



# CITY OF HOUSTON

Administration & Regulatory Affairs Department  
Strategic Purchasing Division

**Annise D. Parker**  
Mayor

Calvin D. Wells, Deputy Director  
City Purchasing Agent  
P.O. Box 1562  
Houston, Texas 77251-1562

<http://purchasing.houstontx.gov>

January 28, 2010

Subject: **Letter of Clarification No. 2,  
Light, Medium and Heavy – Duty Trucks for Various  
Departments**

Reference: **Invitation to Bid No.: S38-N23483**

To: All Prospective Suppliers:

This letter of Clarification is issued for the following reason:

1. Note that the online bid form has been revised.
2. Replace the original bid document dated December 18, 2009, Pages 1 of 89 through Pages 89 of 89 with the attached revised bid document dated January 28, 2010, Pages 1 of 96 through Pages 96 of 96.
3. The revised bid opening date of February 11, 2010 **has not** been changed.

This clarification is hereby incorporated in this bid document and all bidders are directed to bid accordingly.

When issued, Letter(s) of Clarification shall automatically become a part of the bid documents and shall supersede any previous specification(s) and/or provision(s) in conflict with the Letter(s) of Clarification. It is the responsibility of the bidder to ensure that it has obtained all such letter(s). By submitting a bid on this project, bidder shall be deemed to have received all Letter(s) of Clarification and to have incorporated them into this bid.

If you should have any questions, or if further clarification is needed regarding this Invitation for Bid, please contact me.

Lena Farris

Procurement Specialist  
832-393-8729  
lena.farris2@cityofhouston.net

cc: Bid File

*Partnering to better serve Houston*



# CITY OF HOUSTON INVITATION TO BID

Issued: December 18, 2009

## **Bid Opening:**

Sealed bids, in duplicate, will be received by the City Secretary of the City of Houston, in the City Hall Annex, Public Level, 900 Bagby, Houston, Texas 77002, until **10:30 a.m. Thursday, February 11, 2010** and all bids will be opened and publicly read in the City Council Chamber, City Hall Annex, Public Level, 900 Bagby at 11:00 a.m. on that date for the purchase of:

**LIGHT, MEDIUM AND HEAVY-DUTY TRUCKS  
FOR  
VARIOUS DEPARTMENTS  
BID INVITATION NO. S38-N23483  
NIGP: 072-00**

## **Buyer:**

Questions regarding this solicitation package should be addressed to **Buyer Lena Farris**, at **(832) 393-8729**, or e-mail to **lena.farris2@cityofhouston.net**.

Bidding forms, specifications, and all necessary information should be downloaded from the Internet at **<http://purchasing.houstontx.gov>** by registering and downloading this solicitation document, all updates to this solicitation document will be automatically forwarded via e-mail to all registered bidders. This information may also be obtained from the Supplier Assistance Desk, Strategic Purchasing Division, 901 Bagby, Concourse Level, Houston, Texas 77002.

## **Electronic Bidding:**

In order to submit a bid for the items associated with this procurement, you must fill in the pricing information on the "PLACE BID" page.

## **Pre-Bid Conference:**

A Pre-Bid Conference will be held for all Prospective Bidders in the Strategic Purchasing Division, Concourse Level (Basement), Conference Room No. 2, City Hall Basement, 901 Bagby, at **9:00 a.m.** on **Wednesday, January 6, 2010.**

**All Prospective Bidders are urged to be present. It is the bidder's responsibility to ensure they have secured and thoroughly reviewed the solicitation documents prior to the Pre-Bid Conference. Any revisions to be incorporated into this solicitation document arising from discussions before, during and subsequent to the Pre-Bid Conference will be confirmed in writing by Letter(s) of Clarification prior to the bid due date. Verbal responses will not otherwise alter the specifications, terms and conditions as stated herein.**

The place of the bid opening may be transferred in accordance with Paragraph (b), (5) of Section 15-3 of The Code of Ordinances, Houston, Texas. The bid opening meeting may be rescheduled in accordance with Paragraph (b), (6) of said Section 15-3.

**The City reserves the right to reject any or all bids, or to accept any bid or combination of bids deemed advantageous to it.**

City Employees are prohibited from bidding on this solicitation in accordance with the Code of Ordinances, Section 15 - 1.

## **\*CONTENTS:**

SECTION A: OFFER  
SECTION B: SCOPE OF WORK/SPECIFICATIONS  
SECTION C: GENERAL TERMS & CONDITIONS

**\*NOTE 1: Actual page numbers for each Section may change when the solicitation document is downloaded from the Internet or because of Letters of Clarification. Therefore, Bidders must read the bid document in its entirety and comply with all the requirements set forth therein.**

**\*NOTE 2: To be considered for award, please submit the electronic bid form and the forms listed in Section A, including the official signature page, which must be signed by a company official authorized to bind the company.**

## INSTRUCTIONS for BIDDING and TERMS & CONDITIONS

**NOTE:** It is the policy of the City of Houston that a sealed, signed bid must be submitted to the City Secretary by the due date. After you submit your bid online, please print the online Official Bid Form and signature page, sign, and turn in to the City Secretary.

1. All bids must show the full name of the firm bidding and must be on the online Official Bid Form. Bids should be filed in duplicate and at least one copy of the online Official Bid Form must be manually signed in ink by an authorized officer of the company and their title must be shown. Obligations assumed by the signature must be fulfilled. **The bid number, title of the bid, and the bid due date must be shown on the front of the envelope(s) containing the Bid Form(s) when submitted to the Office of the City Secretary, Public Level, Room No. P101, City Hall Annex, 900 Bagby Street, Houston, TX 77002.**
2. **TIME AND DATE:** Bids **MUST** be in the Office of the City Secretary, City Hall Annex, Public Level, 900 Bagby, Houston, Texas 77002 at or before 10:30 A.M. on the day bids are due; an early postmark will not suffice. Be sure you have allowed ample time for postal delivery. **CAUTION:** Bids mailed on the day before bids are due may not be received in time to be considered.
3. **WITHDRAWAL OF BID OFFER:** If the bid has been submitted to the City Secretary, a bidder may withdraw its offer before the expiration of the time during which the offer may be submitted, without prejudice, by submitting a written request for its withdrawal to the City Secretary. The bidder should follow instructions listed on the Strategic Purchasing Division website to withdraw any bid submitted through the online bidding process.
4. The online Official Bid Form should indicate the Unit Price for the specified item(s). The Unit Price shall be inclusive of all costs, insurance and freight. **Cash discounts will not be considered in the award of bids.**
5. No change in price will be considered after bids have been opened.
6. Provisions of the City's online Official Bid Form, Specifications, and General Terms & Conditions shall not be altered. Any alteration of figures or terms may invalidate the bid on the item which the alteration is made. Submission or attachment of company "QUOTATION FORMS" containing alternative terms and/or conditions is not acceptable and may result in your bid being determined non-responsive.
7. If bidder wishes to submit more than one bid on the same item, separate online City Official Bid Forms for each bid, complete with its own original signature page, must be submitted both online and to the City Secretary.
8. All bids are for delivery not later than the time stated in the specifications, Prepaid F.O.B. Destination, the point of delivery stated in the Specifications and/or Bid Form.
9. Bidders are invited to be present at the opening of bids. After opening, bids may be inspected in the City Secretary's Office, City Hall Annex, Public Level, 900 Bagby, Houston, Texas 77002.
10. **Cost of Bid/Proposal Preparation** The City shall not reimburse the cost of developing, presenting or providing any response to this solicitation. Offers submitted for consideration should be prepared simply and economically, providing adequate information in a straightforward and concise manner.

SECTION A



FLEET FORMAL BID

LIGHT, MEDIUM AND HEAVY-DUTY TRUCKS  
FOR  
VARIOUS DEPARTMENTS  
BID INVITATION NO. S38-N23483  
NIGP: 072-00

To the Honorable Mayor  
and City Council Members  
of the City of Houston, Texas (the "City")

The undersigned hereby offers to furnish and deliver prepaid F.O.B. destination point Houston, Texas, the item(s) listed on the **electronic bid form** and on individual Purchase Orders, in accordance with the price(s) bid and other conditions shown herein, and in accordance with the City's Specifications and General Terms & Conditions and/or samples/drawings provided herein. When issued by the City of Houston, Letters of Clarification shall automatically become part of this bid document and shall supersede any previous specifications or provisions in conflict with the Letters of Clarification. It is the responsibility of each bidder to ensure it has obtained all such Letters. By submitting a bid on this project, bidder shall be deemed to have received all Letters of Clarification and to have incorporated them into the bid.

The City may accept this bid offer by issuance of a Notice of Award Letter and/or a Purchase Order at any time on or before the 120th day following the day this Official Bid Form is opened by the City. This offer shall be irrevocable for 120 days after bid opening or for 90 days after City Council awards the bid, whichever comes last, but this period may be extended by written agreement of the parties.

The City reserves the option, after bids are opened, to adjust the quantities listed on the following page(s) upward or downward, subject to the availability of funds, and/or make award(s) on a line item basis.

**The City reserves the right to INCREASE quantities during the twelve-month period following the issuance of the first purchase order subject to agreement in writing by the Prime Contractor/Supplier to honor the same bid price.**

## SECTION A

**Documents/forms must be downloaded from the City's Website**  
**<http://purchasing.houstontx.gov>**

### **Additional Required Forms to be Included with this Bid:**

In addition to the electronic Bid Form and the Official Signature Page, the Forms listed in Table 1 **must be completed and submitted to the Office of the City Secretary on or before the date and time the bid is due:**

<b>Table 1 - Required Forms</b>
<a href="#">Affidavit of Ownership.doc</a>
<a href="#">Fair Campaign Ordinance.doc</a>
<a href="#">Statement of Residency.doc</a>
<a href="#">Conflict of Interest Questionnaire.doc</a>
<a href="#">Bidders Attachments Fleet.doc</a>

Table 2 lists other documents and forms that should be viewed/downloaded from the City's website, but are not required to be submitted with the bid. The City will request these forms, as applicable, to be completed and submitted to the City by the recommended/successful bidder:

<b>Table 2 - Documents and Forms</b>
<a href="#">Drug Form.doc</a>
<a href="#">EEOC.doc</a>
<a href="#">Equipment Inspection &amp; Receiver.doc</a>
<a href="#">MWBE.doc</a>
<a href="#">Sample Insurance Under \$50000</a>
<a href="#">Sample Insurance Over \$50000</a>

## SECTION B

### SPECIFICATIONS

#### PART I GENERAL SPECIFICATIONS

#### 1.0 Bidding:

##### 1.1 Pricing for Specified Item(s):

1.1.1 Bidders may bid on one or more of the specified items listed.

1.1.2 Bids submitted must contain a unit price for the specified item(s). For any bid solicitation that contains a request for separate pricing of options for the specified item(s), pricing must be provided for both the specified item(s) and option(s) listed. If pricing is provided for only the listed option(s), the bid for that specified item will be deemed as non-responsive and will be rejected.

1.1.3 The unit price for any specified item shall be defined as the price for the manufacturer's standard model, furnished complete with all standard equipment and factory installed accessories listed in the manufacturer's printed literature for the respective unit, and any additional equipment defined herein by the City of Houston that is to be included.

##### 1.2 Pricing for Listed Option(s): (If Applicable)

1.2.1 A unit price is required on every listed option for the specified item(s).

1.2.2 If a bidder "no bids" any listed option for which bids are requested for a specified item and the option is available for the specified item(s), the bid for that specified item will be deemed as non-responsive and will be rejected.

1.3 The City may accept this bid offer by issuance of a Notice of Award Letter and/or a Purchase Order covering award of bid to the Prime Contractor/Supplier at any time on or before the 120th day following the day the Official Bid Form is opened by the City. This offer shall be irrevocable for 120 days after bid opening or for 90 days after City Council awards the bid, whichever comes last, but this period may be extended by written agreement of the parties.

1.4 Prices quoted shall remain firm through delivery and shall not be subject to increases (or supplemented on Prime Contractor/Supplier's invoice(s) for payment).

1.5 The City reserves the option, after bids are opened, to adjust the quantities listed on the City's Official Bid Form upward or downward, subject to the availability of funds, and/or make award by line item. Therefore, the City shall not be liable for any contractual agreements/obligations the Prime Contractor/Supplier enters into based on the City purchasing all the quantities specified herein.

1.6 The City reserves the right to INCREASE quantities during the twelve-month period following the issuance of the first purchase order subject to agreement in writing by the Prime Contractor/Supplier to honor the same bid price. During this period, purchase orders will be issued for these items as needed. It is emphasized that the City of Houston does not guarantee any quantities; rather, the quantities may vary depending upon the actual needs of the various city departments.

#### 2.0 Award:

2.1 Award will be made on the basis of the low total bid price for the specified item(s) meeting all specifications referenced herein plus listed options, if any.

#### 3.0 Applicable Specifications:

3.1 The applicable specifications are comprised of the "Instructions for Bidding and Terms & Conditions", "Official Bid Forms", the "General Specifications", the "Technical Equipment Specifications", the "General Terms and Conditions" and other specifications that may be included herewith and the purchase orders which refer to these specifications.

## **SECTION B - PART I: GENERAL SPECIFICATIONS: (Continued)**

### **4.0 Units Bid:**

- 4.1 The unit(s) bid shall be new, manufacturer's latest make and model in current production as offered to commercial trade and shall be furnished complete with all factory-installed standard equipment and accessories listed in the manufacturer's latest literature for the respective unit and any additional optional equipment as may be defined in the detailed Technical Specifications.
- 4.2 Prime Contractor/Supplier, by affixing their signature on the Official City Bid Form, has offered to furnish the equipment as specified herein in accordance with these specifications and all provisions set forth in this bid document. As such, it is the Prime Contractor/Supplier's responsibility to adhere to these specifications. **Any exceptions or conditions to the specifications set forth in the bid documents will deem the bid non-responsive, and the bid will be rejected.**
- 4.3 The unit(s) bid shall be in full and complete compliance with all applicable safety and pollution requirements and regulations in effect at the time of bid submittal. This includes but is not limited to standards established by the United States Department of Transportation, including the Federal Motor Vehicle Safety Standards (FMVSS), the Occupational Safety and Health Administration (OSHA), the Environmental Protection Agency (EPA), the Texas Department of Transportation and the Texas Commission on Environmental Quality (TCEQ).
- 4.4 **The City of Houston requires that the unit(s) bid be the lowest emission unit(s), i.e. Nitrogen Oxides (NOx) and Fine Particulate Matter (PM) without increasing Hydrocarbons (HC), available on the market for the specified equipment.** The emission standards established by the EPA shall be considered only as minimum standards. In the absence of EPA standards or if California Air Resources Board (CARB) standards provide lower emissions, CARB standards will be considered as the minimum if the specified unit and any required fuel is available to the City of Houston. **Federally regulated engines must be covered by an EPA-issued Certificate of Conformity certifying the engine to be in compliance with federal emission standards and the Prime Contractor/Supplier shall provide the Certificate of Conformity with their bid or within three calendar days from the written request of the City.** EPA emission label must be affixed to the vehicle and/or engine and be readily visible.
- 4.5 The term "Heavy Duty", or "HD" as may be applied to these specifications shall be interpreted to mean that the item referred to shall exceed the usual quality, quantity or capacity of that supplied with standard production units and shall be able to withstand the unusual strain, exposure, wear and use to be expected in the intended service. Where specification requirements are given, they shall be considered minimum requirements unless otherwise indicated.
- 4.6 Throughout these specifications, compatibility is of the essence and any modification, accessory, device, material or type of construction, whether to existing or to the specified equipment, which may be necessary to incorporate the specified equipment into the existing equipment shall be considered to be a part of these specifications whether detailed by item or not.
- 4.7 Units provided shall not have any decal, plate, sign, stencil, stamping, molding, or marking of any type pertaining to advertisement other than trademarks, trade names, or model designation normally installed by the manufacturer on equipment delivered to the City of Houston. No accessory item furnished on equipment shall advertise the name of the Prime Contractor/Supplier.

### **5.0 Technical Literature:**

- 5.1 To evaluate the bids, the user department and the City purchasing staff may require product literature/specification sheets. Technical literature may be provided with the bid submittal but is not required. However, the City reserves the right to request and require literature and/or clarifications, as needed, after bid submittal.

## **SECTION B - PART I: GENERAL SPECIFICATIONS: (Continued)**

### **5.0 Technical Literature: (Continued)**

- 5.2 If required, Bidder must submit a minimum of TWO SETS of the requested catalogue information, descriptive literature specifications and/or (if applicable) engineering drawings that completely identify the items bid. Bidder(s) shall furnish the requested literature within seven (7) calendar days after the receipt of the City's written request. FAILURE ON BIDDER'S PART TO FURNISH THE REQUESTED TECHNICAL DATA IN THE TIME LIMIT SPECIFIED MAY BE CAUSE FOR REJECTION OF THE BID.

### **6.0 Warranty:**

- 6.1 A minimum twelve (12) month manufacturer's warranty on both materials and workmanship shall be provided. Any and all documents necessary to effect warranty shall be properly applied for and submitted by the Prime Contractor/Supplier. The Prime Contractor/Supplier shall provide to the City a manufacturer's warranty which will be honored by any of the manufacturer's authorized dealers and a complete copy shall be provided at the time of delivery. When additional warranties are available as standard, they shall be included as a part of the bid for the benefit of the City.
- 6.2 **DELAYED WARRANTIES** must be available for all equipment. Warranty start date shall be effective the date **that the completed unit is placed into service by the City.** The Prime Contractor/Supplier shall furnish a delayed warranty card/document for each unit delivered and/or advise the City's Fleet Management/receiving department of the procedures to be followed for obtaining the delayed start of warranty coverage. Requests for delayed warranties will not exceed six months after delivery.
- 6.3 Additional warranties, if required, are listed in the Technical Specifications for each item.
- 6.4 With respect to any goods, materials, equipment, supplies and parts furnished by it, Prime Contractor/Supplier warrants:
- That all items are new and free of defects in title, design, material and workmanship.
  - That each item meets or exceeds the manufacturer's specifications and requirements for the equipment, structure, or other improvement in which the item is installed and conforms in all respects to the terms of the City Purchase Order and Specifications.
  - That each replacement item is new, in accordance with original equipment
  - Manufacturer's specifications are of a quality of at least as good as the quality of the item that it replaces (when the replaced item was new).
  - That no item or its use infringes any patent, copyright or proprietary right.
- 6.5 The Prime Contractor/Supplier's product shall be supported by an authorized service facility that can provide warranty repair, service and maintenance work within 24 hours from notification by the City.
- 6.6 Any warranty work shall be completed without cost to the City. Prime Contractor/Supplier shall be responsible for all shipping and/or freight expense from the City's designated location to the Prime Contractor/Supplier's facility for all warranty repair and/or maintenance and return to the City's designated location.
- 6.7 Prime Contractor/Supplier shall provide a Manufacturer's Authorized Facility located within the Houston-Galveston Region (Harris County and its seven adjacent counties, Brazoria, Chambers, Fort Bend, Galveston, Liberty, Montgomery and Waller) for all warranty and maintenance service.

### **7.0 Licenses and Permits:**

- 7.1 Prime Contractor/Suppliers are to adhere to all applicable federal, state as well as local laws and regulations. It is the Prime Contractor/Supplier's responsibility to acquire all necessary licenses and permits required by law.
- 7.2 Prime Contractor/Supplier shall be responsible for securing any and all inspections required by law, including State Inspection stickers. Any fee charged for these inspections shall be the responsibility of the Prime Contractor/Supplier and not the City of Houston.
- 7.3 At the time of delivery to the City of Houston, Prime Contractor/Suppliers are required to provide temporary paper license tags/plates for motor vehicles or other equipment required by the State of Texas to be registered for operation on public highways.

## **SECTION B - PART 1: GENERAL SPECIFICATIONS: (Continued)**

### **7.0 Licenses and Permits: (Continued)**

- 7.4 MOTOR VEHICLE COMMISSION CODE Texas Revised Civil Statutes, Annotated, Article 4413 (36) and 4413 (36a) **(If Applicable)**:
- 7.4.1 **License Requirement:** Section 4.01. (a), "Except as provided by this Section, no person shall engage in business as, serve in the capacity of, or act as a dealer, manufacturer, distributor, converter, representative, ... in this state ..., without obtaining a license therefore as provided in this Act and the rules of the Board."
- 7.4.2 **Sale of New Motor Vehicles:** Section 5.04. (a), "No person may engage in the business of buying, selling, or exchanging new motor vehicles unless that person: (1) holds a valid **franchised dealer's license** issued by the Commission for the make or makes of new motor vehicles being bought, sold, or exchanged; or (2) is acting as a bona fide employee of the licensee."
- 7.4.3 **Licensed Franchised Dealers** submitting bids for new cabs & chassis with installed bodies, by this Statute, are required to employ **properly licensed converters** for the conversions of the new motor vehicles.
- 7.4.4 **The Act of Submitting a Bid is regarded as doing business, as the entity is soliciting a sale.** Accordingly, each bidder must be a **licensed franchised dealer** at the time the bid is submitted.

### **8.0 Delivery / Inspection:**

- 8.1 The item(s) specified herein, with delivery tickets and/or other required documents shall be delivered Prepaid F.O.B. Destination to the location(s) shown on the purchase order(s) **within the delivery time(s) as listed in the Technical Specifications** after receipt of City of Houston Purchase Order.
- 8.2 The Prime Contractor/Supplier shall notify the City Contact listed in the "Ship To" section of the purchase order not less than three (3) days prior to expected delivery/arrival to permit inspection scheduling. The City Contact shall advise Prime Contractor/Supplier as to the date, time and location of authorized delivery/location. An authorized representative of the Prime Contractor/Supplier shall supervise delivery to the City. The City will not assume any liability for any vehicle/equipment delivered to an unauthorized location and/or any vehicle/equipment delivered but not accepted by the City.
- 8.3 **Documentation at time of Delivery:**  
Prime Contractor/Supplier shall provide the following documentation **per purchase order** upon delivery:
- Copy of purchase order(s) and invoice(s).
  - Manufacturer's Certificate of Origin shall be made out to "City of Houston, Texas", 611 Walker, 11th Floor, Houston, TX 77002-2527 and delivered to the City's Fleet representative at the time of delivery of the vehicle/equipment, if applicable.
  - Temporary paper license tags/plates paperwork, if applicable for equipment being delivered.
  - Warranty policy(ies) and/or certifications as may be required in the Specifications.
  - Parts, service, operator and maintenance manual(s) as may be required in the Technical Specifications.
- 8.4 Line Tickets:
- 8.4.1 Vehicles (If Applicable):
- 8.4.1.1 Line sheets/line tickets from the manufacturer of the vehicle shall be provided for each vehicle and delivered along with other City-required documents and manuals. Each line sheet/line ticket shall list all components that make up the vehicle chassis and shall include the make, model, and serial number of each component. In addition, line sheets/line tickets shall be provided for all mounted bodies specified for cabs & chassis, and shall include but not be limited to manufacturer, serial number, size, and tare weight. All mounted equipment and components shall be listed by the manufacturer, serial number, weight restrictions (lifts, booms, hydraulic arms etc) and all other relevant data that identifies the component.

## **SECTION B - PART 1: GENERAL SPECIFICATIONS: (Continued)**

### **8.0 Delivery / Inspection: (Continued)**

#### 8.4 Line Tickets: (Continued)

##### 8.4.2 Other Equipment (If Applicable):

8.4.2.1 Line sheets/line tickets from the manufacturer of the equipment specified shall be provided for all equipment delivered along with other City-required documents and manuals. Each line sheet/line ticket shall list all components that make up the equipment and shall include the make, model, and serial number of each component.

8.5 Each unit shall be delivered clean and shall be complete with all equipment operable. Each unit shall be inspected by the City before tender of delivery to determine its compliance with the specifications and/or to test its ability to perform its intended use.

8.6 Upon acceptance and receipt of the vehicle/equipment unit by the City, Prime Contractor/Supplier shall obtain the signatures and employee numbers of the City's receiving employees on the City's Equipment Inspection/Receiver Report.

### **9.0 Liquidated Damages:**

9.1 Under the terms of this Contract (Purchase Order), the Prime Contractor/Supplier certifies to complete delivery of any vehicle/equipment within the specified calendar days, listed in the Delivery Section of the Technical Specifications, counting from the date the City of Houston purchase order is received by the Prime Contractor/Supplier. Prime Contractor/Supplier agrees that time is of the essence in performance of this Contract. The Prime Contractor/Supplier and the City of Houston understand and agree that a breach of contract as to completion on time will cause damages to the City and that the actual damages from the harm would be difficult to estimate accurately.

Therefore, for each and every calendar day that the vehicle/equipment is not delivered and/or accepted by the City beginning sixty-one (61) calendar days after the expiration of the time limit set in the Contract, the Prime Contractor/Supplier shall be liable for and shall pay to the City the sum of **Fifty dollars (\$50.00)** per vehicle/equipment per calendar day, or portion thereof, as liquidated damages and not as a penalty. It is further agreed that the sum stipulated as liquidated damages is a reasonable estimate of the damage that will result from a failure of the Prime Contractor/Supplier to deliver the product/service in accordance with the Contract. The amount of the liquidated damages due may be deducted by the City from any payment or payments due to the Prime Contractor/Supplier, or if all payments otherwise due to the Prime Contractor/Supplier have been made, the amount of the liquidated damages shall be immediately due and payable upon demand.

9.2 Prime Contractor/Supplier will not be liable for delays in performing its obligations to the extent such delays are caused by unforeseeable conditions that are beyond the Prime Contractor/Supplier's reasonable control and directly interfere with performance, and are without Prime Contractor/Supplier's fault or negligence (force majeure). However, Prime Contractor/Supplier shall provide written notice to the City of the cause and extent of an **excusable delay** resulting from unforeseeable conditions. Upon cessation of the event causing the delay, Prime Contractor/Supplier shall provide written notice to the City of the actual delay incurred. Determination of force majeure shall rest solely with the City Purchasing Agent and the receiving department.

### **10.0 Conflict in Terms:**

10.1 Should there be any conflict between the General Specifications and the Technical Specifications, the Technical Specifications shall prevail.

**SECTION B - PART 1: GENERAL SPECIFICATIONS: (Continued)**

**11.0 Miscellaneous:**

- 11.1 For purposes of this Contract (Purchase Order), the phrase "City Purchasing Agent" shall be deemed to include both the City Purchasing Agent, and his or her designated representative(s).
- 11.2 Prospective bidders may propose "equivalent equipment" as additional item(s) for City-approved equipment listings of acceptable equipment in this bid document. Prospective bidders must submit, in writing to the City Purchasing Agent, 1) a request for approval of proposed equipment, 2) Equipment Manufacturer's literature, and 3) a detailed comparison documenting that the equipment proposed is equivalent to existing equipment in the City-approved equipment listings. The approval request and all required documentation shall be in the Office of the City Purchasing Agent no later than 14 calendar days before the bids for this Contract are scheduled to be opened and publicly read. Requests for equipment approval not received by the time specified above will not be considered for this Contract. Determination as to whether the equipment proposed is equivalent to the items in the City-approved equipment listings shall rest solely with the City Purchasing Agent.

**12.0 Prime Contractor/Supplier References (See Exhibit No. 1):**

- 12.1 In order to receive bid award consideration, the bidder must be able to demonstrate that it has provided, as a prime contractor/supplier, products that are similar to those offered on the electronic bid form to governmental agencies or other entities within the last two years.

**13.0 American Recovery and Reinvestment Act of 2009 ("ARRA") Grant Funds (See Exhibit No. 2):**

- 13.1 The City of Houston's funding for items in this bid solicitation will be supplemented with funds received by the City through an ARRA grant. Therefore, per the ARRA Act requirements, both the City and the City's awarded Prime Contractor/Supplier are required to accept and comply with the requirements listed in the attached **Exhibit 2**.
- 13.2 The Prime Contractor/Supplier must accept all of the terms and conditions listed in **Exhibit 2**, and by submitting a bid for these items, acknowledges acceptance of and compliance to the terms and conditions listed in **Exhibit 2**.

EXHIBIT NO. 1

**PRIME CONTRACTOR/SUPPLIER REFERENCES**

In order to receive bid award consideration, the bidder must be able to demonstrate that it has provided, as a prime contractor/supplier, products that are similar to those offered on the electronic bid form to governmental agencies or other entities within the last two years. The references should be listed in the space provided below. Please attach additional pages as necessary. If references are not included with the bid, the bidder shall be required to provide such references to the City of Houston within five working days from receipt of a written request from the City of Houston to do so. **Bidder's capability and experience shall be a factor in determining the Contractor's responsibility.** The City of Houston reserves the right to determine if such products are appropriately similar to those offered.

1. Entity Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
City & State: \_\_\_\_\_  
Name & Phone Number of Contact: \_\_\_\_\_

2. Entity Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
City & State: \_\_\_\_\_  
Name & Phone Number of Contact: \_\_\_\_\_

3. Entity Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
City & State: \_\_\_\_\_  
Name & Phone Number of Contact: \_\_\_\_\_

4. Entity Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
City & State: \_\_\_\_\_  
Name & Phone Number of Contact: \_\_\_\_\_

5. Entity Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
City & State: \_\_\_\_\_  
Name & Phone Number of Contact: \_\_\_\_\_

## EXHIBIT 2

### Requirements for Contracts between the City of Houston and Third Party Contractors Using American Recovery and Reinvestment Act of 2009 ("ARRA") Grant Funds

1. Contractor will adhere to and comply with the special reporting requirements associated with ARRA grants as required by the granting agency and the City of Houston ("City"). The ARRA is available at [http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=111\\_cong\\_bills&docid=f:h1enr.pdf](http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=111_cong_bills&docid=f:h1enr.pdf)
2. The City will adhere to and comply with the special reporting requirements associated with applicable ARRA grants as required by the granting agency and the U.S. Office of Management and Budget.
3. **Compliance with Laws**  
Contractor shall comply with all federal, state, and local laws, statutes, ordinances, rules, and regulations and with the orders and decrees of any courts or administrative bodies or tribunals in any manner affecting the requirements of the ARRA. After receiving a written request from the City, Contractor shall furnish the State with satisfactory proof of its compliance with this section.
4. **Compliance with Comptroller General Requests**
  - A. Contractor will adhere to and comply with requests for any of its records or those of its subcontractors, that directly pertain to, and involve transactions relating to, this contract or subcontract and with any requests for interviews of any officer or employee of Contractor or any subcontractors to the Comptroller General. This will not limit or restrict existing authority of the Comptroller General.
  - B. The City will adhere to and comply with requests for any interviews or records that directly pertain to, and involve transactions relating to, this contract and any interviews of any officer or employee of any State or local government agency administering this contract. This will not limit or restrict existing authority of the Comptroller General.
5. **Compliance with Inspector General Reviews**
  - A. Contractor will adhere to and comply with any requests from any inspector general of a Federal department or executive agency's reviewing of any concerns raised by the public about specific investments using funds made available by the ARRA.
  - B. The City will adhere to and comply with any requests from any inspector general of a Federal department or executive agency's reviewing of any concerns raised by the public about specific investments using funds made available by the ARRA.
6. **Compliance with Office of Inspector General**
  - A. Contractor will adhere to and comply with requests from any representative of an appropriate inspector general to conduct interviews or examine any records of the Contractor any of its subcontractors that pertain to, and involve transactions relating to this contract or subcontract.
  - B. The City will adhere to and comply with requests from any representative of an appropriate inspector general to conduct interviews or examine any records that pertain to, and involve transactions relating to this contract.
7. **Compliance with protection of Whistleblowers**
  - A. Contractor will adhere to and comply with all federal, state, local laws, statutes, ordinances, rules, and regulations and with the orders and decrees of any courts or administrative bodies or tribunals in any manner affecting protection of the State, Local Government or Contractor Whistleblowers. Employers must post notice of the rights and remedies available. Poster available at: <http://www.recovery.gov/sites/default/files/Whistleblower+Poster.pdf>
  - B. The City will adhere to and comply with all federal, state, local laws, statutes, ordinance, rules, and regulations and with the orders and decrees of any courts or administrative bodies or tribunals in any manner affecting the protection of State, Local Government or Contractor Whistleblowers. Employers must post notice of the rights and remedies available. Poster available at: <http://www.recovery.gov/sites/default/files/Whistleblower+Poster.pdf>

**Requirements for Contracts Using ARRA Grant Funds (Continued):**

**8. Compliance with Buy American**

A Contractor will adhere to and comply with the Buy American requirements of the ARRA.

B The City will adhere to and comply with the Buy American requirements of the ARRA.

**9. Compliance with the Davis-Bacon Act**

A. Contractor will adhere to and comply with the wage rates requirements of the ARRA. Notwithstanding any other provision of law in a manner consistent with other provisions of the ARRA, all laborers and mechanics employed by contractors and subcontractors on projects funded directly by or assisted in whole or in part by and through the Federal Government pursuant to the ARRA shall be paid wages at rates not less than those prevailing on projects of a character similar in the locality as determined by the Secretary of Labor in accordance with subchapter IV of chapter 31 of title 40, United States Code. With respect to the labor standards specified in this section, the Secretary of Labor shall have the authority and functions set forth in Reorganization Plan Numbered 14 of 1950 (64 Stat. 1267; 5 U.S.C. App.) and section 3145 of title 40, United States Code. For City Construction Contracts, these rates are found at <http://choice.cityofhouston.net/aad/index.html>.

B. The City will adhere to and comply with the wage rates requirements of the ARRA. Notwithstanding any other provision of law in a manner consistent with other provisions of the ARRA, all laborers and mechanics employed by contractors and subcontractors on projects funded directly by or assisted in whole or in part by and through the Federal Government pursuant to the ARRA shall be paid wages at rates not less than those prevailing on projects of a character similar in the locality as determined by the Secretary of Labor in accordance with subchapter IV of chapter 31 of title 40, United States Code. With respect to the labor standards specified in this section, the Secretary of Labor shall have the authority and functions set forth in Reorganization Plan Numbered 14 of 1950 (64 Stat. 1267; 5 U.S.C. App.) and section 3145 of title 40, United States Code. For City Construction Contracts, these rates are found at <http://choice.cityofhouston.net/aad/index.html>.

**10. Compliance with the Hire American Workers**

A, Contractor will adhere to and comply with section 1611 of the ARRA.

B The City will adhere to and comply with section 1611 of the ARRA.

**SECTION B**  
**SPECIFICATIONS**

**PART II**  
**TECHNICAL SPECIFICATIONS**

**ITEM NO. 1: CAB & CHASSIS MOUNTED WITH A BOX TRUCK BODY**  
**PR No. 10088671**

**1.0 GENERAL:**

- 1.1 Equipment Description:
  - 1.1.1 These specifications intend to describe a box truck that will be used by the Public Works & Engineering Department, Traffic & Transportation Division, as a response vehicle for emergency detour situations throughout the City of Houston.
- 1.2 Prime Contractor/Supplier:
  - 1.2.1 These specifications require the bidder to be a prime contractor/supplier and to bid on the cab & chassis, body and all ancillary equipment. Award will be made on all or none basis.
  - 1.2.2 The prime contractor/supplier shall be capable of authorizing warranty repairs at the primary service facility, or if the City elects, at the City's facility or facilities
- 1.3 Equivalent Equipment:
  - 1.3.1 Bidders proposing to provide equipment they believe to be equal to the specified model must provide sufficient operating and technical specifications for the City to evaluate the proposed equipment
- 1.4 Equivalent Equipment Documentation:
  - 1.4.1 A bidder proposing to provide equivalent to the specified model must be able to demonstrate upon request that it has manufactured an apparatus similar to the unit bid, and that the apparatus has been proven and tested in service satisfactorily. The bidder will provide records of warranty service repairs upon request. The City of Houston shall be the sole judge whether the apparatus in service similar to the unit bid has been proven and tested satisfactorily

**2.0 CAB & CHASSIS:**

- 2.1 General:
  - 2.1.1 The lowest emission engine that is available from a manufacturer shall be provided, either a 2007 or 2010 engine. Shall have a minimum horsepower rating of 185hp and minimum torque of 390 lb-ft.
  - 2.1.2 Cab will be placed on chassis with a "cab forward" or "cab-over" design so that the driver is placed in a position to have a view of the road unobstructed by the vehicle's hood.
  - 2.1.3 Cab will tilt forward to allow access to engine compartment for servicing and maintenance.
- 2.2 Dimensions and Weight Ratings:
  - 2.2.1 GVWR – 14,000 Lbs.
  - 2.2.2 GCWR – 19,000 Lbs
  - 2.2.3 Cab to Axle – 147 in. min.
  - 2.2.4 Wheelbase – 176 in.
- 2.3 Transmission:
  - 2.3.1 Automatic Transmission shall be a fully electronic, six speed transmission.
  - 2.3.2 Fifth and sixth gears shall be overdrive
  - 2.3.3 Transmission cooler shall be frame mounted and thermostatically controlled.

**SECTION B, PART II TECHNICAL SPECIFICATIONS (CONTINUED):**

**ITEM NO. 1: CAB & CHASSIS MOUNTED WITH A BOX TRUCK BODY (Continued):**

**2.0 CAB AND CHASSIS: (Continued):**

- 2.4 Brakes:
  - 2.4.1 Shall be equipped with dual caliper brakes on all four wheels with wear sensors on each wheel
- 2.5 Cab:
  - 2.5.1 Air Conditioning
  - 2.5.2 Power Locks and Windows
  - 2.5.3 Cruise Control
  - 2.5.4 Manufacturer's standard AM/FM Radio
- 2.6 Frame:
  - 2.6.1 Frame shall have a RBM rating of 415,000
- 2.7 Suspension:
  - 2.7.1 Rear suspension shall include a sway bar

**3.0 BODY:**

- 3.1 Exterior:
  - 3.1.1 Outside Width - 96", Outside length -216"
  - 3.1.2 Front and side panels - .040 Aluminum with Posts on 16" centers
  - 3.1.3 Grab Handles (2), one on each side, rear
  - 3.1.4 LED Lights per FMVSS-108
  - 3.1.5 Wiring shall be in a loom when under body and all interior wiring shall be secured, especially in rear header and front top corners. Wiring will include a 6-way trailer plug at rear for attaching trailer lights.
  - 3.1.6 Reflectors per FMVSS-108 attached with screws
  - 3.1.7 Translucent roof panels mounted on galvanized roof bows @ 24" centers
  - 3.1.8 Full width step bumper with minimum 2" receiver, with provisions for and including a 2" combination pintle/ball hitch
  - 3.1.9 Pull out ramp in rear
  - 3.1.10 Outside Height - 110.5"
- 3.2 Interior:
  - 3.2.1 Inside width - 92-1/2"
  - 3.2.2 3/8" plywood lining full height on sides and front
  - 3.2.3 Hardwood laminated flooring
  - 3.2.4 16" steel kickplate on front and sides
  - 3.2.5 A-Track cargo control on curbside wall on 36" centers. E-Track cargo control on driver's side and front @ 24, 48, and 72 inches
  - 3.2.6 Inside Height 97"
  - 3.2.7 Dome lights in box with switch in cab, 3 lights on driver's side and 2 lights on curb side
- 3.3 Doors:
  - 3.3.1 Rear Door- 88" wide roll up
  - 3.3.2 Side Door- 48" wide roll up
- 3.4 Miscellaneous:
  - 3.4.1 Emergency light shall be provided and installed:
    - 3.4.1.1 All-linear LED 54" amber lightbar
    - 3.4.1.2 Whelen Liberty Lightbar Mdl No. SX2AAAA

**SECTION B, PART II TECHNICAL SPECIFICATIONS (CONTINUED):**

**ITEM NO. 1: CAB & CHASSIS MOUNTED WITH A BOX TRUCK BODY (Continued):**

**4.0 WARRANTY:**

4.1 Cab & Chassis:

4.1.1 A minimum of a Manufacturer's standard 36-month/36,000-mile bumper-to-bumper warranty shall be provided.

4.2 Box Truck Body:

4.2.1 The body and all equipment shall be warranted against all defects in material and workmanship for a period of not less than twelve (12) months.

4.2.2 If manufacturer's standard warranty exceeds twelve (12) months, then the manufacturer's standard warranty period shall be in effect.

**5.0 TRAINING:**

5.1 Successful bidder shall instruct City of Houston personnel on proper operation and proper maintenance of the unit for a minimum of two (2) hours or satisfaction of City of Houston supervisory personnel, at no additional cost to the City of Houston.

**6.0 LITERATURE:**

6.1 Two (2) sets of Parts Manuals

6.2 Two (2) sets of Service Manuals

**7.0 DELIVERY:**

7.1 The item(s) specified above, with delivery tickets and/or other required documents shall be delivered Prepaid F.O.B. Destination to the location(s) shown on the purchase order(s) within one hundred eighty (180) calendar days from receipt of the City of Houston Purchase Order.

**SECTION B, PART II TECHNICAL SPECIFICATIONS (CONTINUED)**

**ITEM NO. 2: CAB & CHASSIS MOUNTED WITH HERBICIDE SPRAYER BODY  
PR No. 10085647**

**1.0 GENERAL:**

1.1 Equipment:

1.1.1 These specifications intend to describe a weed sprayer truck that will be used by the Public Works & Engineering Department, Right-of-Way & Fleet Maintenance Division, Herbicide Application Group, to spray herbicides to control weed growth in right-of-ways, ditches and storm sewer easements.

1.2 Prime Contractor/Supplier:

1.2.1 These specifications require the bidder to be a prime contractor/supplier and to bid on all components specified herein, including any ancillary equipment. Award will be made on all or none basis. The prime contractor/supplier shall be capable of authorizing warranty repairs at the primary service facility, or if the city elects, at the city's facility.

1.3 Equivalent Equipment:

1.3.1 An equivalent or better product may be substituted except when otherwise specified. Bidder proposing to submit an equivalent product as a substitute for the equipment specified must supply sufficient operating and technical information to allow the city to evaluate the proposed substitute product.

1.3.2 Determination as to whether the item(s) bid is (are) equivalent to those specified shall rest solely with the City Purchasing Agent and the receiving department.

1.3.3 Bidder proposing to provide equipment equivalent to that specified must be able to demonstrate upon request that it has manufactured a product identical to the proposed item and that the product has been proven satisfactory in tests and in service.

1.3.4 The prime contractor/supplier must provide records of warranty service repairs as requested by the City.

**2.0 CAB & CHASSIS:**

2.1 General:

2.1.1 Ford F-550 4x4 Cab & Chassis with Regular Cab or City-approved equal. GVWR shall be not less than 19,500 lbs. with an 84" cab-to-axle.

2.2 Engine:

2.2.1 A 2010 electronically-governed 6.7L diesel engine shall be provided.

2.3 Transmission:

2.3.1 A 6-speed automatic transmission with integral PTO provision shall be provided

2.4 Cab and Equipment:

2.4.1 OEM air conditioning, heating and defroster shall be provided

2.4.2 AM/FM radio shall be provided

2.4.3 Electric windows and door locks shall be provided.

2.4.4 Vinyl bench type seat

2.4.5 Manufacturer's standard ABS brakes

2.4.6 Colors (OEM Standard)

2.4.7 Darkest interior color available

2.4.8 Cab steps for all doors

## SECTION B, PART II TECHNICAL SPECIFICATIONS (CONTINUED):

### ITEM NO. 2: CAB & CHASSIS MOUNTED WITH HERBICIDE SPRAYER BODY (Continued):

#### 3.0 HERBICIDE SPRAYER SPECIFICATIONS:

##### 3.1 General:

- 3.1.1 The purpose of these specifications is to describe a truck-mounted, high production right-of-way sprayer consisting of a front bumper-mounted, low drift, boom less, spray head containing only solid stream nozzles which are vibrated electromagnetically and sprays eight independently-controlled laterally adjacent swaths for 36 feet, and one water pump and a computer-controlled chemical injection system with all accessories meeting the following minimum specifications. **Referenced Supplier:** Cibilo, Johnny Kubacak, email address jlkubacak@yahoo.com
- 3.1.2 **NOTE:** Successful bidder to provide a list of three users with telephone numbers and contacts that have purchased at least three sprayer units that meet all of the specifications as listed below, including those on the boom less spray head listed below.

##### 3.2 Single Application Spray Head:

- 3.2.1 The sprayer shall have the capability of applying herbicides in a SINGLE APPLICATION, in any of the techniques listed below in a single pass along the right-of-way.
- 3.2.1.1 Selective application of herbicides for spot treatment or broadcasting in multiple adjacent swaths across the right of way.
- 3.2.1.2 Spot treatment of herbicides to shoulders, edges of pavement, curbs, gutters, guardrails, signs, culvert ends, bridges, and medians.
- 3.2.1.3 Spot treatment with a handgun.
- 3.2.1.4 Three section rear batwing boom.

##### 3.3 Low Drift Multiple Swath Boom Less Spray Head:

The spray head must meet all of the following features:

- 3.3.1 The spray head is boom less.
- 3.3.2 The spray head is non-motorized and sprays multiple laterally adjacent swaths.
- 3.3.3 The spray head consist of one curved (arc) longitudinal flat 1/2" thick stainless steel bar, approximately 18.5" long which is attached at its uppermost end. Mild steel is embedded in the non-attached end of the bar as an attractor. The electromagnet rapidly pulls and releases the non-attached end of the bar.
- 3.3.4 The end of the bar to be coated with a plastic coating to prevent corrosion.
- 3.3.5 The second stainless bar is approximately 10" long and 3/8" thick and contains nozzles which can be adjusted up or down in a slot and are held in position with a lock washer and hex nut.
- 3.3.6 The opposite end of the 18.5" bar is non-attached and free to move and is positioned near a 12 Volt D.C. electromagnet.
- 3.3.7 The magnetic force created by the magnet causes one end of the bar to move rapidly. The bar vibrates at a minimum of 45 hertz. As a result the rapid movement shakes or vibrates the straight streams causing them to break up and scatter uniformly over the area being sprayed. This process eliminates any gaps in the spray swath. The spray head runs smooth and quiet not generating any irritating noises.
- 3.3.8 All swaths consist of sets of miniature stainless nozzles, all of which produce straight streams. Nozzles located in the bottom of the 18.5" bar are screwed through the bar while the top nozzles are held in a slot with lock washers and hex nuts. All nozzles contain hose barbs with capillary hose pushed over with a clamp made of hose, which is pushed over the top of the barbs. The other end of each capillary hose is pushed over hose barbs mounted in brass manifolds screwed into solenoid valves. Each solenoid valve mounted in the spray head has a brass manifold with multiple hose barbs.
- 3.3.9 Each nozzle is mounted in the spray head on a predetermined fixed orientation to prevent movement of nozzles. All nozzles are screwed through holes threaded through the bar in permanent fixed positions.
- 3.3.10 Nozzles in the sets covering swath zones closer to the vehicle deliver smaller droplet sizes while nozzles in sets covering swath zones further away from the vehicle delivering larger droplets sizes.

## **SECTION B, PART II TECHNICAL SPECIFICATIONS (CONTINUED):**

### **ITEM NO. 2: CAB & CHASSIS MOUNTED WITH HERBICIDE SPRAYER BODY (Continued):**

#### **3.0 HERBICIDE SPRAYER SPECIFICATIONS (Continued):**

##### **3.3 Low Drift Multiple Swath Boom Less Spray Head: (Continued)**

- 3.3.11 A single 3/4" hose carries fluid from the water pump to a stainless manifold mounted inside the spray head. This manifold is the supporting structure for all of the electric solenoids. Each solenoid has a second outlet manifold with multiple miniature stainless hose barbs screwed into the side. Capillary hoses connect each hose barb to each individual nozzle. Each swath consists of one solenoid and multiple capillary hoses and nozzles.
- 3.3.12 Eight brass solenoids are mounted directly in the spray head above the nozzles. The 8 multiple swaths consists of 4', 4', 4', 4', 6', 6', 6' and 6' for a total of 36 to 40 feet.
- 3.3.13 Vibrator Control Unit – A 4" X 5" X 7" metal box has controls mounted on the front-face side. The
  - 3.3.13.1 Controls consist of an on/off toggle switch with a bypass control mode.
  - 3.3.13.2 The monitor is mounted in the cab of the vehicle and controls the pulses to the electromagnetic coil by voltage and frequency.
  - 3.3.13.3 There are several different settings for adjusting the vibrating speed of the curved bar housing the nozzles.
- 3.3.14 The spray head to be constructed of a rigid frame and to be enclosed by protective shields (1 / 8 " plate) along the sides to protect it from damage from obstructions in the right-of-way.
  - 3.3.14.1 The spray head to be mountable on the vehicle on an upright post and be independently moveable and be able to change the inclination of the spray head to spray slopes and inclines.
  - 3.3.14.2 The spray head weighs approximately 60 pounds.
  - 3.3.14.3 The spray head will apply approximately 25 gallons of water per acre at 12 miles per hour with uniform coverage obtained between each individual nozzle or any combination of swaths used.
  - 3.3.14.4 THE SPRAY HEAD DOES NOT CONTAIN ANY MOTORS, SHAFTS, CAMS, BEARINGS, GREASE SERTS, NON--METALLIC NOZZLES OR ANY 90-DEGREE FITTINGS TO HOLD OR POSITION NOZZLES. NO OIL OR LUBRICATION IS REQUIRED. THE MULTIPLE SWATH SPRAY HEAD MUST ALSO NOT CONTAIN ANY FLAT FAN, OFF-CENTER OR ANGLE TYPE NOZZLES SINCE THESE ARE KNOWN TO PRODUCE FINE MIST WHICH DRIFTS OFF TARGET. THE SPRAYHEAD OPERATES SILENTLY.

##### **3.4 Front Bumper:**

- 3.4.1 The removable front-end assembly shall be mounted on an extended fixed frame rigidly attached to vehicle chassis utilizing manufactures factory installed front bumper if possible.

##### **3.5 Spray Head Swinging Feature:**

- 3.5.1 The spray head swings to either side of the vehicle by a hydraulic motor mounted on the front bumper frame and controlled from electric switches mounted in the in cab computer controls.
- 3.5.2 The frame will consist of a 3/8" X 3" X 38" inch long angle member located in front of and parallel with the bumper. Two additional 3" X 20" long angle iron members are welded vertically on each end of the 38" member. A fourth 3/8" X 3" X 38" long flat iron member is welded on top of the two sides and forms a rectangular frame which supports in the center a 1-1/2" vertical shaft. The shaft is mounted at each end in a 1-1/2" sealed flange bearing. One end of the 3" X 3"x 27" long square tubing is welded to the lower end of the 1-1/2" vertical shaft. A 3" x 3" x 27" horizontal square is welded internally a 2-1/2" square tubular 28" long. The 2-1/2" square tubing is the supporting structure for all spray bar extensions containing all spot spray nozzles, spray head, and breakaway apparatus.

## **SECTION B, PART II TECHNICAL SPECIFICATIONS (CONTINUED):**

### **ITEM NO. 2: CAB & CHASSIS MOUNTED WITH HERBICIDE SPRAYER BODY (Continued):**

#### **3.0 HERBICIDE SPRAYER SPECIFICATIONS (Continued):**

##### **3.5 Spray Head Swinging Feature: (Continued):**

3.5.3 The 1 1/2" shaft allows the 3" X 3" X 27" tubing to swing to either side of the vehicle permitting the operator to spray from either side of the vehicle. A hydraulic motor is mounted on top of the bumper mounted frame and is attached to the top of the 1-1/2" shaft. When the operator touches a switch on the computer panel to swing left the hydraulic motor swings the spray head to the left side of the vehicle. When the operator touches the switch to swing right the hydraulic motor swings the spray head to the right side of the vehicle. It takes only about five seconds to swing the spray head to either side of the vehicle. The computer shall contain six separate electric switches to facilitate the operation of three hydraulic cylinders and one hydraulic motor.

##### **3.6 Automatic Locking System:**

3.6.1 The extension, single spray head, and pivoting arm must automatically lock into position. This safety-locking device consists of a hydraulically operated horizontal rocker arm with a weighted latch at each end. This hydraulic cylinder moves the latch into position to safely secure the spray head to either side of the vehicle. This allows the operator to safely and quickly spray to either side of the vehicle or spray the path in front of the vehicle without getting out of the vehicle. This allows the operator to quickly spray hard to reach areas such as around drainage ditches, points, corners, barricades, and at the end of dead end streets and roads. The operator uses only the swing switch and manual speed override switch. This operation reduces the amount of time spraying with the handgun. Two spray heads are not acceptable.

##### **3.7 Front Bumper Mounted Extension Booms:**

3.7.1 The extension supporting the spray head is constructed of heavy-duty 2-1/4" O.D. tubular steel. This extension has a breakaway feature at its end consisting of three 1" diameter stainless steel coil springs 5" long mounted at one end on a slid able bracket for adjustable tension. These springs allow the spray head to break away when the head accidentally contacts an obstacle in the right-of-way. This break away mechanism reduces damage to the spray head when it accidentally contacts delineators, signs, guardrails and etc., which pass by the spray truck.

##### **3.8 Solenoids:**

3.8.1 There will be a minimum of eight electric 12-volt nickel solenoids mounted inside the spray head. Five additional solenoids are mounted on the 2" square tubing with nozzles that spray 18", 18", and 18", 36", and 8 ft. across the front bumper.

##### **3.9 Nozzles For Shoulders, Curb, Gutter And Guardrails:**

3.9.1 A 2" tubular extension is attached parallel to the front side of the 2-1/4" horizontal bar supporting the large spray head. This bar contains nozzles at 4 locations along the bar, which sprays shoulders, curbs and gutters, etc. The swaths from inside to outside are 18", 18", and 18", and 36".

3.9.2 Five 3/8" additional nickel solenoids are mounted above the 2" square tubing. The 3/8" I.D. solenoids are used to control the spray solution flow to additional swath locations. The solenoids will have an operating range of 5 to 125 PSI.

3.9.3 The corresponding switches with red indicator lights 1 through 5 are located on the computer panel, which electrically control the solenoids.

3.9.4 All hoses connecting solenoids to the nozzles of each swath are to be 3/8" I. D. and 150 PSI single braid hose.

3.9.5 All fittings on this bar are to be brass.

## **SECTION B: PART II: TECHNICAL SPECIFICATIONS (CONTINUED):**

### **ITEM NO. 2: CAB & CHASSIS MOUNTED WITH HERBICIDE SPRAYER BODY (Continued):**

#### **3.0 HERBICIDE SPRAYER SPECIFICATIONS (Continued):**

##### 3.10 In-Cab Controls:

3.10.1 A single computer control module shall be pedestal mounted and swivel in order that either the driver or the passenger of the vehicle may operate it. The dimensions of the complete computer control module system including all keyboards and all hydraulic controls to be no less than 12" wide, 13" tall, and 8" deep. The computer module controls all sprayer functions except for control of the auxiliary engine.

3.10.2 A second panel shall contain controls for chemical tank agitators, fuses, agitator on/off toggle switches, auxiliary engine oil light, voltmeter and toggle switch to turn on/off. The panel also contains the sprayer engine throttle, electric start, and engine kill controls.

##### 3.11 Chemical Injection System:

3.11.1 The computer's injection system dispenses concentrated chemicals and additives based on calculations by combining information from the variables of the rate per acre selected, changes in vehicle speed, and all combinations of swath widths. The computer processes this information and increases or decreases the speed of each injection pump accordingly. The computer must date information to each injection pump for necessary changes in rpm for every 2 degrees of revolution or 180 times per single revolution of each injection pump. .

##### 3.12 Computer Switches and Controls:

3.12.1 The computer to contain one master switch.

3.12.2 The master switch activates eight swath control switches and solenoids mounted in the boom less spray head and 3 additional switches for spot spraying shoulders, curb and gutter, edge of the pavement, under the guardrail and the swath covering the width of the truck. Switches 9, 10, and 11 also control the three-section rear booms. These switches also activate the computer injection system. Switches 1 through 5 also activate the electromagnet on the spray head vibrator.

##### 3.13. Computer Menu:

3.13.1 The computer operation set up is menu driven and allows the operator to set up all procedures in a logical and easily understood fashion. This is accomplished in advance of any spraying. All variables are easily identified in the multiple LCD display screen and selections can be made quickly during the spraying operation. The system is very user friendly.

##### 3.14 Computer Features and Functions:

3.14.1 The computer console shall be digital and contain one microprocessor and one additional microprocessor for each injection pump for data storage and operation.

3.14.2 The computer shall contain an internal keyboard consisting of 43 individual and separate single function keys by which the operator can enter the information into the computer. All 28 lettered keys are arranged in alphabetical order and all 15 numbered keys are arranged in standard calculator order. All data can be easily obtained through selection of the designated keys.

3.14.3 The computer console shall contain a real time clock. The time and date can be read in the computer LCD display at any time.

3.14.4 The on-board computer must have sufficient EPROM memory capacity to accumulate data including acres of each chemical sprayed, total acres sprayed, volume of each chemical used, and linear distance traveled. No battery backup is required to maintain data storage. Data is maintained (even when power is turned off or interrupted) or until the operator clears memory.

## **SECTION B, PART II, TECHNICAL SPECIFICATIONS (CONTINUED):**

### **ITEM NO. 2: CAB & CHASSIS MOUNTED WITH HERBICIDE SPRAYER BODY (Continued):**

#### **3.0 HERBICIDE SPRAYER SPECIFICATIONS (Continued):**

##### **3.14 Computer Features and Functions (Continued):**

##### **3.14.5 Computer LCD Display Screen:**

3.14.5.1 The computer's 1-inch tall X 10 inch wide screen area is byline and consists of two separate rows or sentences each containing 40 characters. Each character is 1/2-inch size for easy reading. The display screen area is made up of multiple displays, which are all visible to the operator at the same time.

3.14.5.2 The computer's screen displays continually at the same time all of the following information.

3.14.5.2.1 Vehicle speed in MPH (4 characters - 0.1 mph resolution).

3.14.5.2.2 System voltage (4 characters)

3.14.5.2.3 Names of each chemical used with 3 characters truncated from the original entry.

3.14.5.2.4 Names of drift control agent or additives (3 characters truncated from the original entry of up to 9 characters).

3.14.5.2.5 Application rates of each pesticide injection pump can be selected in either ounces or pints applied per acre by the operator during setup while programming the computer. (4 characters each). Application rates of each pesticide can be changed on the go. The computer software allows from one to five programmable rates for each chemical injection pump. All rates are selected in ounces or pints. The middle rate is considered the normal rate with two increased and two decreased rates. Rates selected can be a portion of the normal rate to several times over the normal rate.

3.14.5.2.6 The drift control agent or additive rates (in ounces per 100 gallons of water) are entered through the computers numeric keypad and rates are easily changed during the spray operation.

3.14.5.2.7 Width of swath in feet (4 characters -0.1 ft. resolution). The most distant point sprayed to the side of the vehicle (4 characters).

3.14.5.2.8 Linear distance accumulated to .001 mile.

3.14.5.2.9 Accumulates acres of each separate pesticide sprayed to .0001 acre.

3.14.5.2.10 Accumulates total acres sprayed without reference to individual pesticides to .0001 acre.

3.14.5.2.11 Accumulates volume of each chemical used in ounces and to the nearest .01 gal. above 128 ounces.

3.14.5.2.12 An audible alarm continuously beeps when the handgun is operated to alert the operator that chemical is being injected. All pesticide injection pumps will properly inject chemical to the handgun. The computer accumulates acres sprayed with the handgun to .0001 acre and this data is displayed in the LCD.

##### **3.15 Additional Display Selections:**

3.15.1 The following additional display selections can be retrieved by the operator during spraying operations:

3.15.1.1 Date (computer maintained, entered by operator if incorrect)

3.15.1.2 Time of day (computer maintained, entered by operator if incorrect)

3.15.1.3 Spraying pressure is electronically maintained by the computer and displayed in the LCD display.

3.15.1.4 Detailed individual injection pump data including the full name of each chemical (up to 9 characters)

3.15.1.5 The computer automatically switches to the handgun mode when the handgun is triggered; no dials or switches are required.

## **SECTION B, PART II TECHNICAL SPECIFICATIONS (CONTINUED):**

### **ITEM NO. 2: CAB & CHASSIS MOUNTED WITH HERBICIDE SPRAYER BODY (Continued):**

#### **3.0 HERBICIDE SPRAYER SPECIFICATIONS (Continued):**

- 3.16 Indicator Lights:
  - 3.16.1 Separate red indicator lights are provided on the computer control to indicate when master control switch and each spray swath control switch is on.
  
- 3.17 Audible Alarms and Error Messages:
  - 3.17.1 The computer shall give an audible alarm accompanied by a message in the display for these following conditions:
    - 3.17.1.1 When any pesticide tank is nearing empty
    - 3.17.1.2 When a condition exists that might cause misapplication (such as exceeding pump limits)
    - 3.17.1.3 When proper pressure cannot be maintained
    - 3.17.1.4 When computer system detects any malfunction of the spray system or controls, the audible alarms will reoccur at regular intervals until the operator corrects the problem reported in the display.
  
- 3.18 Set Up Procedure:
  - 3.18.1 When the computer spray system is turned on, the display will reflect the prior settings as selected during previous setup. The operator may change these settings by using the menu. The computer will have a manual speed switch to override the radar mode, which is accessible through the menu system.
  
- 3.19 Peristaltic Injection Pumps:
  - 3.19.1 Three pumps are used for herbicides and utilize 3/8 or 1/2" I.D. tubing giving a minimum output range of 0.2 ounces per minute to 150 ounces per minute, based on using water at 60 degrees Fahrenheit.
  - 3.19.2 All pumps are mounted below the chemical tanks to allow for total clean out of liquid in the tank.
  
- 3.20 Vehicle Speed Sensing Device:
  - 3.20.1 The computer is to include a GPS ground speed sensor to monitor vehicle speed.
  - 3.20.2 The computer must be capable of displaying speeds from 0.00 to 25.00 MPH.
  - 3.20.3 The computer control system checks and corrects for speed changes 20 times a second.
  
- 3.21 Calibration:
  - 3.21.1 The operator prior to spraying calibrates each herbicide injection pump by collecting the dispensed amount of chemical through a three way, two-position ball valve located on the outlet side of each pump.
  - 3.21.2 A plastic type graduated cylinder (1000 ml.) is to be provided for checking calibration.
  
- 3.22 Electronic Pressure Control System:
  - 3.22.1 The spray pressure is automatically self adjusted by the computer and consists of a pressure sensor and a ball valve. The spray pressure automatically self adjusts for all combinations of swath widths as the operator turns on any combination of spray swaths. The system will maintain the intended operating pressure. This allows the operator to use the least amount of pressure necessary to cover the target area. The computer controls will allow the operator to quickly make a pressure adjustment if too many fine particles of spray are created causing off target drift. The selected spray pressure for the pumping system may be viewed in the computer display. The operator touches a pressure set button and then enters the numerical desired pressure setting. No manual pressure regulators and multiple pressure gauges will be permitted in this system.

## **SECTION B, PART II TECHNICAL SPECIFICATIONS (CONTINUED):**

### **ITEM NO. 2: CAB & CHASSIS MOUNTED WITH HERBICIDE SPRAYER BODY (Continued):**

#### **3.0 HERBICIDE SPRAYER SPECIFICATIONS (Continued):**

##### 3.23 Platform And Body Components:

3.23.1 There shall be a platform surrounding the water tank and shall be 1/8" thick with a diamond plate surface. The platform to be supported by 3" channel (4 lbs. per foot) and be on 18" to 20" centers. Platform should contain wheel wells to aid in keeping the tank on a lower center of gravity. The maximum permissible height from top of vehicle chassis to bottom of the low profile tank to be no more than 7 inches. Platform includes clearance lights. The platform body dimensions are to be 8 feet wide. Platform body to include clearance lights, stop lights, and reflectors, and anti-sail mud flaps. Platform body to be minimum 12 feet in length.

##### 3.24 Auxiliary Engine:

3.24.1 The unit shall include a 13 HP gasoline Honda engine with electric start. The engine and water pump are mounted on the drivers side of the vehicle on a rectangular frame mounted below the level of the bed to allow for easy access and draining of the crankcase oil. The location of the engine and pump assembly is to be behind the cab and in front of the rear axles.

##### 3.25 Auxiliary Engine Accessories:

3.25.1 Throttle adjustment and engine shut off are to be mounted on a control panel inside the cab. A cutout or drop from the platform body allows for low profile mounting. All belts shall have safety covers. Frame to have vibration isolators in each corner. A minimum 6-gallon auxiliary fuel tank to be provided with a fill hose to the auxiliary engine fuel tank. **An hour meter is connected to this engine.**

##### 3.26 Water Pumping Systems:

3.26.1 Unit shall be provided with one 90 GPM at 40 PSI centrifugal pump driven by two v-belts from and auxiliary engine. The pump is to be engaged with a 12-volt electric clutch activated from the computer. Sprayer has one 3/4" filter on the discharge side of the water pump and one 1-1/4" filter between pump and large water tank.

##### 3.27 Water Tank:

3.27.1 525 gallon, 48 inch diameter polyethylene

3.27.2 Water tank to have a 16" fill well lid and minimum of two straps over the top of the tank.

3.27.3 A 1" return line is provided from the water pump to the water tank with a shutoff. This 1" return line is intended to facilitate mixing of any additive to the large water tank.

##### 3.28 Chemical Holding Tanks:

3.28.1 All chemical tanks to be cone shaped polyethylene.

3.28.2 Tank 1 shall be 35 gallon with no agitator

3.28.3 Tank 2 shall be 35 gallon with 1 mechanical agitator

3.28.4 Tank 3 shall be 15 gallon with no agitator

##### 3.29 Chemical Agitators:

3.29.1 Each mechanical agitator is run by a 12-volt motor.

3.29.2 All agitators are to be controlled from inside the cab of the vehicle.

3.29.3 Agitation must be sufficient to keep granular or wettable powder formulations adequately suspended.

## **SECTION B, PART II TECHNICAL SPECIFICATIONS (CONTINUED):**

### **ITEM NO. 2: CAB & CHASSIS WITH HERBICIDE SPRAYER BODY (Continued):**

#### **3.0 HERBICIDE SPRAYER SPECIFICATIONS (Continued):**

- 3.30 Automatic Handgun Chemical Dispensing System:
- 3.30.1 The operator need only to trigger the handgun and the selected chemical injection pump dispenses the appropriate amount of chemical. No activation switches are required to be turned on to run the handgun.
  - 3.30.2 The handgun will deliver the selected rate of any chemical or combination of chemicals.
  - 3.30.3 The computer automatically controls chemical dispensed to the handgun for the period only when the handgun trigger is activated.
  - 3.30.4 The system to include a flow sensor.
  - 3.30.5 The HANDGUN MODE accounts for any variation between different spray operators by basing the application on time in seconds it takes to spray 200 square feet. The operator enters his time in seconds into the computer's menu.
  - 3.30.6 The computer must function for any type of handgun.
  - 3.30.7 Acres sprayed for the handgun are accumulated to the nearest .0001 in the computers spray totals.
  - 3.30.8 Handgun volume is accumulated in TOTALS of volume of chemical used.
  - 3.30.9 The sprayer to consist of an electric rewind hose reel with 200 feet of 1/2" inch I.D., 600 PSI hose and one trigger type.
  - 3.30.10 Handgun to be trigger type.
- 3.31 Electrical System:
- 3.31.1 The sprayer system to include a separate 24-volt alternator with a minimum of 30 amps, two 12 volt minimum 500 CCA batteries hooked in series, and a covered battery box. The alternator is to be belt driven from the auxiliary engine. A cover is mounted over the top and sides of the alternator.
- 3.32 Hydraulic Swing Out For Post Holding Spray Head:
- 3.32.1 The front bumper mounted post for supporting the spray head to include a heavy duty hinge on its lower extremity and a hydraulic cylinder mounted above the 3 springs to tilt the post and spray head out further away from the vehicle allowing the spray head to spray better on slopes or ditches. The hydraulic system to include 2 additional solenoids for cylinder control. One toggle switch to be included on the control pedestal for cylinder control.
- 3.33 Three-Section Rear Mounted Spray Boom with Breakaways:
- 3.33.1 A three-section spray boom is mounted on the rear of the platform bed. It consists of two outside spray swaths each covering 12 feet and one center section which covers 8 feet wide. A maximum of 3 hydraulic cylinders perform all hydraulic functions. The two outside sections pivot at the rear corners of the vehicle and hydraulically fold the booms to the outside of the platform bed directly behind the cab. The outside booms sections when folded do not extend past 102 inches width of the platform body. Only one 10 inch hydraulic cylinder both folds the outside boom in and also raises and lowers each side boom. The far ends of each boom are to be held in horizontal position. The center boom section which covers the width of the vehicle is made of 4" O.D. pipe. A single 24 inch hydraulic cylinder raises and lowers the 4" pipe and raises and lowers the total boom complex. A manifold with three brass solenoids provides fluid to the boom. All nozzles are stainless steel. The spray is turned on and off from the computer control panel. A hydraulic block with six directional spools and coils controls the three hydraulic cylinders.
- 3.34 Light Bar with GPS Guidance System:
- 3.34.1 The light bar permits the operator to spray laterally adjacent swaths (side by side) with the three-section rear boom without overlapping or skipping areas. It includes 5 Hz internal GPS engine with external antenna, a light bar guidance plus a graphical display for complete guidance, with a durable sealed rubber keypad. The control system to be mounted on the dash of the vehicle.

**SECTION B, PART II TECHNICAL SPECIFICATIONS (CONTINUED):**

**ITEM NO. 2: CAB & CHASSIS MOUNTED WITH HERBICIDE SPRAYER BODY (Continued):**

**3.0 HERBICIDE SPRAYER SPECIFICATIONS (Continued):**

3.35 Anti Surge Baffles:

3.35.1 The water tank to contain polyethylene anti surge baffles. The level of baffles should be to about 1/2 of the tanks volume.

3.36 Hydraulic System:

3.36.1 The sprayer shall be furnished with a complete independent single unit type hydraulic system, including pump, 12-volt motor, and a 2 gallon reserve tank. Four separate sets of electric solenoids (8) are to control hydraulic flow to 3 hydraulic cylinders and 1 hydraulic motor. Electric switches located in the computer are to control all of the hydraulic functions.

3.37 Drift Induction Tube System:

3.37.1 A three-inch diameter clear PVC tube with a 44-ounce capacity is mounted on a supporting bracket near the auxiliary engine compartment. A 1/4" ball valve is mounted under the tube allowing the operator to regulate the induction of drift control or other additives that flow to and are mixed with water and returned back to the large water tank. The tube is calibrated in 4-ounce increments.

3.38 Emergency Fresh Water Station:

3.38.1 A separate 10 gallon (minimum) container is located on the platform body. A 12 volt on demand electric pump with toggle switch and with 2 feet of tubing supplies water to an RV type handle and spray head. It can be used to supply clean water to wash hands, eyes, gloves, and containers.

3.39 Storage Compartment:

3.39.1 An aluminum storage compartment with minimum dimensions of 36" wide, 18" tall, and 18" deep to be securely fastened to platform body. The door shall contain a lock latch and be weatherproof.

3.40 Fire Hydrant Filling:

3.40.1 Tank is to be equipped with a 2 " line that will fill the tank through the water tank man way. There should be a 4" air gap between the end of the fill line and the opening of the water tank man way. Platform body shall include a storage area for a hydrant filler hose. A 2" male cam lock coupler shall be mounted on the platform body on the rear.

3.41 Strobe Lights:

3.41.1 The sprayer body to include two (2) strobe lights 7" high X 6" diameter, amber, and plainly visible to motorist behind the spray truck. Strobe lights shall be mounted on 2" square tubing behind the cab near the corners of the platform body.

3.42 Paint Coatings:

3.42.1 Sprayer front end and sprayer body to be black in color. All components to be rust free and must have been cleaned and to include one coat of primer and two separate coats of paint. Underside of the bed shall be painted too.

3.43 Accessories:

The following extra items are to be included with the sprayer:

3.43.1 One pint of tube lube.

3.43.2 Four extra 3/8" ED Plex hose, 18" long

3.43.3 One 3/4" 50 mesh strainer.

3.43.4 Four extra 1/2" ED Plex hose, 18" long

3.43.5 One 1/4" 50 mesh strainer.

3.43.6 Two repair kits for 1/2" brass solenoids

**SECTION B, PART II TECHNICAL SPECIFICATIONS (CONTINUED):**

**ITEM NO. 2: CAB & CHASSIS MOUNTED WITH HERBICIDE SPRAYER BODY (Continued):**

**4.0 SAFETY PLAQUES OR DECALS:**

4.1 Safety plaques or decals shall be furnished and affixed include necessary warnings and precautions.

**5.0 LITERATURE:**

5.1 Each sprayer system furnished shall include two (2) operation manuals that cover all aspects of the system and diagrams of all spray systems and diagrams of all spray patterns and nozzles including complete operation of the computer system.

5.2 Each sprayer system furnished shall include two (2) service instruction manuals and two (2) illustrated parts list for the sprayer system and the engines.

**6.0 TRAINING:**

6.1 Training sessions shall be provided for operators covering the total system and vehicle, and each training session shall be a minimum of 16 hours for each unit and shall be limited to a maximum of two individuals.

6.2 Training shall include but not be limited to the following:

6.2.1 How to utilize the sprayer for all possible application techniques.

6.2.2 How to incorporate the various pesticide programs with the computerized injection system.

6.2.3 Maintenance programs.

6.2.4 Calibration procedures for the pesticide injection system.

6.2.5 How to reduce application error with the pesticide injection system.

6.2.6 How to maximize use of the boom less spray head.

6.2.7 How to reduce off target drift with the drift control system.

6.2.8 Using the computerized pressure control system and how it affects the spray swath.

6.2.9 How this spray system will reduce the misuse and overuse of herbicides in the environment.

**7.0 WARRANTY:**

7.1 Cab & Chassis:

7.1.1 A minimum of a Manufacturer's 36-month/36,000 mile bumper-to-bumper warranty shall be provided.

7.1.2 Manufacturer's standard warranty shall be provided for emission controls, power train, and corrosion.

7.2 Spray Unit:

7.2.1 The sprayer unit and all equipment shall be warranted against all defects in material and workmanship for a period of not less than twelve (12) months.

7.2.2 If manufacturer's standard warranty exceeds twelve (12) months for the sprayer unit and equipment, then the standard warranty period shall be in effect.

**8.0 PARTS AND SERVICE:**

8.1 The herbicide sprayer manufacturer and/or the distributor shall maintain an inventory of high usage parts and a source for low-usage parts for the sprayer unit.

**9.0 DELIVERY:**

9.1 The item(s) specified above, with delivery tickets and/or other required documents shall be delivered Prepaid F.O.B. Destination to the location(s) shown on the purchase order(s) within one hundred eighty (180) calendar days from receipt of the City of Houston Purchase Order.

**SECTION B, PART II TECHNICAL SPECIFICATIONS (CONTINUED):**

**ITEM NO. 3: CAB & CHASSIS MOUNTED WITH STAKEBED BODY AND CRANE**  
**PR No. 10085469**

**1.0 GENERAL:**

- 1.1 Equipment Description:
  - 1.1.1 This specification is intended to describe a vehicle that will be used as a utility truck by the Public Works & Engineering Department, Traffic & Transportation, Signs & Markings Maintenance Section. This vehicle consists of a cab & chassis mounted with a stake bed body, knuckleboom crane, and other equipment.
- 1.2 Prime Contractor/Supplier:
  - 1.2.1 These specifications require the bidder to be a prime contractor/supplier and to bid on the cab & chassis mounted with the stake bed body and knuckleboom crane. Award will be made on all or none basis.
- 1.3 Quantity:
  - 1.3.1 Identical units shall be furnished.
- 1.4 Equivalent Equipment:
  - 1.4.1 Bidders proposing to provide equipment they believe to be equal to the specified model must provide sufficient operating and technical specifications for the City to evaluate the proposed equipment
- 1.5 Equivalent Equipment Documentation:
  - 1.5.1 A bidder proposing to provide equivalent to the specified model must be able to demonstrate upon request that it has manufactured an apparatus similar to the unit bid, and that the apparatus has been proven and tested in service satisfactorily. The bidder will provide records of warranty service repairs upon request. The City of Houston shall be the sole judge whether the apparatus in service similar to the unit bid has been proven and tested satisfactorily

**2.0 CAB & CHASSIS:**

- 2.1 General:
  - 2.1.1 Ford F-550 4x2 Cab & Chassis with Regular Cab or City-approved equal. GVWR shall be not less than 19,500 lbs. with an 84" Cab-to-Axle
  - 2.1.2 Heavy duty front springs
  - 2.1.3 Minimum of 2 key pod type controls for keyless entry
  - 2.1.4 Minimum 40 gallon rear fuel tank
- 2.2 Engine:
  - 2.2.1 A 2010 electronically-governed **6.10L V10 GASOLINE** engine shall be provided
- 2.3 Transmission:
  - 2.3.1 A minimum 5-speed automatic transmission with integral PTO provision shall be provided
- 2.4 Cab:
  - 2.4.1 OEM air conditioning, heating and defroster shall be provided
  - 2.4.2 AM/FM radio shall be provided
  - 2.4.3 Front cloth seat shall be provided
  - 2.4.4 Manufacturer's standard ABS brakes
  - 2.4.5 Manufacturer's standard power windows and door locks shall be provided
  - 2.4.6 Hour meter, under dash mounted, will actuate only with engine running
  - 2.4.7 White exterior color
  - 2.4.8 Darkest interior color available

## **SECTION B, PART II TECHNICAL SPECIFICATIONS: (CONTINUED)**

### **ITEM NO. 3: CAB & CHASSIS MOUNTED WITH STAKEBED BODY AND CRANE: (Continued)**

#### **3.0 ARTICULATING CRANE (KNUCKLEBOOM): DIAGRAM I-1:**

- 3.1 General basic requirement shall be an articulating (Knuckleboom) crane behind the cab, across the bed mount complete with outriggers and hydraulic boom extension(s). The primary function of this unit will be to install and maintain steel post/signs. Referenced Manufacturers: Ferrari 545 – Telephone: (0522) 964921 – Telex FGR-GRU 5312371, Cormach 4000 or City-approval equal.
- 3.2 Articulating Crane (Knuckleboom):
  - 3.2.1 Two (2) hydraulic horizontal extensions eighteen (18) feet minimum.
  - 3.2.2 Dual controls.
  - 3.2.3 360 degree rotation
  - 3.2.4 All cylinders to have counter-balance valves.
  - 3.2.5 All cylinder & valve bank porting shall be SAE “O” ring type
  - 3.2.6 Deleted
  - 3.2.7 Automatic throttle control system shall be provided to provide increased engine speed for boom positioning and system shall include control switch in the cab “**PUMP: ON/OFF**” switch shall be dash mounted and contain internally illuminated indication for pump engagement
  - 3.2.8 Hydraulic pump/tank sufficient in capacity to operate crane

#### **4.0 STAKE BED BODY: DIAGRAM I-2:**

- 4.1 Stationary Platform / Stake bed Dimensions:
  - 4.1.1 Cab-to-axle: 84”
  - 4.1.2 Length: 120”
  - 4.1.3 Width: 96”
  - 4.1.4 Stake Height: 14”
- 4.2 Construction Requirements:
  - 4.2.1 Cross members minimum of six (6) cross members 3” structural steel channel
  - 4.2.2 Longitudinal sill two (2) long sill, 5”, 6.7 lb/ft structural steel channel
  - 4.2.3 Rails – floor edges shall be enclosed at both ends and both sides: end rails and side rails minimum 5” structural steel channel
  - 4.2.4 Rub Rails – 1/4” X 2” steel welded to outside of stake pockets.
  - 4.2.5 Stake Racks – shall be steel, fourteen (14) inches high mounted rear of bed. Two (2) horizontal slats 5” wide welded to steel stake post. Stake post to be 1/4” x 2” removable with straight slide security.
  - 4.2.6 Cab Protector - Fourteen (14) inches high, steel plate, eleven (11) gauge. The frames to be constructed with 2” X 3” X 1/8” tubing, two (2) uprights of 2” X 3” X 1/8” tubing. Mounting using Knee-Brace style reinforcement welded to the bottom of the outer body rails and long sills. Top angle gusset not acceptable. **DIAGRAM I-3**
  - 4.2.7 Floor – steel flooring 3/16” safety plate are to be covered with Martex anti-slip coating.
  - 4.2.8 Lighting – lamps, reflectors and side marker lamps shall be furnished as required by Federal Standards. Rear lights to be recessed in rear of bed. Side markers to be armor lights and no adhesive type reflectors. All wiring shall be contained with flexible conduit.
  - 4.2.9 Mud Flaps – anti-sail
- 4.3 Components:
  - 4.3.1 Tool Boxes: **DIAGRAM I-4**
    - 4.3.1.1 Both on top of and under bed mounted.
    - 4.3.1.2 Minimum fourteen (14) gauge steel covered with 3/16” tread plate.
    - 4.3.1.3 Top of boxes to be covered with Martex anti-slip coating.
    - 4.3.1.4 Each door to have protective weather seals, rain gutters extending over doors and door chains. All doors to have “T” handles.
    - 4.3.1.5 Forward (curbside) box to have accessory tray sixteen (16) gauge steel, with ten (10) adjustable dividers.
    - 4.3.1.6 Doors to be hinged at base.
    - 4.3.1.7 \*NOTE: Doors will be checked for weather proofing by pressure hose before acceptance.
    - 4.3.1.8 Each truck to be keyed separately, all boxes per truck to be keyed alike with three (3) sets of keys.

## **SECTION B, PART II TECHNICAL SPECIFICATIONS: (CONTINUED)**

### **ITEM NO. 3: CAB & CHASSIS MOUNTED WITH STAKEBED BODY AND CRANE: (Continued)**

#### **4.0 STAKE BED BODY: DIAGRAM I-2 (Continued):**

##### **4.3 Components (Continued):**

- 4.3.1.9 Two (2) boxes curbside 60" X 18" X 18". One (1) box 120" X 18" X 18" with two (2) 60" doors. One (1) box 18" X 18" X 92" with two (2) 18" doors, one on each end. One (1) box 18" X 18" X 24: with one (1) 24" door.
- 4.3.2 Sign Post Rack: **DIAGRAM I-5**
  - 4.3.2.1 Supports to house eighteen (18) each 2-3/8" diameter sign posts, ranging in length from eleven (11) to thirteen (13) feet in length.
  - 4.3.2.2 Forward Section - (near Bulkhead) to be solid three (3) sided 1/4" steel plate reinforced with 1/4" X 1" X 1" box tubing welded to bulkhead. Pipe carrier (interior) to be sixteen (16) inches wide and sixteen (16) inches high. Bottom rack to be placed on top of tool boxes. **DIAGRAM I-5A**
  - 4.3.2.3 Center Rack - to be placed five (5) feet from bulkhead to be 1/4" X 2-1/2" X 2-1/2" box tubing. Pipe carrier (interior) to be sixteen (16) inches wide and sixteen (16) inches high, mounted on top of storage box. The uprights to have pre-punched holes two (2) inches apart on exterior side of the boxed tubing for tie-down capability. **DIAGRAM I-5B**
  - 4.3.2.4 End Rack - to be placed ten (10) feet from bulkhead to be 1/4" X 2-1/2" X 2-1/2" box tubing. Pipe carrier (interior) to be sixteen (16) inches wide and sixteen (16) inches high, mounted on top of tool box. The uprights to have pre-punched holes two (2) inches apart on exterior side of the boxed tubing for tie-down capability. **DIAGRAM I-5C**
  - 4.3.2.5 Center and rear pipe carrier shall have the vertical post. The full height of carrier extending and secured to the stakebed floor.
- 4.3.3 Lighting:
  - 4.3.3.1 There shall be a heavy duty lighting package for the service body
  - 4.3.3.2 All lighting shall be recessed except for marker clearance lights
  - 4.3.3.3 Provide and install two (2) low profile flashing, high intensity LED warning lights (one amber, one blue) mounted above the front of the truck bed with brush guards and control switches in the cab
  - 4.3.3.4 Install two (2) low profile flashing, high intensity LED warning lights (one amber, one blue) mounted above the service body at the rear corners with brush guards and control switches in the cab
  - 4.3.3.5 Install full size LED light bar, minimum 48", centered on the top of the cab with associated controls in the cab.
  - 4.3.3.6 Install an arrow stick (Model No. SYAS847 P.S.E. or City-approved equal) with controls in the cab. This will be flush mounted in the tailshelf toolbox
  - 4.3.3.7 A 12" fluorescent light (12VDC) will be installed in the cab to supplement courtesy light.
- 4.3.4 Water Cooler Holder: **DIAGRAM I-7**
  - 4.3.4.1 With locking device mounted on right rear, spigot access curbside.
  - 4.3.4.2 Base fifteen (15) inches diameter, height eighteen (18) inches high.
  - 4.3.4.3 Holder to fit three (3) gallon water coolers, Igloo or Gotte.
  - 4.3.4.4 Base shall be ten (10) gauge metal with a spacer placed at bottom rear for drainage.
- 4.3.5 Rear Bumper: **DIAGRAM I-8**
  - 4.3.5.1 Bumper to extend twenty-eight (28) inches to frame. Bumper to have mounted eighteen (18) inch x eighteen (18) inch across the bumper storage compartment.
  - 4.3.5.2 Minimum fourteen (14) gauge steel with 3/16" tread top plate.
  - 4.3.5.3 Each end to have locking access doors with weather protective sealing and rain gutters extended over doors.
  - 4.3.5.4 \*NOTE: Doors will be checked for weather proofing by pressure hose before acceptance.
  - 4.3.5.5 Rear bumper to have 3H8 Series drop forged two (2) inch combination hitch mounted approximately 22" center of bumper.
  - 4.3.5.6 Rear bumper to have two (2) B-40 lash rings.

## **SECTION B, PART II TECHNICAL SPECIFICATIONS: (Continued)**

### **ITEM NO. 3: CAB & CHASSIS MOUNTED WITH STAKEBED BODY AND CRANE: (Continued)**

#### **4.3 Components (Continued):**

##### **4.3.5 Rear Bumper: DIAGRAM I-8 (Continued)**

4.3.5.7 Mounted on rear bumper bench yoke vise, Rigid Model 25 or City-approved equal. Vise shall be mounted on a telescoping or slide-out mount so that it can slide out for use on curbside, but stored inboard of curbside edge of bumper.

4.3.5.8 Rear bumper to have license plate bracket with light.

##### **4.3.6 Lighting / Electrical:**

4.3.6.1 Backup alarm Whelen, Model # WBUA112 or City approved equal.

4.3.6.2 All wiring to be enclosed with flexible conduit and routed to covered fuse terminal block.

##### **4.3.7 Air Compressor and Accessories:**

4.3.7.1 A truck-mounted, under the hood rotary screw air compressor shall be installed and made operational, VMAC-VR7000 System, Model 9032.

4.3.7.2 The air compressor system to provide 70 CFM output at 150 PSI minimum for the power tools listed herein.

4.3.7.3 The air compressor system, as a minimum, shall have a complete installation kit, including compressor, throttle control, low profile inlet control valve, oil cooler: liquid-to-liquid, eliminator 5000 air dryer **DIAGRAM I-13**, and two (2) chassis mounted thirty-five (35) gallon air receiver tanks **DIAGRAM I-15**.

4.3.7.4 The successful bidder shall provide as a part of this bid the following air tools per unit, one (1) each.

4.3.7.4.1 Air Drill – Ingersoll Rand, Model # 5RANST8 or City approved equal, industrial duty, Chuck capacity 1/2", power rating 0.75 HP, free speed 600 RPM, 4.2 CFM average air flow, 90PSI required pressure, 1/4" air inlet, minimum hose size 3/8".

4.3.7.4.2 Rock Drill – 103 CFM @ 90 PSI, Manufacturer Atlas COPCO, Model # RH 571-5L with two (2) 7/8" X 4-1/4" shanks.

4.3.7.4.3 Impact Wrench – 13 CFM @ 90 PSI bolt capacity SAE Grade 8, ASTM, A354 Grade BD, bolt diameter 3/8" up to 1/2", Manufacturer Chicago Pneumatic or city approved equal. Reference Chicago Pneumatic, Model # CP 9540-RSR. With wrench: one (1) 3/8" X 3" extension CP-CA046380, one (1) 3/8" X 6" extension CP-CA046382, one (1) standard socket set 3/8" drive CP-CA1341109, one (1) deep-socket set 3/8" drive CP-CA133931.

4.3.7.4.4 Airline(s) installation and supporting hardware. Successful bidder shall supply, mount and be operational all items necessary to operate air tools **DIAGRAM I-10**

4.3.7.4.5 The air system to have metal air lines from the receiver tank(s) to three (3) air tool outlets. One (1) left and right forward of bed and one (1) at personnel lift. The lines are to be secured to the upper most frame on stakebed for protection and to prevent vibration.

4.3.7.4.6 The air system to have at each air tool outlet: a two (2) stage filter (40-Micron filter) and moisture separator; maximum inlet pressure 200 PSI (or recommendation from manufacturer of air tool). Unit to be shatterproof metal with sight glass, threaded ports corresponding to tool use and removable from line without disturbing hard piping. A lubricator proportional oil feed rates corresponding to pipe size/lines, (or recommendation from manufacturer of air tool). Unit to be shatterproof metal with sight glass and single flow adjustment corresponding to tool use and removable from line without disturbing hard piping.

4.3.7.4.7 Air Control Valve – each tool outlet to have an on/off air control ball valve (bronze material) with on/off lever. Inlet/outlet NPT thread corresponding tool ball valve, have hose coupling (3/4" rock drill and/or 1/4" impact wrench) and/or quick-change coupling.

**SECTION B, PART II TECHNICAL SPECIFICATIONS: (Continued)**

**ITEM NO. 3: CAB & CHASSIS MOUNTED WITH STAKEBED BODY AND CRANE: (Continued)**

**4.0 STAKE BED BODY: DIAGRAM I-2 (Continued):**

**4.3 Components (Continued):**

**4.3.7 Air Compressor and Accessories (Continued):**

4.3.7.4.8 Air Line(s) – each Rock Drill shall have twenty-five (25) feet of 3/4” rubber hose Goodyear with “crowfoot” 200-250 PSI connectors. Each impact wrench shall have one (1) twenty-five (25) feet 1/4” NPT, rayon braid – neoprene tube with cover (or recommendation from manufacturer). 200-250 PSI rating complete ferruled and fitted assemblies. One (1) twelve (12) feet 1/4” NPT coiled air hose, rayon braid – neoprene tube with cover (or recommendation from manufacturer). 200-250 PSI rating complete ferruled and fitted assemblies.

**4.3.7.5 Inverter:**

4.3.7.5.1 Install one Dimensions Model 3000N 3000 Watt Pure Sine inverter, to be place in the front curbside compartment and to have one double GFI type receptacle at the rear of the stake bed, curbside.

4.3.7.5.2 Install two Group 27 Type 12-volt batteries in the bed of the stake bed body with a metal cover, encasing the batteries to protect them from impact from loose items in the bed. Shall be directly behind the compartment containing the inverter.

**4.3.7.6 Components:**

4.3.7.6.1 Articulating (Knuckleboom) Crane across the bed.

4.3.7.6.2 Stakebed Body - 120" X 96".

4.3.7.6.3 Toolbox Protector.

4.3.7.6.4 Pipe Racks.

4.3.7.6.5 Water Cooler Holder.

4.3.7.6.6 Rear Bumper with accessories.

4.3.7.6.7 Tool Outlet Connectors - Two (2) underbed mount; 3/4" air; one (1) 3/4" air right rear of body, and two (2) electric, one (1) next to air outlet on right side of body, one (1) at bumper.

4.3.7.6.8 **\*NOTE: Successful bidder may be required to make minor adjustments to locations per diagram at no additional charge to the City of Houston.**

**4.4 Primer, Paint and Coatings:**

4.4.1 Bed to have two (2) coats Sherwin Williams KEM Jet Seal Light Grey Primer. Underbed - Black with undercoating, 3M.

4.4.2 All deck surfaces, top of storage boxes, rear bumper, deck surfaces and walk areas to be coated with Martex materials.

4.4.3 Paint: Above bed, side rails up - White Enamel Acrylic to match Cab & Chassis.

4.4.4 At time of delivery, provide certification of primer used, number of coats, undercoating and surface paint.

**5.0 TRAINING:**

5.1 Successful bidder shall instruct City of Houston personnel on proper operation and proper maintenance of units, knuckle crane, air compressor and accessories for a minimum of two (2) hours or satisfaction of City of Houston supervisory personnel, at no additional cost to the City of Houston.

**6.0 MANUALS:**

6.1 Three (3) sets each of Operator’s, and Parts/Service for Knuckle Crane and Air Compressor.

**SECTION B, PART II TECHNICAL SPECIFICATIONS: (Continued)**

**ITEM NO. 3: CAB & CHASSIS MOUNTED WITH STAKEBED BODY AND CRANE: (Continued)**

**7.0 WARRANTY:**

- 7.1 Cab & Chassis:
  - 7.1.1 A Manufacturer's 36-month/36,000 mile bumper-to-bumper warranty shall be provided
  - 7.1.2 Manufacturer's standard warranty shall be provided for emission controls, power train, and corrosion
- 7.2 Stake Bed Body, Crane, Air Compressor and all other Associated Equipment:
  - 7.2.1 A minimum of one (1) year warranty on both materials and workmanship shall be provided shall start on the date of acceptance by the City of Houston. Warranty facilities shall be provided within the Houston-Galveston Region.

**8.0 DELIVERY:**

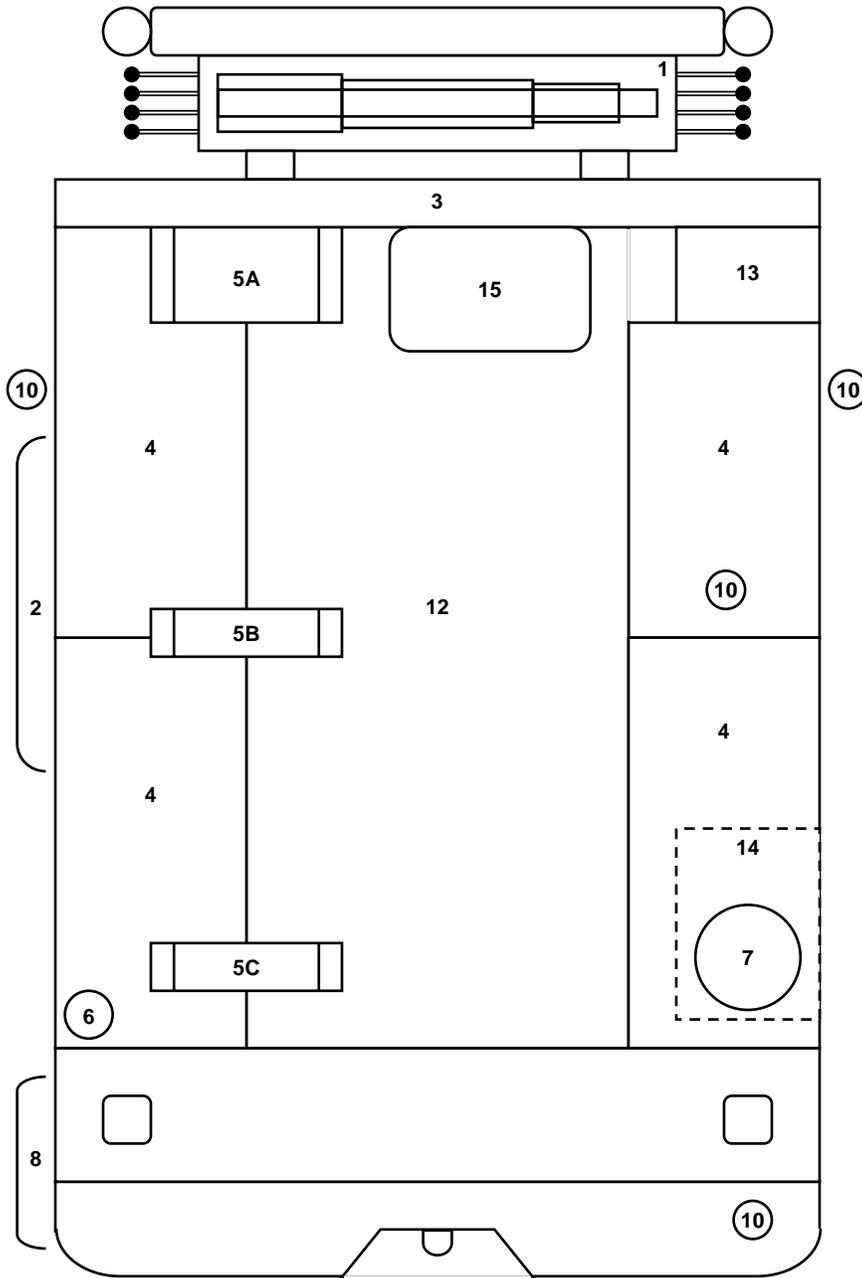
- 8.1 The City of Houston will not authorize ANY additional payment for bid specification work after the bid award and/or the issuance of the City of Houston Purchase Order (I.e. Mounting, installation of accessories, repositioning of bed or accessories).
- 8.2 The vehicle shall be delivered with weight ticket and current State Inspection.
- 8.3 The item(s) specified above, with delivery tickets and other required documents shall be delivered Prepaid FOB Destination to the location(s) shown on the purchase order(s) within **one hundred eighty (180) calendar days** after receipt of City of Houston Purchase Order. Full delivery is termed ALL items.
- 8.4 Representatives from both the Prime Contractor/Supplier and any Subcontractor (body/equipment) shall be present at the time of the delivery of the unit(s) to the City of Houston.

**9.0 FINAL ACCEPTANCE:**

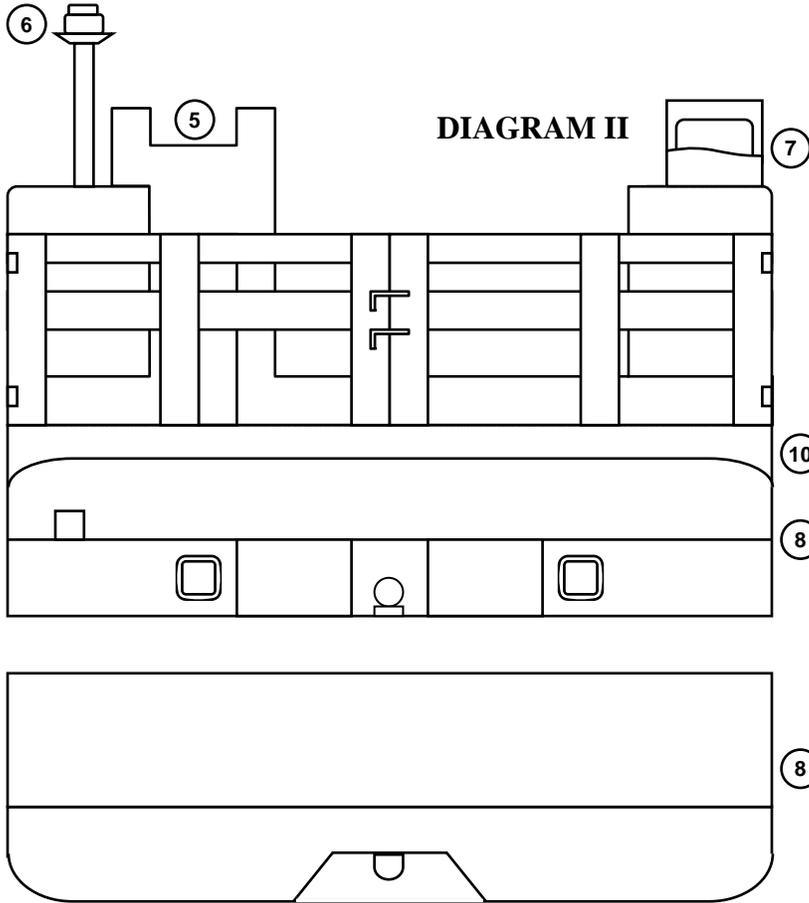
- 9.1 Successful completion, performance testing and final acceptance of the vehicle/equipment by the City of Houston, Public Works & Engineering Department, will be evidenced by documents signed by the City and an authorized representative of supplier. All documents of title, licenses, mileage, warranties, permits, manuals, accessories, and keys shall be submitted upon final acceptance.

DIAGRAM I

TOP VIEW

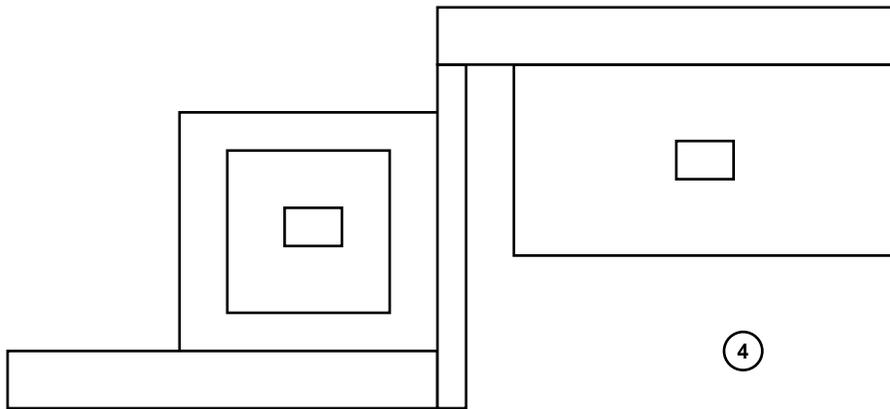


ITEM NO. 3: **CAB & CHASSIS MOUNTED WITH STAKEBED BODY AND CRANE: (Continued)**



REAR VIEW

TOP VIEW



END VIEW

**SECTION B, PART II TECHNICAL SPECIFICATIONS: (CONTINUED)**

**ITEM NO. 4: CAB & CHASSIS MOUNTED WITH BODY AND 45 FT. AERIAL MANLIFT**  
**PR No. 10085840**

**1.0 GENERAL:**

1.1 Equipment Description:

1.1.1 The Insulated Electrical Bucket Truck in this specification incorporates an Articulated/Telescopic Aerial Lift Platform to be provided and installed on a cab & chassis. The unit features a 180° rotating platform, hydraulic tool circuit at the platform, independent outriggers, chassis insulation system, and front and rear torsion bars.(Referenced Cab & Chassis is a Ford F-550, or City-Approved equal). It will be used by the Houston Airport System at the Ellington Airport to reach low to medium height lighting, signage and other utility fixtures by electrical and other maintenance personnel.

1.2 Prime Contractor/Supplier:

1.2.1 These specifications require the bidder to be a prime contractor/supplier and to bid on the cab & chassis mounted with the aerial manlift and body. Award will be made on all or none basis.

1.3 Quantity:

1.3.1 Identical units shall be furnished.

1.4 Equivalent Equipment:

1.4.1 Bidders proposing to provide equipment they believe to be equal to the specified model must provide sufficient operating and technical specifications for the City to evaluate the proposed equipment

1.5 Equivalent Equipment Documentation:

1.5.1 A bidder proposing to provide equivalent to the specified model must be able to demonstrate upon request that it has manufactured an apparatus similar to the unit bid, and that the apparatus has been proven and tested in service satisfactorily. The bidder will provide records of warranty service repairs upon request. The City of Houston shall be the sole judge whether the apparatus in service similar to the unit bid has been proven and tested satisfactorily

**2.0 CAB & CHASSIS:**

2.1 Specification Minimum Requirements:

- 2.1.1 Approximate Payload: 10,720 lbs.
- 2.1.2 GVWR: 19,500 lbs.
- 2.1.3 Nominal cab-to-axle dimension of 60" with dual rear wheels
- 2.1.4 2010 Engine, 6.7L Diesel
- 2.1.5 Engine Net HP: 320
- 2.1.6 Engine Torque: 520
- 2.1.7 Transmission: Automatic w/PTO Provision
- 2.1.8 Tire Size & Load Range: Mfg Standard
- 2.1.9 Rim Size: Mfg. Standard

2.2 Additional Features:

- 2.2.1 Air Conditioning, includes heavy-duty radiator
- 2.2.2 Solid Color: **YELLOW**, must be Federal Standard 595B, Color No. 13507
- 2.2.3 Fuel Tank(s), 25 gallon capacity
- 2.2.4 Low Mount Mirrors
- 2.2.5 Power Steering
- 2.2.6 AM/FM Radio
- 2.2.7 Brakes, ABS Front & Rear
- 2.2.8 Cab Steps for All Doors

2.3 Additional Equipment:

- 2.3.1 Grill Guard
- 2.3.2 Lightbar, Minifreedom, Whelen Model FT8AAAAP
- 2.3.3 Electronic Engine Speed Control
- 2.3.4 Engine Hour Meter, Actuate with Engine Running, Dash Mounted
- 2.3.5 Peterson "No Switch" Compartment Lighting on Top of All Body Compartments (included)

**SECTION B, PART II TECHNICAL SPECIFICATIONS (CONTINUED):**

**ITEM NO. 4: CAB & CHASSIS MOUNTED WITH BODY AND 45 FT. AERIAL MANLIFT (Continued):**

**3.0 BODY AND AERIAL LIFT ( REFERENCED UNIT IS A VERSALIFT SST-40 EI, OR CITY-APPROVED EQUAL:**

3.1 Body Specifications:

- 3.1.1 108" L x 40" H x 94" wide Dakota Line Body
- 3.1.2 Stainless Steel Automotive Rotary Type Door Latches
- 3.1.3 Chain Stops on All Doors
- 3.1.4 Rubber Rolled Crown Type Fenders
- 3.1.5 Automotive Bulb Type Weather-Stripping
- 3.1.6 Rubberized protective undercoating
- 3.1.7 24" tail shelf with 7-Lamp Light Bar installed at rear
- 3.1.8 Rear Access Cable Step and Grab Handle
- 3.1.9 Fuel Filler Cutout
- 3.1.10 Independent A-Frame Outriggers
- 3.1.11 Outrigger Control Box
- 3.1.12 Curbside Compartmentation
  - 3.1.12.1 1st Vertical – Two (2) Adjustable Shelves with Adjustable Dividers
  - 3.1.12.2 Rear Vertical – Two (2) Adjustable Shelves with Adjustable Dividers
- 3.1.13 Street Side Compartmentation
  - 3.1.13.1 1st Vertical – Two (2) Adjustable Shelves with Adjustable Dividers
  - 3.1.13.2 Rear Vertical – Two (2) Adjustable Shelves with Adjustable Dividers

3.2 Dimensional Specifications

- 3.2.1 Horizontal Reach: 27 ft. 9 in.
- 3.2.2 Standard Platform Capacity: 300 lbs.
- 3.2.3 Maximum Platform Capacity: 400 lbs.
- 3.2.4 Outer Boom Lift Eye Capacity: 500 lbs.

3.3 With Standard Pedestal:

- 3.2.1 Height to Bottom of Platform: 40 ft. 0 in.
- 3.2.2 Working Height: 45 ft. 0 in.
- 3.2.3 Stowed Travel Height: 10 ft. 4 in.
- 3.2.4 Weight of Lift: 2335 lbs.

3.4 Hydraulic System:

- 3.4.1 Operating Pressure: 2250 PSI
- 3.4.2 Flow Rate: 3 GPM
- 3.4.3 Filtration: 10 micron return
- 3.4.4 Open Center: 100 mesh suction

3.5 Boom Action:

- 3.5.1 Inner Boom: 116 in.
- 3.5.2 Outer Boom: -14° to +74°
- 3.5.3 Lower Boom: -7° to Vertical
- 3.5.4 Rotation: 370° Non-Continuous

3.6 Insulation Gap:

- 3.6.1 Upper Boom Fully Retracted 42 in.
- 3.6.2 Lower Boom Insert 12 in.

3.7 Installation Details:

- 3.7.1 Furnish and install Mounting Hardware, PTO, and Pump
- 3.7.2 Install Platform Lift
- 3.7.3 Furnish and Install Service Body and Accessories
- 3.7.4 Furnish and Install Mudflaps
- 3.7.5 Furnish and Install Backup Alarm
- 3.7.6 Furnish and Install Travel Height Decal in the Cab

**SECTION B PART II TECHNICAL SPECIFICATIONS (CONTINUED):**

**ITEM NO. 4: CAB & CHASSIS MOUNTED WITH BODY AND 45 FT. AERIAL MANLIFT (Continued):**

**3.0 AERIAL LIFT PLATFORM (CONTINUED):**

3.7 Installation Details Continued):

- 3.7.7 Furnish and Install Park Brake Interlock
- 3.7.8 Furnish and Install Quick Disconnects with Dust Covers at Platform Tool Power
- 3.7.9 Furnish and Install Two (2) Go-Lights – One (1) on each side on top of cab with controls inside cab
- 3.7.10 Furnish and Install ICC Bumper
- 3.7.11 Paint Body to Match Cab & Chassis (Federal Yellow)
- 3.7.12 Paint Tread plate Floor with Black No-Skid
- 3.7.13 Furnish Fire Extinguisher and 3-Piece Triangle Reflector Kit
- 3.7.14 Test Ride Completed Unit for 1 Hour
- 3.7.15 Test and Certify per ANSI A92.2-2001

**4.0 ASSEMBLY:**

- 4.1 Unit shall be delivered completely assembled, properly lubricated, fueled, and ready for use.

**5.0 LITERATURE:**

- 5.1 One (1) complete set of parts, service, and operator's instruction manuals shall be delivered with each unit.

**6.0 TRAINING:**

- 6.1 The successful bidder shall provide two separate 2-hour sessions of instruction to City personnel on the use, operation, maintenance, and safety aspects of the unit at no additional cost to the City.
- 6.2 Training of Houston Airport System personnel shall be completed within 30 days of delivery and acceptance. The Houston Airport System may at its discretion extend the time up to 90 Days."

**7.0 SAFETY:**

- 7.1 All equipment supplied must meet all current applicable City, State of Texas, and Federal safety regulations including OSHA requirements. Equipment must have all pertinent guards, lockouts, shutdowns, safety decals etc. for safe operation. All components must be rated for maximum pressure and must meet all applicable safety requirements. If special safety instructions are required for operator's safety, the instructions must be provided with each unit at time of delivery. All parts which form part of the equipment must conform in design, strength and quality of material and workmanship to the highest standards of engineering practice.

**8.0 DELIVERY:**

- 8.1 The item(s) specified above with delivery tickets and other required documents shall be delivered Prepaid FOB Destination to the location(s) shown on the purchase order(s) within **one hundred eighty (180) calendar days** after receipt of City of Houston Purchase Order.

**9.0 WARRANTY:**

- 9.1 A minimum of one year's guarantee on both workmanship and materials must be provided. The warranty period commences on the date the city accepts the equipment. Warranty work must be completed without cost to the city within ten days after notification to vendor of equipment failure or faulty material. When extended warranties are available as standard, they must be included as a part of the bid for the benefit of the City. Any and all documents necessary to effect warranty must be properly applied for and submitted by the successful vendor. All freight charges to and from the vendor's repair facility for warranty repair and/or maintenance must be borne by seller during the warranty period.

**SECTION B PART II TECHNICAL SPECIFICATIONS (CONTINUED):**

**ITEM NO. 5: CHASSIS MOUNTED WITH STEP VAN BODY**  
**PR No. 10084855**

**1.0 GENERAL:**

- 1.1 Equipment Description:
  - 1.1.1 This specification is intended to describe a step van that will be used as a delivery vehicle by the Public works & Engineering for transporting a crew and the required tools and accessories.
- 1.2 Prime Contractor/Supplier:
  - 1.2.1 These specifications require the bidder to be a prime contractor/supplier and to bid on the chassis mounted with a step van body.
- 1.3 Equivalent Equipment:
  - 1.3.1 Bidders proposing to provide equipment they believe to be equal to the specified model must provide sufficient operating and technical specifications for the City to evaluate the proposed equipment.
- 1.4 Equivalent Equipment Documentation:
  - 1.4.1 A bidder proposing to provide equivalent to the specified model must be able to demonstrate upon request that it has manufactured a vehicle similar to the unit bid, and that the vehicle has been proven and tested in service satisfactorily. The bidder will provide records of warranty service repairs upon request. The City of Houston shall be the sole judge whether the vehicle in service similar to the unit bid has been proven and tested satisfactorily

**2.0 CHASSIS:**

- 2.1 General:
  - 2.1.1 Work Horse Chassis Model W62 4X2 or City-approved equal
  - 2.1.2 Wheelbase 176 inches
  - 2.2.3 GVWR 23,500-lbs.
- 2.2 Axles/Suspension:
  - 2.2.1 Front axle 8,000 lb. I-Beam
  - 2.2.2 Front Suspension 9,000 lb. capacity taper leaf with shock absorber
  - 2.2.3 Rear Axle 15,500 lb. single reduction gear ratio: 5.13
  - 2.2.4 Rear Suspension 15,500 lb. capacity 17,000 maximum capacity
  - 2.2.5 Spring vari-rate
- 2.3 Diesel Engine:
  - 2.3.1 The lowest emission 2007 or 2010 engine that is available from a manufacturer shall be provided.
    - 2.3.1.1 200 hp at 2300/2600 RPM
    - 2.3.1.2 440 lb. ft. Torque
  - 2.3.2 Fuel Tank - 65 gallons RH mount
  - 2.3.3 OEM Standard Exhaust System
  - 2.3.4 Hour Meter
- 2.4 Transmission, Automatic:
  - 2.4.1 Four speed - Allison 2200 HS with transmission cooler
- 2.5 Wheels:
  - 2.5.1 Front Disc, 19.5" 8-stud 6.75 DC Rims; steel
  - 2.5.2 Rear Dual Disc, 19.5" 8-stud 6.75 DS Rims; steel
- 2.6 Tires:
  - 2.6.1 Front two (2) 245/70R 19.5 12 ply G109GY
  - 2.6.2 Rear four (4) 245/70R 19.5 12 ply G124GY
- 2.7 Brakes, Hydraulic:
  - 2.7.1 Split system
  - 2.7.2 Automatic adjustment
  - 2.7.3 Four channel ABS, Disc
  - 2.7.4 Parking DCM type

**SECTION B PART II TECHNICAL SPECIFICATIONS (CONTINUED):**

**ITEM NO. 5: CHASSIS MOUNTED WITH STEP VAN BODY (Continued):**

**2.0 CHASSIS (Continued):**

- 2.8 Electrical:
  - 2.8.1 Battery 12 volt 950 CCA maintenance free
  - 2.8.2 Alternator 12 Volt 100 amp
  - 2.8.3 Uninterrupted Power Switch
- 2.9 Cab Equipment:
  - 2.9.1 Gauges – Manufacturers Standard
  - 2.9.2 Air Conditioning – Manufacturer’s Standard
- 2.10 Frame and Bumper:
  - 2.10.1 Frame 80,000 PSI for 176 inch WB
  - 2.10.2 Bumper, front; full width

**3.0 STEP VAN BODY:**

- 3.1 General:
  - 3.1.1 Utilimaster Aeromaster, or City-approved equal, mounted to chassis
  - 3.1.2 Aluminum body length; eighteen (18) feet or City –approved equal
- 3.2 Body size, Interior:
  - 3.2.1 Width 93.5 inches
  - 3.2.2 Height 85 inches
- 3.3 Floor Structure:
  - 3.3.1 Aluminum self-sealing extrusion
  - 3.3.2 Continuous floor planking
  - 3.3.3 Tread plate (safety) in cab and step wells
  - 3.3.4 Body to be undercoated
- 3.4 Rear-Step Bumper:
  - 3.4.1 Eight (8) inch wide tread plate
  - 3.4.2 Kick plate
  - 3.4.3 Recessed center license plate bracket
  - 3.4.4 Access step rear bumper 24” wide single flip step with latch to lock in an open or closed position
- 3.5 Rear Structure:
  - 3.5.1 Extrusion with increased section modules
  - 3.5.2 Two (2) solid swing doors (each) twenty nine (29) inches wide
  - 3.5.3 Standard LH door release
  - 3.5.4 Slam-lock hardware
    - 3.5.4.1 Non-push to lock
    - 3.5.4.2 Keyed to cab door
    - 3.5.4.3 Door latch to lock door in open position
- 3.6 Walls, side and rear:
  - 3.6.1 Twenty four (24) inch stud spacing
  - 3.6.2 Exterior covering with .125 inch hardened aluminum skin
  - 3.6.3 Fiberglass insulation
  - 3.6.4 Standard exterior rub rails
- 3.7 Bulkhead:
  - 3.7.1 Center opening
    - 3.7.1.1 Aluminum door
    - 3.7.1.1 Bulkhead mounted

**SECTION B PART II TECHNICAL SPECIFICATIONS (CONTINUED):**

**ITEM NO. 5: CHASSIS MOUNTED WITH STEP VAN BODY (Continued):**

**3.0 STEP VAN BODY (Continued):**

- 3.8 Roof:
  - 3.8.1 Eight (8) inch stud spacing
  - 3.8.2 One (1) piece aluminum roof
  - 3.8.3 (.032) inch self-sealing extrusion
  - 3.8.4 Fiberglass insulation
  - 3.8.5 Ceiling:
    - 3.8.5.1 Textured aluminum (.024) lined
  
- 3.9 Doors:
  - 3.9.1 Sliding doors left and right sides
  - 3.9.2 Kason lock selections
  - 3.9.3 Non-push to lock
  - 3.9.4 Keyed to rear door
  - 3.9.5 Left and right entry to have intermediate steps
  - 3.9.6 Equipped with weather tight seals around the entire frame
  - 3.9.7 Double sealed along the rear edge
  - 3.9.8 Tinted sliding windows with drip rails above both doors
  
- 3.10 Operators compartment:
  - 3.10.1 Driver's seat:
    - 3.10.1.1 High-back
    - 3.10.1.2 Tilt pedestal
  - 3.10.2 Passenger's seat:
    - 3.10.2.1 High-back
    - 3.10.2.2 Tilt pedestal
  - 3.10.3 3-point seat belt
  - 3.10.4 Sound reduction fire wall
  - 3.10.5 Intermittent wiper motor
  - 3.10.6 Air conditioner/heater
  - 3.10.7 Cab dome light
  
- 3.11 Exterior:
  - 3.11.1 Bonded front driver/passenger windshield glass
  - 3.11.2 Exterior mirrors: Dual, left and right
  - 3.11.3 Tinted windshield
  - 3.11.4 Full front lift-up hood
  - 3.11.5 All lights per DOT regulation
  - 3.11.6 Mud flaps
  - 3.11.7 Paint color white
  
- 3.12 Lighting:
  - 3.12.1 Dedicated electrical wiring channel - built into interior of body roof
  - 3.12.2 Cargo dome light with a rear mounted light switch
  - 3.12.3 Four (4) twin bulb fluorescent fixtures 18" to 24" 120 volt with switch conveniently mounted in front and rear of vehicle.
    - 3.12.3.1 Two (2) mounted over work bench
    - 3.12.3.2 Two (2) general lighting)
    - 3.12.3.3 Directional Light-Traffic Advisor Equipment, TA Model TA837A44, 8 Halogen Lamp with control head or City-approved equal
  
- 3.13 Air Conditioning:
  - 3.13.1 Roof mounted low profile A/C rotary air (cargo area) 13,500 BTU with 5,600 BTU heat strip to be powered by the generator.

## **SECTION B PART II TECHNICAL SPECIFICATIONS (CONTINUED):**

### **ITEM NO. 5: CHASSIS MOUNTED WITH STEP VAN BODY (Continued):**

#### **3.0 STEP VAN BODY (Continued):**

- 3.14 Generator:
  - 3.14.1 Onan Quiet Diesel 7.5 HD KW with remote start and gauge panel mounted inside the vehicle in a safe and appropriate location. Generator to be mounted on a slide out service rack for easy access from the outside of the vehicle.
    - 3.14.1.1 Water cooled diesel
    - 3.14.1.2 62.5 amp 120V
    - 3.14.1.3 31.25 amp at 240V
    - 3.14.1.4 EPA approved
  - 3.14.2 Fuel supplied by main fuel tank
  - 3.14.3 Compartment mounted (lockable)
  - 3.14.4 Separate battery
  - 3.14.5 Start - stop switch
  - 3.14.6 Temp pressure shutdown system
- 3.15 Compressor:
  - 3.15.1 Floor-mounted, electric, to be enclosed in a removable sound box with outside access via a lift up panel.
  - 3.15.2 2.5 HP
  - 3.15.3 25 Gallon Air Tank
  - 3.15.4 4.9 SCFM @ 40 PSI
  - 3.15.5 3.5 SCFM @ 90 PSI
  - 3.15.6 150 Maximum PSI
  - 3.15.7 Electric wall socket to be provided inside mounting area to accept plug from air compressor
  - 3.15.8 Quick release outlet mounted at workbench
  - 3.15.9 Quick release outlet mounted at compressor vent to outside
- 3.16 Gauges:
  - 3.16.1 Oil pressure
  - 3.16.2 Water
  - 3.16.3 Temperature
  - 3.16.4 Battery
  - 3.16.5 Voltage
  - 3.16.6 Hour meter
- 3.17 Wiring:
  - 3.17.1 120 VAC breaker system for A/C, Lighting, Generator, Air Compressor and twin duplex service plug-in (4x4 box, location to be determined)
- 3.18 Work Bench and Shelving:
  - 3.18.1 Passenger Side Bench- Approx. 5' L x 3' H to the rear of air compressor cover and over the generator cover.
  - 3.18.2 Top must be made of solid surface Avonite in light gray. **See Drawing A**
  - 3.18.3 Passenger Side Drawers – Under bench a top the generator housing a six (6) drawer cabinet 48" X 21" x 24" **See Drawing A**
  - 3.18.4 Passenger Side Shelving- Four shelves (approx. 7.5' Long cut at 15 degree angle) above wheel well to ceiling made of welded aluminum angle frame with mid divider and 3/16 inch Aluminum plate-shelf base. **See Drawing A**
  - 3.18.5 Driver Side Drawers – Two drawer sets across from the bench, one thirteen (13) drawer cabinet (42"x18"x24", and the other eleven (11) drawer cabinets must be 60"xx18"x24". **See Drawing B**
  - 3.18.6 Driver Side Shelving – Four (4) shelves (approx.8.5 feet long cut at 15 degree angle) above the wheel Well to ceiling on welded aluminum angle frame with mid-divider and 3/16 in plate – shelf base. **See Drawing B**
  - 3.18.7 Tool Rack (Aluminum) – upper and lower shelved backing with holes for tools
  - 3.18.8 Water Cooler Rack (aluminum, 3 gallon). **See Drawing B**

**SECTION B PART II TECHNICAL SPECIFICATIONS (CONTINUED):**

**ITEM NO. 5: CHASSIS MOUNTED WITH STEP VAN BODY (Continued):**

**4.0 TRAINING:**

4.1 Minimum two (2) hours equipment and maintenance orientation

**5.0 LITERATURE:**

5.1 Two (2) complete sets of Parts Manuals

5.2 Two (2) complete sets of Service Manuals

5.3 One (1) Operator Manual

**6.0 WARRANTY:**

6.1 Minimum of one (1) year on parts and labor shall be provided for the chassis, body, auxiliary air conditioner, and generator.

**7.0 DELIVERY:**

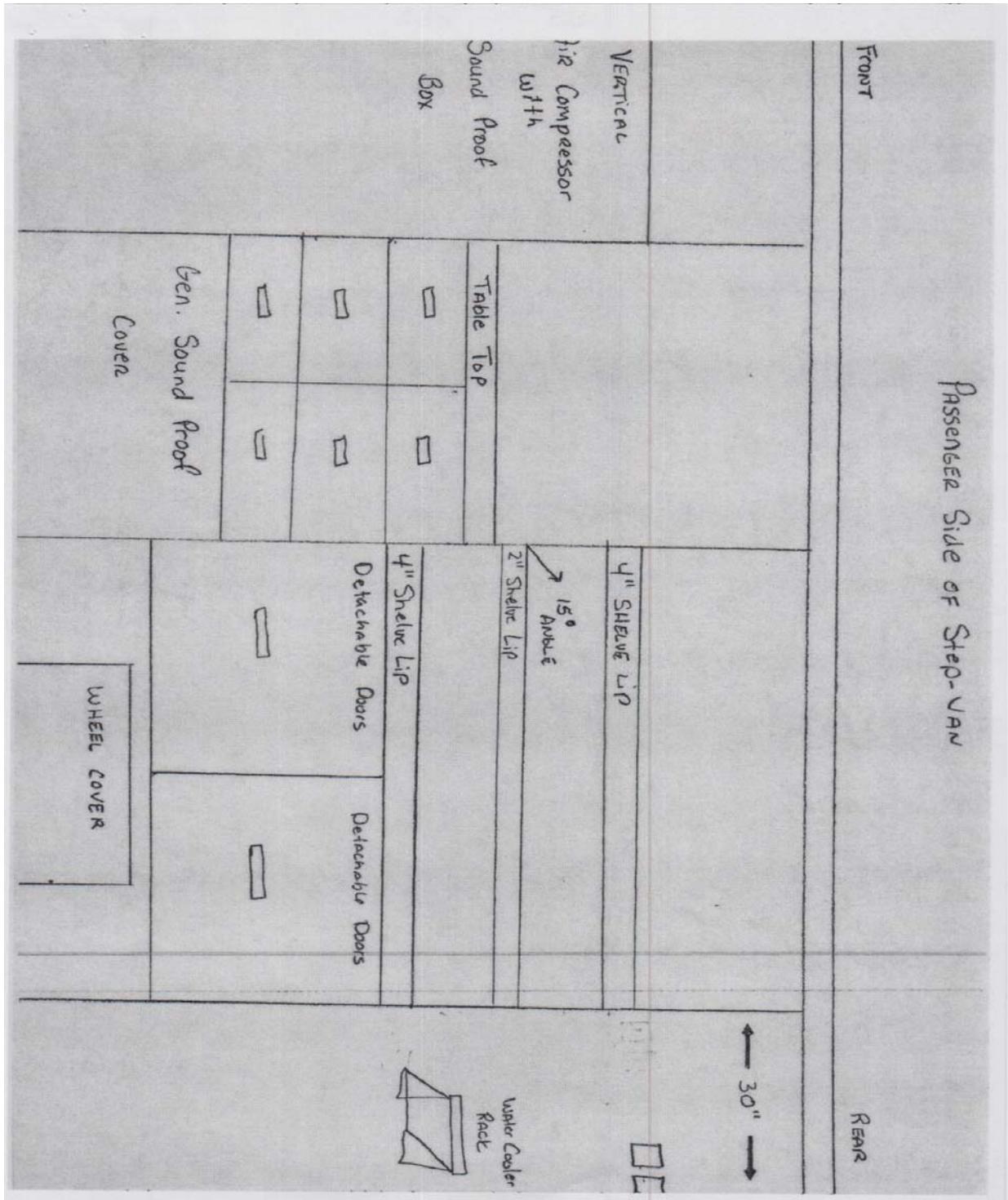
7.1 The item(s) specified above, with delivery tickets and/or other required documents shall be delivered Prepaid F.O.B. Destination to the location(s) shown on the purchase order(s) two hundred ten (210) calendar days from receipt of the City of Houston Purchase Order.

**SECTION B PART II TECHNICAL SPECIFICATIONS (CONTINUED):**

**ITEM NO. 5: CHASSIS MOUNTED WITH STEP VAN BODY (Continued):**

**DRAWING A**

**DRAWING OF PASSENGER SIDE**





**SECTION B PART II TECHNICAL SPECIFICATIONS (CONTINUED):**

**ITEM NO. 6: CAB & CHASSIS MOUNTED WITH FLATBED BODY  
PR 10085682**

**1.0 GENERAL:**

1.1 Equipment Description:

1.1.1 This specification is intended to describe a cab & chassis mounted with a flatbed body with lift gate and maximum GVWR of 25,500 lbs. that will be used by the General Services Department to transport large quantities of furniture and other equipment to various City office locations.

1.2 Prime Contractor/Supplier:

1.2.1 These specifications require the bidder to be a prime contractor/supplier and to bid on the complete cab & chassis and flatbed body and other required equipment.

1.3 Equivalent Equipment:

1.3.1 Bidders proposing to provide equipment they believe to be equal to the specified model must provide sufficient operating and technical specifications for the City to evaluate the proposed equipment.

1.4 Equivalent Equipment Documentation:

1.4.1 A bidder proposing to provide equivalent to the specified model must be able to demonstrate upon request that it has manufactured a vehicle similar to the unit bid, and that the vehicle has been proven and tested in service satisfactorily. The bidder will provide records of warranty service repairs upon request. The City of Houston shall be the sole judge whether the vehicle in service similar to the unit bid has been proven and tested satisfactorily

**2.0 CAB & CHASSIS:**

2.1 Front Axle and Equipment:

- 2.1.1 8,000 lb. Axle
- 2.1.2 8,000 lb. Suspension

2.2 Rear Axle and Equipment

- 2.2.1 17,500 lb. axle, single-speed
- 2.2.2 17,500 lb. suspension
- 2.2.3 Rear auxiliary springs
- 2.2.4 Stemco wheel seals, wet-type or equivalent
- 2.2.5 Differential ratio will be geared for truck to run approximately 62 MPH unless otherwise specified on bid form.

2.3 Brake and Equipment Air With ABS:

- 2.3.1 Moisture ejectors, automatic
- 2.3.2 Air pressure gauge, dash-mounted w/light/buzzer for low air pressure.
- 2.3.3 Rear dust shields
- 2.3.4 Air compressor OEM standard water cooled and lubricated by engine oil.
- 2.3.5 Air Dryer

2.4 Cab and Equipment:

- 2.4.1 OEM Standard with tilting hood and fenders
- 2.4.2 Crew cab configuration with three-person bench seats, vinyl, heavy-duty
- 2.4.3 Warning light and buzzer for low oil pressure and high temperature
- 2.4.4 Heater
- 2.4.5 Assist handles
- 2.4.6 Dual sun visors
- 2.4.7 Tinted glass, all
- 2.4.8 All gauges to include the following: oil, ampmeter or voltmeter, temperature and fuel.
- 2.4.9 Tachometer
- 2.4.10 Engine hour meter, which will actuate only with engine running, dash mounted
- 2.4.11 Dual electric horns
- 2.4.12 Single base dual trumpet air horn
- 2.4.13 Mirrors, dual western, painted with auxiliary convex, 5"
- 2.4.14 Arm rest on both doors
- 2.4.15 Factory air conditioning

**SECTION B PART II TECHNICAL SPECIFICATIONS (CONTINUED):**

**ITEM NO. 6: CAB & CHASSIS MOUNTED WITH FLATBED BODY (Continued):**

**2.0 CAB & CHASSIS (Continued):**

- 2.5 Electrical:
  - 2.5.1 90-amp alternator
  - 2.5.2 Dual batteries, 525 CCA each
  
- 2.6 Engine and Equipment:
  - 2.6.1 2010 Diesel, 200 gross horsepower
  - 2.6.2 Air cleaner, dry-type with pop-up air cleaner restriction indicator
  - 2.6.3 Fuel/water separator filter
  - 2.6.4 Maximum cooling system available
  - 2.6.5 Cooling system(s) shall be protected with permanent coolant rate for service to - 20F.
  
- 2.7 Exhaust System
  - 2.7.1 Horizontal muffler and pipe
  
- 2.8 Frame and Equipment:
  - 2.8.1 Minimum frame rating 900,000 RBM reinforced to meet GVWR
  - 2.8.2 One 45-gallon step type fuel tank, left or right side with running board/steps on opposite side.
  - 2.8.3 All fuel caps shall be locking-type, keyed alike on each vehicle. Two keys per tank.
  - 2.8.4 Frame-mounted towing hooks on front.
  - 2.8.5 Truck will be delivered with full tank(s) of fuel.
  
- 2.9 Tires and Wheels:
  - 2.9.1 Front and Rear: Steel belted radial type tubeless with steel disc type wheels.
  - 2.9.2 Front tires shall be for highway use and the rear tires shall be for both highway and off-road use.
  
- 2.10 Transmission and Equipment:
  - 2.10.1 Transmission, automatic 5-speed must be compatible with horsepower and torque of engine proposed may be used both on and off road.

**3.0 MISCELLANEOUS:**

- 3.1 Unless specified in the detailed vehicle specifications, the cab-to axle dimension ad/or wheelbase shall be as required to properly mount the body on the chassis, with no more than six (6) inches between the cab and chassis unless a greater distance is required for proper operation.
- 3.2 Line setting ticket for each unit will be available at the time of inspection.
- 3.3 Color: OEM standard – color to be specified on purchase order.

**4.0 TILTING FLATBED BODY WITH LIFTGATE:**

- 4.1 Equipment Description:
  - 4.1.1 Provide and Install a 16' x 96" flatbed with solid sides
  - 4.1.2 Bed to be made of 6" channel long sills, 4" structural channel cross sills on 18" centers, 6" outside channel, 3/16" smooth plate flooring
  - 4.1.3 Standard headboard with no window
  - 4.1.4 36" solid sides, 10 ga walls, and 3" channel uprights, no rear
  - 4.1.5 Standard 625 DH hoist, with 23,000-lb. capacity at 45 degree angle
  - 4.1.6 1600-lb. upright Liftgate
  - 4.1.7 Manual tarping system, ground crank, side spring, with black mesh tarp
  - 4.1.8 Prime and paint body black
  - 4.1.9 Reinforced rear bumper
  - 4.1.10 Heavy-duty rear receiver tube and D-rings totally frame mounted. Hitch shall not be attached to tilt bed

**SECTION B PART II TECHNICAL SPECIFICATIONS (CONTINUED):**

**ITEM NO. 6: CAB & CHASSIS MOUNTED WITH FLATBED BODY (Continued):**

**5.0 TRAINING:**

5.1 Minimum two (2) hours equipment and maintenance orientation shall be provided for cab & chassis, flatbed body, liftgate, and all specified equipment.

**6.0 LITERATURE:**

- 6.1 Two (2) complete sets of Parts Manuals
- 6.2 Two (2) complete sets of Service Manuals
- 6.3 One (2) Operator Manual

**7.0 WARRANTY:**

7.1 Minimum of one (1) year on both materials and workmanship shall be provided for the chassis, body, and all specified equipment

**8.0 DELIVERY:**

8.1 The item(s) specified above, with delivery tickets and/or other required documents shall be delivered Prepaid F.O.B. Destination to the location(s) shown on the purchase order(s) one hundred eighty (180) calendar days from receipt of the City of Houston Purchase Order.

**SECTION B PART II TECHNICAL SPECIFICATIONS (CONTINUED):**

**ITEM NO. 7: CAB & CHASSIS MOUNTED WITH PLATFORM BODY  
PR 10086479**

**1.0 GENERAL:**

1.1 Equipment Description:

1.1.1 The intent of these specifications is to provide and furnish a cab & chassis with platform/crane truck body to the City of Houston Parks & Recreation Department. A manufacturer's 2010 engine shall be provided. Reference Manufacturer International 4300M7 SBA 4X2 (MA065) or City-approved equal.

1.2 Prime Contractor/Supplier:

1.2.1 These specifications require the bidder to be a prime contractor/supplier and to bid on the complete cab & chassis and platform/crane truck body.

1.3 Equivalent Equipment:

1.3.1 Bidders proposing to provide equipment they believe to be equal to the specified model must provide sufficient operating and technical specifications for the City to evaluate the proposed equipment.

1.4 Equivalent Equipment Documentation:

1.4.1 A bidder proposing to provide equivalent to the specified model must be able to demonstrate upon request that it has manufactured a vehicle similar to the unit bid, and that the vehicle has been proven and tested in service satisfactorily. The bidder will provide records of warranty service repairs upon request. The City of Houston shall be the sole judge whether the vehicle in service similar to the unit bid has been proven and tested satisfactorily

**2.0 CAB & CHASSIS:**

2.1 General:

- 2.1.1 Cab, conventional
- 2.1.2 Seat, front bench full width; vinyl, with fixed back
- 2.1.3 Mirrors (2) rectangular, approximately 7" X 15", brackets breakaway type, with convex both sides,
- 2.1.4 Air conditioner with integral heater and defroster
- 2.1.5 Mirror, convex, look down right side approximately 6"x10" mounted to right side fender
- 2.1.6 Cab interior trim deluxe
- 2.1.8 Mirror, convex, hood mounted 2 for left and right sides approximately 7.00" sq inches
- 2.1.7 187" Wheelbase, 120" CA, and 73" Axle to Frame, minimum
- 2.1.9 Frame rails heat treated alloy steel (minimum 120,000 PSI); 10.1254" X 3.580" X .312"
- 2.1.10 Axle, front non-driving I-beam type, 10,000-lb capacity
- 2.1.11 Suspension, front, 10,000-lb capacity; with shock absorbers
- 2.1.12 Steering column stationary
- 2.1.13 Power steering gear
- 2.1.14 Exterior Color: white
- 2.1.15 Axle, rear, single, single reduction, 17,500-lb. capacity, Gear ratio: 6.50
- 2.1.16 Suspension, RR, spring, single vari-rate; 18,500-lb capacity, with 4500-lb. auxiliary rubber spring
- 2.1.17 Front Wheels, 22.5" painted white steel, 7.5 DC rims
- 2.1.18 Rear Wheels, 22.5" painted white steel, 7.5 DC rims
- 2.1.19 2 Front tires 265/75R22.5 load range G, 14 ply
- 2.2.20 Engine and heater hoses silicone
- 2.1.21 4 Rear tires 265/75R 22.5, load range G, 14 ply
- 2.1.22 Fuel tank top draw, 50 US Gal

## **SECTION B PART II TECHNICAL SPECIFICATIONS (CONTINUED):**

### **ITEM NO. 7: CAB & CHASSIS MOUNTED WITH PLATFORM BODY (Continued):**

#### **2.0 CAB & CHASSIS (Continued):**

##### 2.2 Engine:

- 2.2.1 A 2010 Diesel 240hp@2600 rpm, 620 lb-ft torque @ 1400 rpm, 2600 rpm governed speed
- 2.2.2 Radiator with transmission cooler
- 2.2.3 Transmission, (Allison 2500\_HS), 5 speed, with overdrive; less retarder
- 2.2.4 Air cleaner dual element

##### 2.3 Electrical:

- 2.3.1 Electrical system, 12 volt, standard equipment
- 2.3.2 Alternator 12 volt 120 amp. Capacity
- 2.3.3 Body builder wiring under cab, includes sealed connectors for tail/amber turn/marker/backup/accessory power/ground and sealed connector for stop/turn
- 2.3.4 Electric Trailer Brake/Lights accommodation package to rear frame; for combined trailer stop, tail, turn, marker lights circuits; includes electric trailer brake unit, less trailer socket
- 2.3.5 Stop/turn/tail/backup lights, with LED lamps for stop, turn and taillights and lamps for backup lights, less power module, less rubber mount, includes reflectors.
- 2.3.6 Backup alarm, electric 102dba
- 2.3.8 Battery system maintenance free (2) 12-volt 1100CCA batteries
- 2.3.9 Starter Motor (heavy duty) 12 volt; less thermal over crank protection with integrated magnetic switch
- 2.3.10 Radio AM/FM, with speakers

##### 2.4 Brakes:

- 2.4.1 Brake system, hydraulic, split system, full power, with automatic adjustment and with four channel ABS
- 2.4.2 Parking Brake DSSA Type for hydraulic brake chassis, activated by lever in cab
- 2.4.3 Brakes, front hydraulic disc quadraulic
- 2.4.4 Brakes, rear hydraulic quadraulic

#### **3.0 PLATFORM BODY:**

##### 3.1 General: (To view the truck body, please contact Michael Estes at 832.395.7240)

- 3.1.1 15 ft. L x 96 in. W; flatbed body
- 3.1.2 3/16 in smooth steel floor
- 3.1.3 Tapered headache rack
- 3.1.4 Oxygen/acetylene box (RKI Mdl. BDA5106) furnished and installed on driver's side of bed, between three 48 in. boxes (RKI Mdl. BH481818) furnished and installed. Two of the three boxes shall be forward of the oxygen/acetylene box and one box shall be to the rear of the oxygen/acetylene box. (Exhibit 7A)
- 3.1.5 Liftmoore electric crane, Mdl. No. 3200REE-15 or City approved equal, shall be furnished and mounted left on driver side at rear of body with boom support on box. (Exhibit 7A)
- 3.1.6 Miller Trailblazer Model 302 Welder shall be furnished and installed on the front passenger side of the bed. (Exhibit 7B)
- 3.1.7 Welder shall include 100 ft. of ground cable, 100 ft. welding cable and clamps. (Exhibit 7B)
- 3.1.8 Welder shall have one-Reelcraft twin welding cable lead reel, manual rewind. (Exhibit 7B)
- 3.1.9 Four 48 in. boxes shall be furnished and mounted on passenger side with bottom two facing outside of body and top two facing inside of body. (Exhibits 7C and 7D)
- 3.1.10 Weatherguard pak rat Model No. 308-3 (two each), and Model No. 338-3 (two each) shall be furnished and mounted center of bed, two stacked together facing the rear and two stacked together facing the front. (Exhibits 7C and 7D)
- 3.1.11 Fabricate ladder rack that mounts on top of the passenger side boxes, must be lockable. (Exhibits 7D through 7H)

**SECTION B PART II TECHNICAL SPECIFICATIONS (CONTINUED):**

**ITEM NO. 7: CAB & CHASSIS MOUNTED WITH PLATFORM BODY(Continued):**

**3.0 PLATFORM BODY (Continued):**

- 3.1.12 Skirted rear step bumper with pintle hook recess
- 3.1.13 Rear storage compartment between frame rails of truck with rear access door
- 3.1.14 Vise mount on passenger side of rear of bumper with mechanics vise
- 3.1.15 Electric brake control with 6-way trailer connector
- 3.1.16 2 in. ball combo/pintle hook and d-rings installed
- 3.1.17 Trailer Towing to 16,000-lb
- 3.1.18 Non-skid material applied to bed before painting
- 3.1.19 FMVSS light package, LED
- 3.1.20 Paint: Black
- 3.1.21 Conspicuity tape as required
- 3.1.22 Certification tag as required by NHTSA

**4.0 LITERATURE:**

- 4.1 Maintenance and Operator's Manuals:
  - 4.1.1 Manuals to be furnished upon delivery of equipment:
  - 4.1.2 Two (2) complete sets of factory service shop repair manuals (Technical Service Manuals)
  - 4.1.3 Two (2) complete sets of factory parts manuals
  - 4.1.4 Two (2) complete sets of operators' manuals

**5.0 DELIVERY AND INSPECTION:**

- 5.1 The item(s) specified above, with delivery tickets and/or other required documents shall be delivered Prepaid F.O.B. Destination to the location(s) shown on the purchase order(s) one hundred eighty (180) calendar days from receipt of the City of Houston Purchase Order.
  - \*\*\*City of Houston Parks and Recreation Department
  - \*\*\*6200 Wheeler
  - \*\*\*Houston, TX 77023
- 5.2 Unit(s) shall have  $\frac{3}{4}$  tank of fuel, clean and shall be complete with all equipment operable at time of delivery/ inspection.
- 5.3 Unit(s) shall be accompanied with a copy of the original invoice, warranty and/or Certificates as may be required.

**6.0 WARRANTY:**

- 6.1 Cab & Chassis:
  - 6.1.1 A minimum of a Manufacturer's 60-month/100,000-mile bumper-to-bumper warranty shall be provided including towing to nearest manufacturers' dealership for warranty-covered equipment repair.
- 6.2 Platform Body:
  - 6.2.1 Manufacture's Standard Warranty

**7.0 TRAINING:**

- 7.1 Supplier will provide two (2) two-hour operators training and two (2) two-hour technical training at designated City facility.

**SECTION B PART II TECHNICAL SPECIFICATIONS (CONTINUED):**

**ITEM NO. 7: CAB & CHASSIS MOUNTED WITH PLATFORM BODY(Continued):**

EXHIBIT 7A



**SECTION B PART II TECHNICAL SPECIFICATIONS (CONTINUED):**

**ITEM NO. 7: CAB & CHASSIS MOUNTED WITH PLATFORM BODY(Continued):**

EXHIBIT 7B



**SECTION B PART II TECHNICAL SPECIFICATIONS (CONTINUED):**

**ITEM NO. 7: CAB & CHASSIS MOUNTED WITH PLATFORM BODY(Continued):**

EXHIBIT 7C



**SECTION B PART II TECHNICAL SPECIFICATIONS (CONTINUED):**

**ITEM NO. 7: CAB & CHASSIS MOUNTED WITH PLATFORM BODY(Continued):**

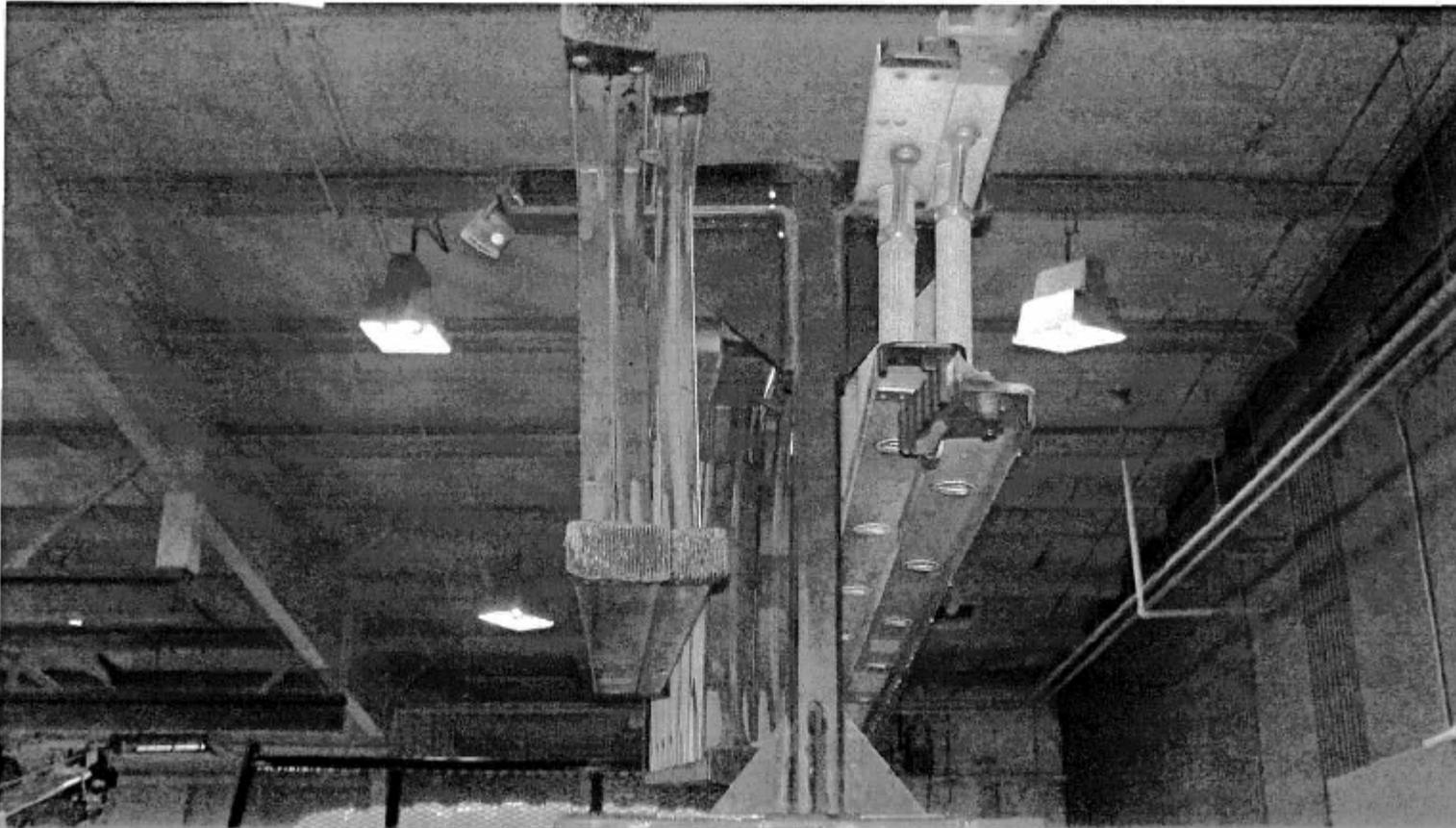
EXHIBIT 7D



**SECTION B PART II TECHNICAL SPECIFICATIONS (CONTINUED):**

**ITEM NO. 7: CAB & CHASSIS MOUNTED WITH PLATFORM BODY(Continued):**

EXHIBIT 7E



**SECTION B PART II TECHNICAL SPECIFICATIONS (CONTINUED):**

**ITEM NO. 7: CAB & CHASSIS MOUNTED WITH PLATFORM BODY(Continued):**

EXHIBIT 7F



**SECTION B PART II TECHNICAL SPECIFICATIONS (CONTINUED):**

**ITEM NO. 7: CAB & CHASSIS MOUNTED WITH PLATFORM BODY(Continued):**

EXHIBIT 7G



**SECTION B PART II TECHNICAL SPECIFICATIONS (CONTINUED):**

**ITEM NO. 7: CAB & CHASSIS MOUNTED WITH PLATFORM BODY(Continued):**

EXHIBIT 7H



**SECTION B PART II TECHNICAL SPECIFICATIONS (CONTINUED):**

**ITEM NO. 8: CREW CAB & CHASSIS MOUNTED WITH CHIPPER DUMP BODY**  
**PR 10086540**

**1.0 GENERAL:**

1.1 Equipment Description:

1.1.1 The intent of these specifications is to provide a crew cab and chassis mounted with a chipper dump body to the City of Houston Parks & Recreation Department. A manufacturer's 2010 engine shall be provided. Referenced Manufacturer is International 4300 SBA 4X2 (MA025) or City-approved equal.

1.2 Prime Contractor/Supplier:

1.2.1 These specifications require the bidder to be a prime contractor/supplier and to bid on the complete crew cab and chassis mounted with a chipper dump body.

1.3 Equivalent Equipment:

1.3.1 Bidders proposing to provide equipment they believe to be equal to the specified model must provide sufficient operating and technical specifications for the City to evaluate the proposed equipment.

1.4 Equivalent Equipment Documentation:

1.4.1 A bidder proposing to provide equivalent to the specified model must be able to demonstrate upon request that it has manufactured a vehicle similar to the unit bid, and that the vehicle has been proven and tested in service satisfactorily. The bidder will provide records of warranty service repairs upon request. The City of Houston shall be the sole judge whether the vehicle in service similar to the unit bid has been proven and tested satisfactorily

**2.0 CAB & CHASSIS:**

2.1 General:

- 2.1.1 Cab, conventional 6-man crew cab
- 2.1.2 Engine and heater hoses silicone
- 2.1.3 Driver seat air suspension mid back, vinyl, with 2 position front cushion adjustments, -3 to +14 degree seat back adjustment
- 2.1.4 Front Seat, Two-Man passenger; with two integral headrest, vinyl, less under seat storage compartment
- 2.1.5 Rear seat bench full width, vinyl with fixed back and two integral outboard headrest
- 2.1.6 Mirrors (2) rectangular, approximately 7.00" x 15.00", brackets breakaway type, with convex both sides
- 2.1.7 Air conditioner with integral heater and defroster
- 2.1.8 Mirror, convex, hood mounted (2) for left and right sides approximately 7.00" sq inches.
- 2.1.9 Cab interior trim deluxe for crew cab
- 2.1.11 Cab rear suspension air bag type
- 2.1.12 217" Wheelbase, 106" CA, and 63" Axle to Frame minimum
- 2.1.13 Tow Hook, front (2) inside rail, frame mounted
- 2.1.14 Frame rails heat treated alloy steel (120,000 PSI yield); 10.25" X 3.610" X.375"
- 2.1.15 Axle, front non-driving I-beam type, 12,000-lb capacity
- 2.1.16 Suspension, front, taper leaf; 12,000-lb capacity; with shock absorbers
- 2.1.17 Steering column tilting
- 2.1.18 Power steering gear
- 2.1.19 Exterior Paint: White, with darkest interior possible.
- 2.1.20 Axle, rear, single, single reduction, 21,000-lb capacity. Gear ratio:6.50
- 2.1.21 Axle, rear, lube Synthetic oil;
- 2.1.22 Suspension, RR, spring, single vair-rate; 23,500-lb capacity, with 4500-lb auxiliary rubber spring
- 2.1.23 Wheels, front disc; 22.5 painted white steel with 8.25 DC rims
- 2.1.24 Wheels, rear dual disc; 22.5 painted white steel 8.25 DC rims
- 2.1.25 Wheel bearing, front, lube synthetic oil
- 2.1.26 Front tires 504 rev/mile, load range G, 14 ply
- 2.1.27 Rear tires 496 rev/mile, load range G, 14 ply- Traction Tire
- 2.1.28 Fuel tank top draw; steel, 50 US Gal, mounted right side, under cab
- 2.1.29 Wheel seals, front for wheel lubricated wheel bearings

**SECTION B PART II TECHNICAL SPECIFICATIONS (CONTINUED):**

**ITEM NO. 8: CREW CAB & CHASSIS MOUNTED WITH CHIPPER DUMP BODY(Continued):**

**2.0 CAB & CHASSIS (CONTINUED):**

2.2 Engine:

- 2.2.1 A 2010 Diesel 225 hp @2600 rpm, 560 lb-ft torque@1400 rpm, 2600 rpm governed speed
- 2.2.2 Fan drive "two speed", with residual torque device for disengaged fan speed
- 2.2.3 Radiator aluminum; with in tank transmission cooler
- 2.2.4 Expanded engine temp effects to allow higher engine operating temperature range; includes nylon surge tank and 15 PSI pressure cap
- 2.2.5 Transmission, Automatic (Allison 3000\_RDS\_P) close ratio, 5 speed, with overdrive; on/off hwy; includes oil level sensor, with PTO provision, less retarder
- 2.2.6 Transmission shift control (Allison) push-button type
- 2.2.7 Shift Control Parameters WT-Allison S-4 economy programming in primary and Allison S-1 performance programming in secondary
- 2.2.8 Transmission oil Synthetic
- 2.2.9 Air cleaner dual element

2.3 Electrical:

- 2.3.1 Electrical system, 12 volt, standard equipment
- 2.3.2 Alternator 12 volt 120 amp. Capacity;
- 2.3.3 Body builder wiring under extended cab at left frame, includes sealed connectors for tail/amber turn/marker/backup/accessory power/ground and sealed connector for stop/turn
- 2.3.4 Battery system maintenance free (2) 12-volt 1300CCA batteries
- 2.3.5 Stop, turn, tail and B/U lights, with LED lamps for stop, turn, and tail lights and lamps for backup lights, less power module, less rubber mount, includes rear reflectors
- 2.3.6 Electric Trailer Brake/Lights accommodation package to rear of frame; for separate trailer stop, tail, turn, marker light circuits; Includes electric trailer brake accommodation package with cab connections for mounting customer installed electric brake unit, less trailer socket
- 2.3.7 Windshield wiper speed control force wipers to slowest intermittent speed when park brake set
- 2.3.8 Clearance/marker lights (5) amber LED lights, flushed mounted on cab or sunshade
- 2.3.9 Headlights on w/wipers, headlights automatically turn on when wipers are turned on
- 2.3.10 Starter Motor (heavy duty) 12 volt; gear reduced. with thermal over-crank protection
- 2.3.11 Indicator for low coolant level with audible alarm
- 2.3.12 Throttle, hand control engine speed control; electronic, stationary, variable speed, mounted on steering wheel
- 2.3.13 Circuit breakers manual reset (main panel) SAE Type III with trip indicators, replaces all fuses except for 5 amp fuses
- 2.3.14 Gauge, oil temp Allison Tran

2.4 Brakes:

- 2.4.1 Brake system, air dual system for straight truck applications
- 2.4.2 Air brake ABS full vehicle wheel control system (4-channel) with automatic traction control
- 2.4.3 Air dryer with heater
- 2.4.4 Front brakes, air cam S-Cam; 16.5"x5.0" includes 20 Sq.In. long stroke brake chambers
- 2.4.5 Rear brakes, air cam 16.5"x7.0" includes 30/30 long stroke brake chamber and heavy duty spring actuated parking brake
- 2.4.6 Air compressor 13.2 CFM capacity minimum

**SECTION B PART II TECHNICAL SPECIFICATIONS (Continued):**

**ITEM NO. 8: CREW CAB & CHASSIS MOUNTED WITH CHIPPER DUMP BODY (Continued):**

**3.0 CHIPPER BODY:**

3.1 General:

- 3.1.1 Manufacturer Reference: Southco Heavy Duty MP-1472 Multipurpose Body or City-approved equal
- 3.1.2 "L" Design: 14' x 92" x 72" high
- 3.1.3 "L" Cross box w/(2) underbody tool boxes
- 3.1.4 (2) Section 11' long x 18" high removable top
- 3.1.5 42" high 10 gauge (Stationary) sides w/tubing top rails reinforcement
- 3.1.6 Omaha 625 Hydraulic Hoist
- 3.1.7 Hitch (Heavy Duty Pintle)
- 3.1.8 6-Pole connector
- 3.1.9 Electric brake control
- 3.1.10 Color White
- 3.1.11 LED Lighting and 4 point strobe system
- 3.1.12 Wheel chocks and holders
- 3.1.13 Electric Shift PTO for Automatic Transmission
- 3.1.14 3/16' floor w/cross sills on 12" centers
- 3.1.15 Manufacturer's Standard Warranty

**4.0 LITERATURE:**

4.1 Maintenance and Operator's Manuals:

- 4.1.1 Manuals to be furnished upon delivery of equipment:
- 4.1.2 Two (2) complete sets of factory service shop repair manuals (Technical Service Manuals)
- 4.1.3 Two (2) complete sets of factory parts manuals
- 4.1.4 Two (2) complete sets of operators' manuals

**5.0 DELIVERY AND INSPECTION:**

- 5.1 The item(s) specified above, with delivery tickets and/or other required documents shall be delivered Prepaid F.O.B. Destination to the location(s) shown on the purchase order(s) one hundred eighty (180) calendar days from receipt of the City of Houston Purchase Order.  
\*\*\*City of Houston Parks and Recreation Department  
\*\*\*6200 Wheeler  
\*\*\*Houston, TX 77023
- 5.2 Unit(s) shall have ¾ tank of fuel, clean and shall be complete with all equipment operable at time of delivery/ inspection.
- 5.3 Unit(s) shall be accompanied with a copy of the original invoice, warranty and/or Certificates as may be required.

**6.0 WARRANTY:**

6.1 Cab & Chassis:

- 6.1.1 A minimum of a Manufacturer's 60-month/100,000-mile bumper-to-bumper warranty shall be provided including towing to nearest manufacturers' dealership for warranty-covered equipment repair.

6.2 Chipper Dump Body:

- 6.2.1 Manufacturer's standard warranty

**7.0 TRAINING:**

- 7.1 Supplier will provide two (2) two-hour operators training and two (2) two-hour technical training at designated City facility.

**SECTION B PART II TECHNICAL SPECIFICATIONS (CONTINUED):**

**ITEM NO. 9: DELETED DELETED DELETED DELETED**

**1.0 GENERAL:**

- 1.1 Equipment Description:
  - 1.1.1 This specification is intended to describe a medium duty crew cab truck cab & chassis mounted with a utility service body that will be used by the Public Works & Engineering Department, Public Utilities Division to transport field crews, tools, parts and supplies to and from water line repair worksites.
- 1.2 Prime Contractor/Supplier:
  - 1.2.1 These specifications require the bidder to be a prime contractor/supplier and to bid on the cab & chassis mounted with the service body and all other components
- 1.3 Equivalent Equipment:
  - 1.3.1 Bidders proposing to provide equipment they believe to be equal to the specified model must provide sufficient operating and technical specifications for the City to evaluate the proposed equipment
- 1.4 Equivalent Equipment Documentation:
  - 1.4.1 A bidder proposing to provide equivalent to the specified model must be able to demonstrate upon request that it has manufactured an apparatus similar to the unit bid, and that the apparatus has been proven and tested in service satisfactorily. The bidder will provide records of warranty service repairs upon request. The City of Houston shall be the sole judge whether the apparatus in service similar to the unit bid has been proven and tested satisfactorily

**2.0 CAB & CHASSIS:**

- 2.1 General:
  - 2.1.1 Crew Cab configuration
  - 2.1.2 Cab-to-Axle shall be a minimum of 84 inches
- 2.2 Front Axle and Equipment:
  - 2.2.1 12,000 lb. Axle
  - 2.2.2 12,000 lb. Suspension
- 2.3 Rear Axle and Equipment:
  - 2.3.1 23,000 lb. axle, single-speed
  - 2.3.2 23,000 lb. suspension
  - 2.3.3 Rear auxiliary springs
  - 2.3.4 Stemco wheel seals, wet-type or City approve equal
  - 2.3.5 Differential ratio shall be geared for truck to run approximately 62 MPH unless otherwise specified on bid form
- 2.4 Brakes and Equipment Air with ABS
  - 2.4.1 Moisture ejectors, automatic
  - 2.4.2 Air pressure gauge, dash-mounted with light/buzzer for low air pressure
  - 2.4.3 Rear dust shields
  - 2.4.4 Air compressor OEM standard water cooled and lubricated by engine oil
  - 2.4.5 Trailer towing package including gladhand and seven-way electrical cable extended to rear of frame for straight truck application.
- 2.5 Cab and Equipment:
  - 2.5.1 OEM Standard with tilting hood and fenders
  - 2.5.2 Seating, mid-back air suspension driver seat and mid-back fixed passenger seat and rear bench seat
  - 2.5.3 Warning light and buzzer for low oil pressure and high temperature
  - 2.5.4 Heater

**SECTION B PART II TECHNICAL SPECIFICATIONS (CONTINUED):**

**ITEM NO. 9: DELETED DELETED DELETED DELETED**

**2.0 CAB & CHASSIS (Continued):**

**2.5 Cab and Equipment (Continued):**

- 2.5.5 Assist handles
- 2.5.6 Dual sun visors
- 2.5.7 Tinted glass
- 2.5.8 All gauges - to include the following: oil, ampmeter or voltmeter, temperature and fuel.
- 2.5.9 Tachometer.
- 2.5.10 Engine hour meter, which will actuate only with engine running, dash mounted
- 2.5.11 Dual electric horns
- 2.5.12 Single base dual trumpet air horn
- 2.5.13 Mirrors, dual western, painted with auxiliary convex, 5"
- 2.5.14 Arm rest on both doors
- 2.5.15 Factory air conditioning
- 2.5.16 Air shift controls for PTO mounted in cab
- 2.5.17 OEM standard white exterior color with darkest interior color available

**2.6 Electrical:**

- 2.6.1 160 amp alternator
- 2.6.2 Three batteries, 1000 CCA each

**2.7 Engine and Equipment: Must be compatible with the Transmission specified below.**

- 2.7.1 2010 Diesel Engine, 260 horsepower, 560 foot-pounds torque, minimum
- 2.7.2 Air cleaner, dry-type with pop-up air cleaner restriction indicator
- 2.7.3 Fuel/water separator filter
- 2.7.4 Maximum cooling system available
- 2.7.5 Cooling system(s) shall be protected with permanent coolant rated for service to - 20F

**2.8 Exhaust System:**

- 2.8.1 Manufacturer's standard

**2.9 Frame and Equipment:**

- 2.9.1 Minimum frame rating 900,000 RBM reinforced to meet GVWR
- 2.9.2 One 45-gallon step type fuel tank, left or right side with running board/steps on opposite side
- 2.9.3 All fuel caps shall be locking-type, keyed alike on each vehicle. Two keys per tank
- 2.9.4 Frame-mounted towing hooks on front
- 2.9.5 Truck shall be delivered with full tank(s) of fuel
- 2.9.6 Auxiliary fuel port on chassis for operation of diesel air compressor

**2.10 Tires and Wheels:**

- 2.10.1 Front and Rear: Steel belted radial type tubeless with steel disc type wheels 11.00R22.5 14-ply.
- 2.10.2 Front tires shall be for highway use and the rear tires shall be for both highway and off-road use.

**2.11 Transmission and Equipment:**

- 2.11.1 Transmission, automatic 5-speed minimum. May be used both on and off road. Shall be an Allison 3500RDS transmission or City-approved equal.
- 2.11.2 PTO opening 10-bolt.

**2.12 Miscellaneous:**

- 2.12.1 Unless specified in the detailed vehicle specifications, the cab-to axle dimension and/or wheelbase shall be as required to properly mount the body on the chassis, with no more than six (6) inches between the cab and chassis-mounted equipment unless a greater distance is required for proper operation.

**SECTION B PART II TECHNICAL SPECIFICATIONS (CONTINUED):**

**ITEM NO. 9: DELETED DELETED DELETED DELETED**

**2.12 Miscellaneous (Continued):**

- 2.12.2 Line setting ticket for each unit will be available at the time of inspection.
- 2.12.3 Color: OEM standard – color to be specified on purchase order.
- 2.12.4 Mud flaps, no logo.
- 2.12.5 State Inspection.

**3.0 UTILITY SERVICE BODY:**

**(All dimensions are approximate)**

**3.1 Dimensions:**

- 3.1.1 LENGTH: 132 inches.
- 3.1.2 CLEAR CAB TO AXLE: 84 inches.
- 3.1.3 WIDTH: 92 to 96 inches.
- 3.1.4 Floor constructed of 1/8" steel tread plate.
- 3.1.5 Compartments shall be 20" deep with a 54" load area.
- 3.1.6 Eight (8) compartments; approximately 41" body height for the two on each side in front of the wheels, horizontal compartments over the wheels, and rear compartments to be approximately 39"-43" in height.
- 3.1.7 Full step bumper, structural channel steel construction to handle 30,000 lb. GVWR trailer.
- 3.1.8 Pintle hitch with minimum 90,000 lb. pulling capacity, 24 inch height, two heavy duty "D" rings, 3" x 3".

**3.2 Under Structure:**

- 3.2.1 Cross members to be 3" x 5" rectangular tubing with 3/16" wall.
- 3.2.2 Full width cross members one rear and two intermediate, each 3" x 5".
- 3.2.3 Minimum of three full-length longitudinal members.
- 3.2.4 Mounting longitudinal of minimum 1/2" x 3" flatbar.

**3.3 Sides and Ends:**

- 3.3.1 Sides, top of body and skin panels shall be a minimum 14 gauge A-40 Galvannealed, cargo area covered with a minimum 14 gauge safety tread plate steel.
- 3.3.2 Front bulkhead shall be a minimum 14 gauge, A-40 Galvannealed steel with a minimum 12 gauge treadplate steel overlay and reinforced with die formed ribs.
- 3.3.3 End panels shall be a minimum 14 gauge sides, A-40 Galvannealed steel and have a minimum 12 gauge treadplate steel overlay.
- 3.3.4 Vertical & horizontal compartment bottoms, shall be a minimum of 14 gauge, A-40 Galvannealed steel.
- 3.3.5 Wheel boxes in cargo area, 12 gauge treadplate plate steel.
- 3.3.6 Tailgate, OEM standard, Galvannealed, double panel with inside covered with treadplate.

**3.4 Hinges & Locks:**

- 3.4.1 Locks, 3-point type, T-Handle, mechanical shaft linkage, no chain or cable. All locks keyed alike each body keyed differently.
- 3.4.2 Hinges, OEM standard, bolted or riveted preferred.
- 3.4.3 Seals, Compression-type on all doors, automotive type.
- 3.4.4 Doors shall be a double 18 gauge, A-40 Galvannealed, both sides with two chain support on all horizontal doors.
- 3.4.5 Vertical doors shall have spring door retainers.

**SECTION B PART II TECHNICAL SPECIFICATIONS (CONTINUED):**

**ITEM NO. 9: DELETED DELETED DELETED DELETED**

**3.0 UTILITY SERVICE BODY(Continued):**

- 3.5. Shelving, Dividers & Pull Out Tray:
  - 3.5.1 Shelves, removable, lock in place, made of 16 & 18 gauge galvanized spangle steel.
  - 3.5.2 Vertical compartments, with plain shelving.
  - 3.5.3 Horizontal compartments, one reinforced horizontal slotted shelf with dividers adjustable on 2" centers.
  - 3.5.4 Dividers, 18 gauge galvanized panel steel, adjustable and removable.
  - 3.5.5 Pull out tray, mounted in front curb side compartment, single 12 gauge, A-60 Galvannealed, both sides, with 250 lb capacity slides, Grant 3320-16 or city approved equal.
  
- 3.6. Hydraulic System:
  - 3.6.1 Direct mount pump rated at 8 gallons per minute, 2,500 pounds per square inch at an engine speed of approximately 1200 RPM.
  - 3.6.2 Power Take Off: 10-bolt connected to Allison MD3060P transmission with clutch controls mounted on dash in the cab.
  - 3.6.3 Hydraulic tank with minimum 15 gallon capacity shall have one interior baffle plate. Tank shall include a protected sight glass, temperature gauge, and shut off valve. Tank shall be mounted at the front of the load space of the service body.
  - 3.6.4 A ten micron filter shall be mounted on the return line with minimum 3/4-inch porting.
  - 3.6.5 Control valve shall be open center motor spool with rotary control and built in relief set at 2500 psi.
  - 3.6.6 System shall be equipped with radiator type air to oil cooler. Porting on the cooler shall be minimum 3/4". Forced air ventilation shall be provided by an electric fan. Cooler shall be mounted in approved location . Protective grill shall be provided.
  - 3.6.7 Quick connect couplers with covers and control valve for the tool circuit. (Parker FF371/372/8FP or city approved equal)
  - 3.6.8 Throttle, hand control, engine speed, electronic, variable speed shall be installed in control compartment to adjust engine RPM. A flow meter shall be installed in control compartment. All controls shall be mounted in rear curbside vertical compartment.
  - 3.6.9 Hydraulic hose requirements: Suction line - 1", Pressure lines - 3/4", and return lines - 3/4-inch.
  - 3.6.10 A self winding hose reel Hannay N615-23-24B, or City approved equal shall be mounted in the control cabinet. Reel shall contain two 25' hydraulic hoses. Hose shall be 1/2" 2 wire braid with end stops. Reel shall be directly plumbed into hydraulic system with return lines routed direct bypassing the control valve.
  - 3.6.11 The system shall be full of hydraulic oil and fully operational.
  - 3.6.12 Two adapters for 1/2-inch to 3/8-inch shall be provided.
  - 3.6.13 A diverter valve shall be provided with 8 GPM flow which will allow crane or tool circuit operation.
  
- 3.7. Crane Reinforcing:
  - 3.7.1 The rear compartment curbside shall be reinforced to support a 50,000 ft.-lb. crane.
  - 3.7.2 1" steel under and on top of compartment with mounting holes.
  - 3.7.3 Reinforcement to accept crane – OEM standard.
  - 3.7.4 Three permanent Rope Chain Hooks.
  
- 3.8. Paint:
  - 3.8.1 Acrylic enamel with hardener on outside of the body only.
  - 3.8.2 Factory rust prevention primer on entire body.
  - 3.8.3 Refinish with same primer any welds made at Prime Contractor/Supplier's shop.
  - 3.8.4 Inside of compartments shall include doors to be painted light colored primer.

**SECTION B PART II TECHNICAL SPECIFICATIONS (CONTINUED):**

**ITEM NO. 9: DELETED DELETED DELETED DELETED**

**3.0 UTILITY SERVICE BODY ((Continued)):**

- 3.9 Lights:
  - 3.9.1 All lights and reflectors required by law.
  - 3.9.2 Backup lights license plate bracket and light.
  - 3.9.3 All lights and reflectors shall be attached with 3/16" minimum aluminum "pop" rivets.
  
- 3.10 Miscellaneous:
  - 3.10.1 Mud flaps, no logo.
  - 3.10.2 State Inspection.
  
- 3.11 Warranty:
  - 3.11.1 Two (2) year parts and labor warranty on service body and hydraulic system.

**4.0 Additional Equipment:**

- 4.1 Alternator:
  - 4.1.1 3,500 watt capacity.
  - 4.1.2 Two circuit breakers.
  - 4.1.3 Must have 120/240 volt 60 Hz output at 8 gpm flow.
  - 4.1.4 Built-in voltmeter.
  - 4.1.5 Approximate weight shall be 60 lbs.
  - 4.1.6 Shall include the following outlets: 120V 15A duplex, 120V 30A twist lock, and 240V 15A duplex.
  - 4.1.7 Quick connect couplings with flat fact O-ring seals.
  
- 4.2 Impact Wrench:
  - 4.2.1 Hydraulic Impact Wrench – ¼" Stanley IW12140.
  - 4.2.2 Must operate at 4-12 GPM, 1000 – 2000 psi.
  - 4.2.3 Weight shall not exceed 14 lbs.
  - 4.2.4 Length shall not exceed 9.5 inches.
  - 4.2.5 Width shall not exceed 4 inches.
  - 4.2.6 Must have ¾" square drive.
  - 4.2.7 Must have case-hardened steel motor gears direct drive spline to hammer cage.
  - 4.2.8 Impact mechanism must not use gear reductions, ball cams, or hammer thrust cage.
  - 4.2.9 Must be adjustable tool from 250-1200 ft.-lb. torque.
  
- 4.3 Warranty:
  - 4.3.1 Provide OEM standard warranty

**5.0 LITERATURE:**

- 5.1 Cab & Chassis:
  - 5.1.1 Two (2) sets of Operation Manuals
  - 5.1.2 Two (2) sets of Maintenance Manuals
  - 5.1.3 Two (2) sets of Parts Manuals
  
- 5.2 Service Body:
  - 5.2.1 One (1) set of Operator's Manuals
  - 5.2.2 One (1) set of Maintenance Manuals
  - 5.2.3 One (1) set of Installation Manuals
  
- 5.3 Hydraulic System:
  - 5.3.1 One (1) set of Operator's Manuals
  - 5.3.2 One (1) set of Maintenance Manuals

**SECTION B PART II TECHNICAL SPECIFICATIONS (CONTINUED):**

**ITEM NO. 9: DELETED DELETED DELETED DELETED**

**6.0 WARRANTY:**

- 6.1 A minimum of one year's warranty on both workmanship and materials must be provided for cab & chassis, service body and hydraulic system. The warranty period commences on the date the city accepts the equipment.
- 6.2 Warranty work must be completed without cost to the city within ten calendar days after notification to Prime Contractor/Supplier of equipment failure or faulty material.
- 6.3 When extended warranties are available as standard, they must be included as a part of the bid.
- 6.4 Any and all documents necessary to effect warranty must be properly applied for and submitted by the Prime Contractor/Supplier.
- 6.5 All freight charges to and from the Prime Contractor/Supplier's repair facility for warranty repair and/or maintenance must be borne by Prime Contractor/Supplier during the warranty period.

**7.0 DELIVERY/INSPECTION:**

- 7.1 The truck unit(s) specified above, with delivery tickets and/or other required documents shall be delivered prepaid F.O.B. destination to the location(s) shown on the purchase order(s) within **two hundred ten (210) calendar days** after receipt of City of Houston Purchase Order.
- 7.2 Representatives from both the cab & chassis Prime Contractor/Supplier and the body/equipment Subcontractor shall be present at the time of delivery of the unit to the City of Houston

**SECTION B PART II TECHNICAL SPECIFICATIONS (CONTINUED):**

**ITEM NO. 10: CAB & CHASSIS MOUNTED WITH BLACK TOP BITUMINOUS DISTRIBUTOR BODY  
PR 10084480**

**1.0 GENERAL:**

1.1 Equipment Description:

1.1.1 These specifications are intended to describe a Cab & Chassis mounted with a Black-Topper Bituminous Distributor body for the Public Works & Engineering Department, Right-of-Way and Fleet Maintenance Division, Street Resurfacing Group.

1.1.2 Cab to Axle shall be no greater than 85 inches.

1.2 Prime Contractor/Supplier:

1.2.1 These specifications require the bidder to be a prime contractor/supplier and to bid on the complete cab & chassis, body, and ancillary equipment.

1.3 Equivalent Equipment:

1.3.1 Bidders proposing to provide equipment they believe to be equal to the specified model must provide sufficient operating and technical specifications for the City to evaluate the proposed equipment.

1.4 Equivalent Equipment Documentation:

1.4.1 A bidder proposing to provide equivalent to the specified model must be able to demonstrate upon request that it has manufactured a vehicle similar to the unit bid, and that the vehicle has been proven and tested in service satisfactorily. The bidder will provide records of warranty service repairs upon request. The City of Houston shall be the sole judge whether the vehicle in service similar to the unit bid has been proven and tested satisfactorily

**2.0 CAB & CHASSIS:**

2.1 Front Axle and Equipment:

2.1.1 12,000 lb. axle, Cognis EMGUARD® FE 75W-90 synthetic Lube or City-approved equal

2.1.2 12,000 lb. suspension

2.1.3 Power Steering Glidecoat splines on steering shaft.

2.2 Rear Axle and Equipment:

2.2.1 23,000-lb. axle, two-speed, single.

2.2.2 23,000-lb suspension, Reyco 102AR Taper Leaf with shocks or City-approved equal

2.2.3 Oil wheel seals.

2.2.4 Differential ratio will be geared for truck not to exceed 55 MPH.

2.2.5 4S4M ABS Brakes.

2.3 Brakes and Equipment Air:

2.3.1 Moisture ejectors, automatic, Bendix DV-2 or City-approved equal

2.3.2 Air pressure gauge, dash-mounted w/light/buzzer for low air pressure.

2.3.3 Front and rear dust shields.

2.3.4 Air Compressor, minimum 18.7 CFM.

2.3.5 Bendix AD-IP heated air dryer or equal or City-approved equal.

2.3.6 Gusseted cam brackets and rear axle stabilizer bar

2.4 Cab and Equipment:

2.4.1 OEM severe service with tilting hood and fenders.

2.4.2 Hi-back air suspension, seat with in cab battery box under fixed passenger seat.

2.4.3 Warning light and buzzer for low oil pressure and high temperature.

2.4.4 Heater

2.4.5 Assist handles

2.4.6 Dual sun visors

2.4.7 Tinted glass, all

2.4.8 Gauges - to include the following; water temp (eng.), voltmeter, oil temp (trans.) oil pressure (eng), air pressure, and fuel.

2.4.9 Speedometer/Odometer with trip odometer.

2.4.10 Tachometer

2.4.11 Engine hour meter, which will actuate only with engine running, dash mounted.

**SECTION B PART II TECHNICAL SPECIFICATIONS (CONTINUED):**

**ITEM NO. 10: CAB & CHASSIS MOUNTED WITH BLACK TOP BITUMINOUS DISTRIBUTOR BODY (Continued):**

**2.0 CAB & CHASSIS (CONTINUED):**

**2.4 Cab and Equipment (Continued):**

- 2.4.12 Dual electric horns
- 2.4.13 Mirrors, dual Moto-Mirrors each side heated and motorized with switch on dash.
  - 2.4.13.1 Two (2) Convex 8 inch Heated mirrors, under mirror bracket.
- 2.4.14 Arm rest on both doors
- 2.4.15 Factory air conditioning
- 2.4.16 Two (2) Hadley Air Horns, rectangle 26" air horns with shields
- 2.4.17 Engine fan switch – full on or automatic selections
- 2.4.18 AM/FM/WB radio with (2) speakers
- 2.4.19 Tilt wheel, telescoping column
- 2.4.20 Power Lift window, driver and passenger door, driver controlled
- 2.4.21 Painted outside sunvisor
- 2.4.22 Convex mirror over passenger door.
- 2.4.23 D.P.F. Three way switch on dash with in dash indicator light
- 2.4.24 Cab air suspension

**2.5 Electrical:**

- 2.5.1 145 amp alternator
- 2.5.2 Batteries, Optima DT31T Batteries Minimum 2700 CCA Total
- 2.5.3 Battery Box, in cab under passenger seat
- 2.5.4 Battery Jumper Terminal Mounted Under Hood LH Frame Rail.
- 2.5.5 Plug in, reset able circuit breakers.
- 2.5.6 L.E.D. marker and tail lights.

**2.6 Engine and Equipment:**

- 2.6.1 Diesel 300 gross horsepower, 6 cylinders, minimum 860 ft. lbs. Torque.
- 2.6.2 2010 Engine
- 2.6.3 Air cleaner, dry type with restriction indicator, dash mounted.
- 2.6.4 Spin-on fuel/water separator/filter
- 2.6.5 Fan clutch
- 2.6.6 Deep Core radiator, 880 sq. in. frontal area, minimum.
- 2.6.7 Cooling system shall be protected with permanent coolant, rated for service to 40F.

**2.7 Exhaust System:**

- 2.7.1 Single vertical exhaust and pipe with rain cap or curved
- 2.7.2 Diesel particulate filter right hand under cab.
- 2.7.3 Select Catalytic Reduction device provided under right hand door as well with a minimum 12 gallon Diesel Exhaust Fluid tank provided.

**2.8 Frame and Equipment:**

- 2.8.1 Minimum frame rating 1,776,000 RBM to meet GVW.
- 2.8.2 Minimum single 70 gallon capacity fuel tank RH under cab door.
- 2.8.3 Frame-mounted towing hook(s) on front.
- 2.8.4 Front frame extension with Front End Power Take Off provision.

**2.9 Tires and Wheels:**

- 2.9.1 Front - 11R22.5 14 ply steel belted radial tubeless on steel disc type wheels (Accur 50408 piloted 22.5 x 8.25) R280 Tire tread.
- 2.9.2 Rear – 11R22.5 16 Ply steel belted radial type tubeless for on/off road use with disc type wheels (Accur 50408 piloted 22.5 x 8.25) M843 Tire tread.

**2.10 Transmission and Equipment:**

- 2.10.1 Transmission automatic 6 speed, Allison 3500RDS-P, and must be compatible with horsepower and torque of engine proposed must be able to be used both on and off road.
- 2.10.2 TranSynd automatic Transmission Fluid only.

**SECTION B PART II TECHNICAL SPECIFICATIONS (CONTINUED):**

**ITEM NO. 10: CAB & CHASSIS MOUNTED WITH BLACK TOP BITUMINOUS DISTRIBUTOR BODY(Continued):**

**2.0 CAB & CHASSIS (Continued):**

2.11 Miscellaneous:

- 2.11.1 Unless specified in the detailed vehicle specifications, the cab-to-axle dimension and/or wheel base shall be as required to properly mount the body on the chassis, with no more than four (4) inches between the Cab and Chassis unless a greater distance is required for proper operation.
- 2.11.2 Line setting ticket for each unit will be available at the time of inspection.
- 2.11.3 Color: White OEM standard.
- 2.11.4 Trailer towing package including air glad hand(s), six, and seven-way electrical connections at rear of frame. For trailer application(s).
- 2.11.5 Lincoln Auto lubrication System shall be furnished and installed, NO EXCEPTIONS.

**3.0 CAB & CHASSIS WARRANTY:**

- 3.1 Minimum, five (5) years/100,000 miles warranty on parts and labor

**4.0 BITUMINOUS DISTRIBUTOR:**

4.1 General:

- 4.1.1 It is the intent of these specifications to describe a Bituminous Distributor in sufficient detail to secure bids on comparable equipment. All parts not specifically mentioned, which are necessary to provide a complete Distributor, shall be included in the bid and shall conform in strength and quality of material and workmanship to what is usually provided to the trade in general. The Distributor shall be a current model under standard production by the manufacturer.
- 4.1.2 Any units not conforming to these specifications will be rejected, and it will be the responsibility of the manufacturer to conform with the requirements unless deviations have been specifically cited by the bidder and acceptance made on the basis of the exception.

4.2 Function:

- 4.2.1 The Distributor shall perform the following functions:
  - 4.2.1.1 Fill tank by Distributor pump from outside source.
  - 4.2.1.2 Circulate material in tank.
  - 4.2.1.3 Circulate material in spray bar.
  - 4.2.1.4 Spray at a constant desired application rate, regardless of variance in truck speed.
  - 4.2.1.5 Return material in spray bar to tank by pump suction.
  - 4.2.1.6 Handspray.
  - 4.2.1.7 Return material in hand spray to tank by pump suction.
  - 4.2.1.8 Transfer from an outside source to another outside source without having material enter distributor tank.
  - 4.2.1.9 Pump material back to supply source.
  - 4.2.1.10 Automatically go from Circulate in Spray Bar to Spray mode and return to circulate without pushing material over relief valve.
- 4.2.2 It is important that the Distributor be capable of returning all material in the spraybar, handspray and distributing lines to the Distributor tank by means of pump suction. This function is to be accomplished without reversing the asphalt pump.
- 4.2.3 Unit shall use volumetric metering with no bypass when spraying to insure accuracy of application.
- 4.2.4 Provision shall be made for easily draining the circulating system independently of the tank and for flushing circulating system and pump with not more than three (3) quarts of fuel oil so as not to dilute tank contents.

4.3 Tank and Fittings:

- 4.3.1 Capacity: 1,000 U.S. Gallons minimum.
- 4.3.2 Shape: Oval in cross section, with the long axis horizontal.
- 4.3.3 Material: Shell to be 10 gauge steel. Tanks to have 10 gauge steel heads, deep dished and flanged, welded to tank shell both inside and outside for strength and durability.

## **SECTION B PART II TECHNICAL SPECIFICATIONS (CONTINUED):**

### **ITEM NO. 10: CAB & CHASSIS MOUNTED WITH BLACK TOP BITUMINOUS DISTRIBUTOR BODY (Continued):**

#### **4.3 Tank And Fittings (Continued):**

- 4.3.4 Surge Plate: Tank to be supported with full section surge plate, deep dished and flanged, constructed of 10 gauge steel. To be spaced to provide adequate tank strength and proper surge control. Openings shall be provided in the surge plates for the free flow of material to the pump and large enough for a man to crawl through
- 4.3.5 Manhole: 20" inside diameter manhole with quick-opening cover.
- 4.3.6 Overflow: 3" diameter overflow, extending at least 6 inches above the liquid, and draining internally only through the bottom of the tank in such a location as to clear all chassis members. Tank overflow design that drains asphalt material into the spill collar around manhole is not acceptable.
- 4.3.7 Insulation: 2" fiberglass 1 lb. Density with spacers to prevent compression, protected by aluminum jacket sheet (.040").
- 4.3.8 Tank Mounting: Mounting saddles shall be full bolster style. Includes aluminum fenders.
- 4.3.9 Tank Gauge: Float type, with dial calibrated in 100 gallon increments, both front and rear of tank.
- 4.3.10 Measuring Stick: Aluminum, calibrated in 50 gallon increments. To be designed and calibrated to read tank contents without dipping stick into material.
- 4.3.11 Spillage collar and overflow drain, including refiners platform and ladder.
- 4.3.12 Tank design and construction to meet all applicable Federal Cargo Tank Regulations 49 CFR 173.247 and including DOT-406, HM-183, HM-198A, with consideration for hot asphalt products. Must have ASME tank approval number to assure that federal cargo tank regulations can be met.

#### **4.4 Power Unit:**

- 4.4.1 Type: Hydrostatic transmission
- 4.4.2 Pump: Infinitely variable displacement pump with a minimum displacement of 3.1 cubic inches per revolution, axial piston type. electronic stroker control.
- 4.4.3 Motor: Piston motor with gearbox. 1.53 cubic inch per revolution displacement, direct coupled to the asphalt pump. Entire transmission unit shall be capable of operating speeds up to 2800 RPM. Hydraulic oil may reach temperature up to 200 degrees without damage to the unit. Unit shall have internal valving, and shall be fitted with relief valve and high oil temperature signal in cab.
- 4.4.4 Hydrostatic pump shall be driven by crankshaft take off; chassis must be equipped to accept crankshaft drive.
- 4.4.5 Hydraulic Lines:
  - 4.4.5.1 High pressure hose with swaged type split flange "0" ring fittings, per S.A.E. standards.
  - 4.4.5.2 Low pressure hose installation shall be made according to transmission manufacturer's recommendations, only top quality fittings, tubing and hoses to be used.
- 4.4.6 Controls: Electronic micro-control of hydrostatic transmission for setting asphalt pump discharge rate shall be located in truck cab. Control to permit stopping the variable pump discharge without disconnecting the drive and be equipped with an override of the micro-control which shall allow increases in asphalt pump output for filling, sucking back, etc., without affecting application rate setting.
- 4.4.7 Override control shall be located in truck cab and at rear of unit.
- 4.4.8 Reservoir minimum 20 gallon hydraulic reservoir with dial thermometer and level indicator.
- 4.4.9 Filter shall be a 10 micron, replaceable cartridge type filter with vacuum gauge located in the line between oil reservoir and hydrostatic pump.

#### **4.5 Bitumen Pump:**

- 4.5.1 Positive type displacement rotary gear, 4 1/2" suction x 4" discharge.
- 4.5.2 Shall be located below the bottom level of the tank so that the material will flow vertically from the suction to the discharge ensuring complete drainage when tank contents valve is closed.
- 4.5.3 Capacity shall be minimum of 400 gallons per minute.
- 4.5.4 Self flushing line from fuel tank or heating system to fill line, includes minimum 20 gallon capacity fuel tank with float level gauge located away from burners for safe operation.

## **SECTION B PART II TECHNICAL SPECIFICATIONS (CONTINUED):**

### **ITEM NO. 10: CAB & CHASSIS MOUNTED WITH BLACK TOP BITUMINOUS DISTRIBUTOR BODY (Continued):**

#### **4.0 BITUMINOUS DISTRIBUTOR (Continued):**

- 4.6 Heating System:
  - 4.6.1 Flues: (1) with (LPG) liquid petroleum gas burner, with minimum of 1,000,000 BTU per hour per burner capacity. With pressure regulator, valves, piping, and 52 gallon frame mounted tank to be furnished.
- 4.7 Spray Bar:
  - 4.7.1 Full circulating 16 feet in length, hinged to permit folding for traveling.
  - 4.7.2 Length of bar in folded position not to exceed 8 feet. Positive circulation from one end of the bar to the other end, regardless of bar length or asphalt pump rate.
  - 4.7.3 To consist of 8' center section with (2) folding wing sections.
  - 4.7.4 Electric-air on-off in 1' increments, cab controlled.
  - 4.7.5 Electric-hydraulic spray bar shifting, lifting and wing folding, cab controlled.
  - 4.7.6 Nozzles to be spaced on 4" centers on spray bar and shall have an individual valve for each spray nozzle. Each nozzle valve to have flip lever control so spray width can be adjusted, and allows individual valves to be disconnected without the use of tools or pulling pins Right and left side wings (bar extensions) to relieve fore and aft. pin replacement required when bar relieves.
  - 4.7.7 Bar to adjust for positive or negative crown and also adjustment for pitch of bar to aim nozzle valves rearward. Sections to be interchangeable, right or left side.
- 4.8 Air Control:
  - 4.8.1 Driver Operated Cab Control:
    - 4.8.1.1 Distributor shall be equipped with air controls. Air for the controls shall be obtained from the air system on the truck chassis. The Distributor air system shall include its own air reservoir (using of truck chassis reservoir not acceptable) with check valve set at 80 pounds to prevent loss of air on truck chassis brakes in case lines are ruptured. System shall have its own air line oiling device and controls shall be electric, located in cab convenient to operator.
  - 4.8.2 Air Operated:
    - 4.8.2.1 All air solenoid valves and hydraulic solenoid valves are to be mounted to be accessible and serviceable from the ground without climbing on the machine.
- 4.9 Tool Box Fenders, Etc.:
  - 4.9.1 Tool Box: All steel box with aluminum door, of sufficient size to store all necessary tools shall be furnished at side of the tank. Must have hinged door at side with flush-type lock. Door at top not acceptable.
  - 4.9.2 Fenders: Full dual flanged fenders (.080" aluminum) with rubber flaps use of skirting and flaps as a substitute for fenders not acceptable.
- 4.10 Controls/Instrumentation:
  - 4.10.1 Computer with in-cab operator controls which include:
    - 4.10.1.1 Computer controlled switches for five (minimum) preset application rates.
    - 4.10.1.2 Distance/volume reset switch.
    - 4.10.1.3 Application rate adjustment switch.
    - 4.10.1.4 Display select switch.
  - 4.10.2 In-cab instrumentation will include the following information on self-illuminated display(s):
    - 4.10.2.1 Truck travel speed feet/minute and/or meters/minute.
    - 4.10.2.2 Application rate in gallons/square yard and/or liters/square yard.
    - 4.10.2.3 Pump rate in gallons/minute and/or liters/minute.
    - 4.10.2.4 Resettable distance sprayed in feet and/or meters.
    - 4.10.2.5 Resettable volume sprayed in gallons and/or liters.
    - 4.10.2.6 Low tank level warning.
    - 4.10.2.7 Warnings that travel speed and/or application rate is beyond system capability.
  - 4.10.3 Radar type sensor to pickup ground speed.
  - 4.10.4 Cab control of 4-way asphalt valve.

**SECTION B PART II TECHNICAL SPECIFICATIONS (CONTINUED):**

**ITEM NO. 10: CAB & CHASSIS MOUNTED WITH BLACK TOP BITUMINOUS DISTRIBUTOR BODY (Continued):**

**4.0 BITUMINOUS DISTRIBUTOR (CONTINUED):**

4.11 Accessories:

- 4.11.1 Hose trough for fill hose in lieu of hooks.
- 4.11.2 Thermometer well on side of tank.
- 4.11.3 Pencil thermometer.
- 4.11.4 Liquid sampling valve to be state approved for taking samples of liquid asphalt located in the rear tank head.
- 4.11.5 Hand Spray Attachment: Hand spray gun with cold handle and not less than 3 nozzles, with 25' of 3/4" flexible rubber hand spray hose.
- 4.11.6 Strainers: Asphalt system to be designed so all liquid asphalt pumped to the tank, from the tank or to the spray bar must pass through a screen.
- 4.11.7 Turn Signals: At rear of Distributor with truck supplying chassis control of signals.
- 4.11.8 Light: Federal Standard 108 requirements, including reflectors, clearance and identifications lights wiring in loom.
- 4.11.9 All necessary special tools for operation and maintenance of the Distributor shall be provided.
- 4.11.10 Painting: Distributor steel parts shall be painted Black Enamel.

4.12 Warranty:

- 4.12.1 Minimum 36 month warranty of Distributor components.
- 4.12.2 With the bid shall be included manufacturer's descriptive literature and specifications on unit being bid, and a list of any exceptions to these specifications. Bidder will supply parts manual and complete operating instruction manual with bid if requested.
- 4.12.3 Bid shall include mounting on customer's chassis at factory and instruction of operator on maintenance and operation at factory.

4.13 Miscellaneous Items:

- 4.13.1 Manhole strainer, 20" only required when filling tank overhead storage.
- 4.13.2 Dial thermometer, 4".
- 4.13.3 Mud flaps – anti-sail:
  - 4.13.3.1 Heavy duty fiber
  - 4.13.3.2 Reinforced with metal mounting inserts
  - 4.13.3.3 Hole punched center of mud flap – to fold and connect mud flap to bed
  - 4.13.3.4 Body to have "J" hooks to secure mud flaps
  - 4.13.3.5 State Inspection and Weight Certificate:
  - 4.13.3.6 Supplier shall provide state inspection and weight certification for each vehicle supplier will complete the document and post in an appropriate location

**5.0 BITUMINOUS DISTRIBUTOR WARRANTY:**

- 5.1 Hydraulic pump, valve and cylinders– 12 months for material and workmanship
- 5.2 All other items – 12 months for material and workmanship

**6.0 LITERATURE:**

- 6.1 Two (2) sets of Parts Manuals
- 6.2 Two (2) sets of Service Manuals

**7.0 TRAINING:**

- 7.1 Training sessions shall be provided for operators covering the total system and vehicle, and each training session shall be a minimum of 8 hours for each unit and shall be limited to a maximum of six people.

**8.0 DELIVERY/INSPECTION:**

- 8.1 The item(s) specified above, with delivery tickets and/or other required documents shall be delivered Prepaid F.O.B. Destination to the location(s) shown on the purchase order(s) one hundred eighty (180) calendar days from receipt of the City of Houston Purchase Order.

**SECTION B PART II TECHNICAL SPECIFICATIONS (CONTINUED):**

**ITEM NO. 11: CAB & CHASSIS MOUNTED WITH BODY AND 87 FT. AERIAL MANLIFT**  
**PR No. 10086706**

**1.0 GENERAL:**

- 1.1 Equipment Description:
  - 1.1.1 The intent of these specifications is to provide a cab & chassis mounted with a heavy utility bucket and body to the City of Houston Parks & Recreation Department. A manufacturer's 2010 engine shall be provided. Reference Manufacturer, International 7400 SBA 6X4 (SF625) or City-approved equal.
- 1.2 Prime Contractor/Supplier:
  - 1.2.1 These specifications require the bidder to be a prime contractor/supplier and to bid on the complete cab & chassis, body and utility bucket.
- 1.3 Equivalent Equipment:
  - 1.3.1 Bidders proposing to provide equipment they believe to be equal to the specified model must provide sufficient operating and technical specifications for the City to evaluate the proposed equipment.
- 1.4 Equivalent Equipment Documentation:
  - 1.4.1 A bidder proposing to provide equivalent to the specified model must be able to demonstrate upon request that it has manufactured a vehicle similar to the unit bid, and that the vehicle has been proven and tested in service satisfactorily. The bidder will provide records of warranty service repairs upon request. The City of Houston shall be the sole judge whether the vehicle in service similar to the unit bid has been proven and tested satisfactorily

**2.0 CAB & CHASSIS:**

- 2.1 General:
  - 2.1.1 236" Wheelbase, 168" CA, and 116" Axle to Frame
  - 2.1.2 Tow Loop, Front
  - 2.1.3 Frame rails heat treated alloy steel (120,000 PSI yield); 10.125" X 3.580"X.0312"
  - 2.1.4 Frame reinforcement, outer "C" channel, heat treated alloy steel (120,000 PSI Yield); 10.813" X 3.892" X .312"
  - 2.1.5 Crossmember, Rear, AF
  - 2.1.6 Axle, front non-driving I-beam type wide track, 18,000-lb capacity
  - 2.1.7 Suspension, front, spring multileaf, shackle type; 18,000-lb capacity; less shock absorbers
  - 2.1.8 Steering column stationary
  - 2.1.9 Power steering gear, dual power
  - 2.1.10 Paint: White
  - 2.1.11 Axle, rear, Tandem single reduction 46,000-lb capacity, with lube oil pump, and "R" wheel ends, with driver controlled locking differential in forward rear and rear axles. Gear ratio:5.57
  - 2.1.12 Axle, rear, lube Synthetic oil;
  - 2.1.13 Suspension, rear tandem (Hendrickson HMX-460-54) walking beam type 54" axle spacing; 46,000-lb capacity, with rubber end bushings, transverse torque rods, less shock absorbers
  - 2.1.14 Suspension/ rear-axle identity for Dana Spicer Eaton style tandem rear axles with bar-pin beam attachment type suspensions
  - 2.1.15 Wheels, front disc; 22.5" painted white steel 12.25 DC rims
  - 2.1.16 Wheels, rear disc; 22.5" painted white steel 8.25 DC rims

**SECTION B PART II TECHNICAL SPECIFICATIONS (CONTINUED):**

**ITEM NO. 11: CAB & CHASSIS MOUNTED WITH BODY AND 87 FT. AERIAL MANLIFT (Continued):**

**2.0 CAB & CHASSIS (Continued):**

- 2.1.17 2 Front tires to be a minimum size of 385/65R22.5 load range J
- 2.1.18 8 Rear tires 11R22.5, load range G, 14 ply Traction Tire
- 2.1.19 Fuel tank top draw; aluminum 100 US Gal, mounted left side, under cab
  
- 2.2 Cab Unit:
  - 2.2.1 Cab, conventional
  - 2.2.2 Engine and heater hoses silicone
  - 2.2.3 Seat, Driver Air suspension, high back with integral head rest, cloth, isolated, 1 chamber lumbar, 2 position front cushion adj, -3 to +14 degree seat back angle adjustment, dual shocks
  - 2.2.4 Seat, Passenger Air suspension, High back with integral headrest, cloth, isolator, 1 chamber lumbar, 2 position front cushion adj. -3 to +14 degree seat back adj, dual shocks
  - 2.2.5 Mirrors (2) rectangular, 7.00" x 15.00", and 7.00" sq convex right side only, breakaway
  - 2.2.6 Air conditioner with integral heater and defroster
  - 2.2.7 Fresh air filter for HVAC
  - 2.2.8 Cab interior trim deluxe
  - 2.2.9 Cab rear suspension air bag type
  - 2.2.10 Arm rest driver's seat
  - 2.2.11 Arm rest passenger's seat
  - 2.2.12 Two (2) hood mounted convex mirrors left and right
  
- 2.3 Engine:
  - 2.3.1 A 2010 Diesel 300hp, 860 lb-ft torque@1200 RPM, 2200 RPM governed speed
  - 2.3.2 Fuel/Water separator with filter restriction/change indicator, includes standard equipment water-in-fuel sensor
  - 2.3.3 Fan drive direct drive type, two speed with residual torque device for disengaged fan speed
  - 2.3.4 Radiator, includes long life antifreeze
  - 2.3.5 Expanded engine temp effects to allow higher engine operating temperature range; includes nylon surge tank and 15 PSI pressure cap
  - 2.3.6 Transmission, Automatic (Allison 3500\_RDS\_P); wide ratio, 5 speed, with overdrive; on/off hwy; includes oil level sensor, with PTO provision, less retarder
  - 2.3.7 Transmission shift control push-button type;
  - 2.3.8 Oil cooler, auto transmission water to oil, for Allison transmission
  - 2.3.9 Shift Control Parameters WT-Allison S-1 performance programming in primary and Allison S-4 economy programming in secondary
  - 2.3.10 Transmission oil Synthetic;
  - 2.3.11 Air cleaner, dual element
  
- 2.4 Electrical:
  - 2.4.1 Electrical system, 12 volt, standard equipment
  - 2.4.2 Alternator 12 volt 120 amp. Capacity
  - 2.4.3 Body builder wiring back of standard cab at left frame, includes sealed connectors for tail/amber turn/marker/backup/accessory power/ground and sealed connector for stop/turn
  - 2.4.4 Battery system maintenance free (2) 12-volt 1300CCA batteries

## **SECTION B PART II TECHNICAL SPECIFICATIONS (CONTINUED):**

### **ITEM NO. 11: CAB & CHASSIS MOUNTED WITH BODY AND 87 FT. AERIAL MANLIFT (Continued):**

#### **2.0 CAB & CHASSIS (Continued):**

##### **2.4 Electrical (Continued):**

- 2.4.5 Stop, turn, tail and B/U lights, with LED lamps for stop, turn, and tail lights and for backup lights, less power module, less rubber mount, includes rear reflectors
- 2.4.6 Jump start stud remote mounted
- 2.4.7 Clearance/marker lights (5) amber LED lights, flushed mounted on cab or sunshade
- 2.4.8 Backup Alarm 120dba
- 2.4.9 Fog Lights
- 2.4.10 Toggle switch for work light on instrument panel for cab light on back
- 2.4.11 Starter Motor (heavy duty) 12 volt less thermal over-crank protection
- 2.4.12 Indicator for low coolant level with audible alarm
- 2.4.13 Throttle, hand control engine speed control for PTO; electronic, stationary pre-set, two speed settings, mounted on steering wheel
- 2.4.14 Engine control, remote mounted provision for; includes wiring for body builder installation of PTO controls; with ignition switch control for MaxxFace DT Engines (DT466)
- 2.4.15 Gauge, oil temp, engine
- 2.4.16 Circuit breakers manual reset (main panel) SAE Type III with trip indicators, replaces all fuses except for 5 amp fuses
- 2.4.17 Gauge, oil temp Allison Tran
- 2.4.18 Body, Integration; remote power module mounted under cab or on battery box; up to 6 outputs and 6 inputs, max. 20 amp per channel, max. 80 amp total (includes 1 switch pack with latched switches)
- 2.4.19 Body, Integration, Power Module Aux. (1) mounted on the drivers side frame rail at rear of frame; up to 6 outputs and 6 inputs, max 20 amp per channel, max 80 amp total
- 2.4.20 Body, Integration, remote start/stop to start and stop vehicle
- 2.4.21 Body, Integration, PTO accommodation for electric over hydraulic PTO, does not include solenoids, with switch mounted on dash, includes audible alarm and indicator light in gauge cluster (requires 1 remote power module input and 1 output)
- 2.4.22 Body, Integration, Indicator lights (2) 1 for boom out stow, 1 for outriggers deployed, includes audible alarm and interlock to parking brake, programmable mode for various switch actions (requires 2 remote power module inputs)
- 2.4.23 Body, Integration, Throttle control for dual function input, for utility applications, remote throttle control when engine is running and activating output for emergency power when engine is not engaged; useable only when vehicle is stopped and park brake is applied (requires 1 remote power module input and output)
- 2.4.24 Body, Integration, Headlights, WIG WAG high beam wig wag with park brake interlock, park brake disables high beam wig wag, enables low beam wig wag

##### **2.5 Brakes:**

- 2.5.1 Brake system, air dual system for straight truck applications
- 2.5.2 Air brake ABS
- 2.5.3 Drain valve manual; with pull chain for air tanks
- 2.5.4 Air dryer with heater
- 2.5.5 Brake Chambers, front axle 20sqin
- 2.5.6 Brake Chambers, rear axle 30/30 spring brake
- 2.5.7 Front brakes, air cam S-Cam; 16.5"x5.0" includes 20 Sq.In. long stroke brake chambers
- 2.5.8 Rear brakes, air cam 16.5"x7.0" includes 30/30 long stroke brake chamber and spring actuated parking brake
- 2.5.9 Air compressor (Bendix tu-flo 550) 13.2 CFM capacity minimum

## **SECTION B PART II TECHNICAL SPECIFICATIONS (CONTINUED):**

### **ITEM NO. 11: CAB & CHASSIS MOUNTED WITH BODY AND 87 FT. AERIAL MANLIFT (CONTINUED):**

#### **3.0 AERIAL DEVICE:**

- 3.1 A new Terex-Utilities Hi-Ranger TM85 non-overcenter insulated aerial device providing a working height of 87.0 ft and a side reach of 47.5 ft on material handling units no substitutes.
- 3.2 Design Criteria: Terex Telelect aerial devices are designed in accordance with current industry and engineering standards applicable and accepted for structural and hydraulic design
- 3.3 Upper Controls: Single stick control; enable lever must be actuated before operation; controls lower boom, upper boom, upper boom extension and rotation
- 3.4 Lower Controls: Individual control levers are provided and located in an accessible location on the turntable. The lower controls activate lower boom, upper boom, upper boom extension, lower boom extension, platform level and rotation. An upper control shut-off provides override of the platform controls and shut off all hydraulic flow to upper controls.
- 3.5 Engine Two Speed Throttle Control: A two speed engine throttle control is provided at the upper controls. The chassis engine will advance to a preset speed when engaged and decrease to idle when disengaged.
- 3.6 Platform Leveling: The platform shall have a positive leveling system, utilizing a single hydraulic motor driving a gearbox. This system shall maintain boom insulation requirements in all positions. This system meets all dielectric requirements per ANSI/SIA A92.2-2001
- 3.7 Platform Tilt: the platform is equipped with hydraulic horizontal tilt at the platform controls for ease of personnel rescue and platform debris clean out.
- 3.8 Platform Rotator: Hydraulic platform rotator 180 degrees (90 degrees each direction) for end mount platform only
- 3.9 Pivot Points: The support areas at the boom –to-turntable is equipped with self-aligning swivel ball bushing for extended life of main pivot pins.
- 3.10 Lower Boom: constructed of high strength rectangular fabricated steel tube with a rectangular bi-axial filament wound, high strength fiberglass insert providing an insulation gap of 20 in. The lower boom articulation enveloped is from 0°-93°;The lower boom has one extension for a total extension of 12 ft.; The lower boom is supported when stored by a boom rest with tie down; Lower boom also includes a padded upper boom rest with tie down.
- 3.11 Upper Boom: Aerial device upper boom knuckles constructed of high strength rectangular bi-axial filament wound fiberglass boom providing 14.2 ft clear insulation. The aerial device upper boom provides articulation of 78° above horizontal. The upper boom has one extension for a total extension of 7.5ft.
- 3.12 Boom Interlock: To operate the boom the outriggers must be extended.
- 3.13 Lower Boom Dual Cylinders: (2) single, threaded end gland design, double acting hydraulic lift cylinders equipped with two integral holding valves.
- 3.14 Elbow Cylinder & Linkage Mechanism: Two double acting hydraulic elbow cylinders equipped with two integral holding valves. Linkage mechanism is of welded steel fabrication utilizing high-strength steel.
- 3.15 Pedestal and Turntable: The pedestal is of welded high-strength steel construction and designed with access holes for maintenance of hydraulic plumbing; The pedestal top plate is machined from a single piece of thick plate; The turntable is constructed of steel plates with an offset configuration to provide maximum strength and stability; It shall be provided with self-aligning steel swivel ball bushings utilized in each side plate for mounting of the lower aerial device boom. Steel bottom plate has provisions for attaching outer race of rotation bearing.
- 3.16 Continuous Unrestricted Rotation: A 6 port collector block provides a rotating oil distribution system for continuous and unrestricted rotation. A 6 channel electric collector ring. A planetary gearbox, with integral brake, rotation drive with its pinion gear in direct contact with the turntable bearings outer race shall be provided for continuous and unrestricted rotation.
- 3.17 Rotation Bearing: The rotation bearing is a heavy duty “shear-ball” bearing utilizing polished alloy steel balls; Both inner and outer races are machined from high- strength alloy steel and are heat treated to provide maximum life; High-strength bolts attached the inner and outer races to the pedestal and turntable.

## **SECTION B PART II TECHNICAL SPECIFICATIONS (CONTINUED):**

### **ITEM NO. 11: CAB & CHASSIS MOUNTED WITH BODY AND 87 FT. AERIAL MANLIFT (CONTINUED):**

#### **3.0 AERIAL DEVICE(Continued)**

- 3.18 ANSI Rating: Aerial device is designed as a Category C machine in accordance with ANSI/SIA a92.2-2001: Aerial device is dielectrically tested and rated for operation up to 46,000 volts of working line voltage per ANSI/SIA A92.2-2001.
- 3.19 Hydraulic System: The hydraulic system used for operating the boom functions is a pilot operated boom control system: Full pressure is 3000 PSI closed center, load sensing hydraulic system. A 70 gallon hydraulic oil reservoir provided with a replaceable cartridge type 10-micron return line filter, a 100-mesh filter screen, baffles outlet filter screen, clean out access hole, dipstick and shut off valve. (2) high pressure filters shall be located in the pressure line from main pump located before any valves. A single high pressure filter is located in pressure line from second pump. Hydraulic hoses are equipped with permanent type hose fitters.
- 3.20 Outrigger Motion Alarm: Alarm sounds whenever an outrigger is raised or lowered from the controls.
- 3.21 Miscellaneous: All metallic components of the completed aerial device are prime painted white: The fiberglass upper boom, lower boom insert and platforms are white: Two complete manuals providing operation and maintenance procedures and a replacement parts listing: Warning decals are provided with unit.
- 3.22 (2): Platform 31" x 60" x 42": One mounted fiberglass platform with a rated capacity up to 800-lbs: Includes one (1) inside/outside access step with a slip resistant surface; Two(2) safety harnesses with lanyards.
- 3.23 (2): Platform Liner for 31" x 60" x 42" platform:
- 3.24 (2): Vinyl Platform Cover for 31" x 60" Platform: Waterproof with internal elastic cord around edge.
- 3.25 (1): Single hydraulic lift 15 ft. to elevate the bucket height to 85 ft.: Includes a 50 gallon hydraulic oil reservoir.
- 3.26 (1): Hydraulic Tool Outlets at Platform: Accommodate two closed center hydraulic tools and cannot be operated simultaneously: Provides 6GPM and 2250psi tool for standard operation of tools with truck engine on low speed and 8GPM on high speed. Quick disconnect HTMA flush face couplers are included: Tool return back pressure is less than 200psi with ISO 15 hydraulic oil.
- 3.27 (1): Auxiliary Power: Allows the operation of any function for a time period limited by battery life: Note this includes a switch for activation at pedestal for electric function.
- 3.28 (1): Engine Stop/Start: Controlled from platform and turntable
- 3.29 (1): Hydraulic Tool Outlet Below Rotation: Provides 6GPM and pressure limited to 2000psi closed center for standard operation of tools with truck engine on low speed.
- 3.30 (1): Electrical mini-box system
- 3.31 (1): Hydraulic Articulating Hydraulic Extending 90° Jib and Winch: Infinite positioning through the 90 degree articulation envelop Jib length is 48" retracted, a hydraulic extension of 17" and a manual extension of 15.75"(2 positions at 7.88"). Jib extends by means of a hydraulic cylinder; can extend under load; Jib capacity is 1500 lbs with jib retracted, 1400 lbs with up to 17" hydraulic or manual extension add 1300 lbs from 65" to 80.5"; TM85- 100 of ½" load line and swivel hook with latch' Includes a winch control at the lower controls.
- 3.32 (1): Subframe for TM Series: Non-possum belly, 168" CT
- 3.33 (1): Tie Down Kit for TM
- 3.34 (1) Medium duty Radial Outriggers for TM Series
- 3.35 (1) Extra heavy duty radial outriggers for TM Series
- 3.36 (1): Outrigger Controls for 2-sets of outriggers with auxiliary tool outlets: Recessed at rear of truck each side for ease of view for outrigger placement. This will operate two sets radials
- 3.37 (1): Boom/Boom Stow Interlock in addition of standard Boom Interlock: To operate the outriggers the boom must be in the stowed position and to operate the boom the outriggers must be extended
- 3.38 (1): Boom Storage Warning Light: Alerts operator if aerial device is not properly stored.
- 3.39 (1): Pump for TM Systems Requiring: A load sensing pressure compensated pump rated at 3000 PSI with a total output of 19 gallons per min at 1800 RPM; The pump provides flow for the boom functions and winch. The pump shall have a thru shaft mount for a second pump; The second pump, pressure compensated rated at 3000 PSI shall provide an output of 6.5 gallons per minute at 1800 RPM; this pump shall provide flow for the limit system, level system, platform and jib functions.

## **SECTION B PART II TECHNICAL SPECIFICATIONS (CONTINUED):**

### **ITEM NO. 11: CAB & CHASSIS MOUNTED WITH BODY AND 87 FT. AERIAL MANLIFT (CONTINUED):**

#### **4.0 UTILITY BODY:**

- 4.1 (1): Flatbed, 24-ft heavy duty with 12 gauge treadplate deck
- 4.2 (1): Frame and Floor with installation of subframe and outriggers
- 4.3 (1): Recessed 9- Lamp Light Bar at Rear: Rear bar includes six 4 inch light holes (3 each side), 4 clearance light holes (2 each side), and 3 lamp light cluster holes in center
- 4.4 (1): Stake pockets on 24" centers
- 4.5 (2): Compartment With Side Drop Down Door: 12-gauge treadplate top, 18"W x 18"H x 60"L, equipped with rotary paddle latch and chain stops, (2) installed,(1) street side, (1) curbside, at front below side access to flatbed
- 4.6 (5): Compartment With Side Drop Down Door : 12-gauge treadplate top, 18"W x 18"H x 36"L, equipped with rotary paddle locks and chain stops, (1) installed front, street side, on top of flatbed; (2) installed at rear on top of flatbed(1-street side 1-curb side); (2) installed at rear below flatbed (1-curb side 1-street side)
- 4.7 (2): Compartment With Side Drop Down Door: 12-gauge treadplate top, 18"W x 18"H x 120"L, equipped with rotary paddle latch and chain stops, (2) installed above rear axles, on flatbed (1-each side).
- 4.8 (4): Pool Type Pipe Grab Rail for Flatbed Side Access
- 4.9 Installation & Accessories:
  - 4.9.1 (1): Oil cooler with bypass, fan, thermostat
  - 4.9.2 (2): Brackets
  - 4.9.3 (2): Preco 4242A Amber Strobe Light: with 4" tall and 6" diameter lens and mounting bracket
  - 4.9.4 (2): Preco BG4240 branch guard for 4" strobe
  - 4.9.5 (4): Whelen LED: 4.5" round flush mounted amber strobe light. Installed at front and rear of vehicle
  - 4.9.6 (1): Golight 2000 Spotlight: permanent mount programmable wireless remote
  - 4.9.7 (1): Directional Light Stick: PSE Mdl. AS850-H47", 8-LED lamp mounted on the tail shelf
  - 4.9.8 (1): Remote Engine Stop/Start control from Rear of Vehicle
  - 4.9.9 (1): Lighted license plate bracket kit
  - 4.9.10 (1): Back Up Alarm: to sound when the vehicle is shifted into reverse
  - 4.9.11 (1): Push button throttle control installed at rear
  - 4.9.12 (1): DOT Inspection
  - 4.9.13 (1): Set Chassis parameters
  - 4.9.14 (1): Grab Handle on side of Broom
  - 4.9.15 (1): Access steps to platform for TM units
  - 4.9.16 (1): ICC rear bumper
  - 4.9.17 (2): Sliding Step for Side Access to Front of Flatbed
  - 4.9.18 (1): ICC rear bumper
  - 4.9.19 (1): Boom Rest- installed back of cab, with lightbar
  - 4.9.20 (1): Exhaust shield to protect from hydraulic system
  - 4.9.21 (2): Level Indicator, Master Carr bubble bulls eye type.
  - 4.9.22 (1) Mud flaps without logo(One pair)
  - 4.9.23 (1) Hannay spring rewind grounding reel
  - 4.9.24 (1): Safety Kit: 5-lb ABC fire extinguisher with bracket, James King triangle reflector kit
  - 4.9.25 (1): Hannay Spring Rewind Grounding Reel with 50" 1/0 black cable and clamp
  - 4.9.26 (1): 2/0 Black Electrical Cable- used for grounding per ASTM F855-04; 50" of multi-strand flexible copper cable, 3 grounding lugs and grounding clamps; 3-point grounding system for grounding vehicle during work operations; cable must be fully removed from bracket before use
  - 4.9.27 (1): Paint TM Series aerial device, radial outriggers, flatbed & boxes white to match the cab.(paint under carriage is black)
  - 4.9.28 (1): Paint body box tops & floor with non-skid paint
  - 4.9.29 (1): Electronic pre-paint inspection

**SECTION B PART II TECHNICAL SPECIFICATIONS (CONTINUED):**

**ITEM NO. 11: CAB & CHASSIS MOUNTED WITH BODY AND 87 FT. AERIAL MANLIFT (Cointinued):**

**5.0 WARRANTY:**

- 5.1 Cab & Chassis:
  - 5.1.1 A minimum of a Manufacturer's 60-month/100,000-mile bumper-to-bumper warranty shall be provided including towing to nearest manufacturers' dealership for warranty-covered equipment repair.
- 5.2 Body and Aerial Device:
  - 5.2.1 Terex Hi-Ranger TM85 Aerial Bucket Body shall have a Manufacturer's five-year warranty for on site repairs

**6.0 LITERATURE TRUCK AND AERIAL DEVICE:**

- 6.1 Maintenance and Operator's Manuals:
  - 6.1.1 Manual to be furnished upon delivery of equipment:
  - 6.1.2 Two (2) complete sets of factory service shop repair manuals (Technical Service Manuals)
  - 6.1.3 Two (2) complete sets of factory parts manuals
  - 6.1.4 Two (2) complete sets of operators' manuals

**7.0 DELIVERY AND INSPECTION:**

- 7.1 The item(s) specified above, with delivery tickets and/or other required documents shall be delivered Prepaid F.O.B. Destination to the location(s) shown on the purchase order(s) one hundred eighty (180) calendar days from receipt of the City of Houston Purchase Order.  
\*\*\*City of Houston Parks and Recreation Department  
\*\*\*6200 Wheeler  
\*\*\*Houston, TX 77023
- 7.2 Unit(s) shall have  $\frac{3}{4}$  tank of fuel, clean and shall be complete with all equipment operable at time of delivery/ inspection.
- 7.3 Unit(s) shall be accompanied with a copy of the original invoice, warranty and/or Certificates as may be required.

**8.0 TRAINING:**

- 8.1 Supplier will provide two (8) eight-hour operators training and two (8) eight-hour technical training at designated City facility.

**SECTION B PART II TECHNICAL SPECIFICATIONS (CONTINUED):**

**ITEM NO. 12: CAB & CHASSIS MOUNTED WITH BODY AND 37-FT AERIAL MANLIFT  
PR No. 10085509**

**1.0 GENERAL:**

1.1 Equipment Description:

1.1.1 This specification is intended to describe a vehicle that will be used as an aerial bucket truck by the Public Works & Engineering Department, Traffic and Transportation Division. The vehicle consists of a cab & chassis mounted with an aerial manlift and service body.

1.2 Prime Contractor/Supplier:

1.2.1 These specifications require the bidder to be a prime contractor/supplier and to bid on the cab & chassis mounted with the aerial manlift and body

1.3 Quantity:

1.3.1 Identical units shall be furnished.

1.4 Equivalent Equipment:

1.4.1 Bidders proposing to provide equipment they believe to be equal to the specified model must provide sufficient operating and technical specifications for the City to evaluate the proposed equipment

1.5 Equivalent Equipment Documentation:

1.5.1 A bidder proposing to provide equivalent to the specified model must be able to demonstrate upon request that it has manufactured an apparatus similar to the unit bid, and that the apparatus has been proven and tested in service satisfactorily. The bidder will provide records of warranty service repairs upon request. The City of Houston shall be the sole judge whether the apparatus in service similar to the unit bid has been proven and tested satisfactorily

**2.0 CAB AND CHASSIS:**

2.1 General:

2.1.1 Ford F-550 4x2 Cab & Chassis with Regular Cab or City-approved equal. GVWR shall be not less than 19,000 lbs. with an 84" Cab-to-Axle and 165" Wheelbase.

2.1.2 Rear axle ratio of 4.88

2.1.3 Heavy duty front springs

2.1.4 Cab height must allow for aerial device mounting to be at 10 foot 2 inches maximum

2.1.5 Minimum of 2 key pod type controls for keyless entry

2.1.6 Minimum 40 gallon rear fuel tank

2.2 Engine:

2.2.1 An electronically governed 2010 **6.8L V10 GASOLINE** engine shall be provided

2.3 Transmission:

2.3.1 A 5-speed automatic transmission with integral PTO provision shall be provided

2.4 Cab:

2.4.1 OEM air conditioning, heating and defroster shall be provided

2.4.2 AM/FM radio shall be provided

2.4.3 Electric windows and door locks shall be provided.

2.4.4 Vinyl bench type seat

2.4.5 Manufacturer's standard ABS brakes

2.4.6 White exterior color

2.4.7 Darkest interior color available

## **SECTION B PART II TECHNICAL SPECIFICATIONS: (Continued)**

### **ITEM NO. 12: CAB & CHASSIS MOUNTED WITH BODY AND 37-FT AERIAL MANLIFT (Continued):**

#### **3.0 AERIAL MANLIFT:**

##### **3.1 General:**

- 3.1.1 Referenced manufacturer is Versalift Southwest Model SST-37E-H (254.717.3523)
- 3.1.2 Insulated telescopic / articulated aerial device with a minimum platform height of 37 foot with lift working height
- 3.1.3 Horizontal reach shall be a minimum of 26 feet
- 3.1.4 Travel height shall not exceed 9 foot 10 inches
- 3.1.5 A-frame outriggers for stability.
  - 3.1.5.1 Include an outrigger interlock system to prevent aerial from operating without the outriggers being deployed.
  - 3.1.5.2 Pedestal front mounting hardware of aerial device
- 3.1.6 Aerial Device to be mounted maximum of 12 inches behind the cab of the chassis to the front of the pedestal
- 3.1.7 Lower Boom to stow over the cab of the chassis and not to extend into area effecting driver's vision
- 3.1.8 Minimum platform capacity of 400 pounds
- 3.1.9 The aerial device must be manufactured in an ISO 9001 Certified Facility

##### **3.2 Control System:**

- 3.2.1 The upper controls shall be of a Unitrol single stick design. They will consist of positive links with no cables. A safety trigger on the underside of the Unitrol handle will not allow boom movement until it is depressed. An emergency stop control is also to be provided at the upper controls at the basket.
- 3.2.2 Individual full-pressure controls at the turret actuate all boom functions. This lower control station is equipped with a selector valve to override the upper controls in event of injury, rescue or equipment malfunction.
- 3.2.3 The hydraulic control valves are full pressure and full flow.
- 3.2.4 The start/stop system will be designed so that the aerial lift cannot be operated normally unless a power switch is activated and the truck ignition switch is the "on" position. This feature makes it difficult for unauthorized individuals to operate the aerial when the truck is locked or unattended. Start/Stop controls will be located in the basket for the operator and at the lower control station.
- 3.2.5 The aerial will have an emergency power system installed. It will consist of a hydraulic pump driven by a DC motor. This will be powered from the chassis battery system. It will be designed for non-continuous use only. These systems controls will be installed at both the basket and lower control stations. The DC motor/pump will be installed in the pedestal of the aerial device to protect it from damage and the elements.

##### **3.3 Outer/Inner Boom Assembly:**

- 3.3.1 The outer/inner booms assembly consists of the outer boom, telescopic boom, extension system, and hydraulic hose assemblies. The hoses routed through outer/inner boom assembly are non-conductive and fully contained within the boom assembly.
- 3.3.2 The outer boom consists of an 6" X 8" steel section.
- 3.3.3 The outer boom includes a 7 ½" X 9 ½" inch fiberglass section {ElectroGuard}. This allows for the boom tip to maintain a 38 inch insulated section when the inner boom is fully retracted into the outer boom housing.
- 3.3.4 The 5" X 7" rectangular inner boom is housed within the outer boom. The inner boom is easily removed and disassembled for service and/or inspection.
- 3.3.5 The extension system consists of a hydraulic cylinder, two integral holding valves and dual #50 roller chains housed entirely within the boom assembly. The two integral holding valves are accessible from the outside of the outer/inner boom assembly. Ultra high molecular weight plastic slide pads mounted on the outer boom can be changed without the removal of the inner boom. The inner boom slide pads can also be changed through service port windows without the removal of the inner boom.
- 3.3.6 Minimum Inner Boom Extension will be 116 inches.
- 3.3.7 The insulation gap must be a minimum of 42" when fully retracted..
- 3.3.8 The outer/inner boom assembly articulates from -14 degrees below horizontal to 74 degrees above horizontal. A rubberized boom support cradle and ratchet type tie-down are installed.
- 3.3.9 Actuated by a double acting hydraulic cylinder that has two integral holding valves, the outer/inner boom assembly is offset to one side to provide easy access to the platform.

## **SECTION B PART II TECHNICAL SPECIFICATIONS: (Continued)**

### **ITEM NO. 12: CAB & CHASSIS MOUNTED WITH BODY AND 37-FT AERIAL MANLIFT (Continued):**

#### **3.0 AERIAL MANLIFT(Continued):**

##### **3.4 Lower Boom Assembly:**

- 3.4.1 The lower boom is of a box fabrication design and allows for maximum working height to be achieved without the lower boom leaving the front, rear or side confines of the service body. This allows for safe operation in a high traffic area or where limited space is a concern.
- 3.4.2 The lower boom encloses a parallelogram linkage to maintain the knuckle at a constant angle with the turret.
- 3.4.3 The double acting cylinder complete with an integral holding valve allows the lower boom to articulate from horizontal to -7 degrees above horizontal.

##### **3.5 Turret/Rotation:**

- 3.5.1 The turret wings are ½ inch thick steel plate. A steel tube is welded between the turret wings to support the boom cylinder and provide rigidity. The turret wings are designed for strength and rigidity. The bearing cover is continuously welded to seal out moisture and prevent foreign material from obstructing the turret rotation.
- 3.5.2 The turret plate is machined flat to support the rotation bearing. A bearing cover is provided to prevent foreign material from interfering with lift rotation.
- 3.5.3 Rotation is continuous and unrestricted in both clockwise and counterclockwise directions. This accomplished by a hydraulically driven worm and spur gear acting on a shear-ball rotation bearing.
- 3.5.4 The critical bolts holding the lift to rotation bearing are SAE grade 8. These bolts are torque seal marked to provide a quick means to inspect for loosening.

##### **3.6 Pedestal:**

- 3.6.1 The pedestal is a round shape with an access opening on both sides. These include easily removable doors to protect the internal components from damage and the elements. A 12-gallon hydraulic reservoir is built integral to the pedestal. The reservoir includes anti-slash baffles.
- 3.6.2 The top plate of the pedestal 1-1/4 inch steel plate machined flat to support the rotation bearing.
- 3.6.3 Dual sight gauges are furnished on the pedestal for monitoring the hydraulic oil level.
- 3.6.4 A 100 mesh suction strainer and 10 micron return filter with shut off valves are located inside the pedestal.

##### **3.7 Platform:**

- 3.7.1 24-inch X 30-inch X 42-inch deep platform completely closed with on access step.
- 3.7.2 Platform to be supported in the stowed position by a tubular rubber support mounted on the floor of the service body.
- 3.7.3 Platform must be end mounted with hydraulically leveled platform. The leveling system includes a master/slave cylinder arrangement that can be actuated from both the upper and lower controls for rescue or cleanout.
- 3.7.4 An extra-large full body harness with deceleration lanyard will be provided.
- 3.7.5 The anchor point for the lanyard is incorporated to the inner boom at the basket end.
- 3.7.6 A platform liner 24" X 30" X 42" deep and rated for 50 kV will be supplied.
- 3.7.7 A bright orange or yellow soft stretch cover will be supplied to fit the 24X30x42 basket.

##### **3.8 Hydraulic System:**

- 3.8.1 The open-center hydraulic system operates at 2250 psi and 3 gpm. A 10-micron return-line filter. Mounted above the hydraulic oil level and inside the pedestal, can easily be changed without draining the reservoir. A gate valve, located below the reservoir, prevents oil loss when the pump is serviced. A magnetic drain plug attracts metal particles from the oil and can easily be cleaned by removal when changing the system oil.
- 3.8.2 Hydraulic power is provided by a PTO and Pump configuration.
- 3.8.3 PTO/PUMP to be engaged by a toggle type switch on the dash of the chassis. There will be a red PTO indicator light dash mounted as well. There will be a PTO safety interlock installed and wired through the emergency brake of the chassis.

## **SECTION B PART II TECHNICAL SPECIFICATIONS: (Continued)**

### **ITEM NO. 12: CAB & CHASSIS MOUNTED WITH BODY AND 37-FT AERIAL MANLIFT (Continued):**

#### **3.0 AERIAL MANLIFT (Continued):**

##### 3.9 Miscellaneous:

- 3.9.1 Non-lube bushings will be used at most points of motion. Only the extension chains, rotation gearbox and rotation bearing require periodic lubrication.
- 3.9.2 The complete unit is primed and painted standard white urethane prior to assembly.
- 3.9.3 The high-pressure hoses routed through the booms are non-conductive hoses with swaged hose end fittings. Reusable hose fittings may be installed if a hose is damaged.
- 3.9.4 Three sets of operation and service manuals will be provided with the aerial lift.
- 3.9.5 All cylinders are equipped with AQ type seals, nylon back up rings, non-metallic bearings on the pistons and end glands, rod wipers, threaded end glands and chrome plated rods.
- 3.9.6 All lift and load holding type cylinders will be both threaded on the cylinder rod and then welded for dual retention and safety.
- 3.9.7 The extension cylinder has wear rings on the piston and end gland for extended seal life. Dual holding valves are mounted at the extension cylinder base to prevent boom creep during road travel or uncontrolled movement in case of hydraulic hose failure. A hydraulic regeneration feature on the extension cylinder provides extension and retraction at approximately the same speed.
- 3.9.8 Pins are high strength alloy steel and chrome plated for a hard finish and corrosion resistance. Cylinder pins are held in place with torque sealed bolts on one end and a pin cap washer and bolt that is torque sealed on the other.

##### 3.10 Stabilization:

- 3.10.1 Must use front and rear Torison Bars

#### **4.0 HEAVY-DUTY SERVICE BODY:**

##### 4.1 General:

- 4.1.1 Dakota Body or City-approved equal
- 4.1.2 Body to be install in relation to the aerial device and chassis specified above.
- 4.1.3 The body shall be a 132-inch body with tailself and entry steps on the curbside.
- 4.1.4 Streetside Compartmentation:
  - 4.1.4.1 All compartment doors will be of a T-Handle lock design
  - 4.1.4.2 Front vertical to have standard Dakota 132 shelving
  - 4.1.4.3 Second vertical to have standard Dakota 132 shelving
  - 4.1.4.4 Horizontal will have one material tray and 10 dividers
  - 4.1.4.5 Rear vertical will have 4 pullout drawers. The top two drawers will have 3 sections with 3 cross sections to form 9 individual compartments for the (storage of small materials. The bottom two drawers will have 3 equal sections for tool storage. The drawers will all have a safety latch to prevent the drawer from sliding out if parked on an incline.
- 4.1.5 Curbside Compartmentation:
  - 4.1.5.1 All compartment doors will be of a T-Handle lock design
  - 4.1.5.2 Front Vertical to have standard Dakota 132 shelving
  - 4.1.5.3 Second compartment will be 28 inch wide access steps for body entry
  - 4.1.5.4 Horizontal will have one adjustable material tray with 10 dividers
  - 4.1.5.5 Rear vertical will have 5 fixed material hooks 1-3-1

##### 4.2 Body Dimensions:

- 4.2.1 Floor width shall be 52 inches minimum
- 4.2.2 Body height shall be 40 inches minimum
- 4.2.3 Body length shall be 132 inches
- 4.2.4 Body width shall be 92 to 96 inches
- 4.2.5 Compartment depth shall be 18 minimum

## **SECTION B PART II TECHNICAL SPECIFICATIONS: (Continued)**

### **ITEM NO. 12: CAB & CHASSIS MOUNTED WITH BODY AND 37-FT AERIAL MANLIFT (Continued):**

#### **4.0 HEAVY-DUTY SERVICE BODY: (Continued):**

- 4.3 Tailshelf:
  - 4.3.1 Maximum width shall match outside width of body
  - 4.3.2 The tailshelf shall be of sufficient size to encompass the aerial device basket completely when in the stowed position.
  - 4.3.3 Tailshelf shall have an area to insert an arrow stick at the rear
  - 4.3.4 There shall be one cable step at curbside rear for entry
  - 4.3.5 The tailshelf and all lights on the service body shall be of an LED design.
  
- 4.4 Tailgate:
  - 4.4.1 A 2-inch X 6-inch steel tube type tailgate shall be installed.
  - 4.4.2 It shall slide into horizontal slots on the body and to be configured where it will not interfere with the aerial device basket storage.
  - 4.4.3 There shall be one quick pin to hold tailgate in position and for ease of removal.
  
- 4.5 Window Guard (Headache Rack):
  - 4.5.1 An expanded metal window guard shall be installed to protect the rear windshield and/or the chassis.
  - 4.5.2 Window guard shall have two mounts for low profile amber strobe lights with brush guards for the strobes.
  
- 4.6 Lighting:
  - 4.6.1 There shall be a heavy-duty lighting package for service body.
  - 4.6.2 All lighting shall be recessed except for marker clearance lights
  - 4.6.3 Two low profile flashing, high – intensity LED warning lights (1 amber 1 blue) on the rear window guard with brush guards and control switches in the cab.
  - 4.6.4 Install two low profile flashing, high-intensity LED warning lights (1 amber, 1 blue) with brush guards on each side of service body at the rear. These will have control switches in the cab
  - 4.6.5 Install full size LED light bar, minimum 48” centered on top of cab with associated control in cab.
  - 4.6.6 Install an arrowstick model number SYAS847 P.S.E. or equivalent with controls in the cab. This will be flush mounted in the tailself.
  - 4.6.7 12 “ Fluorescent light (12VDC) will be installed in cab to supplement courtesy light.
  
- 4.7 Painting:
  - 4.7.1 Paint Body OEM Color to match chassis
  - 4.7.2 All walkways shall have anti-skid paint applied
  - 4.7.3 All service body compartment tops shall have anti-skid paint applied
  - 4.7.4 Interior of compartments shall be primer gray

#### **5.0 MISCELLANEOUS EQUIPMENT AND ITEMS TO BE PROVIDED AND INSTALLED:**

- 5.1 High Security lock on the body to gang lock body compartments
- 5.2 Install mudflaps anti sail with metal straps
- 5.3 Grab handle to aid in tail self entry, bolted on the rear of the service body curbside
- 5.4 Install backup alarm Ecco # 5A907 or City-approved equal
- 5.5 Treadplate installed on compartment tops
- 5.6 Provide 5-pound ABC fire extinguisher
- 5.7 Triangle reflector kit
- 5.8 Undercoating and rustproof
- 5.9 Install grill guard for front of chassis

**SECTION B PART II TECHNICAL SPECIFICATIONS: (Continued)**

**ITEM NO. 12: CAB & CHASSIS MOUNTED WITH BODY AND 37-FT AERIAL MANLIFT (Continued):**

**6.0 WARRANTY:**

6.1 Cab & Chassis:

6.1.1 A minimum of a Manufacturer's 36-month/36,000 mile bumper-to-bumper warranty shall be provided

6.1.2 Manufacturer's standard warranty shall be provided for emission controls, power train, and corrosion

6.2 Aerial Lift:

6.2.1 Aerial lift shall have a Manufacturer's standard one-year warranty and include a three-year warranty on all-hydraulic hoses and hydraulic cylinders

6.2.2 Warranty repairs to the aerial device shall be made at the City of Houston Traffic Operations Facility by Factory Authorized mechanics

6.3 Service Body:

6.3.1 one-year full warranty (parts and labor) shall be provided on service body and any listed options installed by manufacturer

6.3.2 If manufacturer's standard warranty is longer, the City of Houston will accept the longer warranty

6.3.3 Three-year full warranty (parts and labor) shall be provided for rust perforation

6.3.4 One-year full warranty (parts and labor) shall be provided for any option required by the City that is installed by Prime Contractor/Supplier, including rust perforation

**7.0 TRAINING:**

7.1 Operator orientation training shall be provided to those employees designated by the Department of Public Works & Engineering. The orientation training will include a thorough briefing on daily pre trip, during and post trip operator checks and services, unique operating characteristics of the unit and suggested handling and operating techniques.

7.2 Technical orientation training shall be given to department technicians to familiarize them with the new equipment and about any special troubleshooting or diagnostic checks, techniques and services

7.3 Training shall be provided to the Department at no additional cost to the City.

**8.0 LITERATURE:**

8.1 Maintenance and Operator's Manuals:

8.1.1 Four sets of parts, service, shop, hydraulic schematics, lubrication charts and operator's manuals shall be provided with delivery of the first unit (electronic format is acceptable)

8.1.2 One set of operator's manuals shall be provided for each additional unit (hard copy format)

**9.0 DELIVERY:**

9.1 All of the truck unit(s) specified above, with delivery tickets and/or other required documents shall be delivered Prepaid F.O.B. Destination to the Public Works & Engineering Department, Houston, Texas within **two hundred ten (210) calendar days** after receipt of City of Houston Purchase Order.

## SECTION C

### GENERAL TERMS AND CONDITIONS

#### 1.0 **COMPETITIVE BIDDING:**

It is the intent of the City of Houston to solicit the lowest and best responsible bid or price under competitive conditions. All materials and/or equipment shall be new unless stated otherwise. Prospective bidders are advised that the specifications within this bid invitation are not to be considered restricted to any referenced manufacturer.

#### 2.0 **AWARD:**

- 2.1 The City reserves the right to consider and make awards of bids on articles of similar nature that will in all respects serve the purpose for which the purchase is being made. The City reserves the right to be the sole judge as to whether such articles will serve the purpose.
- 2.2 Unless otherwise specified, the City reserves the right to accept or reject in whole or in part any bid submitted or to waive any informalities that are in the best interests of the City.

#### 3.0 **CONDITIONS PART OF BID:**

- 3.1 In the event of any conflict, the terms and provisions incorporated in the bid specifications shall control over the terms and provisions of the General Terms & Conditions for any or all purposes. Otherwise, all the terms and provisions appearing within the General Terms & Conditions shall be given full effect and shall be construed in harmony to the maximum extent by the parties hereto.
- 3.2 The failure of the City to insist, in any one or more instances, upon performance of any of the terms, covenants or conditions of this Contract (Purchase Order), General Terms & Conditions or Specifications shall not be construed as a waiver or relinquishment of the future performance of such term, covenant or condition by the City, but the obligation of the Prime Contractor/Supplier with respect to such future performance shall continue in full force and effect.

#### 4.0 **SHIPPING TERMS:**

Prices shall be prepaid F.O.B. destination to the delivery locations, Houston, TX, as indicated on individual City of Houston purchase orders. Prime Contractor/Supplier shall retain title and control of all goods until they are delivered and the contract of coverage (Purchase Order) has been completed. All risk of transportation and all related charges shall be the responsibility of the Prime Contractor/Supplier. All claims for visible or concealed damage shall be filed by the Prime Contractor/Supplier. The City will notify the Prime Contractor/Supplier promptly of any damaged goods and shall assist the Prime Contractor/Supplier in arranging for inspection.

#### 5.0 **SILENCE OF SPECIFICATIONS:**

The apparent silence of these specifications as to any detail or the apparent omission from them of a detailed description concerning any point shall be regarded as meaning that only the best commercial practice shall prevail and only materials and workmanship of first quality are acceptable. All interpretations of these specifications shall be made upon the basis of this statement.

#### 6.0 **SPECIFIED EQUIPMENT, OR EQUIVALENT:**

- 6.1 Wherever in the specifications any materials or processes are indicated or specified by patent of proprietary name and/or by name of manufacturer, such specifications shall be deemed to be used for the purpose of facilitating descriptions of the performance, materials and/or processes desired and shall be deemed to be followed by the words, "or equivalent", if not so stated in the specifications herein.
- 6.2 The burden of proof shall rest with the bidder, in the course of a technical evaluation, to prove that the proposed item(s) are equivalent to the performance, materials, processes, or articles specified.  
**DETERMINATION AS TO WHETHER THE ITEM(S) BID IS(ARE) EQUIVALENT TO THOSE SPECIFIED SHALL REST SOLELY WITH THE CITY PURCHASING AGENT AND THE RECEIVING DEPARTMENT.**

**GENERAL TERMS & CONDITIONS: (CONTINUED)**

**7.0 BRAND NAMES:**

Any manufacturer's names, trade names, brand names, or catalog numbers used in the specifications are for the purpose of describing and establishing the general quality level, design and performance desired. Such references are not intended to limit or restrict bidding by other Prime Contractor/Suppliers, but are intended to approximate the quality design or performance that is desired. Any bid that proposes like quality, design or performance, will be considered. Equivalent products will be considered, provided a complete description and product literature is provided. Unless a specific substitution is made, the assumption will be that the item bid is exactly as specified on the Invitation to Bid.

**8.0 PATENTS:**

**THE PRIME CONTRACTOR/SUPPLIER AGREES TO INDEMNIFY AND SAVE HARMLESS THE CITY, ITS AGENTS EMPLOYEES, OFFICERS, AND LEGAL REPRESENTATIVES (COLLECTIVELY THE "CITY") FROM ALL SUITS AND ACTIONS OF EVERY NATURE AND DESCRIPTION BROUGHT AGAINST THEM OR ANY OF THEM, FOR OR ON ACCOUNT OF THE USE OF PATENTED APPLIANCES, PRODUCTS OR PROCESSES, AND IT SHALL PAY ALL ROYALTIES AND CHARGES WHICH ARE LEGAL AND EQUITABLE. EVIDENCE OF SUCH PAYMENT OR SATISFACTION SHALL BE SUBMITTED, UPON REQUEST OF THE CITY PURCHASING AGENT, AS A NECESSARY REQUIREMENT IN CONNECTION WITH THE FINAL ESTIMATE FOR PAYMENT IN WHICH SUCH PATENTED APPLIANCE, PRODUCTS OR PROCESSES ARE USED.**

**9.0 RELEASE:**

**PRIME CONTRACTOR/SUPPLIER AGREES TO AND SHALL RELEASE THE CITY, ITS AGENTS, EMPLOYEES, OFFICERS, AND LEGAL REPRESENTATIVES (COLLECTIVELY THE "CITY") FROM ALL LIABILITY FOR INJURY, DEATH, DAMAGE, OR LOSS TO PERSONS OR PROPERTY SUSTAINED IN CONNECTION WITH OR INCIDENTAL TO PERFORMANCE UNDER THIS AGREEMENT, EVEN IF THE INJURY, DEATH, DAMAGE, OR LOSS IS CAUSED BY THE CITY'S SOLE OR CONCURRENT NEGLIGENCE AND/OR THE CITY'S STRICT PRODUCTS LIABILITY OR STRICT STATUTORY LIABILITY.**

**10.0 INDEMNIFICATION:**

**10.1 PRIME CONTRACTOR/SUPPLIER AGREES TO AND SHALL DEFEND, INDEMNIFY, AND HOLD THE CITY, ITS AGENTS, EMPLOYEES, OFFICERS, AND LEGAL REPRESENTATIVES (COLLECTIVELY THE "CITY") HARMLESS FOR ALL CLAIMS, CAUSES OF ACTION, LIABILITIES, FINES, AND EXPENSES (INCLUDING, WITHOUT LIMITATION, ATTORNEYS' FEES, COURT COSTS, AND ALL OTHER DEFENSE COSTS AND INTEREST) FOR INJURY, DEATH, DAMAGE, OR LOSS TO PERSONS OR PROPERTY SUSTAINED IN CONNECTION WITH OR INCIDENTAL TO PERFORMANCE UNDER THIS AGREEMENT INCLUDING, WITHOUT LIMITATION, THOSE CAUSED BY:**

- (1) PRIME CONTRACTOR/SUPPLIER'S AND/OR ITS AGENTS', EMPLOYEES', OFFICERS', DIRECTORS', CONTRACTORS', OR SUBCONTRACTORS' (COLLECTIVELY IN NUMBERED PARAGRAPHS 1-3, "PRIME CONTRACTOR/SUPPLIER") ACTUAL OR ALLEGED NEGLIGENCE OR INTENTIONAL ACTS OR OMISSIONS;**
- (2) THE CITY'S AND PRIME CONTRACTOR/SUPPLIER'S ACTUAL OR ALLEGED CONCURRENT NEGLIGENCE, WHETHER PRIME CONTRACTOR/SUPPLIER IS IMMUNE FROM LIABILITY OR NOT; AND**
- (3) THE CITY'S AND PRIME CONTRACTOR/SUPPLIER'S ACTUAL OR ALLEGED STRICT PRODUCTS LIABILITY OR STRICT STATUTORY LIABILITY, WHETHER PRIME CONTRACTOR/SUPPLIER IS IMMUNE FROM LIABILITY OR NOT.**

**10.2 PRIME CONTRACTOR/SUPPLIER SHALL DEFEND, INDEMNIFY, AND HOLD THE CITY HARMLESS DURING THE TERM OF THIS AGREEMENT AND FOR FOUR YEARS AFTER THE AGREEMENT TERMINATES. PRIME CONTRACTOR/SUPPLIER'S INDEMNIFICATION IS LIMITED TO \$500,000 PER OCCURRENCE. PRIME CONTRACTOR/SUPPLIER SHALL NOT INDEMNIFY THE CITY FOR THE CITY'S SOLE NEGLIGENCE.**

## **GENERAL TERMS & CONDITIONS: (CONTINUED)**

### **10.0 INDEMNIFICATION: (Continued)**

#### **10.3 INDEMNIFICATION PROCEDURES:**

- (1) **Notice of Claims.** If the City or Prime Contractor/Supplier receives notice of any claim or circumstances which could give rise to an indemnified loss, the receiving party shall give written notice to the other party within 10 days. The notice must include the following:
- (a) a description of the indemnification event in reasonable detail,
  - (b) the basis on which indemnification may be due, and
  - (c) the anticipated amount of the indemnified loss.

This notice does not estop or prevent the City from later asserting a different basis for indemnification or a different amount of indemnified loss than that indicated in the initial notice. If the City does not provide this notice within the 10 day period, it does not waive any right to indemnification except to the extent that Prime Contractor/Supplier is prejudiced, suffers loss, or incurs expense because of the delay.

(2) **Defense of Claims**

- (a) **Assumption of Defense.** Prime Contractor/Supplier may assume the defense of the claim at its own expense with counsel chosen by it that is reasonably satisfactory to the City. Prime Contractor/Supplier shall then control the defense and any negotiations to settle the claim. Within 10 days after receiving written notice of the indemnification request, Prime Contractor/Supplier must advise the City as to whether or not it will defend the claim. If Prime Contractor/Supplier does not assume the defense, the City shall assume and control the defense, and all defense expenses constitute an indemnification loss.

- (b) **Continued Participation.** If Prime Contractor/Supplier elects to defend the claim, the City may retain separate counsel to participate in (but not control) the defense and to participate in (but not control) any settlement negotiations. Prime Contractor/Supplier may settle the claim without the consent or agreement of the City, unless it (i) would result in injunctive relief or other equitable remedies or otherwise require the City to comply with restrictions or limitations that adversely affect the City, (ii) would require the City to pay amounts that Contractor does not fund in full, (iii) would not result in the City's full and complete release from all liability to the plaintiffs or claimants who are parties to or otherwise bound by the settlement.

### **11.0 INSURANCE: (See Exhibit No. 3, Sample of Certificate of Insurance)**

- 11.1** Prior to award and/or starting work, Prime Contractor/Supplier must present a Certificate of Insurance evidencing the insurance coverage specified herein. **This is a mandatory requirement.** Only unaltered, original insurance certificates are acceptable. Photocopies are unacceptable.

**\*Exception:** Proof of insurance coverage **is not required** by Prime Contractor/Supplier if the specified equipment will be dropped-shipped by manufacturer, or delivered by a common carrier, and this contract agreement (Purchase Order) **does not require** Prime Contractor/Supplier to perform a labor or service component at a City facility. Prior to award, Prime Contractor/Supplier must present a written statement attesting to this exception.

**11.2** The Prime Contractor/Supplier shall have insurance coverage as follows:

- **Commercial General Liability** shall be \$500,000 per occurrence; \$1,000,000 aggregate, per 12-month policy period.

**GENERAL TERMS & CONDITIONS : (CONTINUED)**

**11.0 INSURANCE: (Continued)**

- **Automobile Liability Insurance for autos furnished or used in the course of performance of this Contract (Purchase Order), including Owned, Non-Owned, and Hired auto coverage.** (Any Auto coverage may be substituted for Owned, Non-Owned and Hired Auto coverage.) If no autos are owned by Prime Contractor/Supplier, coverage may be limited to Non-Owned and Hired Autos. If Owned Auto coverage cannot be purchased by Prime Contractor/Supplier, Scheduled Auto coverage may be substituted for Owned Auto coverage. **EACH AUTO USED IN PERFORMANCE OF THIS CONTRACT (PURCHASE ORDER) MUST BE COVERED IN THE LIMITS SPECIFIED: \$1,000,000 - Combined Single Limit per occurrence; \$1,000,000 aggregate, per 12-month policy period.**
- **Worker's Compensation including Broad Form All States endorsement shall be in statutory amount and**
- **Employer's Liability:** Bodily Injury/Accident \$100,000; Bodily Injury / Disease \$100,000 (per employee); Bodily Injury / Disease \$100,000 (policy limit).

11.3 The issuer of any policy (1) shall have a Certificate of Authority to transact insurance business in the State of Texas, or (2) shall be an eligible non-admitted insurer in the State of Texas, and shall have a Best's rating of B+ or better and a Best's Financial Size Category of Class VI or better, according to the most current edition of Best's Key Rating Guide.

11.4 All insurance policies required by this Contract (Purchase Order) shall require that 1) the City of Houston is named as an additional insured on the General Liability, Auto Liability and any Umbrella policies; 2) waiver of subrogation is provided for the City of Houston on General Liability, Auto Liability, any Umbrella policies, and Worker's Compensation; and 3) thirty (30) days advance written notice shall be provided **by the Prime Contractor/Supplier** to the City before any policy required by this Contract (Purchase Order) is cancelled or non-renewed. Within such thirty (30) day period, Prime Contractor/Supplier covenants that it will provide other suitable policies in lieu of those about to be cancelled or non-renewed to maintain in effect the coverage required under the provisions hereof. Failure or refusal of the Prime Contractor/Supplier to obtain and keep in force the above-required insurance coverage shall authorize the City, at its option, to terminate this Contract (Purchase Order) at once.

11.5 **REQUIREMENTS FOR CERTIFICATE OF INSURANCE:**

- 11.5.1 Name and Address of Producer writing coverage.
- 11.5.2 Name of each insurance company providing coverage (as listed or on company's Certificate of Authority on file with the Texas Department of Insurance, or in Best's Key Rating Guide).
- 11.5.3 Name and address of Insured (as shown on policy).
- 11.5.4 Letter in the column must reference the insurer of the policy being described.
- 11.5.5 Must be a policy number; no binders will be accepted.
- 11.5.6 Date policy became effective.
- 11.5.7 Expiration date of policy must be at least 30 days from date of delivery of certificate.
- 11.5.8 Name and file number of project (Bid Name and Bid Number).
- 11.5.9 Name of project manager (Buyer).
- 11.5.10 Signature or facsimile signature of authorized representative of Producer (blue ink preferred).

**FORWARD CERTIFICATE TO BUYER AT: City of Houston/Administration & Regulatory Affairs Department  
Strategic Purchasing Division  
P.O. Box 1562  
Houston, Texas 77251-1562**

## **GENERAL TERMS & CONDITIONS: (CONTINUED)**

### **12.0 DRUG DETECTION AND DETERRENCE PROCEDURE: (See Online Forms)**

- 12.1 It is the policy of the City to achieve a drug-free workforce and to provide a workplace that is free from the use of illegal drugs and alcohol. It is also the policy of the City that the manufacture, distribution, dispensation, possession, sale or use of illegal drugs or alcohol by Prime Contractor/Suppliers while on City premises is prohibited. By executing this Contract (Purchase Order), Prime Contractor/Supplier represents and certifies that it meets and shall comply with all the requirements and procedures set forth in the Mayor's Policy on Drug Detection and Deterrence, City Council Motion No. 92-1971 ("Mayor's Policy") and the Mayor's Drug Detection and Deterrence Procedures for Contractors, Executive Order No. 1-31 ("Executive Order"), both of which are on file in the Office of the City Secretary.
- 12.2 Prime Contractor/Supplier shall provide, prior to execution of this Contract (Purchase Order) by the City, 1) a copy of its drug-free workplace policy, 2) the Drug Policy Compliance Agreement substantially in the format set forth in Attachment "A", 3) a written designation of all safety impact positions, or if applicable, Certification of No Safety Impact Positions substantially in the format set forth in Attachment "C", and 4) if a written designation of safety impact positions is filed, a declaration substantially in the format set forth in Attachment "B" shall be filed.
- 12.3 SAFETY IMPACT POSITION means a Prime Contractor/Supplier's employment position involving job duties that if performed with inattentiveness, errors in judgment, or diminished coordination, dexterity, or composure may result in mistakes that could present a real and/or imminent threat to the personal health or safety of the employee, co-workers, and/or the public.

### **13.0 MINORITY AND WOMEN BUSINESS ENTERPRISES: (See Online Forms)**

These provisions apply to goal oriented Contracts (Purchase Orders). A goal oriented Contract (Purchase Order) means any Contract (Purchase Order) awarded for the supply of goods or non-professional services of approximately \$100,000.00 for which competitive bids are required by law and which the City Purchasing Agent has determined to have City of Houston Certified MWBE subcontracting potential.

Prime Contractor/Supplier agrees to comply with the City's Minority and Women Business Enterprise programs as set out in Chapter 15, Article V of the City of Houston Code of Ordinances insofar as such programs apply to this Contract (Purchase Order). Prime Contractor/Supplier further agrees that it will make good faith efforts to award subcontracts or supply agreements in at least 11% of the value of this Contract (Purchase Order) to Minority and Women-owned Business Enterprises certified by the City's Affirmative Action Division. In addition, Prime Contractor/Supplier acknowledges that it has reviewed the requirements for good faith efforts that are on file with the City's Affirmative Action Division, is familiar with such requirements, and will comply with them.

Prime Contractor/Supplier shall require written subcontracts with all MWBE subcontractors and suppliers, which must contain the terms set out in the documents attached herein. If Prime Contractor/Supplier is an individual person (as distinguished from a corporation, partnership, or other legal entity), and the amount of the subcontract is \$50,000 or less, then the subcontract must also be signed by the attorneys of the respective parties.

Refer to the "City of Houston Goal-Oriented Minority and Women Business Enterprises Contract Provisions" attachment, which is incorporated in the specifications herein by this reference for all purposes, for more detailed information on this requirement.

### **14.0 REJECTIONS:**

- 14.1 Articles not in accordance with samples and specifications must be removed by the Prime Contractor/Supplier and at his expense. All disputes concerning quality of supplies delivered under this offer will be determined by the City Purchasing Agent or designated representative.
- 14.2 All articles enumerated in the offer shall be subject to inspection on delivery by an officer designated for the purpose and if found inferior to the quality called for, or not equal in value to the Department's samples, or deficient in weight, measurements, workmanship or otherwise, this fact shall be certified to the City Purchasing Agent who shall have the right to reject the whole or any part of the same.

## **GENERAL TERMS & CONDITIONS: (CONTINUED)**

### **15.0 TAXES:**

The City is exempt from the Federal Excise and Transportation Tax, and the limited Sales and Use Tax. Unless the Bid Form or Specifications specifically indicate otherwise, the bid price must be net exclusive of above-mentioned taxes. A Prime Contractor/Supplier desiring refunds of, or exemptions from, taxes paid on merchandise accepted by the City, must submit the proper forms, and the City Purchasing Agent, if satisfied as to the facts, may approve or issue the necessary certificates.

### **16.0 INVOICING:**

16.1 In order to expedite payments all invoices must be submitted in triplicate, itemized as to quantity, part and/or model number, description in the same order and form as in the City of Houston Purchase Order. Variations will only delay payment. In addition, invoices must show the name of the Department, Division or Section to which the merchandise was delivered, and the City of Houston Purchase Order Number.

16.2 All delivery tickets must have a description of the item delivered.

16.3 Mail invoices and a copy of the signed City of Houston Equipment/Receiver Report to the Accounts Payable Section of the Department and to the address, as noted on individual purchase orders.

16.4 Delivery tickets and packing slips will contain the same information as the invoice.

16.5 The City of Houston Equipment/Receiver Report must be signed by the receiving employee with their City Employee Number and must be signed by Prime Contractor/Supplier Representative.

### **17.0 PAYMENT:**

Payment is due thirty (30) days after the City has approved the invoice or after the City has accepted the equipment and all required documents, whichever occurs later. Invoices received that do not agree with the provisions set forth herein shall be returned for correction and will result in payment being delayed.

### **18.0 PAYMENT OF SUBCONTRACTORS:**

Prime Contractor/Supplier shall make timely payments to all persons and entities supplying labor, materials or equipment for the performance of this Contract (Purchase Order). Prime Contractor/Supplier agrees to protect, defend, and indemnify the City from any claims or liability arising out of Contractor's/Supplier's failure to make such payments. (Disputes relating to payment of M/WBE subcontractors shall be submitted to arbitration in the same manner as any other disputes under the M/WBE subcontract. Failure of the Prime Contractor/Supplier to comply with the decisions of the arbitrator may be deemed, at the sole discretion of the City, a material breach leading to termination of this Contract (Purchase Order)).

### **19.0 INSPECTIONS AND AUDITS:**

19.1 The City reserves all rights to review all payments made to Suppliers by auditing at a later date. Subject to such audit, any overpayments may be recovered from the Supplier.

19.2 City representatives may have the right to perform, or have performed, (1) audits of Supplier's books and records, and (2) inspections of all places where work is undertaken in connection with this Agreement. Supplier shall keep its books and records available for this purpose for at least three years after this Agreement terminates. This provision does not affect the applicable statute of limitations.

19.3 City representatives have the right to examine the books of all subcontractors and/or suppliers supplying goods and/or services under the prime (Purchase Order) insofar as those books and records relate to performance under the prime contract (Purchase Order).

### **20.0 CONTRACTOR DEBT:**

If Prime Contractor/Supplier, at any time during the term of this agreement, incurs a debt, as the word is defined in Section 15-122 of the Houston City Code of Ordinances, it shall immediately notify the City Controller in writing. If the City Controller becomes aware that Prime Contractor/Supplier has incurred a debt, the City Controller shall immediately notify Prime Contractor/Supplier in writing. If Prime Contractor/Supplier does not pay the debt within 30 days of either such notification, the City Controller may deduct funds in an amount equal to the debt from any payments owed to Prime Contractor/Supplier under this agreement, and Prime Contractor/Supplier waives any recourse therefor.

### **21.0 SUCCESSORS & ASSIGNS:**

Prime Contractor/Supplier may not assign this (Purchase Order) or dispose of substantially all of its assets without the written consent of the City Purchasing Agent. Prime Contractor/Suppliers failure to obtain such consent shall be an event of default, authorizing the Purchasing Agent to terminate this contract (Purchase Order) according to its terms.

**GENERAL TERMS & CONDITIONS: (CONTINUED)**

**22.0 CHANGE ORDERS:**

- 22.1 At any time during the Agreement Term, the City Purchasing Agent, or designated representative, may issue a change order to increase or decrease the scope of services, or change plans and specifications, as may be necessary to accomplish the general purposes of this Agreement. Prime Contractor/Supplier shall furnish the services or deliverables in the change order in accordance with the requirements of this Agreement plus any special provisions, specifications, or special instructions issued to execute the additional work.
- 22.2 Prime Contractor/Supplier shall not make any changes to the specifications contained herein without written authorization from the City Purchasing Agent or designated representative.
- 22.2.1 The City may refuse to accept all or part of the work performed or equipment/supplies delivered if changes are made to the specifications without the written authorization of the City Purchasing Agent or designated representative. The City shall not be responsible for costs incurred by the Prime Contractor/Supplier on unauthorized change orders.
- 22.2.2 A letter with supporting documentation of the requested change(s) shall be submitted to the City Purchasing Agent, and the City Purchasing Agent must approve any requested changes by written authorization PRIOR TO ANY CHANGES BEING PERFORMED. Documentation acceptable to the City Purchasing Agent as evidence of Prime Contractor/Supplier's change(s) shall reference the City's bid specification by section(s) and page number(s). The face of the envelope containing this letter shall clearly state "CHANGE ORDER REQUEST". The letter shall reference the CITY BID INVITATION NUMBER, EQUIPMENT DESCRIPTION and CITY PURCHASE ORDER NUMBER(S). Failure to provide clear and concise evidence as stated above and in the format requested will result in denial until Prime Contractor/Supplier complies with these provisions. Documentation shall be mailed to:

City Purchasing Agent  
City of Houston, Administration & Regulatory Affairs Department  
Strategic Purchasing Division  
P. O. Box 1562  
Houston, TX 77251-1562

- 22.3 The City Purchasing Agent, or designated representative, may issue change orders, subject to the following limitations:
- 22.3.1 City Council expressly authorizes the City Purchasing Agent to approve change orders of \$50,000 or less. A change order of more than \$50,000 over the approved contract (Purchase Order) amount must be approved by City Council.
- 22.3.2 The total of all change orders issued under this section may not increase the Original Agreement amount by more than 25%.
- 22.3.3 For any items described in a change order that the Prime Contractor/Supplier is otherwise required to provide under the Original Agreement, the City shall not pay additional money to Prime Contractor/Supplier.

**GENERAL TERMS & CONDITIONS: (CONTINUED)**

**23.0 TERMINATION OF AGREEMENT:**

23.1 By the City for Convenience:

23.1.1 The City Purchasing Agent may terminate this Contract (Purchase Order) at any time upon 30 calendar days notice in writing to the Prime Contractor/Supplier. Upon receipt of such notice, Prime Contractor/Supplier shall, unless the notice directs otherwise, discontinue all services in connection with the performance of the Contract (Purchase Order) and shall proceed to cancel promptly all existing orders and contracts insofar as such orders and contracts are chargeable to this Contract (Purchase Order). As soon as practicable after the receipt of notice of termination, the Prime Contractor/Supplier shall submit a statement to the appropriate department(s) showing in detail the services performed or items delivered under this Contract (Purchase Order) to date of termination. The City agrees to compensate the Prime Contractor/Supplier for that portion of the prescribed charges for which the services were actually performed or items delivered under this Contract (Purchase Order) and not previously paid.

23.2 By the City for Default by Prime Contractor/Supplier:

23.2.1 In the event that the materials and/or services furnished by the Prime Contractor/Supplier do not conform to the standard set forth herein, or if the deliveries and servicing of this Contract (Purchase Order) do not conform to the requirements detailed herein, the City through a written notice from the Purchasing Agent to the Prime Contractor/Supplier describing such default may as its options:

(1) Terminate the Contract (Purchase Order) for default and the City shall have no further obligation under the Contract (Purchase Order).

(2) Allow the Prime Contractor/Supplier to cure default within 30 calendar days from receipt of notice unless the City Purchasing Agent specifies a longer period of time in the notice. The City, at its sole option, may extend the proposed date of termination to a later date. If prior to the proposed date of termination, Prime Contractor/Supplier cures such default to the City's satisfaction, then the proposed termination shall be ineffective. If Prime Contractor/Supplier fails to cure such default prior to the proposed date of termination, then the City may terminate its performance under this Contract (Purchase Order) as of such date and have no further obligation under the Contract (Purchase Order).

23.2.2 In the event of failure to deliver any or all of the items or to perform required services, the City may cover its loss by reasonably procuring from another source the items not delivered or the services not performed. Prime Contractor/Supplier shall be responsible for, and shall pay to the City immediately upon demand, the difference in price between that offered by the Prime Contractor/Supplier and that which the City was forced to pay for covering Prime Contractor/Supplier's failure to deliver or perform services.

23.3 By the Prime Contractor/Supplier for Default by City:

23.3.1 Default by the City shall occur if the City fails to perform or observe the terms and conditions of this Contract (Purchase Order) required to be performed or observed by the City, and the Prime Contractor/Supplier gives notice in writing to the City of the act or omission claimed by the Prime Contractor/Supplier to constitute default on the part of the City.

23.3.2 Upon receipt of such notice in writing from the Prime Contractor/Supplier; however, the City shall have 30 calendar days to cure such default. The Prime Contractor/Supplier, at its sole option, may extend the proposed date of termination to a later date.

23.3.3 If City cures such default prior to the proposed date of termination, the proposed termination shall be ineffective. If the City fails to cure such default prior to the proposed date of termination, then the Prime Contractor/Supplier may terminate its performance under this Contract (Purchase Order) as of such date.

**EXHIBIT NO. 3**

**SAMPLE ACCORD CERTIFICATE OF INSURANCE** Issue Date (MM/DD/YY)

PRODUCER:  
ISSUERS OF POLICIES. THE ISSUER MUST HAVE A RATING OF **B+ OR BETTER AND FINANCIAL SIZE OF CLASS VI OR BETTER ACCORDING TO THE CURRENT YEAR'S BEST RATING**, OR HAVE A CERTIFICATE OF AUTHORITY TO CONDUCT INSURANCE BUSINESS IN THE STATE OF TEXAS

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.

INSURED:

**SAMPLE FORM**

**COMPANIES AFFORDING COVERAGE**

- .....
- COMPANY A
- .....
- COMPANY B
- .....
- COMPANY C
- .....
- COMPANY D
- .....
- COMPANY E

**COVERAGES:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED, NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN. THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

CO LTR.	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/DD/YY)	LIMITS
	<b>General Liability</b>				General Aggregate \$1,000,000
A.	(X) Commercial General Liability				Products-Comp/Op Agg. \$1,000,000
	Claims Made (X) Occur.				Personal & Adv. Injury \$1,000,000
	Owners & Contractors Prot.				Each Occurrence \$ 500,000
					Fire Damage (Any one fire) \$ 50,000
					Med. Expense \$ 5,000
					(Any one person)
A.	<b>Automobile Liability</b>	Auto Liability Insurance for autos furnished or used			Combined Single Limit \$1,000,000
	(X) Any Auto	in the course of performance of this Contract.			Bodily Injury (Per person) \$
	All Owned Autos	Including Owned, Non-owned, and Hired Auto			Bodily Injury (Per Accident) \$
	Scheduled Autos	coverage. (Any Auto coverage may be substituted			Property Damage \$
	(X) Hired Autos	for Owned, Non-owned and Hired Auto coverage.)			
	(X) Non-Owned Autos	If no autos are owned by Contractor, coverage may			
	Garage Liability	be limited to Non-owned and Hired Autos. If Owned			
		Auto coverage cannot be purchased by Contractor,			
		Scheduled Auto coverage may be substituted for			
		Owned Auto coverage. EACH AUTO USED IN			
		PERFORMANCE OF THIS CONTRACT MUST BE			
		COVERED IN THE LIMITS SPECIFIED.			
	<b>Excess Liability</b>				Each Occurrence \$
	Umbrella Form				Aggregate \$
	Other than Umbrella Form				
	<b>Worker's Compensation</b>			(X) <b>Statutory Limits</b>	
	And				Each Accident \$ 100,000
	<b>Employee Liability</b>	Statutory Limits			Disease - Policy Limit \$ 100,000
					Disease - Each Employee \$ 100,000
	<b>Other</b>				

**DESCRIPTION OF OPERATION/LOCATIONS/VEHICLES/SPECIAL ITEMS**  
City of Houston is named as **additional insured on Auto, General Liability and Umbrella policies. Waiver of Subrogation is provided on Auto, General Liability, Worker's Compensation and Umbrella policies.** The terms of the policies described by this certificate as to advance notification of cancellation and non-renewal are in compliance with the Contract terms between the City and the Insured for the project/service covered by this certificate and such advance notification will be provided.

**CERTIFICATE HOLDER:**  
CITY OF HOUSTON/ADMIN. & REGULATORY AFFAIRS DEPT.  
STRATEGIC PURCHASING DIVISION  
P.O. BOX 1562  
HOUSTON, TX 77251

**CANCELLATION: (MODIFIED AS INDICATED ABOVE)**  
SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED, BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING INSURER WILL ENDEAVOR TO MAIL 30 DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT, BUY FAILURE TO DO SO SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE INSURER, IT'S AGENTS OR REPRESENTATIVES.  
AUTHORIZED REPRESENTATIVE: \_\_\_\_\_