a list of a minimum of ten aerial device manufacturers for whom testing is currently being conducted on a regular basis. NO EXCEPTION.
11. The independent testing organization shall carry not less than one million dollars in excess liability insurance for bodily injury and property damage combined. NO EXCEPTION.

C.) PERSONNEL:

1. The inspectors performing the test work on the units shall be certified as meeting Level II requirements as outlined in American Society for Nondestructive Testing (ASNT) document CP-189 in all methods used in the aerial device inspection.
2. Prior to award of contract, the actual person(s) performing the inspection may be required to present for review proof of Level II Certification in the required NDT methods.
3. Prior to submittal to the contractor, the final report shall be reviewed by qualified staff who is directly involved with the aerial certification program at their company.

D.) CERTIFICATION:

1. When the unit successfully meets all Certification requirements in Section 19-24 of NFPA 1901, 2009 Edition, the third party testing company shall issue a certificate of automotive fire apparatus examination and test stating the unit's compliance with Section 19.24 of NFPA 1901, 2009 Edition.
2. When the unit successfully meets all Certification requirements in Section 16.13 of NFPA 1901, 2009 Edition, the third party testing company shall issue a certificate of automotive fire apparatus examination and test stating the unit's compliance with Section 16.13 of NFPA 1901, 2009 Edition.
3. When the unit successfully meets all Certification requirements in Section 22.15.7 of NFPA 1901, 2009 Edition, the third party testing company shall issue a certificate of automotive fire apparatus examination and test stating the unit's compliance with Section 22.15.7 of NFPA 1901, 2009 Edition.
4. In addition to meeting the requirements for third party certification for fire pumps, aerial devices, and, a fixed power source, the contractor shall provide additional certification to the District for the following automotive fire apparatus systems referenced in the appendices of NFPA 1901, 2009 Edition. The District may specify that these tests also be certified by a third party testing organization.
   (a.) Section 13.14, Low voltage electrical system and warning devices
   (b.) Section 17.12, Auxiliary pump and associated equipment
   (c.) Section 18.6, Water tanks
   (d.) Section 20.10, Foam proportioning systems
   (e.) Section 21.9, Compressed air foam systems (CAFS)
   (f.) Section 22.15, Line voltage electrical systems
   (g.) Section 24.14, Air systems

E.) In order to comply with this specification, the independent testing organization must have in its possession the tolerances from the manufacturer. NO EXCEPTIONS. Proof of compliance may be required prior to award of contract. The NFPA Standard 1911, Chapter 19, 2007 Edition requires the following test results be compared to the manufacturer's maximum recommended tolerances:

1. Critical mounting bolt grade, size, and torque specification
2. Rotation bearing clearance and backlash
3. Rotation lock movement
4. Elevation cylinder drift
5. Extension cylinder drift
6. Stabilizer cylinder drift
7. Relief hydraulic pressure
8. Breathing air system pressure
9. Ladder section twist or bow
10. Hardness for top rails and baserails of aluminum devices

11. Hollow I-beam baserail thickness
12. Winch and brake drift
13. Tip controls speed
14. Rated load of the aerial device
15. Water system tests (i.e. flow meter accuracy and relief valve pressure setting) 5

F.) UNDERWRITERS LABORATORIES INC. EXAMINATION AND TEST FOR AUTOMOTIVE FIRE APPARATUS

GENERAL

Underwriters Laboratories Inc. (UL) is recognized worldwide as a leading third party product safety certification organization for over 100 years. UL has served on National Fire Protection Association (NFPA) technical committees for over thirty years.

INDEPENDENT TESTING ORGANIZATION QUALIFICATIONS:

1. UL is a nationally recognized testing laboratory recognized by OSHA in accordance with the OSHA regulations set forth at 29 Code of Federal Regulations set forth at 29 Code of Federal Regulations, Section 1910.7, Appendix A, "OSHA Recognition Process for Nationally Recognized Testing Laboratories."
2. UL has demonstrated compliance with ISO/IEC Standard 17020, *General criteria for the operation of various types of bodies performing inspection,* and has been accredited, commencing November 10, 2008 by International Accreditation Service. Proof of certification available upon request.

3. UL complies with the American Society for Testing and Materials (ASTM) Standard ASTM E543 "Determining the Qualifications for Nondestructive Testing Agencies."
4. UL has more than 40 years of automotive fire apparatus safety testing experience and 16 years of factory aerial device testing and Certification experience. UL has more than 100 years of experience developing and implementing product safety standards.

5. UL does not represent, is not associated with, nor is in the manufacture or repair of automotive fire apparatus.
6. All test work outlined in NFPA 1911, Chapter 19, 2007 Edition, including nondestructive testing, will be conducted at the manufacturer's facility. In addition, the following test work outlined in Section 19.24, Certification Tests, of NFPA 1901, 2009 Edition will be conducted:

(a.) 1-1/2 Times Rated Capacity on Level Ground Stability Test: A load of 1-1/2 times rated capacity (as specified by the manufacturer) will be suspended from the tip of the aerial ladder, or the platform of the elevating platform, when it is in the position of least stability. If the manufacturer specifies a rated capacity while flowing water, then one times the water load and the worst case nozzle reaction will be added to the stability test weights. The apparatus will show no signs of instability. For a water tower, the stability test includes 1-1/2 times the weight of the water in the system and 1-1/2 times the maximum nozzle reaction force when it is in the position of least stability.

(b.) 1-1/3 Times Rated Capacity on a 5° Slope Stability Test: A load of 1-1/3 times rated capacity will be suspended from the tip of the aerial ladder, the platform of the elevating platform, or the tip of the water tower when it is in the position of least stability. The apparatus will show no signs of instability.

(c.) Horizontal Load Test: For aerial devices with a pre-piped waterway, a 350 lb. (160 kg) test load shall be applied to the tip of the ladder or boom. For aerial devices without a pre-piped waterway, a 220 lb. (100 kg) load shall be applied to the tip of the ladder or boom. The turntable shall not rotate and the ladder or boom shall not deflect beyond what the manufacturer's specification allows.

(d.) Aerial Device Water System Tests -

A friction loss test will be conducted for an aerial device equipped with a permanent water system and has a rated vertical height of 110 ft. or less. The standard model flow test results will be provided to the manufacturer. If the water system has been modified from the standard model configuration, a

new flow test will be conducted to determine that the friction loss in the water system between the base of the swivel and the monitor outlet does not exceed 100 psi with 1000 gpm flowing and the water system at full extension.
(e.) A maximum vertical height flow test will be conducted to determine that the water system is capable of flowing 1000 gpm at 100-psi nozzle pressure with the aerial device at full elevation and extension. If the apparatus is equipped with a fire pump designed to supply the water system, the test will be conducted using the onboard fire pump. The intake pressure to the fire pump will not exceed 20 psi.
7. UL provides the manufacturer a complete written Examination and Test Report for each aerial device inspection performed at the manufacturer's facility. This Report specifies the points of inspection and results of such examinations and tests. The test report, as required by NFPA 1911, Chapter 19, will include the following test results:
(a.) Torque verification of all mounting bolts including bolt size, grade, and torque specification.
(b.) The following NDT methods and results will be recorded: All ferrous welds will be magnetic particle inspected for defects. All nonferrous welds will be visually inspected, and if questionable defects are identified, dye penetrant will be used to further evaluate the quality of the weld. All bolts and pins will be ultrasonically inspected for internal flaws.
(c.) The following measurements will be taken and recorded in the examination and test record: bearing clearance and backlash, elevation cylinder drift, engine speed operating rpm, relief pressure, stabilizer extension cylinder drift, ladder section twist, hardness readings, baserail thickness, winch drift, extension brake drift, and extension cylinder drift.
8. All test work for fire pumps outlined in Section 16.13 of NFPA 1901, 2009 Edition will be conducted.
9. All test work for fixed power sources outlined in Section 22.15.7 of NFPA 1901, 2009 Editions
10. UL has included a list of all factory aerial device manufacturers for whom testing is <u>currently</u> being conducted on a regular basis.
11. UL carries ten million dollars in excess liability insurance for bodily injury and properly damage combined.

<u>PERSONNEL</u>:
1. The UL inspectors performing the test work on the units are certified to Level II in the required NDT methods, under the requirements outlined in ASNT document CP-189.
2. The actual person(s) performing the inspection will present for review proof of Level II Certification in the required NDT methods.
3. Prior to submittal to the automotive fire apparatus manufacturer, the final Report will be reviewed by qualified staff that is directly involved with the aerial device certification program at UL.

<u>CERTIFICATION</u>:
1. When an aerial device successfully meets all the requirements outlined in NFPA 1901, 2009 Edition, UL will issue a Certificate of Inspection stating compliance with Section 19.24.
2. When a pumper successfully meets all the requirements outlined in NFPA 1901, 2009 Edition, UL will issue a Certificate of Inspection stating compliance with Section 16.13. 8
3. When a generator successfully meets all the requirements outlined in NFPA 1901,2009 Edition, UL will issue a Certificate of Inspection stating compliance with Section 22.15.7
4. UL offers third party testing and Certificate services for the following automotive fire apparatus systems referenced in NFPA 1901, 2009 Edition:

(a.) Section 13.14, Low voltage electrical system and warning devices
(b.) Section 17.12, Auxiliary pump and associated equipment
(c.) Section 18.6, Water tanks
(d.) Section 20.10, Foam proportioning systems

(e.) Section 21.9, Compressed air foam systems (CAFS)
(f.) Section 22.15, Line voltage electrical systems
(g.) Section 24.14, Air systems

SECTION 12 COMMUNICATIONS INSTALLATIONS:

A. TWO-WAY RADIO COMMUNICATIONS SYSTEM

The contractor shall furnish and install the following equipment:

1.) The contractor shall furnish and install in the cab one (1) Motorola Astro25 XTL5000 two-way radio with “O5” version remote control head and DEK status head. To accommodate the installation of the two-way radio installation, the following components shall be provided and installed:

XTL 5000 MOBILE 10-35 WATT, 764-870MHZ	M20URS9PW1_N
ENH: SOFTWARE ASTRO DIGITAL CAI OPERATION	G806
ENH: 3600 SMARTZONE OPERATION	G51
ADD: XTL5000 CONTROL HEAD	G442
ADD: CONTROL HEAD SOFTWARE	G444
ADD: REMOTE MOUNT	G67
ALT: ANTENNA 3DB GAIN 764-870MMZ	W484
ADD: PALM MICROPHONE	W22
ADD: AUXILARY SPKR SPECTRA 7.5 WATT	B18
ENH: ENHANCED DIGITAL ID DISPLAY	G114
ENH: ASTRO PROJECT 25 TRUNKING SOFTWARE	G361
ADD: ENCRYPTION UCM 30 SEC	G159
ADD: DES/DES-XL/DES-OFB ENCRYPTION	G625
ADD: STATUS MESSAGE 8 MESSAGES	W355
ENH: 3 YEAR REPAIR SERVICE ADVANTAGE (COMPREHENSIVE)	GA00249AC
ADD: PRINTED TEST RESULTS	G799

2.) One (1) 4” x 7” x 1/8” minimum thickness, grounded metal plate shall be installed on the cab dash, that will be accessible to both the driver and the officer.

3.) One (1) 30 ampere, 12VDC (B+ & B-) service drop, 18” of extra wire shall be provided and located under the officer’s seat. This will be a dedicated circuit, and shall be protected by a circuit breaker.

4.) One (1) 15 ampere, 12VDC (B+ switched and B-) service drop with 12” of extra wire shall be provided at the grounded metal plate located on the cab dash. This will be a dedicated circuit and shall be protected by a circuit breaker.

5.) One (1) Antenna Specialist model #K-794 antenna mount shall be provided and installed on cab roof. The antenna cable shall be routed to the VRS.

6.) One (1) Motorola model #HKN6169A shall be provided and installed between the grounded plate on the cab dash to the mobile radio under the officer's seat.

7.) One (1) Motorola model #HSN6001B remote radio speaker shall be provided and installed in the cab ceiling in a position that will allow all cab occupants to hear the radio. The speaker cable shall be routed from the speaker to the grounded plate on the cab dash.

8.) One (1) David Clark remote speaker, with volume control, shall be provided and installed on the exterior of the body near the pump panel for an Engine, the turn table for a ladder truck, and the interior of the rescue body for a rescue squad.

9.) The two-way radio control head shall be connected to the B+ switched battery terminal (battery switch)

10.) All terminal connection points shall be protected against accidental contact, and all cabling shall be routed away from heat sources and protected from chafing or excessive stress during cab-tilting.

11.) Exact mounting locations for "ALL" components will be decided at a Pre-Construction Conference.

B. VEHICLULAR REPEATER SYSTEM (VRS)

The contractor shall furnish and install the following equipment:

1) Two (2) antenna mounting plates for the Vehicular Repeater System (VRS) shall be provided and installed one (1) each side of the cab roof, at the rear corners.

2) One (1) Futurecom Mobexcom P25 DVRS "in band" vehicular repeater system built to F/EMS specifications shall be furnished and installed.

3) Two (2) Maxrad model #MP8066XFPTNF panel antennas shall be furnished and installed, one (1) on each of the antenna mounting bases located on the cab roof.

4) The VRS shall be interfaced with the two-way radio system.

800 MHZ DVR SIDE-BY-SIDE IN-BAND APPLICATION A	TT1255
For questions regarding appropriate equipment lists or verifying frequency plans, you shall contact Futurecom Systems Group directly at: sales@futurecom.com or 1-800-701-9180 (ask for DVR Sales Support)	

5) One (1) Motorola WPLN4208B charger shall be installed on the engine cover near the OIC seat, connected to B+ unswitched, for purposes of charging a portable radio in the vehicle.

C. CF-30 PANASONIC MOBILE DATA COMPUTER (FRONT OF APPARATUS BETWEEN DRIVER AND OIC): I/MOBILE

The contractor shall furnish and install the following equipment:

1) Toughbook CF-30: CF-30KCP54AM

Intel Core 2 Duo SL7300 1.6GLV(Centrino2)

Processor speed 1.66 GHz

160GB HD, 2GB SDRAM (DDR2) standard, expandable to 4096MB

13.3" 1-24 X 768 (XGA) transmissive, daylight readable TFT active matrix color LCD with touch screen

Backlit keyboard plastic emissive

External video support up to 1280 X 1024 at 16 million colors

Intel Mobile 945GM graphic controller DVMT 128MB 1000 nit (touch screen models)

Sigmatel™ 1TM STAC9751T AC-97 v.2.1 compliant Audio Codec

Integrated front-facing speaker

PC card type II x 1

Secure Digital (SD) card

Express card/54 x 1

Bluetooth v.2.0 + EDR

Integrated, passive GPS

Intel/Pro Wireless 3945ABG LAN connection 802.11a/b/g,

Cellular modem: GOBI

Computrace theft protection agent in BIOS

2) CF-VDM301U

DVD-Multi Drive (DVD-RAM/DVD-ROM/DVD-RW/CD-R/CD-ROM/DC-RW

3) CF-VPF03U

13.3" LCD Film Protector

4) CF-SVCTGOLD3Y

3 Year Gold Service Package will include the following:

- Load of initial disk image,
- Application of a Toughbook asset tag,
- Shipment to designated locations,
- Provide access to an OEM web based system for tracking product life-cycle service requests and asset management.

http://www.panasonic.com/VoiceOfCustomer/Scripts/OEMCustomerSupport.asp

5) CF-SVCASCTC3Y

Computrace® license for 36 months

CF30 docking station shall be located on the engine cover / officer's side dash area.
The following parts from LEDCO shall be utilized:

TP.AP
MC5
TLSM
DCPR.90
BCO.18X

SCO.19
CG-X
DC.CFX.U.HGD (CF30 dock)
MobileMark Antenna: SMV-UCE-1A2A18FTU/M

D. CF-19 PANASONIC MOBILE DATA COMPUTER (REAR CREW EMS COMPARTMENT: ELECTRONIC PATIENT CARE COMPUTER

The contractor shall furnish and install the following equipment:

1) Toughbook CF-19: CF-19KDRC6CM

Intel® Core 2 Duo Processor SU9300 1.2Ghz(Centrino),
Processor speed - 1.2 GHz
160GB hard drive, 2GB SDRAM (DDR2) standard, expandable to 4096MB,
Tablet PC version: 10.4" 1024 x 768 (XGA) transmissive,
1000 nit daylight-readable TFT active matrix color Dual Touch LCD,
External video support up to 1280 x 1024 at 16 million colors (24-bit color depth),
Intel® GM965 integrated video controller max. 384MB (DVMT) VRAM on XP*,
SigmaTel™ STAC9751 AC-97 v.2.2 compliant Audio Codec,
PC card type II x 1,
Secure Digital (SDHC) card,
ExpressCard/54 x 1,
Intel® Wireless Wi-Fi Link 4965AG 802.11a/b/g/n
Bluetooth® v.2.0 + EDR,
Computrace® theft protection agent in BIOS***,
Integrated cellular modem: GOBI
Integrated GPS receiver,

2) CF-VNP011U

CF-19 Tablet Large Stylus Pen (for Digitizer)

3) CF-VPF06U

10.4" LCD Protector Film for Tablets

4) CF-SVCASCTC3Y

Computrace® license for 36 months

5) CF-SVCTGOLD3Y

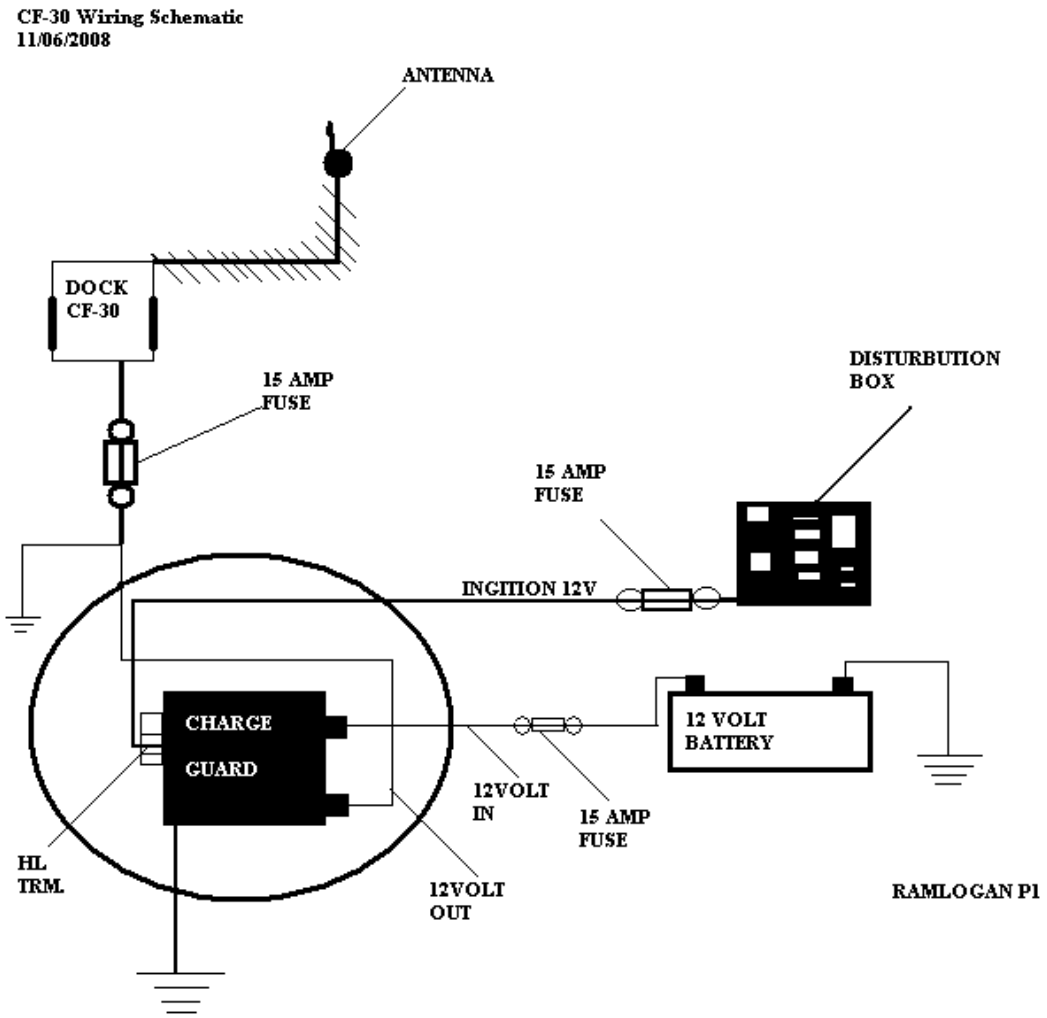
3 Year Gold Service Package will include the following:

- Load of initial disk image,
- Application of a Toughbook asset tag,
- Shipment to designated locations,
- Provide access to an OEM web based system for tracking product life-cycle service requests and asset management. http://www.panasonic.com/VoiceOfCustomer/Scripts/OEMCustomerSupport.asp

6) CF19 "lite" docking station shall be located on the engine cover or rear wall of the crew compartment in between the front or rear facing jump seats. Final location to be decided at preconstruction meeting. The following parts from LEDCO shall be utilized:

DS.CF19.L
LS
CMS
CG-X

E. CF30 Computer Wiring Diagram:



F. David Clark System

The contractor shall provide a David – Clark vehicle intercom system and connect it to the radio system. There shall be 5 interior positions, one position located at the aerial operators pedestal and one position in the tiller cage. The aerial operators pedestal position connection shall be fully weather proofed. The contractor shall coordinate the installation of the intercom system with the Motorola vendor who performs the radio installation to ensure system integration that does not void either warranty. All headsets shall have the capability to listen and talk and shall have separate volume controls. An additional five (5) spare headsets shall be provided. A Fire Com style head set hanger hook shall be furnished at each head set location and 2 in the tiller cage. The David Clark radio interface shall also be properly wired and connected to the system.

G. MISC:

1.) The contractor shall install wiring for (4) fire department supplied portable radio chargers in the cab.

2.) The contractor shall ensure that all radio, intercom and headset installations are free from feedback and interference. The contractor shall install any filters required to accomplish this.

SECTION 13 EMERGENCY AND GENERAL LIGHTING REQUIREMENTS:

The contractor shall provide the following lighting:

1. Emergency warning / DOT lights: **(All Whelen LED warning lights to be "Super LED Technology")**

a.) 3 Whelen LED light bars; Installed on the roof, (1) centered facing forward (2) mounted on an angle at the left and right front corners of the cab roof, Whelen part #FN24DCFD.

b.) All upper and lower level, and front and rear red warning lights shall be Whelen 60R00FRR LED lights. (2) mounted in bezels on the front face of the cab, one each side. (3) down each side in bezels (1)each side in the gravel pan of bumper extension, (1)each side in a bezel over the front axle, and (1) each side over the rear axle. (1) one each side on the tiller fenders, (2) Each on the rear of the Tiller Cage.

c.) All lower level, front and rear amber warning lights shall be Whelan 60A00FAR LED lights.

d.) Intermediate trailer lights – one each side of trailer Whelen 50R03FRR.

e.) Whelen MCFLED2R Red LED Mini Light Bar will be installed on the rear upper corners of the apparatus.

f.) Front directional's – Whelen 60A00TAR LED with 6E flange;

g.) Stop/Tail lights – Whelen 60R00XRR LED with 6E flange;

h.) Back up light – Whelen 60J000CR with 6E flange (halogen light);

i.) Rear directional's – Whelen 60A00TAR LED with 6E flange.

j.) A Whelen model SSF2150 head light flasher will be installed.

k.) (4) Whelen 50 series red LED warning lights shall be provided (1) on each cab door to operate when the door is in the open position, mounted horizontally.

l.) (2) Whelen 50 Series red LED warning lights shall be provided mounted on the left and right side cab front radius.

m.) The wiring, switch, mounting brackets, and a Roto-Ray Light shall be furnished and installed on the center front face of the cab.

n.) The contractor shall provide a Whelen approval letter for this lighting package.

o.) Option Price the Whelen "M" Series light heads for all flush mount lighting locations.

2. <u>OPTIONAL CODE 3 LIGHTING PACKAGE:</u>

1. **Item 1** – 1 each Front Facing Light Bar DF36NFPA1-DC
   Upper Zone –A – Red / White.

2. **Item 2** – 2 each Front angled Facing Light Bar DF23 NFPA1-DC-A
   Upper Zone –A – Red / White.

3. **Item 3** – 2 each Rear Facing Light Bar DF23 NFPA1-DC-C
   Upper Zone –C – Red.

4. **Item 4** – 2 each Front Facing 6 x 4 Prizm lights with bezel (#468RBZ)
   Lower Zone –A – Red. Front face of Cab.

5. **Item 5** – 2 each rear Facing 6 x 4 Prizm lights with bezel (#468RBZ)
   Lower Zone –C– Red.

6. **Item 6** – 4 each rear Facing 6 x 4 Prizm lights with bezel (#468RBZ)
   Upper Zone –C– Red Rear of the Tiller Cage.

7. **Item 7** – 4 each side Facing (total 8) 6 x 4 Prizm lights with bezel (#468RBZ)
   Lower Zone –B & D– Red.

8. **Item 8** – 2 each side Facing (4 total) LED-X lights (#LXEX1F-R).

9. **Item 9** One each side (2 total) LED-X lights (#LXEX1F-R) on the Cab Radius midway between the windshield and the gravel pan. Zone A

10. **Item 10** Four (4 Total) One (1) LED-X lights (#LXEX1F-R) mounted horizontally on the lower interior portion of each cab door.

3. The front high beam headlights shall be alternating flashers controlled by a rocker switch.

4. Any supports or other structures proposed for lighting shall be included.

5. All other required D.O.T. lighting shall be Trucklite LED technology.

6. 4 (four) 650 watt, 120 volt qwik-raze Magnafire 3000 series lights with grills shall be furnished and installed as follows: One each side at rear of the tractor roof. Light head to face side of unit. One each side on trailer body (exact location to be determined at pre-construction meeting). These lights will be fixed, non-telescoping. These lights are to be powered by the 120v system and shall be able to be turned off and on, independently, from a location in the cab that is easily accessible to both the driver and officer and at the generator panel.

7. The cab shall have a red flashing, Whelen model 5SR00FRR “compartment open" light and buzzer. They shall be operational at all times when the parking brake is released.

8. Ground lighting at each door position shall be LED type and shall be activated by the door open light switch. All ground lighting shall be activated by a switch labeled “Ground Lights”. There will also be an additional ground light provided at the mid-trailer location on each side, the standard locations, rear area of trailer, and the goose neck area. The lights shall be 4” round Whelen style LED lights inserted into Truck-Lite rubber boots for 4” round lights.

SECTION 14 GENERAL ELECTRICAL ITEMS:

1. An electronic siren Whelen model 295SLSA1 DCFD with a compatible speaker (Federal BP-100) mounted in the front bumper and covered with a grille. The control head shall be mounted in the cab. The control head shall be easily accessible to both the driver and officer.

2. A Class 1 total system manager or equivalent shall be provided. The contractor shall indicate the load shedding sequence at pre-construction and indicate the procedure for canceling out the high idle. This will be achieved by stepping on the brake pedal as well as the normal time limits for the Class One Load Manager high idle feature.

3. The vehicle shall be equipped with a Kussmaul Autocharge 1200 Model #091-75-12 or equal battery charger with a Kussmaul Charge Indicator #091-189-12 or the dual battery system version. A Kussmaul auto-eject weatherproof power input connector shall be provided on left side of cab. The connector shall have indicator lights and be a NEMA 5-15 termination. A (yellow) 50’ length of 12/3 AWG cable will be provided with NEMA 5-15 male and female ends attached. The charging level indicator shall be located co-located with the power input connector on the cab. The cover will be RED in color.

4. Cab warning devices shall be provided with buttons on both right hand and left hand sides of the rear of the trailer. They shall be appropriately labeled: 1 – stop, 2 – Go, 3 – Back Up. The audible indicator in the cab shall have a separate and distinct tone from other audible indicators.

5. There will be a 2-way buzzer or horn system between the cab and the tiller cage. 1 button for the driver and 1-button for the tillerman. They shall be appropriately labeled: 1 – stop,2 – Go, 3 – Back Up. The audible indicator in the cab shall have a separate and distinct tone from other audible indicators.

6. The vendor shall provide and mount 5 handlamps and charging brackets in locations specified by FEMS at the pre-construction conference. However, the vendor shall be responsible to ensure that the charger and handlamp are mounted in such a way that the handlamp can be removed and inserted freely and easily by the user. The lights are Streamlight Fire Vulcan LED Hand Lights Model # 44451 with a shoulder strap and have DCFD hot stamped in both sides of the light and be orange in color. Any line filtering required shall be provided by the vendor to ensure compatability with the vehicle charging system. The chargers shall be wired to B+.

7. There shall be twist lock electrical outlets mounted, 1 on each side on the rear face of the tractor compartment and the front of trailer in the area of the cord reels above the first transverse compartment for a total of 4 - #L5-30A receptacles.

8. There shall be a Duplex GFI protected outlet to be fed off of the shore line power with the battery charger. It will be located in the rear of the cab access door compartment near the engine tunnel along side of the 12 volt cigarette lighter plug. These shall be accessible from the interior of the cab.

9. Three (3) - 200' Hannay 1616-17-18 fixed cable reels, one on each side and one mounted on the rear of the trailer powered by the main generator. The rear cable reel shall be provided with cable rollers. The cable shall be 10/3 SO. Each cable reel shall have a Circle "D" model PF51G junction box Attached. The junction box shall have the following electrical receptacles mounted therein: 2- L-15 twist locks, 1 – L-30 twist lock and 1-15A GFI conventional. The reels shall be painted job color red and will be provided with a set of rollers. A holder for the J-box shall be provided with adequate drain holes to eliminate the build up of water in the holder.

10. **Main Generator - Harrison 10K hydraulic** - **10,000W** utilizing a separate "hot shift" P.T.O. with a "Variable Displacement Pump" and Momentary style switches with an indicator light shall be used for switches for the generator in both the cab and at the switch panel. The switch and indicator light shall be located within easy reach of the driver and officer. The contractor shall obtain an installation approval from Harrison Hydra-gen for this installation.

11. There shall be an On/Off switch and indicator light provided for both the driver and the officer for the generator.

12. There shall be On/Off switches and indicator lights for the 120V lighting for both the driver and the officer. They will be labeled Left Side & Right Side Flood Lights. This will be done using momentary style switches and latch relays that will turn the lights off every time the truck is shut down in the event the lights are left on when the generator is shut down. This will prevent the generator from being started with the flood lights already on and damaging the floodlights and the generator system itself.

13. The Breaker Box shall be a "Cutler Hammer" brand of circuit breaker box. All breakers will be labeled and numbered accordingly.

14. Portable generator - Honda 5,000W mounted on a slide tray under tiller cab at rear tailboard. This slide tray shall be connected to the compartment open alarm system. The key shall be attached with a chain or cable.

15. The Quad gauge for the Harrison generator shall be installed in the left side tractor compartment mounted to the front wall up as high as possible with momentary switches and indicator lights for off/on switches for the generator and for the 120V lighting. There shall also be an emergency shutdown switch for the generator mounted here as well if deemed necessary.

SECTION 15: PAINT, LETTERING, MISCELLANEOUS REQUIREMENTS AND ADDENDA:

A.) PAINT:

1) Cab – two tone, white upper portion and red lower portion. The contractor shall specify the paint break on the drawings to be provided. The cab interior shall be painted with a gray spatter type of paint and will be clear coated.

2) Trailer – Red.

3) Wheels will be Alcoa Dura-Brite finish. (ALL WHEELS)

4) Chassis components – Red (frame and entire undercarriage)

5) Compartments – D/A or Spatter gray with a clear coat.

6) Clear coat all exterior paint.

7) Cab Interior shall be red spatter paint with a clear coat finish except where LINEX is provided.

B.) LETTERING:

1) The contractor shall furnish and install a maximum of 4 – 12” numbers, 8 – 6” letters/numbers, 20 – 4” letters/numbers, 20 – 3” letters/numbers and 20 – 1” numbers. The colors will be gold scotchlite over black shading. FEMS will specify the lettering/numbering scheme and fonts at pre- construction. **(FONT: HELVT.MED.ACCT.A.K.REV.N.)**

2) FEMS will furnish 2 door seals to be installed.

3) STOP signs will be provided on all four cab doors mounted down low.

4) The vehicle will have a 6” white scotch-lite stripe.

5) Red #983-72 / Yellow-Amber #983-71 DOT 3M Diamond Grade Style Chevron striping shall be applied to the entire rear face of the body in the proper fashion to move traffic away from the vehicle. The seams between the red and yellow shall be covered with a ¼” black vinyl stripe.

6) The DCFD serial # in 1” white scotch-lite decals shall be installed on the left front, left rear, and on the overhead front dash board area of the apparatus.

7) The company number shall be provided on the cab roof using 4” Scotchlite.

C.) MISCELLANEOUS REQUIREMENTS:

The contractor shall provide the following manuals in

a.) Electronic format, and
b.) 1 hard copy each vehicle, the following material:

i. The documentation required by N.F.P.A. 1901 including the following:

ii. Operations and maintenance manuals covering the completed vehicle;

iii. Contractor provided instruction booklets describing function, control, steps of operation and service procedures for all components and equipment supplied to and installed by the contractor;

iv. Parts manuals shall be provided for the vehicle which shall include an overall (5 view) vehicle layout, keyed to service repair parts, to assist in spare parts selection and identification. Parts manuals shall include a diagram of the part, exploded view of components, vehicle manufacturer's part number, original part vendor and vendor's part number.

v. Provide an overall view of the vehicle identifying the location of the readout components and connections ie: for the engine, transmission, ABS brakes etc.,

vi. Aerial operation manuals and steps of operation;

vii. Instructions regarding the frequency and procedures for recommended maintenance;

viii. Lubrication charts;

ix. Bulb schedule for all lights;

x. Electrical diagrams & wiring harness drawings.

D) ADDENDA: LOOSE EQUIPMENT:

The contractor shall provide the following loose equipment and brackets:

1. 4 ea– Southpark AH-51 Axe holders.

2. 1 ea – Ziamatic Quic-Bar and axe mounting bracket p/n MB-3PBA.

3. 10 ea – Performance Advantage Co. (PAC) handlelok p/n 1004-2

4. 5 ea – Ziamatic model KD-UH-7-SF-CRS-180 mask brackets to be mounted as specified in these requirements. (Knock down bracket, high cycle clips, short foot plate, collision resistant strap for bostrom seats.)

5. 4 ea - Bottom mount Axe Blade brackets (ZICO Model H-ABC)

6. 2 ea – Side mount Axe Blade brackets (SOUTHPARK Model ZAH-51)

7. 10 ea – Side mount handle holders (SOUTHPARK Model SMA-52)

8. 10 ea - Bottom mount handle holders (SOUTHPARK Model BMA-53)

9. 6 ea - "U" holders w/cotter pins (ZICO Model PPMB-C)

10. 1 ea - Spanner wrench brackets w/wrenches (ZICO Model SW-MBSS)

11. 12 ea - Ceiling hooks, to include:

    3 ea - 6' "I" beam ceiling hooks (ZICO Model IBM-6)
    1 ea - 6' "I" handle ceiling hook (ZICO Model IBM-6 with ZDH Handle)
    2 ea - 8' "I" beam ceiling hook (ZICO Model IBM-8)
    1 ea - 10' "I" beam ceiling hook (ZICO Model IBM-10)
    1 ea - 12' "I" beam ceiling hook (ZICO Model ibm-12)
    1 ea - 14' "I" beam ceiling hook (ZICO Model IBM-14)
    1 ea – 6' Firehooks unlimited APH-6'
    1 ea – 6' Firehooks unlimited APH6' with "D"handle
    1 ea – 8' RH8 NY Roof Hook mounted in the fly section of the aerial ladder

12. 2 ea - Pick head axe (Firemark PAF-6#)

13. 2 ea – Flat head axe (Firemark - 6#)

14. 1 ea - Akron or equivalent ladder pipe assembly w/2-1/2" swivel inlet for use on the pre-piped bed section ladder pipe (winch controlled), a discharge pipe and the following tips: 1-1/2", 1-3/4" & 2" (Model #1496)

15. 1 ea- Akron or equivalent ladder pipe assembly w/2-1/2" swivel inlet, guide lines, a control arm mounted on the right side of the assembly, a discharge pipe and the following tips 1-1/2", 1-3/4", & 2". (Model #1496).

16. 3 ea - 100' sections of Ponn Supreme 3" double jacket fire hose w/2-1/2" couplings.

17. 3 ea - Akron 4452 Aquastream 500 GPM combination fog and straight stream nozzle.

18. 1 ea - Elkhart or equivalent triple inlet Elk-o-Lite portable Monitor (Model 8290) with 2-1/2" swivel inlets, discharge pipe, triple stacked tips and Elkhart mounting bracket.

19. 1ea - Akron Style 2285 Gate Valve.

20. 3 ea - Sensible Products Inc. Part# E864 Extinguisher Brackets.

21. 3 ea - extinguisher brackets Zico model 3099 quick strap cylinder mounting system to fit an 8" diameter cylinder (max): Order # CYBM-2426-80-11, part # 3099-295-000.

22. 3 ea – Elkhart 4A Siamese with 2-1/2” connections.

23. 1 ea - Aerial Tip rope rappelling or anchor plate to use the aerial ladder for rope rescue operations manufactured by the manufacturer of the aerial ladder.

24. 1 ea – TURK Universal Rescue Kart see www.TURKrescue.com for further information. Storage for this device shall be provided in the rear of the trailer under the frame rails accessible from the rear of the vehicle.

PUMPER

Requirements

February 2011

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SECTION 1: GENERAL REQUIREMENTS:

The vehicle shall be fully compliant with N.F.P.A. 1901. All requirements outlined herein must be addressed in the proposal. Anything that is part of NFPA 1901 that is specifically not called out in these written specifications is expected to be included in the vendors bid specifications and final costs.

A.) DELIVERY:

1. Statement of Origin is required.

2. Within 240 days from receipt of purchase order. No construction may begin prior to receipt of the purchase order. The contractor will be responsible for delivering the vehicle(s) to a location specified by the DCFEMS.

3. A pre-construction conference shall be held at the facility of the contractor.

B.) PRE-DELIVERY INSPECTION:

All vehicles shall be inspected by representatives of the Apparatus Selection Committee and others designated by DCFEMS. Unless otherwise specified by DCFEMS, all vehicles constructed under the awarded contract shall be complete and ready for inspection prior to the arrival of the pre-delivery inspection team. Any vehicle found incomplete and not available for a complete pre-delivery inspection will result in the contractor paying for all expenses for additional pre-delivery inspections until all vehicles have been inspected. Pre-delivery inspections at the manufacturer's warranty facility will not be accepted. DCFD reserves the right to make factory inspections on the apparatus that is under construction at anytime during the construction process. One (1) Complete set of loose equipment must be laid out with one of the vehicles at the final inspection. "NO EXCEPTIONS"

C.) DEFICIENCIES/CORRECTIONS/MODIFICATIONS:

Upon completion of the pre-delivery inspection, all deficiencies, corrections and modifications shall be resolved to the satisfaction of DCFEMS prior to delivery of the vehicle(s). No deficiencies, corrections or modifications are to be deferred to the manufacturer's warranty facility. Any deficiencies, corrections or modifications found, during the pre-delivery inspection, that have not been repaired or corrected will result in the vehicle being returned to its place of production for repair or correction at the manufacturer's expense.

D.) DESTINATION AND FINAL ACCEPTANCE INSPECTION:

Upon delivery of the completed vehicle(s), DCFEMS will conduct a final acceptance inspection of the vehicle(s). The manufacturer shall provide a factory certified technician on site to make repairs to deficiencies found during this inspection. The provisions of this subsection may be carried out during the training period outlined below, however, deficiencies found during this inspection shall be repaired immediately and not be deferred to the manufacturer's warranty facility nor shall they cause the vehicle to be placed in a truck down status (out-of-service) and cause an interruption or stoppage of the training requirements. It is anticipated that this will take 2 (two) weeks. At the end of this period, if there are no existing critical failures, payment for the vehicle will be authorized.

E.) TRAINING:

The contractor shall provide a factory certified technician to perform training on each (all) vehicle(s). (Training Division – 4600 Shepherd Parkway, S.W., Washington, D.C. 20032 or a designated site established by the Apparatus Division Chief). The technician shall be thoroughly familiar with the operation of all components of the vehicle as outlined in these requirements. Vehicle operator training will commence the first full week following the delivery of the vehicle(s) and will last for four (4) consecutive days. Vehicle mechanical training shall be conducted for two (2) additional consecutive days which will encompass both the day and evening shifts on dates specified by the department. The technician shall be capable of making repairs to the vehicle. Any deficiency causing the vehicle to be in a truck down (out-of-service) condition or causes an interruption in training will be considered a "critical failure". These repairs, for purposes of this section, must be made within 24 hours which will place the vehicle back into a fully operational condition.

F.) WARRANTY AND WARRANTY REPAIRS

1.) WARRANTIES:

10 year cab, 10 year body, 5 year bumper to bumper.

2.) WARRANTY REPAIRS:

A.) CRITICAL FAILURE:

The District defines a critical failure as a failure:

i) of a system or component that prevents the continued operation of the vehicle for the purpose for which it's intended;

ii) of a system or component that impacts on another system or component that prevents the continued operation of the vehicle for the purpose for which it's intended;

iii) that could jeopardize the safety of the personnel utilizing the vehicle.

The criteria outlined in N.F.P.A. 1915, Sections 2.1.4.1 through 2.1.4.8 establishes the minimum standard that could reduce the operational safety and performance of the apparatus and will serve as a basis for the District to determine if the warranty period failure is a critical failure and thus would fall under the requirements of this section.

ALL CRITICAL FAILURES, UNDER THIS SECTION, MUST BE REPAIRED WITHIN *48* HOURS. If necessary to effect the ***48* hour** repair of a critical failure, a factory certified technician shall be dispatched to the DCFEMS repair facility upon notification of the critical failure. The manufacturer shall start the repair process immediately if this is a major repair job that will take longer than 48 hours to complete. **The contractor shall ensure that the designated warranty repair facility is aware of this requirement.**

NOTE: The contractor shall respond to all calls for service within 24 hours on Warranty repairs.

B.) NON-CRITICAL REPAIRS:

The COTR shall provide a list of non-critical repairs needed for each vehicle to the contractor when they occur. The COTR shall negotiate the timely resolution for non-critical repairs with the contractor. The length of time needed by the technician to complete the repairs shall be estimated by the contractor. Any repair that is found to be required, but is agreed by the COTR and the contractor not to be a warranty covered repair shall be estimated and approved by the COTR before the repair is effected.

SECTION 2: DRAWINGS, DISKETTES & WRITTEN DOCUMENTS:

A. NUMBER OF DRAWINGS:

The contractor shall provide 4 sets of line drawings of the items specified below. The drawings are to be at least 22" x 34". In addition to the drawings, the copntractor shall provide computer aided design drawings on CD ROM disks in a format that is able to be imported to TurboCad7 (File extensions *.TCW, *.DXF, *.DWF, *.DWG) and shall include relevant symbol libraries.

B. SCOPE OF DRAWINGS:

i. A ***detailed*** drawing giving 5 views of apparatus (Right Side, Left Side, Front, Rear, and Top). This drawing shall include all mounted and manufactured items that are specified by these requirements.

ii. A separate drawing shall be provided for the dimensions outlined in C below.

iii. A ***detailed*** drawing of the cab interior, both side views and top down, which include dimensions,step heights and a graphic layout of the interior.

iv. A ***detailed*** drawing of the complete front cab interior which includes all switch panels, dash panels, controls and mountings. All items are to be labeled as to function.

v. A ***detailed*** drawing of the complete rear cab interior which includes the location of all windows, fold down seats, bench seats, and any other items that would be mounted thereon.

vi. A ***detailed*** drawing of the pump operators panel which shall indicate the location of all intakes, discharges, valve controls, gauges, drains, steps, microphone compartments, speakers, and any other items that would be mounted thereon.

vii. A ***detailed*** drawing of the side opposite the pump panel which shall indicate the location of all intakes, discharges, valve controls, drains, steps, and any other items that would be mounted thereon.

viii. A drawing of the water tank including dimensions and orientation on the chassis.

ix. A ***detailed*** drawing of any shop manufactured items contained in these requirements shall be provided.

C. DRAWING REQUIREMENTS:

The contractor shall provide a drawing, both hard copy and diskette, to include, at a minimum the following body/chassis dimensions:

i. **Heights:** Ground to top of back step, Ground to bottom of a.) Crosslay hosebeds, and b.) Rear hose bed. Ground to highest projection of apparatus (front and rear). Ground to lowest projection (front & rear) and

(ground clearance). Top of the back step to bottom of rear hose bed. Top of back step to top of rear hose bed (body height).

ii. **Lengths:** Overall length. Wheelbase. From front bumper to face of cab. From front bumper to center of front wheel. From center of front wheel to rear of cab. From rear of cab to front of body (pump panel width). From front of body to rear of body. From center of rear wheel to rear of back step. Back step. Hosebed interior lengths.

iii. **Widths:** Body. Body including bumper. Body to outermost projections (mirrors). All hosebeds. Backstep and Backstep between beaver tails.

iv. **Engineering:** Angles of approach & departure. Breakover. Turning radius. Center of gravity from both front and side views. A cut-away showing the dimensions of the well area above the tank.

v. These drawing shall include dimensions of all compartments & troughs.

D. GENERAL:

i. All drawings, both hard copy and diskette, shall be made to scale.

ii. An initial set of drawings and diskettes, as outlined above, shall be provided with the initial proposal.

iii. After contract award, any updates and modifications to the drawings shall be sent via emailto the COTR, Wayne Branch, (**Wayne.Branch@DC.Gov**) for review and comments. This exchange of computer aided design information shall continue until a final set of line drawings is agreed upon to the end that there is a reduction in the amount of hard copy drawings produced and exchanged. After a final set of drawings is agreed to, the contractor shall provide 4 sets of final drawings, as outlined in A, B & C above to the COTR.

E. FINAL ACCEPTANCE DRAWINGS AND DOCUMENTS:

The contractor shall, following the final acceptance of the vehicle and following any corrections and/or modifications, provide the COTR, 3 updated and complete sets of drawings and written specifications as outlined in A, B & C above.

F. MEETINGS AND CORESPONDENCE:

All meetings, phone conversations or other discussions regarding the awarded contract and the construction of the vehicle, changes and/or modifications shall be followed by a written summary of the meeting, phone conversation or discussion. This summary shall be prepared as mutually agreed by the parties involved and forwarded to all parties involved upon completion. The parties shall review the summary to ensure that the contents are accurate. The use of e-Mail is encouraged.

After award, a pre-construction meeting shall be held at the contractor's facility. Engineering and production personnel shall be made available to address any issues that need resolution prior to construction.

SECTION 3: GENERAL DIMENSIONS:

1. The overall height of the apparatus, including any additional lights and air conditioning units shall be as low as possible but shall not exceed 112".

2. The top of the hose body shall be as low as possible but shall not exceed 66" from the top of the rear step to the top of the body side.

3. ***The hose bed shall be as low as possible*** but shall not exceed 40" from the top of the back step nor shall it exceed 64" from the ground. In meeting this requirement, particular attention is to be paid to water tank orientation, the center of gravity and weight distribution. There shall be an intermediate rear step installed in the space between the bottom of the hose bed and the top of the rear compartment. The step shall run at least the width of the rear compartment and ***be 8" in depth and the corners shall be 45 degree angles***. **The center section of the back step shall be a minimum of 20" deep.**

4. The height of the bottom of the bed for the crosslay hose lines and rear attack lines shall be as low as possible but shall not exceed 66" from the ground.

5. The wheelbase of the apparatus shall be as short a possible but shall not exceed **176"**.

6. The overall length of the apparatus shall be as short a possible but shall not exceed **360"**.

SECTION 4: HOSE CAPACITIES:

1. The rear hosebed shall have the capacity to carry: (Facing forward, left to right)

a.) 350' of 1-1/2" preconnected handline,
b.) 1000' of 5" supply line,
c.) 1000' of 5" supply line,
d.) 200' of 2-1/2" preconnected attack line. (single stacked)
e.) 200' of 3" standpipe supply line. (single stacked)

2. The crosslay hose bed shall have the capacity to carry:

   a.) (Front crosslay) 1 - 200' 1-1/2" preconnected attack lines,
   b.) (Rear crosslay) 1 - 200' 1-1/2" preconnected attack lines.

3. There shall be a trough made of 3/16" Aluminum Treadplate, with drain holes, mounted on top of the right side compartments capable of carrying 2 - 100' 1-1/2" standpipe racks w/appliances. The trough shall have 6 - spring type hold downs. The mounting of the hold downs and the hook receiver is to be substantially reinforced. The lip on the side of the trough is to be flush with the flooring of the trough. The flooring material shall be aluminum slatted flooring. There shall be a minimum of (8) Eight ½" diameter drain holes provided in the floor of the hose trough.

4. There shall be a trough in the right side running board made of 3/16" Aluminum treadplate, with Four (4) ½" drains (one (1) in each corner), capable of carrying 50' of 3" hose. The trough shall have 2 – seat belt style type hold downs with airplane style buckles ***and have either Dri-Dek or Turtle Tile flooring.***

5. There shall be a trough with drains and an adjustable divider and seat belt style hold downs with airplane style buckles mounted so that they do not interfere with the cab tilting, located in the front bumper ***with*** **either Dri Dek or Turtle Tile flooring** and capable of carrying:

   a.) **25' of 6" Hose,**
   b.) **100' of 1-1/2" preconnected line.**

6. There shall be mounting devices in the rear step compartment or on the rear step, capable of holding **25' of 6"** hose and a HUMAT Style 100 hydrant valve mounted on the left rear side of the rear step.

7. There shall be a small line reel, electric re-wind w/manual crank as backup. 200' of ¾" rubber hose in 50' sections and an Akron 4801 – 40 GPM (3/4" threads) play pipe with mounting bracket. The reel shall be mounted in the well over the pump, to the left (drivers) side. Rollers shall be provided as required for ease of use. The manual rewind crank receiver shall be located in such a manner as to provide complete and unobstructed use. At least two (2) rewind switches shall be provided. The reel shall be painted job color red. Rollers for removing the hose shall be installed on both sides of the operators

stand and in the center so the hose can pass over the top to the right hand side.

SECTION 5: GENERAL BODY REQUIREMENTS:

A. BODY

1. **Only a body of Stainless Steel** construction will be accepted. Composite materials shall not be used in the construction of the cab or body. The **cab** may be constructed out of **Aluminum**.

2. The front bumper is to be a wrap around style assembly made of Steel and angled at its corners and be painted job color red. It shall wrap itself in and around the front suction plumbing as well. The bumper extension shall be 22 inches maximum.

3. The rear step shall be angled at the corners. The angle shall commence approximately 3" from the rear of the body and extend to a point on the rear step that is in line with the outermost portion of the beavertail. Due to the extended rear body compartments an 8” minimum step will be required behind the left and right rear body compartments. The center section of the rear step shall be a minimum of 20” deep from the rear compartment to the rear most edge of the step.

4. The corners of the front portion of the body (both sides), behind the pump panel and the rear corners of the body shall have a stainless steel covering to prevent paint/body damage. The edges of this covering are to be sealed.

5. The running boards, back step and lower part of the body shall be provided with rub rails. The rub rails will be manufactured out of Black Poly material. All marker lights in running boards will not only be recessed in the rub rails but will be recessed into the running boards and rear step as well. A rub rail shall also be provided for the rear step as well.

6. All walking surfaces, including the rear step and left side running board (under the pump panel) shall have "grip strut" or similar non-slip surfaces that meet NFPA aggressive tread requirements. However, the non-slip surface shall not be in a location that would cause an operators hand to come in contact with it if the operator was attaching or disconnecting a hose line. The running boards, back step, and gravel pan shall be constructed out of 3/16” aluminum treadplate.

7. The front and rear fender liners shall be stainless steel or aluminum. The rear fender liners shall provide enough clearance as to accommodate snow chains when required and be removeable.

8. The contractor shall provide three (3) Southpark LFS-46C or equivalent (approved by DCFD at pre-construction) fold up steps and a slanted grip handle located on the face of the left side compartments to access the tank fill. These steps are not to interfere with any valve handles or controls mounted on the pump panel ***and (1) step on the right side front face of the body.***

9. The contractor shall provide two (2), Southpark LFS-46C or equivalent (approved by the District at pre-construction) fold up steps located, 1 on each side, on the beaver tail portion of the body above the rear step. In addition to these fold up step locations, the Department shall indicate four (4) additional fold up step locations. These 4 Southpark LFS-46C or equivalent fold up steps shall be provided by the contractor.

10. The contractor shall provide eight (8) exterior handrails. They shall be Hanson brand #4000 or equivalent 1.25" diameter stainless steel (approved by DCFD at pre-construction). Interior grab handles shall be the Hansen 930-0000/0001 types. In addition to the standard handrail and grab handle locations, the Department shall indicate eight (8) additional handrail and grab handle locations. The contractor shall provide the 8 additional handrail/grab handles in the total amount for each vehicle. Knurled aluminum with an aggressive surface finish grab rails will not be permitted due to possible burring causing cuts to hands as they grab the grab rails entering and exiting the cab.

11. There shall be a weather proof David Clark speaker mounted recessed in the pump operator's panel. (See radio requirements)

12. Ladder brackets (brackets made of stainless steel) and hard sleeve troughs (troughs made of stainless steel) painted job color red shall be of the adjustable type.

13. The apparatus shall be equipped with ZICO Model SAC-44 <u>collapsible</u> chocks and be mounted on the underside of the body, one in front and one to the rear of the driver's side rear wheels utilizing Model SQCH-44-H folding chock holders. The wheel chock storing brackets shall be mounted as close to the underbody as possible in such a way that they do not hang down excessively.

14. Cab warning devices shall be provided with buttons on both right hand and left hand beavertails. The buttons shall be mounted to the vehicle. Remote cords shall not be permitted. They shall be appropriately labeled: 1 – Stop, 2 – Go, 3 – Back Up.

15. The following Duo-Safety ladders with **½" halyards** shall be furnished and mounted on painted job color red stainless steel adjustable racks:

1 - #900A - 24', 2 section extension ladder,
1 - #775A - 14' roof ladder,
1 - #585A - 10' folding ladder.

16. Two 10' x 6" rubber hard sleeves and one pyrolite strainer are to be furnished. One hard sleeve is to be mounted on each side of the top of the hose body. The hard sleeve troughs shall be painted job color red and be adjustable.

17. 5 – adjustable stainless steel hose bed dividers with reinforcing ribs on the top and rear face of the divider shall be furnished and installed in the rear hose bed either painted job color red or DA finished. The dividers shall be supported at the front wall and floor of the hose bed utilizing a stainless steel uni-strut track with adjustable brackets and shall be tied into the rear top grab rail as well using fully adjustable brackets. The height of the dividers will be addressed at the pre-construction conference. Should these dividers not be adjustable across the full width of the hose bed, then 2 additional dividers shall be provided. Hand holds shall be furnished in each of the 4 main dividers.

18. Provide a polished chrome lighted license plate bracket for the rear of vehicle.

19. Furnish and mount as directed devices and mounting brackets listed in appendix A.

B. COMPARTMENTS:

1. All compartment doors shall be made of stainless steel and vertically hinged unless otherwise specified.

    i. The active door shall be latched at both the top and the bottom. The passive door shall be latched at either the top or the bottom depending on whether it is an upper door or a lower door. The active and passive door shall be provided with an access panel on the interior of the door for maintenance purposes to gain access to the linkage and the latches.

    ii. The compartment doors shall be furnished with “Heavy Duty” Cleveland door stays.

    iii. Both lower rear compartments shall have double doors.

    iv. Both left high side compartments shall have vertically hinged double doors.

v. Both lower front compartment doors shall be hinged toward the front.

vi. The rear step compartment will not have doors, ***the compartment shall be covered in gray linex*** an easily removable tarp red in color shall be provided. The company number shall be sewn on in large reflective numbers. Four (4) ½" drain holes shall be provided in the floor and two (2) ½" drain holes shall be provided in the rear lip. The rear lip shall be approximately 6" high off of the floor of the compartment.

vii. All compartment doors shall be numbered using 1-1/2" gold with black shadow scotchlite numbers.

viii. All doors shall be provided with stainless steel hasps so that a pad lock may be installed at a later date.

2. An optional if available additional locking compartment, located behind the driver, on the cab shall be provided. A Hansen #1250 key shall be used. This compartment may serve as an additional lockable storage compartment.

3. **Medical Compartment:**

i. A compartment shall be provided inside the crew area of the cab for storage of EMS equipment that needs to be stored in a climate controlled atmosphere. Contained within this compartment shall be a small lock box The box is a Medi-Dose Inc. part # NC-1501 (1-800-523-8966) approximately 12"Hx12"Wx6"D that has 12 volt d/c power to it to operate a key fob lock/security device. This shall be powered directly off the battery.

ii. The dimensions of the compartment shall be approximately 20"W x 15"D x 45" to 50"H based on the interior floor to ceiling dimension of the cabs interior. A stainless steel scuff plate shall be mounted to the cab ceiling directly above this compartment.

iii. The compartment shall be manufactured and fabricated out of Stainless Steel or Aluminum and the interior shall be painted white and clear coated so that it can be decontaminated if necessary. The exterior shall be either painted to match the interior of the cab or covered in Aluminum treadplate. It shall be provided with a lockable swing out hinged style lap style door using a Hanson 1250 key and a "D" handle latch.

iv. The preferred mounting location would be against the rear wall of the cab on the left hand side center area between the rear crew cab entrance doors.

v. There shall be Four (4) fully adjustable shelves provided.

vi. There shall be a 120V GFI duplex outlet provided and connected to the shore line.

vii. There shall be Two (2) 12V power point plugs provided in this compartment also.

viii. A partitioned area on the floor shall be provided for installation of a V.R.S. radio repeater. The VRS control box shall be mounted on the floor of this compartment on a slide out tray.

ix. The lower front and sides shall be adequately ventilated for the VRS equipment.

x. Bidders will bid this medical compartment with a swing out style lap door and lockable with a Hansen 1250 key in place of the bench seat in the rear crew cab. The VRS is to be mounted on the floor in this compartment (preferred) or underneath the flip down seat in its own protected compartment.

xi. A minimum of (5) Five Whelen 6 diode strip LED PSCOCDCR compartment lights shall be provided.

4. All compartment doors shall utilize locking Eberhard D handle latches. All passive doors on double door compartments shall utilize handle, lever, or paddle style latches. No pull devices shall be utilized. Handles shall be easily accessed from the ground on upper compartments and be mounted on the bottom of the passive doors. The active door shall be latched at both the top and the bottom of the door. A Hansen #1250 key shall be used. All compartment doors shall be provided with a stainless steel hasp or loops that will be capable of accepting a padlock at a later date. ***All "D" handle latches shall be either completely sealed and or have a barrier type gasket to prevent corrosion between dissimilar metals.***

5. All upper compartments shall have .75" finished marine plywood mounted on the back wall. These boards shall be bolted into place and be removable.

6. .75" finished marine plywood panels shall be provided on the floor of each compartment. Thesepanels shall be raised from the compartment floor utilizing .5" thick neoprene or similar slats or feet and be easily removable.

7. Adjustable shelves shall be provided in all lower compartments – 1 shelf per compartment .75" finished marine plywood panels shall be provided on the floor

of each shelf. These panels shall be raised from the shelf floor utilizing .5” thick neoprene or similar slats or feet and be easily removable. Stainless steel Uni-Strut shall be mounted to the compartment walls and be used for mounting the adjustable shelves.

8. There shall be 2 - 6', Iowa American model IA-H-NPH-1IF or equivalent, fiberglass handled, “I” beam style ceiling hooks provided and mounted in a small compartment beneath either the right or left rear attack lines or both (1 each side). No portion of the hook shall protrude so as to come into contact with any hose.

9. 4 - Wheel well air bottle compartments for Scott 1 hour, carbon Air-Pak 50 cylinders shall be provided. These compartments shall be free of sharp edges and appropriately lined so as to prevent damage to the composite bottles. The doors shall be made of stainless steel and have “D” handle style latches.

10. All compartments and piping penetrations shall be weather-proofed.

11. The rear step compartment shall have welded in place partitions installed between both right and left rear compartments.

12. All compartment doors shall have welded inner panels.

13. The rear step compartment shall have a 6” lip installed across its bottom edge and shall have drains provided for water drainage, the holes shall be at least ½” in diameter. The compartment shall be coated in gray linex. The compartment shall have L.E.D. lighting and shall be controlled by an individual switch in the compartment. This compartment light switch shall not be tied into the open compartment circuit. The switch shall be a weather proof toggle switch or equivalent.

14. The right rear compartment shall have 3 tubes installed for 3 “D” size oxygen cylinders. The tubes shall be mounted on the adjustable shelf and tilted back slightly. There shall be a seat belt style strap with a airplane style buckle or Velcro closure provided to keep the bottles in the tubes.

15. All compartment interior lights shall be Whelen **PSCOCDCR** LED 6 diode strip lights. There shall be a minimum of (3) three lights in each lower front compartment, (6) six in each lower rear compartment, (10) ten lights in the high side left compartment. (4) four in the rear step compartment.

16. All compartments shall be adequately ventilated and no water should be able to enter a compartment through the vent.

17. The left hand and right hand rear body compartmentation shall be extended beyond its normal rear wall so that it extends all the way to the edge of the rear

step, in other words an extended rear body on both sides with the lower portion being full depth on the right hand side only.

18. Eight (8) 500 LB. capacity roll out trays / adjustable shelves shall be provided and exact mounting locations will be determined at the Pre-construction conference.

SECTION 6: GENERAL CAB REQUIREMENTS:

A. CAB EXTERIOR:

1. The cab shall be a **Stainless Steel** or **Aluminum** minimum of a 6 person tilt cab with short barrier style doors. The fluid used for the cab tilt shall be Dexron III. Crash test certifications, data, and video shall be provided with the bid.

2. Cab door latches shall be of the locking recessed paddle type on both the interior and exterior. They shall be Tri-Mark TM202 key. The interior paddle latch shall have the locking mechanism incorporated into the paddle latch assembly. Pin style locks on the top of the door will be unacceptable. Door straps shall be made of a heavy duty thick nylon strap (6”) six inches in width.

3. Where specified by the Department, cab doors shall have Hanson brand #4000 or equivalent 1.25" diameter stainless steel handrails (approved by DCFD at pre-construction). Where specified by the Department, cab interior grab handles shall be the Hansen 930-0000/0001 types and be provided. Knurled aluminum finishes will not be permitted.

4. The side windows in the crew area of the cab shall be a tinted two way horizontal or vertical slider. The rear wall windows in the cab shall be approximately 12" x 17" and shall be of the sliding type (horizontally sliding). These windows shall slide inboard. Any similar type of configuration will also be acceptable (approved by DCFD at pre-construction).

5. A Federal Q siren shall be mounted in such a manner as not to protrude beyond the bevel of the front bumper. The siren shall be controlled by a foot switch at both the drivers & officers’ position. The switches shall be mounted at a location specified by the Department. The siren brake shall be located in a position that it can be easily operated by both the officer and driver or two switches shall be provided. The siren mounting shall be substantially reinforced. Linemaster (632S) heavy duty foot pedals shall be used for the foot switches. The siren foot pedal shall be mounted outboard of the air horn foot pedal.

6. The vehicle shall have a "school bus" bubble style mirror. Grote mfg. Model 28063 stainless steel assembly, mounted on the cab to provide visibility across the front of the apparatus. ***This cornering mirror shall be mounted as far out towards the right front top corner of the cab in such a way that the mirror is not blocking the officer's view of the roadway through the windshield.***

7. The vehicle mirrors shall be west coast style polished frame mirrors with a separately mounted round convex mirror ***a minimum of 8" in diameter or a Vel Vac rectangular 6" x 5" rectangular convex mirror may be used. Lang Mekra mirrors 7" x 16" west coast style and a 6" x 8" convex mirrors can be provided to meet NFPA 1901-2009.***

8. Flexible, non-metallic front bumper sight rods shall be furnished. They shall be 44" in height.

9. The cab roof shall be overlaid with aluminum diamond plate and be considered a walking surface.

10. A Kussmaul auto-eject charging receptacle and charging level indicator Model 091-189-12 shall be mounted on the cab behind the driver's door. The cover shall be red in color. There shall be a Kussmaul 091-75-12 charger provided as well.

B. CAB INTERIOR:

1. SEATING:

i. Driver's seat – Shall be a Seats Incorporated Magnum 100 Part # 181173JN400 Knee action air ride driver's seat with high back styling and Imperial 1200 or cordura cloth black upholstery. The driver's seat shall be mounted as far back as possible to allow for maximum front to back adjustment***. The width of the compartment behind the drivers seat if provided may need to be altered to achieve this.***

ii. Officer's and crew's seats - Three (3) Bostrom 400 Series Tanker 450 SCBA seats with high back styling and black Dura-wear cloth upholstery shall be supplied. There shall be a compartment below the officer's seat, which opens from the front for mounting of a Department supplied radio. The officer's seat shall be moved back as far as possible. The Bostrom part number for the SCBA seat is as follows: P/N 224000-0665F Tanker 450/N Black Durawear w/DCFD logo and low seam style stitching on the cushions. The seats shall be provided with the Secure All SCBA Locking System.

iii. All SCBA seats shall have opening headrests. The seat must be capable of mounting a Scott Air-Pak 50 breathing apparatus with integral personal alert devices.

iv. SCBA brackets, outlined in the loose equipment section, shall be mounted.

v. There shall be One (1) Bostrom Tanker 400CT Flip Up style tanker seat with a Secure All SCBA Locking System style seat shall be provided next to the EMS cabinet on the rear wall of the cab covered in black dura-wear material located in the crew cab area right hand center section between the crew cab doors (right hand side inboard forward facing position). DCFD's own part number from Bostrom is 220000-0665F.

vi. Bidders will bid this medical compartment with a roll up door and lockable with a Hansen 1250 key in place of the bench seat in the rear crew cab. The VRS is to remain on the floor of this compartment (preferred) or in its own compartment under the flip down style seat.

3. Drug Locker in Medical Compartment:

i. A compartment shall be provided inside the crew area of the cab for storage of EMS equipment that needs to be stored in a climate controlled atmosphere. Contained within this compartment shall be a small lock box approximately 12"Hx12"Wx6"D that has 12 volt d/c power to it to operate a key fob lock/security device. This shall be powered directly off the battery. Medi-Dose Inc. part # NC-1501 (1-800-523-8966).

ii. The dimensions of the compartment shall be approximately 20"W x 15"D x 45" to 50"H based on the interior floor to ceiling dimension of the cabs interior.

iii. The compartment shall be manufactured and fabricated out of Stainless Steel or Aluminum and the interior shall be painted white and clear coated so that it can be decontaminated if necessary. The exterior shall be either painted in spatter to match the interior of the cab or covered in Aluminum treadplate. Four (4) compartment lights shall be provided.

iv. The preferred mounting location would be against the rear wall of the cab on the left hand side center area between the rear crew cab entrance doors.

v. The contractor shall propose a location for the mounting of two additional S.C.B.A.'s

vi. There shall be 2 fold down seats located forward facing outboard opposite the rear facing jump seats covered in black dura-wear material. Reinforced stitching methods shall be used to prevent material from tearing. Mounting bolts/fasteners shall not protrude into the cushion.

vii. All seating shall be provided with seat belt extensions.

viii. Any latches used on the officer's side of the dash shall be a recessed type latch or a butterfly type of latch that has smooth edges and is rounded over.

ix. There shall be a Safety Vision "Safe Drive Mini DVR"system installed in the cab and mounted to the driver's side windshield. The exact mounting location shall be decided at the pre construction conference. (Licensed to DCFD).

x. A 12V power point plug shall be furnished on the officers side of the dash board. The exact mounting location will be determined at the preconstruction conference.

xi. A map desk shall be provided in front of the officer on the dash area and shall be approximately 10" wide x 15" long x 2" deep with a 11" x 16" with a lift up latching cover that shall have a raised bottom lip turned slightly forward to prevent items from sliding off of the bottom edge. Note: this is in addition to the "Map Box". This shall be natural D/A finished or painted to match the cab interior.

C. CONTROLS:

1. Dash board gauges shall be Beede NexSyslink Gauges.

2. There shall be a fast idle switch located on the dash board or the main switch panel set for 1000 rpm.

3. The cab shall have a flashing red Whelen model 5SR00FRR "compartment open" light and buzzer. This shall be operational at all times when the parking brake is released. The light and buzzer shall be appropriately marked.

4. There shall be 2 - ***12V D/C Whelen Pioneer Plus PCP2 Pole Mount*** Telescoping lights shall be provided individually switched and be accessible to both the officer and driver (in the cab), and be able to be turned on/off from both the cab and pump panel (using momentary switches) with an indicator light. There shall be a separate elevation sensors for these lights (and the Wagon Pipe) and it shall be connected to the "elevation sensor light" system. These lights shall not be connected to the parking brake. The elevation

sensor LED indicator light shall be Amber in color. Same style as the compartment open light.

5. The Air horn control shall be of the halyard type and shall have 3 pull chains/cords one (1) will drop straight down and have a rubber ball attached to weigh it down and the other two (2) shall be angled so as to be operated by either the driver or officer. The chain/cord mounting shall be substantially reinforced and the chain/cord shall be rubber covered/coated. Any springs used shall be of the heavy duty type so as to resist deformity under heavy use. The air horn operating switch shall be a pull down type. There shall also be a foot switch provided for both the driver and the officer. A Linemaster (632S) heavy duty foot pedal shall be used. This pedal shall be mounted inboard of the siren foot pedal.

6. There shall be an additional emergency parking brake control located on the officers side of the dash, with a protective cover to provide auxiliary emergency braking should the driver become incapacitated.

7. There shall be an additional speedometer provided for the officer's side of the dash board.

8. There shall be a Class 1 Digital 24 hour clock provided on the officers side dash or overhead area part #DC

9. All audible and visual alarms shall be clearly marked as to function. Additionally, all audible alarms shall have distinctly different sounds. The vendor shall provide a reference guide for any coded alarms.

10. The accelerator pedal shall be angled or separated away from the brake pedal a sufficient distance so as to prevent accidental activation of the brakes and/or the accelerator.

OTHER INTERIOR REQUIREMENTS:

1. All door glass shall be of the electric type and shall be able to be lowered fully with an additional officer's side window switch provided for the driver as well. The electric motor shall be placed in a spot that it is easily accessible and easily replaceable. Mounting location of door switch will be approved by the COTR.

2. The entire inner door panel for each door shall be finished in brushed or satin finish stainless steel. The upper door panel shall have the window regulator incorporated into it as one complete unit for ease of replacement. The stainless steel door panels shall be held in place with hex head bolts. An access panel shall be provided to disconnect any door latch linkage necessary to remove the door panel as one piece.

3. The cab shall have the standard insulation package with maximum additional heat and noise insulation for the entire cab and engine compartment.

4. The cab shall be air conditioned. The air conditioning condensing unit(s) located on top of the cab shall be protected by a diamond plate shield, angled at the front and the rear, which will prevent damage from limbs and other low hanging objects. Drainage for the condenser shall be provided that drains condenser condensation to the ground and does not permit water to enter the cab when the cab is in the normal down position or raised position. The contractor shall specify the type and cooling capacity of proposed air conditioners.

5. The cab interior lighting shall consist of a total of four ceiling mounted lights, one near each seat position, and shall be a ***Whelen #70RCSFDR Red / White Dome Light*** red and normal (white) light capability. The white lights are to be switched (on/off) with the crew cab door and by individual switch. Lights are to be able to be operated without getting out of the seat. The red light shall be controlled by an individual switch.

6. The vehicle shall have in-cab fluid level check, with in cab fluid access where practical. The dipstick handles shall be color coded and marked. The fill accesses shall be marked and identified. Transmission / Red Engine Oil / Yellow Power Steering / Blue. Dip sticks shall have appropriate detents and markings. All fluids shall be capable of being checked and refilled without tilting the cab.

7. The contractor shall provide mounting, which is easily accessible for both the driver and officer, for 12 sets of building keys. The contractor shall provide a proposed location and drawing.

8. The contractor shall provide a map box to be mounted on the engine dog house with (3) removable dividers, drop down cover & latch. The contractor shall provide a proposed location and drawing. The box shall be mounted on a spacer to raise it up off of the engine cover slightly to allow the drop down door to open fully. ***The map box shall be finished in black linex.***

9. There shall be a hand held spot light, Mobile Patrol model 2150-1, mounted in a bracket on the engine cover.

10. There shall be a Hansen Stainless Steel grab handle mounted on the Engine cover, Officer's side.

11. All four (4) cab doors shall be provided with a 6" chrome grab handle to be used to close the door. The handles shall be mounted on a rubber biscuit to allow a gloved hand to easily pull the door closed.

12. The officer and driver shall have Hansen 930-0000/0001 or similar style grab handles located in such a manner as to easily and safely facilitate mounting and dismounting the apparatus. These grab handles shall be mounted on or near the door posts of both the officer's and driver's positions. The handle on the driver's door post shall be installed at such a height that it will not interfere with the turning of the steering wheel regardless of the position of the steering wheel.

13. The engine cover shall be covered with Black Linex. The dash board panels in front of the driver and the officer shall be covered in Black Linex also. ***The interior rear wall of the crew cab shall be finished in Aluminum Treadplate. The head liner shall be covered in red dura-wear material.***

14. There shall be a map light, Sunnex model #HS-762-00, mounted on the officer's side of the dashboard.

15. A vehicle fluid information plate shall be mounted on the inside of the driver's door panel.

16. A David – Clark vehicle intercom system shall be provided and connected to the radio system. There shall be 5 interior positions and one position located at the pump panel. The pump panel position connection shall be fully weather proofed (see radio requirements.)
    Hanger hooks shall be provided at each David Clark headset location. A Fire Com hook shall be used and mounting location will be determined at the final inspection.

SECTION 7: GENERAL PUMP AND PUMP PANEL ITEMS:

A.) PUMP:

1. The vehicle shall be equipped with a Two Stage Waterous CMU series 1500 GPM 2 stage Large Body fire pump or a Hale Q-Two 1500 GPM fire pump. If flame plated or upgraded impellers are available they shall be provided. This shall be listed on the pricing page.

2. The pump shall have mechanical seals.

3. The pump shall have a thermal relief valve. The thermal relief valve will discharge to the ground in the area of the left side operator's stand in such a place that is in easy sight of the pump operator.

4. The pump shall be equipped with a Pump Overheat Indicator Light and alarm.

5. The pump shall be engaged by a pneumatic shift located in the cab. There shall be compression style fittings on the air lines. No quick connect fittings.

6. All discharge and intake valves used in the plumbing shall be Waterous Valves. Any electric or air operated valves shall be provided with a easily accessible manual override.

7. The tank to pump valve shall be a Waterous 3-1/2” full flow valve.

8. The pump shall be controlled by a Detroit Diesel Fire Commander with pressure governor or the appropriate equivalent style governor from Fire Research Corporation for a Cummins Engine shall be provided. This component shall be mounted on an access panel or using nut serts for easy removal. It shall also have a service loop of wire to make replacement easy.

B. <u>PRESSURE GOVERNOR, MONITORING, and MASTER PRESSURE DISPLAY for CUMMINS</u>

1. The contractor shall install a **Class One TPG Plus** or a **Fire Research InControl** series ACA601-D00 pressure governor and monitoring display kit. The kit shall include a control module, intake pressure sensor, discharge pressure sensor, and cables. The control module case shall be waterproof and have dimensions not to exceed 6" high by 7-1/2" wide by 2" deep. Inputs for monitored information shall be from a J1939 databus or independent sensors. Outputs for engine control shall be on the J1939 databus or engine specific wiring.

2. The following continuous displays shall be provided:
   a. Pump discharge; shown with four daylight bright LED digits more than 1/2" high
   b. Pump Intake; shown with four daylight bright LED digits more than 1/2" high
   c. Pressure / RPM setting; shown on a dot matrix message display
   d. Pressure and RPM operating mode LEDs
   e. Throttle ready LED
   f. Engine RPM; shown with four daylight bright LED digits more than 1/2" high
   g. Check engine and stop engine warning LEDs
   h. Oil pressure; shown on a dual color (green/red) LED bar graph display
   i. Engine coolant temperature; shown on a dual color (green/red) LED bar graph display
   j. Transmission Temperature: shown on a dual color (green/red) LED bar graph display
   k. Battery voltage; shown on a dual color (green/red) LED bar graph display.
   l. The dot-matrix message display shall show diagnostic and warning messages as they occur. It shall show monitored apparatus information,

stored data, and program options when selected by the operator. All LED intensity shall be automatically adjusted for day and night time operation.

m. The program shall store the accumulated operating hours for the pump and engine to be displayed with the push of a button. It shall monitor inputs and support audible and visual warning alarms for the following conditions:
   i. High Battery Voltage
   ii. Low Battery Voltage (Engine Off)
   iii. Low Battery Voltage (Engine Running)
   iv. High Transmission Temperature
   v. Low Engine Oil Pressure
   vi. High Engine Coolant Temperature
   vii. Out of Water (visual alarm only)
   viii. No Engine Response (visual alarm only).

n. The program features shall be accessed via push buttons located on the front of the control panel. There shall be an USB port located at the rear of the control module to upload future firmware enhancements.

o. Inputs to the control panel from the pump discharge and intake pressure sensors shall be electrical. The discharge pressure display shall show pressures from 0 to 600 psi. The intake pressure display shall show pressures from -30 in. Hg to 600 psi.

p. The governor shall operate in two control modes, pressure and RPM. No discharge pressure or engine RPM variation shall occur when switching between modes. A throttle ready LED shall light when the interlock signal is recognized. The governor shall start in pressure mode and set the engine RPM to idle. In pressure mode the governor shall automatically regulate the discharge pressure at the level set by the operator. In RPM mode the governor shall maintain the engine RPM at the level set by the operator except in the event of a discharge pressure increase. The governor shall limit a discharge pressure increase in RPM mode to a maximum of 30 psi. Other safety features shall include recognition of no water conditions with an automatic programmed response and a push button to return the engine to idle.

q. The pressure governor, monitoring and master pressure display shall be programmed to interface with a Cummins engine.

9. The pump shall have a manual engagement over ride feature. This shall be of the push / pull rod or shaft style. **No Cables**.

10. All intakes and suctions over 3” shall have adjustable intake pressure relief valves provided. These pressure relief valves shall be provided with air bleeders. The intake side of the pump shall also be equipped with a relief valve. There shall be a minimum of 4 relief valves provided.

11. There shall be an environmentally safe oil priming pump controlled by the pump manufactures controller capable of accepting the labeling outlined herein. The oil reservoir must be easily accessible for refilling.

12. A minimum of Four (4) Anodes shall be installed to prevent corrosion in the pump.

13. Nut Serts shall be provided for any components that are installed in or on the pump panel and need replacement that there is limited or no access to for a mechanic to make repairs or install replacement parts.

B.) PUMP PANEL:

i. The pump panels shall be constructed of brushed, non-glare stainless steel. There shall be NO flexing in the panel and it shall be sufficiently reinforced.

ii. The operators stand shall be constructed of stainless steel using a tubular stainless steel sub frame.

iii. Pump panel lights, Whelen 5SCA0CCCR LED, and light shields shall be provided for each side of pump module. ***There shall be enough lights to provide sufficient light for night time operations.*** There shall be (5) lights on the left side and (3) lights on the right side. One (1) light on each side shall be connected to the pump shift. A light shield shall be provided on both sides. The left side shall be used for and considered a stepping surface as well as a light shield.

iv. The panel opposite the operator's side shall be fully and easily removable without removing screws. This panel shall be secured by latches in lieu of screws or bolts. The panel shall be designed in such a way that there is a compartment style door to gain access to the Vogel Lube and fill as well as any overrides for valves.

v. Intakes and discharges shall be identified by etched zinc color coded tags in accordance with current NFPA standards. Tags shall be affixed using screws.

vi. If a DPF Engine is provided a warning light / alarm cluster shall be provided and shall contain a DPF warning light, a HEST (High Exhaust System Temperature) warning light, Low Engine Coolant, High Engine Temperature, Low Voltage, Transmission, and Oil Pressure warning lights and an alarm.

C.) INTAKES, DISCHARGES, CONTROLS & DRAINS:

ATTACHMENT J.3 PUMPER REQUIREMENTS

1. The 6" steamer located on ***left*** side of the apparatus shall be of the short or close type so as to facilitate the mounting of an Akron 1583 Siamese without the Siamese protruding beyond the outer most edge of the vehicle. As you are facing the valve there shall be a 2-1/2" male fitting on the left and a 2-1/2" female swivel fitting on the right.

    a. 2- Crosslays using Waterous 2-1/2" rack and sector valves.
    b. 1- Front Bumper Line using a Waterous 2-1/2" rack and sector valve.
    c. Small Line Reel (Booster Line) mounted above the pump in the open bin area. Labeled In/Closed – Out/Open.

2. There shall be 2- rear discharges, 1 on the left and 1 on the right side below the rear hose bed. The plumbing and piping shall be a minimum of a 3" pipe and terminate 2-1/2" chrome plated brass fitting male NST and be provided with an elbow 2-1/2" female swivel to 2-1/2" NST male with a cap and chain.

    a. 1 – 3.5" Full Flow Waterous valve left side plumbing and piping inclusive.
    b. 1 – 3.5" Full Flow Waterous valve right side plumbing and piping inclusive.

3. The operator's side pump panel side (left hand side) shall have:

    a. 1 - 3.5" Full Flow intake with a reducer to 2-1/2" NST female swivel.
    b. 1- 2.5" Full Flow discharges Waterous rack and Sector Valves.

4. The panel opposite the pump operator's panel side (right hand side) shall have:

    a. 1 - 3.5" Full Flow discharge that terminates 4" NST male (using Waterous parts) with an elbow that is 4" female NST x 2-1/2" male NST and a cap and chain.
    b. 1 – 5" discharge that is a total of 2 - 3-1/2" Full Flow discharges pant legged into 1- 5" discharge utilizing Waterous manifold parts to achieve this. It shall terminate in 5" NST and have a 5" NST female swivel x 5" Storz elbow, cap and chain.
    c. There shall be 1 – 3.5" Full Flow discharge for a Wagon Pipe (deck gun assembly) provided and the piping shall discharge up through the open bin on top of the pump.

NOTE:

- **All discharge and intake valves shall be Waterous hand crank or push / pull style valves.**
- **All plumbing and piping shall be stainless steel.**

- **No automatic drain valves will be allowed.**

5. All intakes and discharges shall be provided with (¾") (¼) quarter turn, ball valve drains and bleeders with high pressure drain hoses between the valve and the drain valve. All drains and bleeders shall be appropriately labeled using the labeling method outlined herein. All gates shall be connected to its associated valve with the least amount of linkage possible. When linkage is necessary, it should be arranged to provide a mechanical gain when the gate is operated. **The amount of force needed to open any push/pull valve shall be as low as possible but shall not exceed 40 lbs. to unseat the valve and 35 lbs. to fully open the valve with the valve under 150 psi pressure.** The drains shall terminate with ¾" hard piping (**No Plastic piping, tubing, or end caps may be used in any part of the drain / bleeder plumbing**.) No automatic drain valves shall be allowed.

6. Any intake or discharge that terminates on the lower portion of the pump panel or side opposite the pump panel shall be located sufficiently high enough that the hands of an operator making a connection to this intake or discharge won't contact any aggressive tread installed on the running board.

7. The discharge fittings for the crosslays shall have 90 degree swivel fittings attached which terminates in 1-1/2" male NSFT. An anti-seeze compound shall be applied to the threads of the swivel prior to installation.

8. The front intake shall be cut back as far as possible and recessed into the extended front bumper and shall terminate as 6" NST reduced to a 5" storz fitting. Intake screens shall be provided. When the soft sleeve is attached to the front intake it MUST NOT protrude out beyond the plane of the front bumper. The piping shall be a minimum of 6" pipe. The front bumper assembly shall be substantially reinforced so that the notched portion cut out does not cause an integrity issue with the steel front bumper and extension assembly. Zinc screens shall be provided, NO plastic screens will be allowed.

9. A Waterous Monarch intake valve or equivalent (Jamesbury) remote valve shall be provided for the front suction with a Waterous handwheel control or equivalent manual control hand wheel located on the operator's side of the pump panel including a relief valve and air bleeder.

10. There shall be one (1) right hand side main pump intake that is a minimum of 6" NST male. One (1) Eight Inch (8") Monarch hand crank valve, pressure relief valve, and air bleeder shall also be provided for the right side suction as well.

11. The front, rear, and right side suctions shall have a pressure relief valve with an air bleeder.

12. The rear suction inlet shall be located as low as possible and shall terminate in a 5” Storz fitting. It shall be a minimum of a 6” diameter pipe. Zinc intake screens shall be provided. It shall be located in the center of the rear compartment. All necessary drains and bleeders shall be provided to drain the entire pipe when required.

13. The front and rear intakes shall be provided using a minimum of 6” piping.

14. A Waterous Monarch intake valve or equivalent remote valve (Jamesbury) shall be provided for the rear suction with a Waterous hand wheel control or equivalent manual control hand wheel located on the operator’s side of the pump panel. The rear suction shall have a pressure relief valve with an air bleeder.

15. Any discharge larger than 2-1/2" shall be hand wheel controlled with a Waterous 82286/81823 series or equivalent manual control valve and hand wheel located on the operator’s side of the pump panel. The hand wheel control shall stop when fully open and shall have an open/closed indicator. The 3-1/2” discharge on the panel opposite the operator’s side shall terminate as a 30 degree elbow 4” NST female swivel X 2-1/2” NST male removable fitting, cap, and chain. The discharge pipe will terminate 4” NST using a Waterous discharge pipe attached directly to the 3-1/2” Waterous valve body. There shall also be an additional elbow provided that is 4” female NST swivel x 5” Storz elbow, cap, and chain provided.

16. The piping for the deck gun shall be a minimum of 3.5” and controlled with the same type of hand wheel control specified for above.

17. Each side discharge and rear discharge shall be provided with a 30 degree Akron Brass #630 removable fitting which terminates in NSFT. The piping shall terminate with a 2-1/2” chrome plated brass fitting.

18. The discharge in the front bumper hose trough shall have a 90 degree swivel fitting attached which terminates in 1-1/2” male NSFT. An anti-seeze compound shall be applied to the threads prior to the swivel being installed.

19. All push-pull handles shall be Class 1 or equivalent chrome locking push-pull control with the function of the valve imprinted in etched zinc recessed within the "T" of the handle. This labeling shall coincide with the intake and discharge tags outlined above. The control levers shall be located directly adjacent to one another and shall be mounted in line so they are in the same position when shut off unless otherwise specified in these requirements. Each valve control lever shall be connected directly to its respective valve by a 7/8” non-corrosive rod to form a direct linkage control system. The specified pressure gauges shall be located directly above the control levers. NO soft or pot metals will be acceptable. All linkage will be painted job color red and ALL U-joints on hand crank linkage shall be covered and protected by a rubber boot. The part number

for the “U” joints to be used is as follows: An ALVIS BB1000 1” OD (outside diameter) with 1/2” bore with a 1000 low profile boot for the a Waterous transfer valve if provided and an ALVIS BB1250 1-1/4” OD (outside diameter) with a 5/8” bore and 1250 low profile boot used on all linkage for the hand crank and push / pull valves.

20. Tag and labels for various pump panel components such as gauges, handles, warning lights, and alarms shall be screwed into the panel. **Glued on Labels are UNEXCEPTABLE THERE WILL BE NO EXCEPTIONS TO THIS REQUIREMENT.**

21. The wagon pipe assembly shall be an AKRON 3433 which includes a 2 inlet ground base, liftoff and direct mount. The elevation sensor for this device shall be in the cradle for the pipe, have a disconnect plug, and be connected to the "elevation sensor" system with a modular plug included near the gun mounting flange. It shall be arranged and mounted in such a manner that the appliance shall be able to be rotated 360 degrees from a horizontal position, additionally, the wagon pipe, when in it’s "nested" position shall not be higher than the top of the cab. A nesting cradle shall be provided for the wagon pipe if necessary.

22. The valve for this assembly shall be controlled by a handwheel.

The AKRON #3433 shall be provided with an AKRON #3488 (10-1/2” L) Aluminum barrel type stream straightener, AKRON #2499 stacked tips, and AKRON #3502 mounting bracket. An Akron 489 Aluminum1-1/2” smooth bore tip shall be provided with the wagon pipe as well.

23. The control handle for the tank to pump valve shall be configured and labeled so that the **“In is open” / “Out is closed”.**

24. There shall be a hose reel mounted in the open bin above the pump on the operators (left hand) side, painted job color red with a capacity of 200’ of ¾” hose. The control handle for the small (3/4”) line valve shall be configured and labeled so that the **in position is closed and out is open**.

25. All threaded intakes and discharges shall have polished chrome plated brass blind caps / plugs provided. These blind caps shall be attached, by a chain, to the pump panel cover. All bushings used to convert thread from pipe thread to NST on any discharge pipes shall be chrome plated brass also unless plumbing furnished by the valve manufacturer terminates in NST.

26. Zinc screens shall be provided on ALL intakes to the pump. **NO Plastic**.

D.) TANK:

1. The water tank shall be 500 gal. Capacity. The tank shall be an inverted “L” style configuration to achieve the low hose bed.

2. The tank to pump valve shall be a Waterous 3-1/2” full flow valve.

3. The water tank gauge shall be a Fire Research LED style FRC Tank Vision gauge.

4. The tank overflow shall terminate to the rear of the rear axle in a manner that no water enters the rear axle vent holes on the rear axle. The tank overflow shall be of sufficient size so that water does not overflow from the top of the fill tower when filling the tank by way of the pump intake at 150 psi.

5. The tank fill between the pump and the tank shall be 1-1/2”. There shall be two (2) Victaulic style fittings installed just prior to the **stainless steel** piping entering the tank and on the discharge side of the tank fill valve for maintenance purposes. This is if a high pressure hose is used in this application.

6. The tank fill tower shall be as far forward and towards the left front outer edge of the tank as possible. The fill tower shall be cut as low as possible.

7. ***The water tank shall be manufactured using the latest technology for poly type tanks that are constructed in the inverted “L” style configuration***.

E.) OTHER ITEMS:

1. An air chuck shall be provided and installed on the pump panel it shall also have 25’ of air hose and have a combination tire air fill / tire gauge fitting supplied. The air hose, air chuck adapter and combination tire/air fill gauge shall be completely assembled. ***There shall also be a On / Off valve located here and labeled as such.***

2. Pump panel tags and tagging system – The apparatus shall be equipped with permanent etched zinc verbiage tags used to identify, instruct or warn the operator. These tags must be specifically designed and manufactured to withstand the service environment of the apparatus; and carry a warranty similar to that provided for the exterior paint and finishes of the apparatus.

3. A Gauge shall be provided for the small (3/4”) line.

SECTION 8: THE CHASSIS, ENGINE AND ELECTRICAL COMPONENTS:

A.) CHASSIS:

AIR SYSTEM AND BRAKES:

i. The vehicle will be provided with ABS Disk brakes with automatic traction control. A mud and snow switch shall be provided.
ii. The air dryer shall be a WABCO System Saver 1200.
iii. Automatic slack adjustors shall be furnished on all brakes. ***EX-225 (17") disc brakes shall be used.*** Brake system chambers/adjuster arms shall be selected to maximize system performance by proportioning braking to match front/rear weight distribution of the completed, loaded vehicle, with specific approval by Meritor / Rockwell required. **A copy of the approval letter shall be furnished prior to beginning construction.**
iv. A dedicated tank for the release of the parking brake shall be furnished. The location of the releasing mechanism or switch shall be easily accessible to the driver on the dash or switch panel.
v. All air tank drain valves shall be equipped with cable controlled drain valves that will be run to the outside edge of the body and will be labeled as such. "Drain Daily".
vi. A pressure protected auxiliary air tank is required for operation of all air devices beyond the brakes, for example the air outlet and the air horns. It shall be of such capacity as to provide for near constant use without unduly draining the air system.
vii. A set of front Glad Hands for towing shall be provided. They shall be labeled one (Red) and one (Blue).
viii. There shall be an air horn shut off valve provided, properly labeled, and located near the driver's position inside the cab.

FRAME, SUSPENSION AND WEIGHT DISTRIBUTION:

i. The frame shall have a minimum RBM of 1.9 million. The frame and ALL undercarriage areas as well as the components shall be painted job color red.
ii. Springs shall be semi-elliptical in design with bronze bushings and utilize heavy duty, double acting shock absorbers. ***The shocks shall be mounted on a minimum of approximately a 70 degree angle on the front axle. This suspension shall be specially designed for the extra severe duty of rough city road surfaces.***
iii. The weight distribution for the completed vehicle with a full operational load shall be as follows: Front: 45%

Rear: 55%
Left to Right 7%

iv. Any ballasting information, to achieve the above weight distributions, shall be provided to the Department.

v. Wheels are to be hub piloted. Tires: Front - Michelin XZY 315 65 R 22.5 Rear - Michelin XDN 1200 R 22.5. ALL wheels shall be ***Alcoa Dura-Brite Aluminum*** wheels.

vi. The vehicle shall be provided with Stemco front axle oil seals.

vii. A Neway AD-123 rear air ride suspension shall be bid as an optional item on the main pricing page.

viii. The vehicle shall be provided with automatic traction control with a mud and snow switch.

ix. To prevent electrolysis, insulators shall be provided at any place where dissimilar metals meet.

x. Front & Rear mud flaps shall be furnished. They shall be a heavy duty rubber mud flap.

xi. Extra heavy duty "**Cut Plate**" tow eyes shall be furnished on both the front and the rear of the vehicle. The eyes shall be directly connected to the frame. These eyes shall be capable of supporting the pulling of the vehicle when fully loaded. The front eyes shall face upward or forward.

xii. The angles of approach and departure shall not be less than 15 degrees and a maximum break over angle as possible shall be shown on the bid drawings. This is achieved when the vehicle is empty.

xiii. The chassis shall be lubricated by a VOGEL lubrication system. The installation will be such that the manifolds are easily accessible, and do not block access to any other component. The lines shall be free from stress. The lubricant reservoir shall be easily accessible for checking and refilling by way of an access door preferably on the right side pump panel. A drum pump and a drum of Vogel Lube shall be provided.

xiv. All Power steering hoses are to be the high pressure type. **No copper tubing is to be used.**

xv. Rear axle vent tubes are to be extended up to in between the frame rails so that water and debris cannot enter them.

xvi. On Spot drop down style chains shall be provided and they shall be capable of being used when the vehicle is in reverse as well as a forward gear. Label shall be provided for operation and engagement speeds.

xvii. Battery access shall be provided either through roll out style trays for the battery compartments or via a lift up door opening in the cab in which all six (6) Group 31 batteries are capable of being changed without tilting the cab. **NO EXCEPTION**.

B.) ENGINE:

ATTACHMENT J.3 PUMPER REQUIREMENTS

1. ENGINE

a. The chassis shall be powered by a 2010 emissions compliant Cummins ISX11.9 diesel engine as described below:

Model	ISX11.9
Number of Cylinders	Six
Bore and Stroke	5.11 x 5.91 in
Displacement Liter (Cu. In.)	11.9 (729)
Rated BHP	500 @ 1800 RPM
Torque	1645 ft.lb. @ 1200 RPM
Governed RPM	2100
Oil Capacity / Type	12 gallons / SAE CJ-4
Fuel Requirement	Ultra low sulfur diesel (15 ppm max.)

b. Standard equipment on the engine shall include the following:

Selective Catalytic Reduction (SCR) after treatment
Cooled Exhaust Gas Recirculation system
Fan – 32”, 11 blade
Charge air cooling
High pressure, common rail fuel system
Fuel filter with check valve and water separator
Fuel strainer
Governor – electronic, interact system
Injectors – electronically controlled full authority injection
Lube oil cooler – integral
Lube oil filter – full flow
Starting motor – 12 volt Denso double reduction
Turbocharger – variable geometry type
Air compressor – Wabco 18.7 CFM

c. The engine exhaust system shall be a horizontal design constructed from heavy-duty truck components. Flexible couplings shall be utilized to absorb the torque and vibration of the engine. The outlet shall be directed to the forward side of the rear wheels, exiting the right side, with a straight tip. A heat-absorbing sleeve shall be used on the exhaust pipe in the engine compartment area to reduce stored heat, providing protection for the alternator, and also to protect hands when checking or adding oil in the engine compartment.

d. A SCR chamber shall be installed in “stacked” series with the DPF chamber on the right side of the vehicle, immediately behind the cab and shall ingest urea from a remote storage tank providing a catalytic reaction with diesel exhaust particulates, called Diesel Exhaust Fluid, it is a solution of 2/3 water and 1/3 urea that reacts with NOx to create nitrogen and water. The urea tank shall be equipped with a level sensor, heater and alarm to prevent run-out or freezing.

2. ENGINE AND CHARGED AIR COOLING SYSTEMS

a. A serpentine core type radiator with continuous louvered copper fin design shall be provided. Radiator shall be fitted with formed steel side frames. The top tank shall have a built-in de-aeration system. A drain shall be located at the lowest point.

b. The engine charged air heat exchanger shall be located directly in front of the radiator and be bolted to its side rails. It shall be all aluminum-brazed construction. Air cooler shall be cross flow design with cast aluminum side tanks, horizontal inlet and outlet at top and aluminum louvered serpentine external air fins. Cooler tubers shall also be constructed of aluminum and have internal fins that eliminate laminar airflow.

c. The charge air cooler and the radiator shall be produced by the same manufacturer as a single assembly to provided continuity throughout the cooling system. This shall ensure a certified “balanced” package for the chassis engine air and fluid cooling systems.

d. The radiator and charger cooler shall be mounted to the chassis stub. Fabricated mounting bracket for the fans ring shall be attached to the front of the engine in a manner so that it “floats” with the engine and increases the fan’s efficiency by tightening the tip clearance. This mounting design eliminates engine fan and radiator shroud contact due to engine torque movement and promotes more efficient airflow. The radiator and charger cooler shall be held in place at the bottom by two (2) large bolts equipped with anti-stress rubber biscuits. The top of the radiator shall be supported by two (2). ¾” tubular braces, bolted to the chassis stub. Anti-vibration rubber biscuits shall be installed at the top threaded end of the braces where they attach to the radiator.

3. ENGINE COOLING CERTIFICATION

"EPQ" (End Product Questionnaire) certification shall be provided by the apparatus manufacturer and shall be done on a completed unit (after pump and complete body installation). Incomplete certifications (chassis only) shall not be acceptable.

4. WARRANTY

Cummins provides a 5 year or 100,000 mile warranty on the ISX engine.

5. EXHAUST HEAT SHIELDS

a. Heat shields shall be provided as needed to prevent damage to body and wiring from excessive exhaust temperatures. The exhaust pipe shall be wrapped in multi-layered insulation blankets, from just aft of the turbo down to inlet side of the DPF.

Each blanket shall have a fiberglass inner layer and a silicone impregnated fiberglass cloth outer layer

b. The cab shall receive 1.25" thick foil back insulation blanket under the crew floor to reduce floor temperatures.

c. All harnesses and cables, in proximity to exhaust system components, shall be protected with insulation.

6. EXHAUST

A SCR chamber shall be installed in “stacked” series with the DPF chamber on the right side of the vehicle, immediately behind the cab and shall ingest urea from a remote storage tank providing a catalytic reaction with diesel exhaust particulates.

7. AIR COMPRESSOR

A Wabco 18.7 cfm air compressor shall be furnished. The air compressor shall be gear driven off the engine.

8. FLEETGUARD/DAVCO FUEL WATER SEPARATOR with ALARM & HEATER

A Fleetguard FH230 Series (Davco Fuel Pro 382) top load 7 micron filter with fuel water separator, water sensor alarm, and 12 VOLT fuel heater shall be provided. The filtering system shall be remote mounted on the chassis and shall include the check valve. The standard engine fuel filters shall be removed from the engine. The system shall have the following features:

- Self priming port, single filter system (replaces primary and secondary filters)
- Drain valve
- Aluminum cylinder (acts as fuel coolant)

OR alternate:

DETROIT DIESEL ENGINE

The chassis shall be powered by an electronically controlled engine as described below:
Make: Detroit Diesel
Model: DD13
Power: 500 hp at 1800 rpm
Torque: 1650 lb-ft at 1200 rpm
Governed Speed: 2080 rpm
Emissions Level: EPA 2010
Fuel: Diesel
Cylinders: Six (6)

Displacement: 781 cubic inches (12.8L)
Starter: Delco 39MT
Fuel Filters: Dual cartridge style with check valve, water separator, and water in fuel sensor
Coolant Filter: Cartridge style with shut off valves on the supply and return line

ENGINE WARRANTY

The engine shall come with a **five (5) year or 100,000 mile** warranty provided by the Detroit Diesel Corporation.

EXHAUST SYSTEM

The exhaust system shall include a diesel particulate filter (DPF) and a selective catalytic reduction (SCR) device to meet current EPA standards. The exhaust system shall be stainless steel from the turbo to the inlet of the SCR device and shall be 5.00" in diameter. An insulation wrap shall be provided on all exhaust pipe between the turbo and SCR to minimize the transfer of heat to the cab. The exhaust shall terminate horizontally ahead of the passenger side rear wheels. A tailpipe diffuser shall be provided to reduce the temperature of the exhaust as it exits. Heat deflector shields shall be provided to isolate chassis and body components from the heat of the tailpipe diffuser.

DIESEL EXHAUST FLUID TANK

A 4.5 gallon diesel exhaust fluid (DEF) tank shall be provided and mounted in the driver's side body forward of the rear axle. The tank shall be constructed of 16-gauge type 304- L stainless steel.
A .50" drain plug shall be provided in a low point of the tank for drainage.
A fill inlet shall be located on the driver's side of the body and be covered with a hinged, spring loaded, stainless steel door that is marked "Diesel Exhaust Fluid Only".
The tank shall meet the engine manufacturers requirement for 10 percent expansion space in the event of tank freezing.
The tank shall include an integrated heater unit that utilizes engine coolant to thaw the DEF in the event of freezing.

1. An active Fan Clutch shall be provided.

2. Cooling capacity for ***maximum BHP rating at any RPM***.

3. The radiator shall have brass tubes, copper fins and bolted steel top and bottom tanks. The radiator flush plug with anti-seize shall be mounted on the side of the radiator.

4. All radiator and heater hoses shall be made of EPDM or silicone material in place of the standard hoses. Pressure compensating constant tension

clamps shall be used to eliminate hose pinching and cold leakage on all hoses over 1".

5. A Fuel Pro 382 Filter system shall be provided or a Davco 382 or Fleet Guard FH230 for the Cummins.

6. An electric fuel primer pump shall be furnished and mounted directly to a frame rail or a cross member for the purpose of stability due to road vibrations.

7. A stainless steel fuel tank shall be at least 65 gal. Capacity with a protect-o-seal fuel cap and flash arrestor. The fuel cap shall be threaded onto the fill neck with a pin actuated flip-up top. A fuel line shut-off shall be provided. A low fuel warning indicator shall be provided in the Engine Status Center. This warning shall not inadvertently activate when fuel is “sloshing” around in tank. There shall be sufficient spacing provided between the fill neck and the Protect-O-Seal fuel cap to allow for the installation of a fuel ring without it being pinched by the fill cap. The sending unit for the fuel tank shall be easily accessible to allow it to be changeable via access panels or openings so that the fuel tank does not need to be dropped to achieve this. Stainless steel straps with an insulating material between the tank and the strap shall also be provided to secure the tank in place if necessary for the mounting configuration provided.

Provide and install appropriate V.I.T. (Vehicle Information Transmitter)/Candometer fueling devices. Contact Mr. Lee Christiansen at E.J. Ward Inc. (210) 824-7383 for information and pricing.

8. Engine protections shall be set for ramp down not shut down.

9. A Denzo brand starter shall be provided.

10. 300 amp. Alternator minimum. Pad Mounted

11. For all oils, fluids and lubricants used by the vehicle, the vendor shall supply the
Department with the MSDS.

12. All engine fluid check/fill locations shall be color coded and labeled. Red / Transmission Yellow / Engine Oil Blue / Power Steering.

13. The vehicle shall be equipped with Delco 1150 or Delphi batteries A total of 6 Group 31 batteries shall be furnished. The batteries shall be able to be changed without having to tilt the cab. Corrosion resistant flooring or matting will be provided and the battery boxes shall be lined with black linex. ***There shall also be a set of jumper studs provided with rubber caps,***

one red (+) and one black (-) that can be accessed without tilting the cab.

14. There shall be black and red colored rubber boots provided on both the jumper stud and over the nut and bolt on the back side of the jumper stud where the cables connect to the studs.

15. A Detroit Diesel Pro-Driver DC system with audible alarm shall be installed and labeled if a Detroit Diesel is provided.

16. A placard shall be mounted on the driver's door indicating the ***ALL*** fluid capacities and ***ALL*** types of fluids used throughout the vehicle. For all oils, fluids and lubricants used by the vehicle, the vendor shall supply the Department with the MSDS.

17. Install and furnish a Neiderman Exhaust removal magnet receiver and the associated components to remote activate the system in the firehouses.

C.) TRANSMISSION:

1. Transmission – Allison World 4000EVS P with the Prognostics turned on.

2. Retarder – Telma Retarder stages will be indicated by the Department. There shall be an on/off switch with indicator light and retarder stage indicator lights mounted on the dashboard. The Stages shall be 1 and 2 off of the Accelerator and 3 and 4 off of the Brake Pedal.

3. A 541 torque converter.

4. Mechanics U Joints shall be provided on the drive shafts.

5. Keypad shifter ***with the mode switch enabled***.

6. Transynd transmission fluid.

7. The transmission dipstick is to have hot and cold level detent markings and color coded "**RED**" as outlined above.

8. The transmission shall be equipped with oil level and temperature sensors.

9. A drive shaft drop guards shall be provided as needed to keep the drive shaft from hitting the ground if a U joint should fail.

D.) ELECTRICAL WIRING AND COMPONENTS:

WIRING:

a. Extreme care shall be exercised to provide for easy serviceability of the system in future years.

b. Circuit connections shall be made on a barrier style terminal block, utilizing stud and nut fasteners for positive mechanical connections or a modular plug system. The Department reserves the right to approve the modular plug system.

c. All wiring terminals shall be closed barrel style. These shall be machine crimped to insure uniform and positive connections throughout the wiring harness. Soldered connections or the use of "Scotch-Lock" type fasteners is not acceptable. ***NO butt connectors shall be used.***

d. To insure minimal voltage drop and secure connections, **NO** splices shall be allowed in the wiring harness.

e. There shall be service loops at all junction points.

f. There shall be direct access to all junction points.

g. All wiring shall be a minimum of 14 AWG with SXL insulation.

h. All cables larger than 10 AWG shall have the terminals mechanically crimped to insure a minimal voltage drop. The vendor shall submit the crimping method and tool used for crimping to the Department for approval prior to construction.

i. All wire loom is to be rated at 250 degrees F., minimum.

j. In lieu of the electrical requirements 1 through 8, a written 10 year bumper to bumper electrical system warranty may be furnished at no cost to FEMS. This warranty shall be furnished prior to beginning construction.

k. 1/0 Braided copper ground straps are to be installed between the engine and cab, the engine and frame and the hose body and frame.

l. All switch panels shall be labeled and grouped by function.

m. The electrical system shall be calculated and wired in such a manner that no power spikes occur during the use of any electrically operated

component installed on the vehicle. Additionally, the contractor shall ensure that the system manager delays power flow to all 12v lighting at engine start-up until the start-up power has stabilized.

n. All terminal connection points shall be adequately protected against accidental contact.

o. The wiring shall be mounted in protective nylon loom in all areas. All wiring shall be specially harnessed with wire locks and clipped to body members using rubber covered, metal retention clips. All wiring shall be hidden to prevent unauthourized access. Wiring harnesses between the cab and the body shall be in Carflex or Sealtight conduit for protection. Wiring clamps shall be rubber lined securely bolted to chassis frame and body. Plastic ties may be used to form bundles, but should not be used to secure bundles to vehicle. ***The Carflex or Sealtight will terminate with a water tight connector designed for the type of conduit used inside of the wiring terminal box for the cab and the body. " NO EXCEPTION" Plastic junction boxes and connectors will NOT be permitted. PMA type loom will be an acceptable alternative provided that the harness is completely sealed and Deutch connectors are used on both ends and they are secured and sealed all the way up to the connector. Heat shrink tubing or similar style of an end cap to the harness will NOT be Acceptable, No Exception.***

p. Wiring shall not be secured to brake lines and/or fuel lines.

q. Where wire passes through sheet metal, large rubber grommets shall be used to protect both the wiring and the wire looms. All electrical connections shall be with mechanical type fasteners. Where pigtails from lights are connected Weather Pak type connectors shall be used.

r. All 12 volt wiring to the rear of the body shall be routed down each side of the exterior body compartments in enclosed electrical raceways over the exterior compartment doors. Raceways shall be enclosed full length, easily accessible and protected from damage.

s. 12 volt wiring from the cab to the body shall be connected at a weathertight box designed for this purpose and / or the main terminal panel box. At this point all wiring shall be split, so that the body may be removed from the chassis at a later date. The main wiring harness shall be run in Carflex or Sealtight, or equivalent conduit (PMA).

t. Additional secondary terminal panels shall be installed in each rear corner compartment, and a separate panel in the cab. Only automatic

reset circuit breakers shall be used in the electrical installation for the body wiring.

u. All wiring shall be color, function, and number coated throughout the installation. The function and numbering system shall correspond with the electrical wiring as built schematic furnished with the apparatus.

v. Extreme care must be taken in the installation to avoid engine manifold, engine exhaust, and muffler areas that could expose the wiring to severe overheating during long periods of operation. Proper insulation and heat deflection panels must be installed in such areas.

w. All compartment door and cab door pin switches as well as any exterior switches shall be weatherproof.

x. All circuit grounding must be accomplished by using grounding busses attached directly to the chassis frame. It is anticipated that only 3 to 4 busses will be required for the entire vehicle. A direct ground shall be run from the ground on the battery to each grounding terminal. No portions of the cab or body shall be used for attaching grounds. All grounds and grounding buses need to be connected directly to the batteries and not to the frame, cab. Or body. **NO EXCEPTION**.

SECTION 9: COMMUNICATIONS INSTALLATIONS:

1. TWO-WAY RADIO COMMUNICATIONS SYSTEM

A. The contractor shall furnish and install in the cab shall be one (1) Motorola Astro25 XTL5000 two-way radio with “O5” version remote control head and DEK status head. To accommodate the installation of the two-way radio installation, the following components shall be provided and installed:

XTL 5000 MOBILE 10-35 WATT, 764-870MHZ	M20URS9PW1_N
ENH: SOFTWARE ASTRO DIGITAL CAI OPERATION	G806
ENH: 3600 SMARTZONE OPERATION	G51
ADD: XTL5000 CONTROL HEAD	G442
ADD: CONTROL HEAD SOFTWARE	G444
ADD: REMOTE MOUNT	G67
ALT: ANTENNA 3DB GAIN 764-870MMZ	W484
ADD: PALM MICROPHONE	W22
ADD: AUXILARY SPKR SPECTRA 7.5 WATT	B18
ENH: ENHANCED DIGITAL ID DISPLAY	G114
ENH: ASTRO PROJECT 25 TRUNKING SOFTWARE	G361

ADD: ENCRYPTION UCM 30 SEC	G159
ADD: DES/DES-XL/DES-OFB ENCRYPTION	G625
ADD: STATUS MESSAGE 8 MESSAGES	W355
ENH: 3 YEAR REPAIR SERVICE ADVANTAGE (COMPREHENSIVE)	GA00249AC
ADD: PRINTED TEST RESULTS	G799

i. One (1) 4” x 7” x 1/8” minimum thickness, grounded metal plate shall be installed on the cab dash, that will be accessible to both the driver and the officer.
ii. One (1) 30 ampere, 12VDC (B+ & B-) service drop, 18” of extra wire shall be provided and located under the officer’s seat. This will be a dedicated circuit, and shall be protected by a circuit breaker.
iii. One (1) 15 ampere, 12VDC (B+ switched and B-) service drop with 12” of extra wire shall be provided at the grounded metal plate located on the cab dash. This will be a dedicated circuit and shall be protected by a circuit breaker.
iv. One (1) Antenna Specialist model #K-794 antenna mount shall be provided and installed on cab roof. The antenna cable shall be routed to the VRS.
v. One (1) Motorola model #HKN6169A shall be provided and installed between the grounded plate on the cab dash to the mobile radio under the officer’s seat.
vi. One (1) Motorola model #HSN6001B remote radio speaker shall be provided and installed in the cab ceiling in a position that will allow all cab occupants to hear the radio. The speaker cable shall be routed from the speaker to the grounded plate on the cab dash.
vii. One (1) David Clark remote speaker, with volume control, shall be provided and installed on the exterior of the body near the pump panel for an Engine, the turn table for a ladder truck, and the interior of the rescue body for a rescue squad.
viii. The two-way radio control head shall be connected to the B+ switched battery terminal (battery switch).
ix. All terminal connection points shall be protected against accidental contact, and all cabling shall be routed away from heat sources and protected from chafing or excessive stress during cab-tilting.
x. Exact mounting locations for “ALL” components will be decided at a Pre-Construction Conference.

2. <u>VEHICLULAR REPEATER SYSTEM (VRS)</u>

A. Two (2) antenna mounting plates for the Vehicular Repeater System (VRS) shall be provided and installed one (1) each side of the cab roof, at the rear corners.
B. One (1) Futurecom Mobexcom P25 DVRS “in band” vehicular repeater system built to F/EMS specifications shall be furnished and installed.

C. Two (2) Maxrad model #MP8066XFPTNF panel antennas shall be furnished and installed, one (1) on each of the antenna mounting bases located on the cab roof.
D. The VRS shall be interfaced with the two-way radio system.

800 MHZ DVR SIDE-BY-SIDE IN-BAND APPLICATION A	TT1255
For questions regarding appropriate equipment lists or verifying frequency plans, you shall contact Futurecom Systems Group directly at: sales@futurecom.com or 1-800-701-9180 (ask for DVR Sales Support)	

E. One (1) Motorola WPLN4208B charger shall be installed on the engine cover near the OIC seat, connected to B+ unswitched, for purposes of charging a portable radio in the vehicle.

3. CF-30 Panasonic Mobile Data Computer (Front of Apparatus between Driver and OIC): I/Mobile

The contractor shall furnish and install the following equipment:

1) Toughbook CF-30: CF-30KCP54AM
Intel Core 2 Duo SL7300 1.6GLV(Centrino2)
Processor speed 1.66 GHz
160GB HD, 2GB SDRAM (DDR2) standard, expandable to 4096MB
13.3" 1-24 X 768 (XGA) transmissive, daylight readable TFT active matrix color LCD with touch screen
Backlit keyboard plastic emissive
External video support up to 1280 X 1024 at 16 million colors
Intel Mobile 945GM graphic controller DVMT 128MB 1000 nit (touch screen models)
Sigmatel™ 1TM STAC9751T AC-97 v.2.1 compliant Audio Codec
Integrated front-facing speaker
PC card type II x 1
Secure Digital (SD) card
Express card/54 x 1
Bluetooth v.2.0 + EDR
Integrated, passive GPS
Intel/Pro Wireless 3945ABG LAN connection 802.11a/b/g,
Cellular modem: GOBI
Computrace theft protection agent in BIOS

2) CF-VDM301U
DVD-Multi Drive (DVD-RAM/DVD-ROM/DVD-RW/CD-R/CD-ROM/DC-RW

3) CF-VPF03U
13.3" LCD Film Protector

4) CF-SVCTGOLD3Y

3 Year Gold Service Package will include the following:

- Load of initial disk image,
- Application of a Toughbook asset tag,
- Shipment to designated locations,
- Provide access to an OEM web based system for tracking product life-cycle service requests and asset management.

http://www.panasonic.com/VoiceOfCustomer/Scripts/OEMCustomerSupport.asp

5) CF-SVCASCTC3Y

Computrace® license for 36 months

6) CF30 docking station shall be located on the engine cover or officer's dash area.
The following parts from LEDCO shall be utilized:

TP.AP
MC5
TLSM
DCPR.90
BCO.18X
SCO.19
CG-X
DC.CFX.U.HGD (CF30 dock)
MobileMark Antenna: SMV-UCE-1A2A18FTU/M

4. CF-19 Panasonic Mobile Data Computer (Rear Crew EMS Compartment: Electronic Patient Care Computer

The contractor shall furnish and install the following equipment:

1) Toughbook CF-19: CF-19KDRC6CM

Intel® Core 2 Duo Processor SU9300 1.2Ghz(Centrino),
Processor speed - 1.2 GHz
160GB hard drive, 2GB SDRAM (DDR2) standard, expandable to 4096MB,
Tablet PC version: 10.4" 1024 x 768 (XGA) transmissive,
1000 nit daylight-readable TFT active matrix color Dual Touch LCD,
External video support up to 1280 x 1024 at 16 million colors (24-bit color depth),
Intel® GM965 integrated video controller max. 384MB (DVMT) VRAM on XP*,
SigmaTel™ STAC9751 AC-97 v.2.2 compliant Audio Codec,
PC card type II x 1,
Secure Digital (SDHC) card,
ExpressCard/54 x 1,
Intel® Wireless Wi-Fi Link 4965AG 802.11a/b/g/n
Bluetooth® v.2.0 + EDR,
Computrace® theft protection agent in BIOS***,
Integrated cellular modem: GOBI

Integrated GPS receiver,

2) CF-VNP011U

CF-19 Tablet Large Stylus Pen (for Digitizer)

3) CF-VPF06U

10.4" LCD Protector Film for Tablets

4) CF-SVCASCTC3Y

Computrace® license for 36 months

5) CF-SVCTGOLD3Y

3 Year Gold Service Package will include the following:

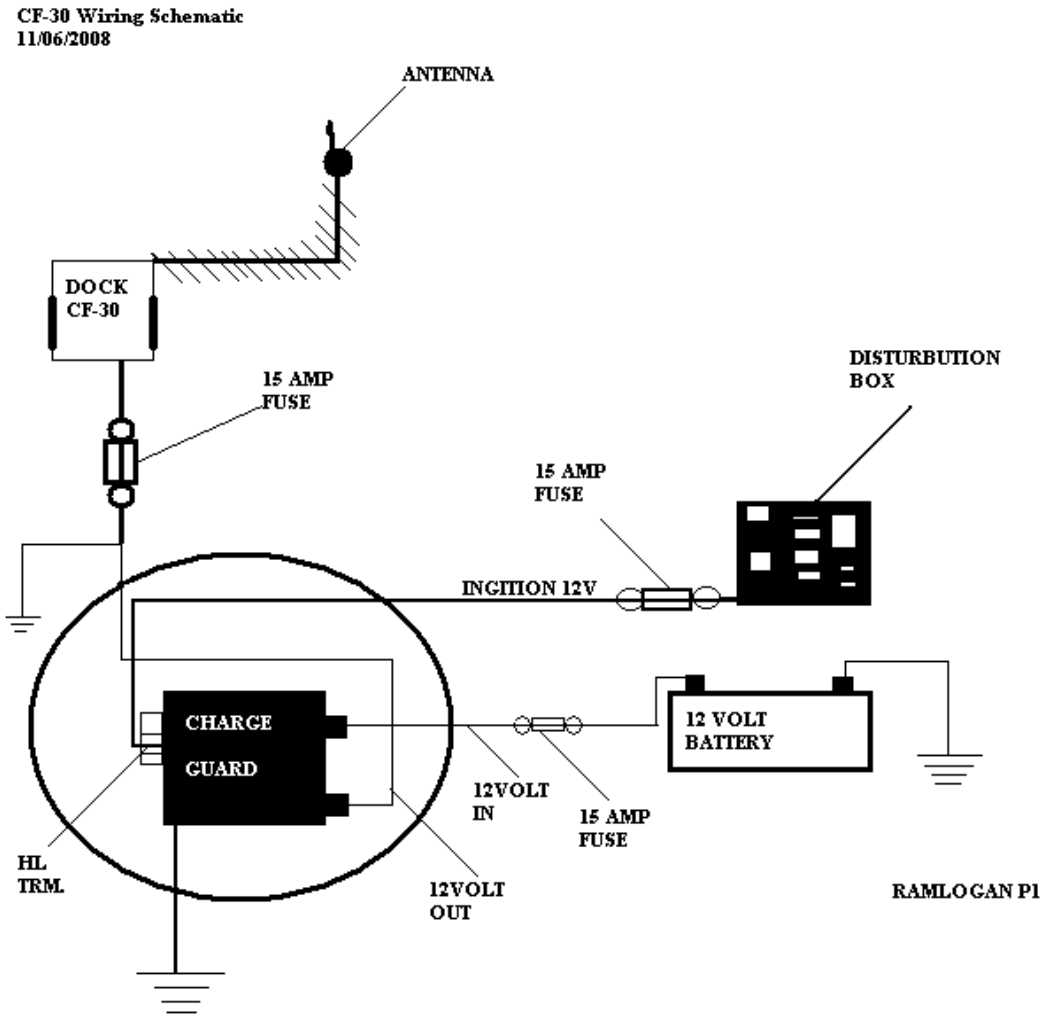
- Load of initial disk image,
- Application of a Toughbook asset tag,
- Shipment to designated locations,
- Provide access to an OEM web based system for tracking product life-cycle service requests and asset management.

http://www.panasonic.com/VoiceOfCustomer/Scripts/OEMCustomerSupport.asp

6) CF19 "lite" docking station shall be located on the engine cover or rear wall of the crew compartment in between the front or rear facing jump seats. Final location to be decided at preconstruction meeting. The following parts from LEDCO shall be utilized:

DS.CF19.L
LS
CMS
CG-X

5. CF30 Computer Wiring Diagram:



SECTION 10: EMERGENCY AND GENERAL LIGHTING REQUIREMENTS:

The contractor shall furnish the following:

NOTE: All warning lights will be "**Smart LED**" Linear style lights.

A. Emergency warning / DOT lights:

1. 3 Whelen LED light bars; Installed on the roof. Whelen Part # FN24DCFD. (1) One centered facing forward and (2) Two mounted on an angle at the left and right front corners of the cab roof.

2. All upper and lower level and front and rear red warning lights shall be Whelen 60R00FRR LED lights. (2) Mounted in bezels on the front

face of the cab, one each side. (3) down each side in bezels (1)each side recessed in the side of the bumper extension, (1)each side in a bezel over the front axle, and (1) each side over the rear axle.

3. 2- Whelen 50 red LED warning lights in chrome bezels shall be provided 1- each side on the cab radius mid way between the windshield and the gravel pan.

4. 4- Whelen 50 red LED warning lights in chrome bezels shall be provided on the inside of each cab door and shall activate when the door is opened.

5. All lower level, front and rear amber warning lights shall be Whelen 60A00FAR LED lights.

6. Whelen MCFLED2R Red Mini Light Bar shall be installed on the rear upper corners of the apparatus.

7. Front directional's – Whelen 60A00TAR LED with 6E flange;

8. Stop/Tail lights – Whelen 60R00XRR LED with 6E flange;

9. Back up light – Whelen 60J000CR with 6E flange (halogen light);

10. Rear directional's – Whelen 60A00TAR LED with 6E flange.

11. A Whelen model SSF2150 head light flasher will be installed.

12. A Roto-Ray light, the wiring, switching, and mounting brackets shall be furnished and installed mounted on the center front face of the cab or through the grill area.

13. The vendor shall provide a Whelen approval letter for this lighting package.

B. OPTIONAL Warning Light Package

The following Code 3 Warning Light Package shall be bid as an option and priced separately on the main pricing page. The cost of the Whelen Lighting Package shall also be provided so a comparison can be made.

Item 1 – 1 each Front Facing Light Bar DF36NFPA1-DC
Upper Zone –A – Red / White

Item 2 – 2 each Front angled Facing Light Bar DF23 NFPA1-DC-A
Upper Zone –A – Red / White

Item 3 – 2 each Rear Facing Light Bar DF23 NFPA1-DC-C
Upper Zone –C – Red

Item 4 – 2 each Front Facing 6 x 4 Prizm lights with bezel (#468RBZ)
Lower Zone –A – Red

Item 5 – 2 each rear Facing 6 x 4 Prizm lights with bezel (#468RBZ)
Lower Zone –C– Red

Item 6 – 3 each side (total 6) Facing 6 x 4 Prizm lights with bezel (#468RBZ)
Lower Zone –B & D– Red

Item 7 One each side (2 total) LED-X lights (#LXEX1F-R) on the Cab Radius midway between the windshield and the gravel pan. Zone A

Item 8 Four each (4 total) LED-X lights (#LXEX1F-R) on the inside lower outmost corner of the Cab Doors when they are in the open position.

C. Any supports or other structures proposed for rear upper level lighting shall be included.

D. All other required D.O.T. lighting shall be Trucklite LED technology.

E. There shall be two (2) Whelen PCP2 Pioneer Plus Series pole mounted super LED Floodlights provided. The lights must be capable of an instant start with no high current in-rush or warm up time. The lens must be hard coated and made of impact resistant polycarbonate to withstand scratches. They shall be 4-5/8” high x 3” deep x 14” long. The lights shall be mounted on telescopic poles that shall be recessed mounted into the open bin storage area above the pump and as close to the pumper body as possible. They will be interfaced with the elevation sensor and not be tied into the parking brake. They shall be switched using momentary style switching with indicator lights by the driver, the officer, and at the pump panel.

F. The cab shall have two (2) flashing, Whelen Red model 5SR00FRR “compartment open" light and buzzer. This shall be operational at all times when the parking brake is released. One light shall be for the left side compartments and the other for the right side compartments and labeled as such.

G. The cab shall have a flashing, Whelen Amber model 5SR00FRR “Elevation Sensor" light and buzzer. This shall be operational at all times when the parking brake is released.

H. Ground lighting LED at each door position shall be activated by the door open light switch. All other ground lighting shall be activated by a separate switch

on the switch panel labeled ground lights. The lights under the cab doors shall also be activated by this switch as well. The ground lighting is to be Whelen 4" round LED lighting mounted in Trucklite rubber boots.

I. Lighting in the cab door step wells shall be LED.

J. There shall be 2-12V Unity lights mounted on the rear corners of the hose bed.

K. There shall be a separate Elevation Sensor system installed attached to the 120V telescoping lights and the wagon pipe using a Whelen 5SROOFRR Amber flashing light connected to the parking brake.

SECTION 11: GENERAL ELECTRICAL ITEMS:

1. The contractor shall provide an electronic siren Whelen model 295SLSA1 DCFD with a compatible speaker mounted in the front bumper and covered with a stainless steel grille. The control head shall be mounted in the cab. The control head shall be easily accessible to both the driver and officer.

2. The contractor shall provide a Class 1 total system manager or equivalent. The contractor shall indicate the load shedding sequence at pre-construction and indicate the procedure for canceling out the high idle. The high idle shall be reset by hitting the brake pedal and also by the time limit set in the Class 1 Total System Manager.

3. The vehicle shall be equipped with a Kussmaul 091-75-12 battery charger. A Kussmaul auto-eject weatherproof power input connector shall be provided in left side of the drivers cab door step well. The connector shall have indicator lights and be a NEMA 5-15 termination. A (yellow) 50' length of 12/3 AWG cable will be provided with NEMA 5-15 male and female ends attached. The charging level indicator shall be located co-located with the power input connector on the cab. The cover will be RED in color.

4. Cab warning devices shall be provided with buttons on both right hand and left hand beavertails. They shall be appropriately labeled: 1 – stop, 2 – Go, 3 – Back Up. The audible indicator in the cab shall have a separate and distinct tone from other audible indicators**.**

5. The contractor shall supply and mount 5 Orange Streamlight Fire Vulcan C4 LED tail light with DCFD hot stamped and orange handlamp charging brackets in locations specified by the Department at the pre-construction conference. However, the vendor shall be responsible to ensure that the charger and handlamp are mounted in such a way that the handlamp can be removed and inserted freely and easily by the user.

SECTION 12: PAINT, LETTERING, MISCELLANEOUS REQUIREMENTS AND ADDENDA:

A.) PAINT:

1. Cab – two tone, white upper portion and red lower portion. The contractor shall specify the paint break on the drawings to be provided.

2. Body – Red.

3. Hose Bed Red or DA.

4. All Wheels shall be Alcoa Dura Brite finish Aluminum Wheels.

5. Chassis components – Red (frame and entire undercarriage)

6. Compartments – Spatter gray with a clear coat finish or a DA finish shall be provided.

7. Clear coat all exterior paint.

8. Cab Interior shall be red spatter paint with a clear coat finish except where LINEX is provided.

B.) LETTERING:

1. The contractor shall furnish and install a maximum of 4 – 12” numbers, 8 – 6” letters/numbers, 20 – 4” letters/numbers, 20 – 3” letters/numbers and 10 – 1-1/2” numbers. The colors will be gold scotchlite over black shading. The COTR will specify the lettering/numbering scheme and fonts at pre-construction. **(FONT: HELVT.MED.ACCT.A.K.REV.N.)**

2. The District will furnish 2 door seals to be installed.

3. DCFD shall be installed in the area above the windshield and below the cab roof line.

4. The vehicle will have a 6” white scotch-lite stripe.

5. The DCFD serial # in 1” white scotch-lite decals shall be installed on the left front, left rear, and on the upper dash board area in the cab of the apparatus.

6. Stop signs (reflective) will be installed on the inside of all 4 cab doors.

7. The Company # shall be installed on the roof top using 4” wide scotch-lite.

8. NFPA compliant Chevron style striping (Diamond Grade) shall be provided on the rear face of the body. 3M Yellow #983-71 and Red #983-72.

NFPA 1901 / 2009 REQUIREMENTS:

1. All certification shall be performed by a certification organization accredited for inspecting and testing systems of fire apparatus in accordance with ISO/IEC 17020 or ISO/IEC Guide 65.

2. A Vehicle Data Recorder shall be provided which will log the following:
   A. Vehicle Speed (MPH)
   B. Acceleration (MPH/sec)
   C. Deceleration (MPH/sec)
   D. Engine Speed (RPM)
   E. Engine throttle Position
   F. ABS Event
   G. Seat Occupied Status
   H. Seat Belt Status
   I. Master optical warning device switch position
   J. Time
   K. Date

3. Rollover Stability Requirements
   A. Apparatus shall be equipped with a stability control system
   OR
   B. Vehicle remains stable to 26.5 degrees tilt table verification calculated or measured CG.

4. Tire pressure monitoring system. Each tire shall be equipped with a visual indicator for tire pressure or a monitoring system for tire pressure.

5. Optical and audible warning system certifications.

6. Additional loose equipment requirements:
   A. Five (5) fluorescent orange traffic cones.
   B. Five illuminated warning devices.
   C. One (1) traffic vest for each seated position. DCFD will provide exact style, supplier and part number at pre-construction.
   D. AED will be supplied by DCFD.

7. A permanent label in the driving compartment will specify the maximum tire speed.

8. DPF / Regeneration will be manually initiated by activation of a switch located in the driver's area. A switch shall be provided at the driver's area that will inhibit DPF regeneration until switch is reset or engine is reset. The DPF icon is visible to the driver when seated during activation. The high exhaust system temperature icon is visible to the driver when seated. A diffuser will be required on the exhaust. Exhaust temperature not to exceed 851 degrees F and a warning label shall be placed on the apparatus in the area of the exhaust to prevent burn injuries to the firefighters working on or around the apparatus.

9. Seat belt web length requirements will be Type 2 pelvic and upper torso restraint shall be a minimum of 110" and Type 1 lap belt for pelvic restraint shall be a minimum of 60". The belts will be Bright Red in color.

10. A Seat Belt Warning System shall be provided and consist of both an audible and visual warning device from the driver and the officer position indicating the following:
    A. Buckled and senses occupant
    B. Buckled and no occupant
    C. Unbuckled and senses occupant
    D. Unbuckled and no occupant

11. Fire Helmet restraints shall be provided. A location for helmet storage shall be provided and compliant with the 9G restraint requirements if stored in the driving or crew compartments. A label stating: **"DO NOT WEAR HELMET WHILE SEATED"** shall be visible from each seating position.

12. Cab Integrity Testing shall be required. All cabs with a GVWR greater than 26,000 lbs. shall meet either SAE J2420 regulations or ECE Regulation 29.

13. Cab rear view mirrors used by the driver shall be adjustable from the driver's position. **(Bus style mirrors will NOT be acceptable for DCFD applications.)**

14. Any Access ladders provided shall have at least 8" clearance between the rung and body or obstruction.

15. All handrails and handholds shall be constructed and mounted so that three (3) points of contact can be maintained at all times while ascending and descending.

16. Reflective Striping shall be as follows:

A. At least 50% of the rear of the apparatus shall be equipped with retro reflective striping.
B. The stripe shall be 6” in width.
C. The colors will be red #3992 and yellow #3991 3M Diamond Grade.

17. Ground Ladders shall not be subject to exposure to heat sources of 212 degrees F or greater.

18. Receiver and anchors for rope and removable winches shall be as follows:
    A. Receivers for removable winches shall be designed to provide a 2.0 to 1 straight line pull no yield safety factor.
    B. Receivers or anchors installed for use with rope operations shall be designed to provide at least 9,000 lbs. no yield condition.

19. New Intake Pressure Gauge requirements as follows:
    A. Intake pressure gauge shall read from 30 in. of Hg vacuum to at least a gauge pressure of 300 PSI (600 PSI preferred by DCFD).
    B. Gauge graduation lines on vacuum side every1 in. Hg with major and intermediate lines emphasized and figures at least every 10 in. Hg.

20. Caps for intake / outlet connections for 4.0” or smaller must remain secured to the apparatus.

21. If equipped with an Aerial Device the following Horizontal and Vertical Height ratings shall apply:
    A. Rated horizontal reach of the aerial may be less than the extended length of the aerial that is used to determine the rated vertical height.
    B. The minimum rated capacity shall remain constant throughout the entire operating envelope of the aerial device.

22. Envelope Control Technology as follows:
    A. Allows for Aerial Operational window to be controlled by system.
    B. Aerial weight reductions with shorter horizontal reach.

23. Stabilizer Position and Aerial Operations:
    A. Aerial devices can be operated over the side with stabilizers not fully deployed if:

i. An indicator is present at the operators position indicating maximum extension in relation to angle of operation based on position of stabilizers.

24. Line Voltage Electrical Systems:
    A. The neutral conductor shall be colored white or gray.
    B. The neutral conductor shall be bonded to the vehicle frame.

25. Winches shall be equipped with:
    A. Clutch assembly to permit free spooling and quick removal of the wire, cable, or synthetic rope.
    B. Free spooling clutch shall be accessible without reaching under the apparatus.

26. Three (3) Classifications of trailers:
    A. Type 1
        i. Trailers designed to remain connected throughout the response event and are dependent on each other for electrical power and conspicuity.
    B. Type 2
        i. Trailers designed to allow separation after arrival at the response and are not dependent on each other for electrical power and conspicuity.
    C. Type 3
        i. Open trailers designed to transport other vehicles, equipment, or containers that will be removed from the trailer after arrival.

27. Low voltage warning devices for Type 1 & 2 trailers shall be connected to the red hazard light in the driving compartment. (DCFD would prefer the installation of an additional light to serve this purpose if allowable).

28. Optical warning devices for trailers:
    A. Type 1 trailers shall meet all requirements of NFPA considering combined vehicle and trailer as a single unit.
    B. Type 2 trailers shall meet all requirements of NFPA considering the trailer as a single unit.
    C. Type 3 trailers shall meet all requirements of NFPA for lower sides and rear zones (B,C,D).

29. Reflective Markings for Trailers:

A. Type 1 trailers shall meet all requirements of NFPA considering combined vehicle and trailer as a single unit.
B. Type 2 trailers shall meet all requirements of NFPA considering the trailer as a single unit.

30. A statement of Exceptions Document shall be provided.

31. Continuous Electrical Load requirements for apparatus equipped to tow a trailer, an additional 45 amps shall be added to the minimum continuous electrical load. A larger size alternator may be required and additional components for load management maybe required as well.

32. Compartment lights and work lights shall meet a 2fc requirement.

33. Cab doors shall have a minimum of 96 sq. in. of reflective striping installed.

SECTION 13: THIRD PARTY TESTING

UNDERWRITERS LABORATORIES INC. will do ALL 3rd Party Testing NO Exception.

A. GENERAL
1. The completed apparatus with an aerial device and/or fire pump shall be tested at the manufacturer's approved facility and certified by an independent testing organization approved by the purchaser. NO EXCEPTIONS.
2. The contractor shall have in effect a complete and documented quality control program that will ensure complete compliance with the requirements of NFPA 1901, 2009 Edition.
3. All test work for aerial devices outlined in Section19.24 of NFPA 1901, 2009 Edition including nondestructive testing shall be conducted, NO EXCEPTIONS.
4. All test work for fire pumps outlined in Section 16.13 of NFPA 1901, 2009 Edition shall be conducted, NO EXCEPTIONS.
5. All test work for fixed power sources outlined in Section 22.15.7 of NFPA 1901, 2009 Edition shall be conducted, NO EXCEPTIONS.

B. INDEPENDENT TESTING ORGANIZATION REQUIREMENTS:
1. Contractor shall be a nationally recognized testing laboratory recognized by OSHA in accordance with the OSHA regulations set forth at 29 Code of Federal Regulations set forth at 29 Code of Federal Regulations, Section 1910.7, Appendix A, "OSHA Recognition Process for Nationally Recognized Testing Laboratories." NO EXCEPTIONS.
2. When results of tests shall be certified by an independent testing organization, the third-party organization shall be accredited for inspection and testing systems 2 on fire

apparatus in accordance with ISO/IEC 17020, *General criteria for the operation of various types of bodies performing inspection*. NO EXCEPTIONS.

3. The independent testing organization shall comply with the following American Society for Testing and Materials Standards. NO EXCEPTIONS.
   (a.) ASTM E543, "Standard Practice for Determining the Qualifications for Nondestructive Testing Laboratories"
   (b.) ASTM E548, "Preparation of Criteria for Use in the Evaluation of Testing Laboratories and Inspection Bodies."

4. The independent testing organization shall have not less than 20 years of experience in factory aerial device safety inspection and 40 years of experience in automotive fire apparatus safety testing.

5. The independent testing organization shall not represent, be associated with, nor be a manufacturer or repairer of automotive fire apparatus, no exceptions.

6. The aerial device shall be inspected and tested by the independent testing organization in accordance with the requirements outlined in NFPA 1901, Standard for Automotive Fire Apparatus, 2009 Edition. This includes all testing outlined in NFPA 1911, Standard for the Inspection, Maintenance, Testing, and the Retirement of In-Service Automotive Fire Apparatus 2007 Edition, Chapter 19, including nondestructive testing. NO EXCEPTIONS.

7. The examination and test report provided to the contractor from the independent testing organization shall specify the point of inspection and the results of such examinations and test. The test report, as required by NFPA 1911, Chapter 19, shall include the following:
   (a.) When the torque verification of mounting bolts, as required by NFPA 1911, Chapter 19, is performed, the bolt size, grade, and torque specification shall be recorded.
   (b.) When NDT is conducted, the test record will indicate the NDT method used in each area inspected.
   (c.) Where NFPA 1911, Chapter 19 requires measurements be taken such as bearing clearance and backlash, cylinder drift, relief pressure, ladder section twist, hardness readings, baserail thickness, extension brake drift, winch drift, and the like, these measurements shall be recorded in the test record in order that a year-to-year comparison can be made.

8. All test work for fire pumps outlined in Section 16.13 of NFPA 1901, 2009 Edition shall be conducted, NO EXCEPTIONS.

9. All test work for fixed power sources outlined in Section 22.15.7 of NFPA 1901, 2009 Edition shall be conducted, NO EXCEPTIONS.

10. The independent testing organization shall submit a list of a minimum of ten aerial device manufacturers for whom testing is currently being conducted on a regular basis. NO EXCEPTION.

11. The independent testing organization shall carry not less than one million dollars in excess liability insurance for bodily injury and property damage combined. NO EXCEPTION.

C. PERSONNEL:
1. The inspectors performing the test work on the units shall be certified as meeting Level II requirements as outlined in American Society for Nondestructive Testing (ASNT) document CP-189 in all methods used in the aerial device inspection.
2. Prior to award of contract, the actual person(s) performing the inspection may be required to present for review proof of Level II Certification in the required NDT methods.
3. Prior to submittal to the automotive fire apparatus manufacturer, the final report shall be reviewed by qualified staff who is directly involved with the aerial certification program at their company.

D. CERTIFICATION:
1. When the unit successfully meets all Certification requirements in Section 19-24 of NFPA 1901, 2009 Edition, the third party testing company shall issue a certificate of automotive fire apparatus examination and test stating the unit's compliance with Section 19.24 of NFPA 1901, 2009 Edition.

2. When the unit successfully meets all Certification requirements in Section 16.13 of NFPA 1901, 2009 Edition, the third party testing company shall issue a certificate of automotive fire apparatus examination and test stating the unit's compliance with Section 16.13 of NFPA 1901, 2009 Edition.
3. When the unit successfully meets all Certification requirements in Section 22.15.7 of NFPA 1901, 2009 Edition, the third party testing company shall issue a certificate of automotive fire apparatus examination and test stating the unit's compliance with Section 22.15.7 of NFPA 1901, 2009 Edition.
4. In addition to meeting the requirements for third party certification for fire pumps, aerial devices, and, a fixed power source, the bidder is required to provide additional certification to the purchaser for the following automotive fire apparatus systems referenced in the appendices of NFPA 1901, 2009 Edition. The purchaser may specify that these tests also be certified by a third party testing organization.

(a.) Section 13.14, Low voltage electrical system and warning devices
(b.) Section 17.12, Auxiliary pump and associated equipment
(c.) Section 18.6, Water tanks
(d.) Section 20.10, Foam proportioning systems
(e.) Section 21.9, Compressed air foam systems (CAFS)
(f.) Section 22.15, Line voltage electrical systems
(g.) Section 24.14, Air systems

E. NOTIFICATION:
In order to comply with this specification, the independent testing organization must have in his possession the tolerances from the manufacturer. NO EXCEPTIONS. Proof of compliance may be required prior to award of contract. The NFPA Standard 1911, Chapter 19, 2007 Edition requires the following test results be compared to the manufacturer's maximum recommended tolerances:
1. Critical mounting bolt grade, size, and torque specification
2. Rotation bearing clearance and backlash

3. Rotation lock movement
4. Elevation cylinder drift
5. Extension cylinder drift
6. Stabilizer cylinder drift
7. Relief hydraulic pressure
8. Breathing air system pressure
9. Ladder section twist or bow
10. Hardness for top rails and baserails of aluminum devices
11. Hollow I-beam baserail thickness
12. Winch and brake drift
13. Tip controls speed
14. Rated load of the aerial device
15. Water system tests (i.e. flow meter accuracy and relief valve pressure setting) 5

F. UNDERWRITERS LABORATORIES INC. EXAMINATION AND TEST FOR AUTOMOTIVE FIRE APPARATUS

1. GENERAL

Underwriters Laboratories Inc. (UL) is recognized worldwide as a leading third party product safety certification organization for over 100 years. UL has served on National Fire Protection Association (NFPA) technical committees for over thirty years.

2. INDEPENDENT TESTING ORGANIZATION QUALIFICATIONS:

1. UL is a nationally recognized testing laboratory recognized by OSHA in accordance with the OSHA regulations set forth at 29 Code of Federal Regulations set forth at 29 Code of Federal Regulations, Section 1910.7, Appendix A, "OSHA Recognition Process for Nationally Recognized Testing Laboratories."
2. UL has demonstrated compliance with ISO/IEC Standard 17020, *General criteria for the operation of various types of bodies performing inspection,* and has been accredited, commencing November 10, 2008 by International Accreditation Service. Proof of certification available upon request.
3. UL complies with the American Society for Testing and Materials (ASTM) Standard ASTM E543 "Determining the Qualifications for Nondestructive Testing Agencies."
4. UL has more than 40 years of automotive fire apparatus safety testing experience and 16 years of factory aerial device testing and Certification experience. UL has more than 100 years of experience developing and implementing product safety standards.
5. UL does not represent, is not associated with, nor is in the manufacture or repair of automotive fire apparatus.
6. All test work outlined in NFPA 1911, Chapter 19, 2007 Edition, including nondestructive testing, will be conducted at the manufacturer's facility. In addition, the following test work outlined in Section 19.24, Certification Tests, of NFPA 1901, 2009 Edition will be conducted:
   (a.) 1-1/2 Times Rated Capacity on Level Ground Stability Test: A load of 1-1/2 times rated capacity (as specified by the manufacturer) will be suspended

from the tip of the aerial ladder, or the platform of the elevating platform, when it is in the position of least stability. If the manufacturer specifies a rated capacity while flowing water, then one times the water load and the worst case nozzle reaction will be added to the stability test weights. The apparatus will show no signs of instability. For a water tower, the stability test includes 1-1/2 times the weight of the water in the system and 1-1/2 times the maximum nozzle reaction force when it is in the position of least stability.

(b.) 1-1/3 Times Rated Capacity on a 5° Slope Stability Test: A load of 1-1/3 times rated capacity will be suspended from the tip of the aerial ladder, the platform of the elevating platform, or the tip of the water tower when it is in the position of least stability. The apparatus will show no signs of instability.

(c.) Horizontal Load Test: For aerial devices with a pre-piped waterway, a 350 lb. (160 kg) test load shall be applied to the tip of the ladder or boom. For aerial devices without a pre-piped waterway, a 220 lb. (100 kg) load shall be applied to the tip of the ladder or boom. The turntable shall not rotate and the ladder or boom shall not deflect beyond what the manufacturer's specification allows.

(d.) Aerial Device Water System Tests -

A friction loss test will be conducted for an aerial device equipped with a permanent water system and has a rated vertical height of 110 ft. or less. The standard model flow test results will be provided to the manufacturer. If the water system has been modified from the standard model configuration, a new flow test will be conducted to determine that the friction loss in the water system between the base of the swivel and the monitor outlet does not exceed 100 psi with 1000 gpm flowing and the water system at full extension.

(e.) A maximum vertical height flow test will be conducted to determine that the water system is capable of flowing 1000 gpm at 100-psi nozzle pressure with the aerial device at full elevation and extension. If the apparatus is equipped with a fire pump designed to supply the water system, the test will be conducted using the onboard fire pump. The intake pressure to the fire pump will not exceed 20 psi.

7. UL provides the manufacturer a complete written Examination and Test Report for each aerial device inspection performed at the manufacturer's facility. This Report specifies the points of inspection and results of such examinations and tests. The test report, as required by NFPA 1911, Chapter 19, will include the following test results:

(a.) Torque verification of all mounting bolts including bolt size, grade, and torque specification.

(b.) The following NDT methods and results will be recorded: All ferrous welds will be magnetic particle inspected for defects. All nonferrous welds will be visually inspected, and if questionable defects are identified, dye penetrant will be used to further evaluate the quality of the weld. All bolts and pins will be ultrasonically inspected for internal flaws.

(c.) The following measurements will be taken and recorded in the examination and test record: bearing clearance and backlash, elevation cylinder drift, engine speed operating rpm, relief pressure, stabilizer extension cylinder drift,

ladder section twist, hardness readings, baserail thickness, winch drift, extension brake drift, and extension cylinder drift.

8. All test work for fire pumps outlined in Section 16.13 of NFPA 1901, 2009 Edition will be conducted.
9. All test work for fixed power sources outlined in Section 22.15.7 of NFPA 1901, 2009 Editions
10. UL has included a list of all factory aerial device manufacturers for whom testing is currently being conducted on a regular basis.
11. UL carries ten million dollars in excess liability insurance for bodily injury and properly damage combined.

3. PERSONNEL:

1. The UL inspectors performing the test work on the units are certified to Level II in the required NDT methods, under the requirements outlined in ASNT document CP-189.
2. The actual person(s) performing the inspection will present for review proof of Level II Certification in the required NDT methods.
3. Prior to submittal to the automotive fire apparatus manufacturer, the final Report will be reviewed by qualified staff that is directly involved with the aerial device certification program at UL.

4. CERTIFICATION:

1. When an aerial device successfully meets all the requirements outlined in NFPA 1901, 2009 Edition, UL will issue a Certificate of Inspection stating compliance with Section 19.24.
2. When a pumper successfully meets all the requirements outlined in NFPA 1901, 2009 Edition, UL will issue a Certificate of Inspection stating compliance with Section 16.13. 8
3. When a generator successfully meets all the requirements outlined in NFPA 1901,2009 Edition, UL will issue a Certificate of Inspection stating compliance with Section 22.15.7
4. UL offers third party testing and Certificate services for the following automotive fire apparatus systems referenced in NFPA 1901, 2009 Edition:

(a.) Section 13.14, Low voltage electrical system and warning devices
(b.) Section 17.12, Auxiliary pump and associated equipment
(c.) Section 18.6, Water tanks
(d.) Section 20.10, Foam proportioning systems
(e.) Section 21.9, Compressed air foam systems (CAFS)
(f.) Section 22.15, Line voltage electrical systems
(g.) Section 24.14, Air systems

SECTION 14: MISCELLANEOUS REQUIREMENTS:

1. The contractor shall furnish and install 2 eyebolts and bungee cords (approximately 13” in length) black in color 1 set each side at the ends of the crosslays so as to prevent accidental ejection of hose from the apparatus.

These bungee cords shall be hooked to stainless steel or painted silver steel eyebolts ease of removal mounted to the operators stand in the area of each crosslay compartment.

2. The contractor shall provide the following manuals: a) in electronic format, b) a minimum of 1 hard copy per vehicle:

    i. The documentation required by N.F.P.A. 1901 including the following:

    ii. Operations and maintenance manuals covering the completed vehicle;

    iii. Contractor provided instruction booklets describing function, control, steps of operation and service procedures for all components and equipment supplied to and installed by the contractor;

    iv. Parts manuals shall be provided for the vehicle which shall include an overall (5 view) vehicle layout, keyed to service repair parts, to assist in spare parts selection and identification. Parts manuals shall include a diagram of the part, exploded view of components, vehicle manufacturer's part number, original part vendor and vendor's part number.

    v. Provide an overall view of the vehicle identifying the location of the readout components and connections e.g.: for the engine, transmission, ABS brakes;

    vi. Pump manuals and steps of operation;

    vii. Instructions regarding the frequency and procedures for recommended maintenance;

    viii. Lubrication charts;

    ix. Bulb schedule for all lights;

    x. Electrical diagrams & wiring harness drawings.

    xi. Electrical requirements (itemize) (standard vs. specified)

SECTION 15: ADDENDA: LOOSE EQUIPMENT:

The contractor shall provide the following loose equipment and brackets:

ATTACHMENT J.3 PUMPER REQUIREMENTS

1. One (1) - Portable By-pass eductor per unit AKRON model # 3097 – 95 GPM w/ 2-1/2" NSFT swivel female inlet and 1-1/2" male NSFT outlet and 48" pick-up tube.

2. Five 5 - Extinguisher brackets Zico model 3099 quick strap cylinder mounting system to fit an 8" diameter cylinder (max): Order # CYBM-2426-80-11, part # 3099-295-000.

3. Three (3) Sensible Products Inc. Extinguisher Brackets Part# E864.

4. One (1) – HUMAT valve & mounting bracket with strap. Bracket Part # FDB 01 ST.

5. Three (3)Red Head T-148-3 triple spanner/hydrant wrench holder (includes wrenches). An Akron Style 15 hydrant wrench shall be provided.

6. Two (2) – Red Head T-146-2 double spanner wrench holder (includes wrenches).

7. Two (2) – Snap-tite FSPH-1 Storz spanner wrenches w/holder.

8. Two (2) – Southpark AH-51 Axe holders with side mount handle holders (SOUTHPARK Model SMA-52)

9. One (1) – Ziamatic Quic-Bar and axe mounting bracket p/n MB-3PBA.

10. Fifteen (15) – Sets - Performance Advantage Co. (PAC) handlelok p/n 1004-2

11. Three (3) Kochek MF407 Storz 4" mounting brackets.

12. Five (5) Kochek Storz 5" mounting plates.

13. Five (5) South Park RMP-49 1-1/2" mounting plates.

14. Seven (7) South Park RMP-49 2-1/2" mounting plates.

15. Three (3) – South Park RMP-49 4-1/2" mounting plate.

16. Three (3) – South Park RMP-49 6" mounting plates.

17. Six (6) South Park QL-48Z triple prong mounting plates.

18. Six (6) – 25' sections of 5" soft suction hose with a 5" storz connection on both ends minimum test pressure of 300 PSI.

19. Two (2) - 50’ sections of 5” soft suction hose with 5” storz connections on both ends minimum of 300 PSI test pressure.

20. Two (2) – 4” storz to 4” **D.C. thread female** long handled swivel adapters. (Kochek basic number is S54L but must ensure D.C. Thread).

21. Ten (10) – 5” Storz to 4” **D.C. thread female** long handled swivel adapters Kochek (must ensure the thread is D.C. thread).

22. Ten (10) – 5” Storz to 4-1/2” **NST female** long handled swivel adapters Kochek.

23. Two (2) – 4” Storz to 4-1/2” **NST Female** long handled swivel adapters Kochek.

24. Two (2) – 4” Storz to 2-1/2” female NSFT swivel adapters.

25. Five (5) – 5” Storz to 2-1/2” female NSFT swivel adapters.

26. Four (4) – 4” NST female swivel elbows to 5” Storz adapters.

27. Two (2) – 4” Storz to 2-1/2” male NSFT adapter.

28. Five (5) – 5” Storz to 2-1/2” male NSFT adapter.

29. Five (5) – 5” Storz to 2-1/2” Female swivel adapters.

30. One (1) –Akron Model 1583 2 way gated Siamese with a 2-1/2” male fitting on the left and a 2-1/2” female swivel fitting on the right (as facing the valve) and (1) 6” NSFT threaded swivel long handled connection for connection to 6” steamer inlet.

31. One (1) - 4-1/2” Female NSFT long handled swivel to 4” Storz adapter Kochek p/n S54L.

32. Two (2) – 4-1/2” Female NSFT long handled swivel to 5” Storz adapter Kochek.

33. Two (2) – 2-1/2” NSFT double female Kochek p/n 35R.

34. Two (2) – 2-1/2” NSFT double male Kochek p/n 36R.

35. Two (2) – 2-1/2” NSFT female to 1-1/2” NSFT male reducer Kochek p/n 37R.

36. Two (2) - 2-1/2” NSFT female swivel to 1-1/2” NSFT male reducer Kochek.

37. Two (2) – 1-1/2” NSFT female to 2-1/2” NSFT male increaser Kochek p/n 54R.

38. Three (3) – Ziamatic model KD-UH-7-SF-CRS-180 mask brackets to be mounted as specified in these requirements. (Knock down bracket, high cycle clips, short foot plate, collision resistant strap for Bostrom seats.)

39. Ten (10) - Kochek 6” NST long handle long handle swivel elbow X 5” Storz fitting.

40. Four (4) – Side mount handle holders (SOUTHPARK Model SMA-52)

41. Ten (10) - Bottom mount handle holders (SOUTHPARK Model BMA-53)

42. Four (4) – Kochek 5” Storz x 4” Storz fittings shall be provided.

43. Five (5) – Kochek 5” Storz Caps and Chains shall be provided.

44. Seven (7) - Akron Assault 1-1/2” break away nozzles with a 7/8” smooth bore tip incorporated into the Saber Shutoff (non pistol grip) #2430 and a #4817 Assault tip 75 PSI 125 GPM fog tip.

45. Two (2) Akron Gated Wye Style 1581

46. One (1) Akron Style 1828 2-1/2” Gate Valve.

47. 1200’ of Ponn Supreme 1-1/2” double jacket fire hose with 1-1/2” couplings.

48. 1000’ of Ponn Supreme 3” double jacket fire hose withy 2-1/2” couplings.

49. 200’ of Ponn Supreme 2-1/2” double jacket fire hose with 2-1/2” couplings.

District of Columbia Fire Department Offeror Certificate

The data contained herein is for the purpose of evaluating the offeror's intent to meet the requirements of the specification. The offeror certifies that the products and items specified herein are the minimum that will be supplied. Acceptance of this Offeror Certificate does not relieve the vendor of its obligation to meet requirements of the specification. Offerors must comply with filling in all of the below items. **Do Not Leave Any Blank Spaces**.

1. **Service Facility Description**:

    a. Number of Employees: _____

    b. Number of Service Vehicles: _____

    c. Dollar amount of related inventory on hand:_____

    d. Number of Apparatus that can be stored inside:_____

    e. Location of Service Facility:_____

2. **Chassis**:

    a. Make:_____

    b. Model:_____

    c. Cab Type:_____

    d. Gross Vehicle Weight Rating (GVWR):_____

    e. Completed Dimensions:

        i. Overall Height:_____

        ii. Overall Width:_____

        iii. Overall Length:_____

        iv. Tractor Wheel Base:_____

        v. Trailer Wheel Base:_____

vi. Cab to Axle:_____

vii. Axle to Back of Cab:_____

viii. Turning Radius:_____

ix. Turning Circle:_____

3. **Angle of Approach**:_____

4. **Angle of Departure**:_____

5. **Engine:**

   a. Make: _____

   b. Model:_____

   c. Cubic Inches:_____

   d. Gross Horsepower:_____ @ RPM's_____

   e. Gross Torque:_____ @ RPM's _____

6. **Transmission:**

   a. Make:_____

   b. Model:_____

   c. Number of Speeds:_____

   d. Max Horsepower Rating:_____

   e. Gross Torque Rating:_____

7. **Alternator:**

   a. Make:_____

   b. Model:_____

c. Maximum Amps _____ @ RPM's_____

d. Amps @ 800 RPM's:_____

e. Amps @ 1000 RPM's:_____

f. Amps @ 1500 RPM's:_____

g. Amps @ 2500 RPM's:_____

8. Electrical:

a. Battery CCA:_____

b. Reserve Capacity:_____

c. Battery Manufacturer:_____

d. Model:_____

9. Front Axle:

a. Make:_____

b. Model:_____

c. OEM Rated Capacity:_____

10. Front Suspension:

a. Rated Capacity:_____

b. Type of Spring:_____

11. Rear Axle:

a. Make:_____

b. Model:_____

c. OEM Rated Capacity:_____

d. Ratios:_____

12. Rear Suspension:

a. Rated Capacity:_____

b. Type of Spring:_____

c. Helper Spring Capacity:_____

d. Type of Spring:_____

13. Tires:

a. Manufacturer:_____

b. Front Size:_____

c. Tread Type:_____

d. Max Load:_____ Lbs. @ _____PSI

e. Rear Size:_____

f. Tread Type:_____

g. Max Load:_____ Lbs. @ _____PSI

14. Brakes:

a. **Front:**

i. Make:_____

ii. Type:_____

iii. Size:_____

b. **Rear:**

i. Make:_____

ii. Type:_____

iii. Size:_____

c. **Anti-Lock System**:_____

15. Cab:

a. Make:_____

b. Model:_____

c. Length:_____

d. Width:_____

e. Type of Material:_____

16. Body:

a. Make:_____

b. Model:_____

c. Length:_____

d. Width:_____

e. Type of Material:_____

17. Aerial Ladder:

a. Length:_____

b. Width: (By Section)

i. Base Section:_____

ii. 2nd Section:_____

iii. 3rd Section:_____

iv. Fly Section:_____

c. Tip Load Working Capacity:_____

d. Working Height:_____

e. Type of material constructed with:_____

f. Manufacturer of Aerial Ladder:_____

18. Apparatus Weight:

a. Weight Front:_____

b. Weight Rear:_____

c. Available Payload Capacity:_____
   i. NOTE: Bidder shall supply weight distribution drawing upon DCFD request prior to award of contract.

19. If any portion(s) of the completed apparatus are to be built or installed by other than the offeror or chassis manufacturer (OEM), the offeror shall indicate below the names of the Entity / Subcontractor performing such installation and the location of their facility. (Use a separate sheet to document **ALL** subcontractors if necessary.)

a. Name of Offeror:_____

b. Address:_____

_____

c. Telephone #:_____

d. Printed Name of Authorized Representative:_____

e. Subcontractor Firm:_____

f. Address:_____

_____

g. Telephone #:_____

h. Printed Name of Authorized Representative:_____

i. Subcontractor Firm:_____

j. Address:_____

_____

k. Telephone #:_____

l. Printed Name of Authorized Representative:_____

MANUFACTURER	Offeror 1	Offeror 2	Offeror 3
NFPA 1901 COMPLIANT			
DELIVERY WITHIN 240 DAYS			
INSPECTIONS			
CHASSIS INSPECTION RQMTS MET?			
PRE-DELIVERY INSPECTION			
HOW MANY UNITS?			
WILL CORRECT ALL DEFICIENCIES AT PLANT?			
PAY FOR ALL RE-INSPECTIONS IF ORDER IS FOUND INCOMPLETE?			
FINAL INSPECTION			
CERTIFIED TECH PROVIDED ON SITE?			
REPAIR DEFICIENCIES FOUND ON SITE?			
TRUCK DOWN STATUS ADDRESSED?			
CRITICAL REPAIRS?			
TRAINING			
WARRANTIES			
10 YEAR CAB?			
10 YEAR BODY?			
5 YEAR BUMPER TO BUMPER?			
10 YEAR BUMPER TO BUMPER ELECTRICAL SYSTEM WARRANTY?			
REPAIRS			
CRITICAL WITHIN 48 HOURS?			
NON-CRITICAL?			
DRAWINGS/DISKETTES/WRITTEN DOCUMENTS			
# OF SETS PROVIDED?			
ELECTRONIC MEDIA?			

MANUFACTURER	Offeror 1	Offeror 2	Offeror 3
5 VIEWS PROVIDED?			
CAB INTERIOR? FRONT? REAR?			
SWITCH PANELS & CONTROLS?			
PUMP PANEL?			
OPPOSITE SIDE PANEL?			
WATER TANK?			
SHOP MANUFACTURED ITEMS?			
DRAWING DIMENSION REQUIREMENTS MET? IF NOT, WHATS MISSING?			
WILL PROVIDE 4 SETS OF FINAL PRE CONSTRUCTION DRAWINGS?			
DETAILED PROPOSAL HARD COPY AND ELECTRONIC MEDIA?			
OPTIONS LIST PROVIDED?			
WILL PROVIDE 3 SETS OF FINAL ACCEPTANCE DRAWINGS?			
AGREE TO CORESPONDENCE REQUIREMENTS?			
GENERAL DIMNENSIONS			
OVERALL HEIGHT 112” MAX.			
HOSE BODY 66” MAX. FROM TOP OF REAR STEP.			
HOSE BEDS:			
REAR – 40” MAX FROM TOP OF REAR STEP AND 64” MAX. FROM GROUND			
INTERMEDIATE STEP?			
CROSSLAYS & REAR ATTACK LINES – 66” MAX. FROM GROUND			
WHEELBASE – 176” MAX.			
OVERALL LENGTH – 360” MAX.			
HOSE CAPACITIES			
REAR HOSE BED MET?			

MANUFACTURER	Offeror 1	Offeror 2	Offeror 3
CROSSLAYS MET?			
STANDPIPE RACK TROUGH REQUIREMENTS MET?			
RIGHT SIDE RUNNING BOARD TROUGH? CAPACITIES MET?			
FRONT BUMPER TROUGH? CAPACITIES MET?			
MOUNTING DEVICE FOR 4” HOSE & HUMAT VALVE ON REAR STEP?			
HUMAT VALVE PROVIDED?			
SMALL LINE REEL REQUIREMENTS MET? LOCATION OF SMALL LINE?			
BODY			
CONSTRUCTION MATERIAL			
STEEL ANGLED FRONT BUMPER?			
22” MAX FRONT BUMPER EXTENSION?			
ANGLED REAR STEP? 3” ANGLE START?			
CORNER COVERING ON BODY?			
BLACK POLY RUB RAILS PROVIDED? RECESSED MARKER LIGHTS AS REQUIRED?			
NON-SLIP WALKING SURFACES? TYPE?			
FRONT & REAR FENDER LINERS? TYPE? ACCOMMODATE SNOW CHAINS?			
3 SOUTHPARK LFS-46C FOLD UP or Equivalent STEPS W/GRAB HANDLE ON LEFT SIDE COMPARTMENT FACE?			
2 SOUTHPARK LFS-46C FOLD UP STEPS ON REAR BEAVERTAIL or Equivalent?			
1 SOUTHPARK LFS-46C FOLD UP			

MANUFACTURER	Offeror 1	Offeror 2	Offeror 3
STEPS ON RIGHT SIDE COMP. FACE or Equivalent?			
4 ADD'L SOUTHPARK LFS-46CFOLD UP STEPS or Equivalent?			
WEATHERPROOF DAVID CLARK SPEAKER MOUNTED AT PUMP PANEL?			
EXTERIOR HANDRAILS MEET REQUIREMENTS? (HANSEN Stainless Steel?)			
INTERIOR GRAB HANDLES MEET REQUIREMENTS? (HANSEN 930-000/0001)			
8 ADD'L GRAB HANDLES?			
ADJUSTABLE LADDER BRACKETS?			
ADJUSTABLE HARD SLEEVE TROUGHS?			
ARE ZICO MODEL SAC-44 COLLAPSIBLE WHEEL CHOCKS PROVIDED?			
MOUNTING BRACKETS ZICO MODEL SQCH-44-H? MOUNTING REQUIREMENTS MET?			
CAB WARNING BUTTONS ON RIGHT AND LEFT BEAVERTAILS? IS LABELING APPROPRIATE?			
ARE THE FOLLOWING DUO SAFETY LADDERS PROVIDED: 1 - #900A 24' 2 SEC. EXT. LADDER? 1 - #775A 14' ROOFING LADDER? 1 - #585a 10' FOLDING LADDER?			
2 – 10' x 6" HARDSLEEVES?			
4 ADJUSTABLE HOSEBED DIVIDERS? ARE OTHER HOSEBED DIVIDER REQUIREMENTS MET?			
LICENSE PLATE BRACKET?			
DEVICES AND MOUNTING BRACKETS LISTED IN APPENDIX A PROVIDED?			

MANUFACTURER	Offeror 1	Offeror 2	Offeror 3
COMPARTMENTS			
ALL COMPARTMENTS VERTICALLY HINGED?			
LOWER REAR DOUBLE DOORS?			
LOWER FRONT HINGED TOWARD FRONT?			
NO DOOR ON REAR STEP COMPARTMENT? COATED IN GREY LINEX? TARP W/CO. #'S PROVIDED? REFLECTIVE NUMBERS?			
HIGH SIDE COMPARTMENT DOUBLE DOORS?			
1-1/2" GOLD REFL. OVER BLACK SHADING COMPARTMENT NUMBERS?			
OPTIONAL (If Available as an Option) EXTERIOR ACCESS COMPARTMENT LOCATED BEHIND DRIVER?			
ALTERNATIVE COMPARTMENT PROVIDED? (MED STORAGE)			
EBERHARD "D" HANDLES USED? #1250 KEYS? SEALED TO PREVENT CORROSION?			
PASSIVE DOOR HANDLE OR PADDLE LATCHES PROVIDED?			
.75" MARINE PLYWOOD PROVIDED: ON UPPER COMPARTMENT WALLS? ALL COMPARTMENT FLOORS? ON FLOOR OF EACH SHELF? IS FLOORING RAISED?			
1 ADJUSTABLE SHELF IN EACH LOWER COMPARTMENT?			

MANUFACTURER	Offeror 1	Offeror 2	Offeror 3
2 – 6’ “I” BEAM CELING HOOKS PROVIDED?			
DOES HOOK MOUNTING MEET OUR REQUIREMENTS?			
4 – WHEEL WELL SCOTT BOTTLE COMPARTMENTS? ARE THEY LINED?			
PIPING PENETRATIONS WEATHER-PROOFED?			
PARTITIONS BETWEEN REAR COMPARTMENTS AND CENTER REAR STEP COMPARTMENT?			
COMPARTMENT DOORS HAVE WELDED INNER PANELS?			
6” LIP ACROSS REAR STEP COMPARTMENT?			
REAR STEP COMPARTMENT GREY LINEX? DRAIN HOLES PROVIDED? L.E.D. LIGHT & INDIV. CONTROL?			
3- O_2 TUBES PROVIDED IN RIGHT REAR COMPARTMENT?			
INTERIOR WHELEN 5SCAOCCR L.E.D LIGHTS?			
ARE COMPARTMENTS VENTILATED? DOES THE MANUF. ENSURE THAT NO WATER WILL ENTER COMPARTMENT VIA VENTILATION OPENINGS?			
GENERAL CAB REQUIREMENTS			
6 PERSON TILT CAB?			
DEXRON III TILT FLUID?			
RECESSED PADDLE LATCH HANDLES ON ALL DOORS? LOCKS MEET OUR REQUIREMENTS			

MANUFACTURER	Offeror 1	Offeror 2	Offeror 3
AND ARE TRI-MARK TM202?			
DO HANDRAILS MEET OUR REQUIREMENTS? (HANSEN Stainless Steel or Rubber Covered)			
ARE Interior GRAB HANDLES HANSEN #930-0000-0001 TYPES?			
SIDE CAB WINDOWS SLIDER?			
REAR CAB WALL WINDOWS? SLIDER?			
FEDERAL Q SIREN PROVIDED?			
FEDERAL Q MOUNTING REINFORCED?			
FEDERAL Q SIREN SWITCHES: 1 FOOT SWITCH EACH FOR DRIVER AND OFFICER? LINEMASTER SWITCHES?			
SIREN BRAKE PROVIDED AND CENTRALLY LOCATED?			
SCHOOL BUS STYLE CORNERING MIRROR PROVIDED? MOUNTING RQMTS. MET?			
WEST COAST STYLE POLISHED FRAME MIRRORS PROVIDED?			
SEPARATE CONVEX MIRROR PROVIDED? IS MIRROR 8” (MIN.) ROUND OR 6” x 5” RECTANGULAR?			
Optional 4 MANUAL ROOF VENTS PROVIDED?			
BUMPER SIGHT RODS PROVIDED? TYPE?			
ALUMINUM TREADPLATE ON CAB ROOF? WALKING SURF.?			
RED KUSSMAUL AUTO-EJECT CHARGING RECEPTACLE PROVIDED?			
CHARGING LEVEL INDICATOR			

MANUFACTURER	Offeror 1	Offeror 2	Offeror 3
MOUNTED AS REQUIRED?			
CAB INTERIOR			
DRIVERS SEAT – SEATS INC. MAGNUM 100 KNEE ACTION AIR RIDE, IMPERIAL 1200 CLOTH (BLACK)			
OFFICER & CREW SEATS - 3 BOSTROM 400 SERIES TANKER 450 SCBA SEATS, P/N 224000-0665F TANKER 450/N BLACK DURAWEAR W/DCFD LOGO and Secure All SCBA Bracket?			
DO ALL SEATS HAVE DURA-WEAR UPHOLSTERY?			
COMPARTMENT BELOW OFFICER'S SEAT?			
FRONT OPENING?			
ARE SEAT HEADRESTS SPLIT OPENING OR FLIP UP?			
MOUNTED Secure All SCBA BRACKETS AS REQUIRED?			
1- Flip Down SCBA SEAT PROVIDED ON REAR WALL?			
Medical Compartment with Roll Up Locking Door?			
2 Way Radio & V.R.S. PARTITIONED Area provided on floor of Medical Compartment			
MOUNTING LOCATION FOR 2 ADD'L SCBA?			
2 FOLD DOWN SEATS WITH APPROPRIATE RESTRAINTS PROVIDED? REINFORCED STITCHING & DURA-WEAR SPECIFIED?			
INTERIOR LATCHES RECESSED or Flush Mounted ON OFFICERS SIDE?			

MANUFACTURER	Offeror 1	Offeror 2	Offeror 3
CONTROLS			
CLASS 1 OR EQUIVALENT ENGINE STATUS CENTER IPO STANDARD GAUGES?			
FAST IDLE SWITCH ON DASH AND PUMP PANEL? 1000 RPM?			
WHELEN 5SR00FRR LED FLASHER FOR COMPARTMENT OPEN LIGHT?			
COMPARTMENT OPEN BUZZER?			
IS PROPER MARKING INDICATED?			
DOES IT WORK WHEN PARKING BRAKE IS RELEASED?			
2 - 12v LED Whelen Pioneer Plus TELESCOPING LIGHTS PROVIDED?			
CAN YOU TURN THEM ON AND OFF FROM EITHER THE CAB OR PUMP PANEL?			
MOMENTARY SWITCHES?			
ARE THE 12V Lights NOT CONNECTED TO THE PARKING BRAKE?			
ARE THE 12V Lights CONNECTED TO AN ELEVATION SENSOR? SENSOR NOT CONNECTED TO THE COMPARTMENT OPEN SYSTEM?			
HOW MANY AIR HORNS ARE PROVIDED?			
LANYARD CONTROLS AS REQUIRED?			
ARE THERE 2 LINEMASTER FOOT SWITCHES AS SPEC?			
DO THE LANYARDS MEET OUR REQUIREMENTS?			
DOES THE EMERGENCY PARKING BRAKE CONTROL MEET OUR REQUIREMENTS? LOCATION?			
ARE ALL AUDIBLE AND VISUAL LIGHTS MARKED AS TO FUNCTION?			
DO ALL AUDIBLE ALARMS HAVE			

MANUFACTURER	Offeror 1	Offeror 2	Offeror 3
DIFFERENT SOUNDS AS REQUIRED?			
IS THE ACCELERATOR PEDAL ANGLED AS REQUIRED?			
OTHER INTERIOR REQUIREMENTS			
DOES THE DOOR GLASS MEET OUR REQUIREMENTS? FULLY ROLL DOWN? SCREW IN RETAINER (REGULATOR HANDLE)?			
ARE INNER CAB DOOR PANELS FINISHED STAINLESS STEEL? IS THE REGULATOR INCORPORATED AS SPEC? ARE HEX HEAD BOLTS USED AS SPEC.?			
DOES CAB INSULATION PACKAGE MEET OUR REQUIREMENTS?			
CAB AIRCONDITIONING: # OF COMPRESSORS? BTU'S EACH? EXTERIOR ANGLED SHIELDING? ADEQUATE CONDENSOR DRAINAGE?			
INTEROIR LIGHTING: WHELEN LIGHT PROPOSED? MODEL 70RCSFDR? INTEGRAL RED/WHITE LENSES? SWITCHED BY CREW CAB DOOR AND INDIVIDUAL SWITCHES? CAN SWITCH BE OPERATED FROM SEAT?			
IN-CAB FLUID CHECKS?			
ARE DIP STICKS COLOR CODED?			

MANUFACTURER	Offeror 1	Offeror 2	Offeror 3
DETENTS AND MARKINGS AS SPEC?			
ARE FILL ACCESSES MARKED?			
IS KEY PLATE PROPOSED?			
DOES MAP BOX MEET OUR REQUIREMENTS? FINISHED IN BLACK LINEX?			
MOBILE PATROL MODEL 2150-1 HANDHELD SPOT LIGHT? BRACKET?			
ENGINE COVER GRAB HANDLE?			
DO DOOR POST MOUNTED GRAB HANDLES MEET OUR REQUIREMENTS?			
IS A LOCKING MEDICAL STORAGE Compartment Provided as Specified?			
ENGINE COVER LINEX? DASH BOARD PANELS LINEX? OTHER? (DETAIL)			
REAR CREWCAB WALL FINISHED IN ALUMINUM TREADPLATE?			
HEADLINER COVERED IN GREY DURA-WEAR?			
SUNNEX MODEL 741-20 MAP LIGHT? MOUNTED AS REQUIRED?			
IS VEHICLE INFORMATION PLATE PROVIDED?			
DAVID CLARK SYSTEM: No. OF POSITIONS? MEET REQUIREMENTS? HANGER HOOKS PROVIDED?			
PUMP AND PUMP PANEL ITEMS			
PUMP: MODEL: 2 STAGE TYPE:			
MECHANICAL SEALS?			
THERMAL RELIEF VALVE?			
OVERHEAT INDICATOR AND ALARM?			
PNEUMATIC SHIFT LOCATED IN CAB?			

MANUFACTURER	Offeror 1	Offeror 2	Offeror 3
DETROIT DIESEL FIRE COMMANDER WITH PRESSURE GOVERNOR or Equivalent FRC for Cummins?			
FIRE COMMANDER or FRC for Cummins ON REMOVEABLE PANEL?			
MANUAL PUMP Shift OVERRIDE?			
INTAKES AND SUCTIONS OVER 3" – INTAKE PRESURE RELIEF VALVES W/BLEEDERS?			
INTAKE SIDE OF PUMP – RELIEF VALVE?			
ENVIRONMENTALLY SAFE PUMP PRIMING SYSTEM?			
T HANDLE CONTROL THAT MEETS OUR REQUIREMENTS?			
RESERVOIR ACCESSABLE?			
ANODES INSTALLED?			
PUMP PANEL			
CONSTRUCTED OF BRUSHED, NON-GLARE STAINLESS STEEL? NO FLEXING STATEMENT?			
PUMP PANEL LIGHTS WHELEN 5SCA0CCR LED'S PROVIDED BOTH SIDES?			
LIGHTS ADEQUATELY SHIELDED?			
IS PANEL OPPOSITE OPERATORS STAND EASILY REMOVEABLE ?			
ARE LATCHES PROVIDED FOR REMOVAL?			
ACCESS TO VOGUL LUBE AND VALVE OVERRIDES?			
IS ETCHED ZINC LABELING PROVIDED AS REQUIRED?			
INTAKES/DISCHARGES/CONTROLS AND DRAINS			
SHORT 6" STEAMERS?			

MANUFACTURER	Offeror 1	Offeror 2	Offeror 3
WILL STEAMERS BE ABLE TO ACCOMMODATE AN AKRON 1583 SIAMESE WITHOUT PROTRUDING BEYOND THE PLANE OF THE BODY?			
LEFT AND RIGHT REAR 3.5" DISCHARGES?			
1- 2.5" INTAKE AND 2-2.5"DISCHARGES AT PUMP PANEL?			
1-3.5" AND 1- 5" (2- 3.5" pantlegged) DISCHARGE ON SIDE OPPOSITE PUMP PANEL?			
DO INTAKE AND DISCHARGE VALVES MEET OUR REQUIREMENTS?			
¼ TURN DRAIN VALVES?			
LINKAGE MINIMIZED?			
LABELED AS REQUIRED?			
DO VALVES MEET OUR PULL REQUIREMENTS?			
DO THE LOWER CONNECTIONS APPEAR TO BE SUFFICIENTLY HIGH ENOUGH TO AVOID OPERATORS HANDS FROM HITTING AGGRESSIVE TREAD?			
CROSSLAYS – 90 DEGREE SWIVEL FITTINGS? NSFT TERMINATION? ANTI-SIEZE USED?			
FRONT INTAKE CUT BACK? 6" NST Male x 5" STORZ FITTING?			
FRONT INTAKE SCREENS?			
6" SLEEVE DOES NOT PROTRUDE BEYOND PLANE OF FRONT BUMPER?			
WATEROUS MONARCH OR EQUIVALENT REMOTE INTAKE VALVE?			
WATEROUS HANDWHEEL?			
MANUAL CONTROL? AT PUMP PANEL?			

MANUFACTURER	Offeror 1	Offeror 2	Offeror 3
FRONT & RIGHT SUCTION PRESSURE RELIEF VALVES W/BLEEDERS?			
REAR SUCTION AS LOW AS POSSIBLE? 6” NST Male x 5”STORZ FITTING? CENTER OF REAR COMPARTMENT?			
INTAKE SCREENS?			
WATEROUS MONARCH OR EQUIVALENT REMOTE INTAKE VALVE? TYPE?			
WATEROUS HANDWHEEL?			
MANUAL CONTROL? AT PUMP PANEL?			
REAR SUCTION PRESSURE RELIEF VALVE W/BLEEDER?			
DISCHARGES 2.5” and over CONTROLLED BY WATEROUS 82286/81823 SERIES MANUAL CONTROL VALVE AND HANDWHEEL?			
FULLY STOP WHEN OPENED?			
OPEN/CLOSE CONTROL INDICATOR?			
5” DISC. OPPOSITE OPERATORS STAND TERMINATES IN 5” NST with a 30 DEGREE Elbow 5” NST Female Swivel x 5” Storz with a 5” x 2.5” NST Male reducer and cap. REMOVEABLE FITTING?			
3” PIPING FOR DECK GUN?			
SAME HANDWHEEL CONTROL?			
Right SIDE DISCHARGE – TERM. IN 30 DEGREE Elbow that TERMINATES with 4” NST Female swivel x 5” Storz 5”Storz x NST 2-1/2” Male with a cap and chain? Left Side Discharges Terminate with 2.5” 30 Degree Elbow Akron Brass #630 Removable Fitting, Cap, and Chain?			

MANUFACTURER	Offeror 1	Offeror 2	Offeror 3
FRONT BUMPER DISCHARGE – 1.5” 90 DEGREE SWIVEL NSFT? ANTI-SIEZE compound AS SPECIFIED?			
CLASS 1 OR EQUIVALENT CHROME LOCKING PUSH/PULL “T” STYLE VALVE HANDLES			
ETCHED ZINC FUNCTION LABELS RECESSED IN T HANDLE?			
DO PUSH/PULL VALVES AND HANDLES MEET OUR REQUIREMENTS?			
PRESSURE GAUGES LOCATED DIRECTLY ABOVE CONTROL LEVERS? NFPA Compliant			
NO SOFT OR “POT” METALS USED? LINKAGE PAINTED JOB COLOR RED? U JOINTS (ALVES BRAND) AND COVERED WITH BOOT?			
WAGON PIPE: AKRON 3433? 2 INLET GROUND BASE? ELEVATION SENSOR? CONNECTED TO Elevation Sensor SYSTEM? 360 DEGREE ROTATION AT HORIZONTAL? NOT HIGHER THAN TOP OF CAB? HANDWHEEL CONTROL? AKRON #3488 – 10-1/2” BARRELL? AKRON #2499 STACKED TIPS? AKRON #3502 MOUNTING BRACKET? AKRON 1-1/2” SMOOTH BORE TIP?			
TANK TO PUMP CONTROL VALVE – IN IS OPEN?			

MANUFACTURER	Offeror 1	Offeror 2	Offeror 3
SMALL LINE CONTROL VALVE – IN IS Closed?			
ALL POLISHED CHROME BLIND CAPS? CHAIN ATTACHMENT?			
TANK			
500 GAL. CAPACITY? INVERTED "L" STYLE?			
FIRE RESEARCH LED STYLE FRC TANK VISION GAUGE?			
TANK OVERFLOW: TERMINATES TO REAR OF AXLE? WILL NOT ENTER AXLE VENT HOLES? NO OVERFLOW FROM TOP OF TANK WHEN FILLED AT 150 PSI?			
TANK FILL FROM PUMP – 1-1/2"? VICTAULIC FITTING AS SPEC?			
FILL TOWER AS FAR FORWARD AND TOWARD OUTER EDGE AS POSSIBLE? FILL TOWER CUT AS LOW AS POSSIBLE?			
OTHER ITEMS			
AIR CHUCK AT PUMP PANEL? ASSEMBLED 25' HOSE, COMB. AIR FILL/TIRE GAUGE FITTING AND AIR CHUCK ADAPTER? LABELED OPEN/CLOSE AIR VALVE?			
ALL TAGS/LABELS MEET OUR REQUIREMENTS?			
GAUGE PROVIDED FOR SMALL LINE?			

MANUFACTURER	Offeror 1	Offeror 2	Offeror 3
CHASSIS			
ABS BRAKES?			
AUTOMATIC TRACTION CONTROL?			
MUD SNOW SWITCH			
WABCO SYSTEM SAVER 1200 AIR DRYER?			
EX 225, 17” DISC BRAKES?			
SLACK ADJUSTER FURNISHED?			
BRAKE SYSTEM MEETS OUR REQUIREMENTS?			
PARKING BRAKE RELEASE TANK?			
CONTROL EASILY ACCESSIBLE TO DRIVER ON DASH OR OVERHEAD ONLY?			
AUXILIARY PRESSURE PROTECTED AIR TANK FOR AIR CHUCK AND OTHER MISC. ITEMS?			
AIR TANK VALVES EQUIPPED W/CABLE CONTROLLED DRAIN VALVES?			
GLAD HANDS? RED AND BLUE COLOR?			
AIR HORN SHUT-OFF VALVE AS REQUIRED?			
FRAME			
R.B.M. MINIMUM OF 1.9 MILLION?			
FRAME AND COMPONENTS PAINTED JOB COLOR RED?			
SEMI-ELLIPTICAL SPRINGS? BRONZE BUSHINGS? HEAVY DUTY, DOUBLE ACTING SHOCK ABSORBERS?			
WEIGHT DISTRIBUTION: FRONT – 45% REAR – 55% LEFT TO RIGHT – 7%			
BALLASTING KNOWN AT THIS TIME?			

MANUFACTURER	Offeror 1	Offeror 2	Offeror 3
WHEELS HUB PILOTED?			
FRONT TIRES: MICHELIN XZY 315 80 R22.5? REAR TIRES: MICHELIN XDN 1200 R22.5?			
ALCOA DURA-BRITE ALUMINUM WHEELS ?			
STEMCO ADVANTAGE 2000 FRONT AXLE OIL SEALS?			
AUTOMATIC TRACTION CONTROL W/MUD AND SNOW SWITCH?			
INSULATORS WHERE DISSIMILAR METALS MEET?			
FRONT AND REAR MUDFLAPS?			
DO THE TOW EYES MEET OUR REQUIREMENTS?			
ANGLE OF APPROACH 15 DEGREES MINIMUM?			
ANGLE OF DEPARTURE 15 DEGREES MINIMUM?			
BREAKOVER 15 DEGREES MINIMUM?			
VOGEL LUBE SYSTEM?			
ARE THE MANIFOLD ACCESS ISSUES ADDRESSED?			
DOES THE SYSTEM MEET OUR REQUIREMENTS?			
DRUM PUMP AND LUBE PROVIDED?			
HIGH PRESSURE POWER STEERING HOSES? (NO COPPER)			
REAR AXLE VENT TUBES EXTENDED UP?			
ENGINE			
SERIES 60 EGR or Cummins ISM 500 375 HP? @ 2100 RPM 1550 LBS. TORQUE? DDEC V ECM? LATEST SOFTWARE? MAINT. ALERT SENSORS?			

MANUFACTURER	Offeror 1	Offeror 2	Offeror 3
COOLING CAPACITY FOR 500 HP?			
RADIATOR CONSTRUCTION MEETS OUR REQUIREMENTS?			
RADIATOR FLUSH PLUG W/ANTI SIEZE adequately protected?			
E.P.D.M. or Silicone RADIATOR AND HEATER HOSES? PRESSURE COMPENSATING CONSTANT TENSION CLAMPS ON HOSES OVER 1”?			
FUEL PRO 382 (Detroit) or Fleetguard (Cummins) Fuel FILTER SYSTEM?			
ELECTRIC FUEL PRIMER?			
STAINLESS STEEL 65 GAL. FUEL TANK?			
PROTECTO-SEAL FUEL CAP W/FLASH ARRESTOR? MEET OUR REQUIREMENTS?			
FUEL LINE SHUT-OFF?			
LOW FUEL INDICATOR ON ENGINE STATUS CENTER?			
DOES VENDOR INDICATE THAT SENSOR WILL NOT ACTIVATE WHEN FUEL IS SLOSHING IN TANK AS REQUIRED?			
CAB TILT FLUID – DEXRON III?			
ENGINE PROTECTIONS SET FOR RAMP DOWN?			
290A (NFPA 260A) MINIMUM ALTERNATOR? TYPE?			
WILL PROVIDE MSDS?			
COLOR CODED AND LABELED FLUID CHECK/FILL LOCATIONS?			
Group 31 6 Pack of BATTERIES furnished? JUMPER STUDS PROVIDED?			
CORROSION RESISTANT FLOORING OR MATTING PROVIDED IN BATTERY			

MANUFACTURER	Offeror 1	Offeror 2	Offeror 3
STORAGE COMPARTMENTS? LINEX LINED?			
AIR FILTER RESTRICTION SENSOR?			
COOLANT LEVEL SENSOR?			
ENGINE OIL SENSOR?			
DETROIT DIESEL PRO-DRIVER DC SYSTEM?			
PRO DRIVER AUDIBLE ALARMS INSTALLED AND LABELED? Cummins Maintenance Alerts Turned On?			
FLUID PLACARD AS REQUIRED?			
NEIDERMAN EXHAUST PROVISIONS?			
TRANSMISSION			
ALLISON WORLD 4000EVS P?			
RETARDER: TELMA? ON/OFF SWITCH WITH INDICATOR LIGHT? STAGE INDICATOR LIGHTS? STAGE 1 & 2 OFF THE ACCELERATOR, 3 & 4 OFF OF BRAKE? MOUNTING LOCATION AS REQ'S?			
541 TORQUE CONVERTER?			
KEYPAD SHIFTER WITH MODE SWITCH ENABLED?			
TRANSYND TRANSMISSION FLUID?			
DIPSTICK HOT/COLD DETENTS? COLOR AS REQUIRED?			
TRANSMISSION OIL LEVEL SENSORS?			
ELECTRICAL			
CIRCUIT CONNECTIONS:			

MANUFACTURER	Offeror 1	Offeror 2	Offeror 3
BARRIER STYLE TERMINAL BLOCK? STUD & NUT FASTENERS? OR MODULAR PLUG SYSTEM?			
NO SPLICES IN WIRING HARNESSES?			
SERVICE LOOPS AT ALL JUNCTION POINTS?			
DIRECT ACCESS TO ALL JUNCTION POINTS?			
WIRING 14AWG W/SXL INSULATION?			
CABLES LARGER THAN 10AWG MECHANICALLY CRIMPED?			
WILL SUBMIT CRIMPING METHOD FOR APPROVAL?			
WIRING LOOM RATED AT 250 DEGREES F, MINIMUM?			
DID VENDOR OPT FOR Optional 10 YEAR BUMPER TO BUMPER ELECTRICAL WARRANTY?			
1/0 GROUNDING STRAPS or Cables INSTALLED AS REQUIRED?			
SWITCH PANELS LABLELED AND GROUPED BY FUNCTION?			
COMPLIES WITH NO POWER SPIKE AND POWER DELAY STATEMENT?			
TERMINAL CONNECTION POINTS ADEQUATELY PROTECTED?			
DOES VENDOR COMPLY WITH WIRE LOOM/CONDUIT & MOUNTING STATEMENTS?			
WEATHERTIGHT USED ON PIG TAIL CONNECTIONS?			
WEATHERTIGHT BOXES USED FOR 12V WIRING?			
TERMINAL PANELS INSTALLED AS REQUIRED?			
AUTOMATIC RESET BREAKERS USED?			

MANUFACTURER	Offeror 1	Offeror 2	Offeror 3
WIRING COLOR, FUNCTION AND NUMBER COATED?			
WIRING PROTECTED FROM MANIFOLD, EXHAUST AND MUFFLER AREAS?			
WEATHER PROOF SWITCHES USED ON ALL DOOR AND EXTERIOR SWITCHES?			
ALL GROUNDING TO GROUNDING BUSSES AS REQUIRED?			
RADIO INSTALLATION:			
DID VENDOR MEET OUR RADIO INSTALLATION RQUIREMENTS? IF NOT, WHAT IS DIFFERENT?			
DID VENDOR MEET OUR DAVID CLARK INTERCOM SYSTEM REQUIREMENTS?			
DID THE VENDOR MEET OUR AVL REQUIREMENTS?			
DID THE VENDOR MEET OUR VRS REQUIREMENTS?			
WIRING FOR 4 PORTABLE RADIO CHARGERS PROVIDED?			
DID VENDOR MEET V.I.T. RQMTS.			
EMERGENCY LIGHTING: PAGE 25 OF OUR REQUIREMENTS: WHELAN LED LIGHTBARS? 1 – FTDCFRNT? 2 – FTDCOUT? (1a) UPPER LEVEL WHELAN 60R00FRR LED AS REQUIRED? (1b) LOWER LEVEL WHELAN 60A00FAR LED AS REQUIRED? (1c) WHELEN MCFLED LED ON REAR CORNERS AS REQUIRED? (1d)			

MANUFACTURER	Offeror 1	Offeror 2	Offeror 3
FRONT DIR.: WHELAN 60A00TAR LED W/6E FLANGE AS REQUIRED? (1e) **STOP/TAIL: WHELAN 60R00XRR LED W/6E FLANGE AS REQUIRED? (1f)** **BACKUP: WHELAN 60J000CR W/6E FLANGE AS REQUIRED? (1g)** **REAR DIR.: WHELAN 60A00TAR LED W/6E FLANGE AS REQUIRED? (1h)** **HEADLIGHT FLASHER: WHELEN SSF2150? (1i)** **ROTO-RAY** **WHELEN APPROVAL LETTER? (1k)**			
UPPER LEVEL LIGHTING SUPPORTS?			
Optional CODE 3 Warning Light Package Bid ?			
ALL OTHER D.O.T. LIGHTING – TRUCKLITE LED?			
DOES 12V LED Auxiliary Lighting MOUNTING AND SWITCHING MEET OUR REQUIREMENTS?			
COMPARTMENT OPEN FLASHER AND BUZZER: WHELEN 5SR00FRR LIGHT? **OPERATIONAL WHEN PARKING BRAKE IS RELEASED?**			
GROUND LIGHTING AT EACH DOOR POSITION? **ACTIVATED BY DOOR OPEN SWITCH?**			
OTHER GROUND LIGHTING? **ACTIVATED BY SWITCH ON SWITCH PANEL?**			

MANUFACTURER	Offeror 1	Offeror 2	Offeror 3
12V UNITY LIGHTS MOUNTED – REAR CORNERS OF HOSEBED?			
GENERAL ELEC. ITEMS			
WHELAN MODEL 295HFS DCFD ELECTRONIC SIREN W/COMPATABLE SPEAKER?			
SPEAKER MOUNTED IN FRONT BUMPER? COVERED BY A GRILL?			
CONTROL MOUNTED AND EASILY ACCESSIBLE TO DRIVER AND OFFICER?			
CLASS 1 TOTAL SYSTEM MANAGER? OTHER TYPE?			
KUSSMAUL AUTOCHARGE 1000 BATTERY CHARGER?			
RED AUTO-EJECT WEATHERPROOF POWER INPUT CONNECTOR? MOUNTED WHERE SPEC'D? NEMA 5-15 TERMINATION? INDICATOR LIGHTS?			
50' LENGTH YELLOW 12/3 AWG CHARGING CABLE? NEMA 5-15 MALE AND FEMALE CONNECTIONS ATTACHED?			
BACK UP BUZZERS ON REAR BEAVERTAILS?			
MOUNT 5 HANDLAMP BRACKETS? WILL MOUNTING MEET OUR REQUIREMENTS?			
PAINT			
TWO TONE – WHITE UPPER AND RED LOWER?			
PAINT BREAK INDICATED ON DRAWINGS?			
HOSE BODY – RED?			
CHASSIS COMPONENTS – RED or D/A			

MANUFACTURER	Offeror 1	Offeror 2	Offeror 3
Finished?			
COMPARTMENTS – SPATTER GRAY W/CLEARCOAT or D/A Finish?			
CLEAR COAT EXTERIOR?			
SPATTER GRAY or Job Color Red INTERIOR W/CLEAR COAT EXCEPT LINEX AREAS?			
LETTERING			
4-12” NUMBERS?			
8-6” LETTERS/NUMBERS?			
20-4” LETTERS/NUMBERS?			
20-3” LETTEERS/NUMBERS?			
10- 1-1/2” NUMBERS?			
GOLD SCOTCHLITE OVER BLACK SHADING?			
FONT AS REQUIRED?			
DCFD INSTALLED OVER WINDSHIELD?			
SERIAL NUMBER ON LEFT FRONT AND REAR?			
STOP SIGNS INSTALLED ON DOORS?			
4” Co. NUMBER ON ROOF?			
DOOR SEALS INSTALLED?			
6” WHITE N.F.P.A. REFLECTIVE STRIPE			
MISC. REQUIREMENTS			
BUNGEE CORDS OVER CROSSLAYS AS REQUIRED?			
ALL MANUALS REQUIREMENTS MET?			