AUTOMATED REFUSE TRUCK

RIGHTHAND OPERATING, DIESEL POWERED

The unit(s) to be furnished under this proposal shall be a diesel powered, Low Entry, Tilt Cab with Cab over chassis, Color White, automatic transmission, single rear axle, cab and chassis with mounted automated, side loading, straight frame, and refuse collection type body. This unit(s) is to be delivered complete and ready for municipal refuse collection serviced operation.

**Compliance with the specifications shall be so noted** in the yes or no columns with a check mark in space designated. If item being bid is not as specified **any additions, deletion, or variation** from the following specification **shall be so stated** in the space provided. These specifications shall be construed as minimum; however, all exceptions will be weighed carefully against the needs, experiences, and resources of the **City of Pigeon Forge**. These **specifications also require the bidder furnish descriptive literature**, complete specifications, and all other technical data on the equipment as proposed by the perspective bidder. Failure to comply with these conditions will deem the bidder as non-responsive.

## A. GENERAL SPECIFICATIONS:

| | Bidder Complies | YES | NO |
|---|---|---|---|
| 1. | Latest, current production model, diesel powered, low entry, tilt cab with cab over chassis, single axle, right hand drive conversion," cab and chassis" with mounted automated, side loading, straight frame, 24 yard refuse type body, new and unused with all standard equipment offered by the manufacture. | ____ | ____ |
| 2. | All parts, accessories, equipment, and safety features considered as standard by the equipment Manufacturer; whether herein specified or not, shall be considered as required. | ____ | ____ |
| 3. | This unit(s) shall be built and delivered complete and ready for use in full compliance with Federal, state, and local requirements and regulations | ____ | ____ |
| 4. | This unit and all other related equipment incorporated into this unit shall be designed, Built, manufactured, and constructed in accordance with all applicable safety codes, design, And manufacturing standards as outlined by SAE, ANSI, AWSI, FMVSS and related organizations Or standards agencies | ____ | ____ |
| 5. | This unit(s) and attachments shall embody the highest quality materials and workmanship available | ____ | ____ |

Exceptions:

## B. CAB / INTERIOR:

| | | | |
|---|---|---|---|
| 1. | New and Unused Cab Over chassis Low Entry 2012 Model or Newer: **WHITE** | ____ | ____ |
| 2. | Low Entry LH Drive w/RH Operating Position | ____ | ____ |
| 3. | A rear view camera system with seven (7") centrally located monitor shall be provided Viewing rear of truck and hopper | ____ | ____ |

Exceptions:

## C. ENGINE:

| | YES | NO |
|---|---|---|
| 1. In-line 6 cylinder, Diesel, 325 HP @ 1500 - 1900 RPM and a torque rating of 1200 lb/ft @ 1100 - 1300 rpm. | ____ | ____ |
| 2. Engine Protection Alarm & Shut Down for low oil pressure and high coolant temperature and alarm for low coolant level. | ____ | ____ |
| 3. Coolant Protection to -30 Degrees F | | |
| 4. Silicone Engine Hoses and tubing including Heater and Radiator. | ____ | ____ |
| 5. RH Inboard frame mounted horizontal exhaust with DPF | ____ | ____ |
| 6. 120V engine block heater, 1000 Watt. | ____ | ____ |
| 7. Air cleaner; single element dry type. | ____ | ____ |
| 8. Fuel / Water Separator. | ____ | ____ |
| 9. 18.7 CFM or Better Air Compressor with internal safety valve. | ____ | ____ |
| 10. Front mount pump provisions with adequate room for pump mounting. | ____ | ____ |
| 11. Engine / Exhaust Brake | ____ | ____ |

Exceptions:

## D. TRANSMISSION:

| | | |
|---|---|---|
| 1. A six (6) speed Automatic Transmission with PTO provisions, Similar in design and performance to the Automatic Allison 4500-RDS or better shall be provided. | ____ | ____ |
| 2. Transmission shall be rated by the manufactured for refuse vehicle operation and match the engine provided. | ____ | ____ |
| 3. Manufactures standard heavy duty external transmission oil cooler and auxiliary filter shall be provided | ____ | ____ |
| 4. Manufactures Solid state, reverse activated backup alarm shall be provided. | ____ | ____ |

Exceptions:

## E. FRONT AXLE & SUSPENSION:

| | | |
|---|---|---|
| 1. 20,000# capacity front axle with front | ____ | ____ |
| 2. 20,000# capacity taper-leaf front suspension. | ____ | ____ |
| 3. TAS- 65 Power Steering Pump, plus right side assist cylinder | ____ | ____ |

Exceptions:

## F. REAR AXLE & SUSPENSION:

| | | |
|---|---|---|
| 1. 30,000# single speed rear axle with 4.89 rear axle ratio. | ____ | ____ |
| 2. 30,000# Multi-leaf rear suspension. | ____ | ____ |
| 3. Driver control traction differential. | ____ | ____ |

Exceptions:

## G. FRAME:

| | YES | NO |
|---|---|---|
| 1. Heavy-duty frame, 120,000 PSI, with frame reinforcement. | ____ | ____ |
| 2. Front tow hooks. | ____ | ____ |
| 3. Heavy-duty front bumper. | ____ | ____ |
| 4. 189” CA. | ____ | ____ |

Exceptions:

## H. BRAKES:

| | | |
|---|---|---|
| 1. ABS-4-Channel Brake System. | ____ | ____ |
| 2. Spring Loaded Parking Brake. | ____ | ____ |
| 3. 18.7 CFM or better Air Compressor. | ____ | ____ |
| 4. Front dust shields. | ____ | ____ |
| 5. Outboard-mounted brake drums. | ____ | ____ |
| 6. Automatic Front and Rear Slack Adjusters. | ____ | ____ |
| 7. Low pressure warning light and alarm with dual pressure gauges. | ____ | ____ |
| 8. AD 9 Air Dryer | ____ | ____ |

Exceptions:

## I. FUEL TANK:

| | | |
|---|---|---|
| 1. Frame-mounted 70 Gallon LH. | ____ | ____ |
| 2. 6.6 Gal. Diesel Exhaust Fluid Tank. | ____ | ____ |

Exceptions:

## J. ELECTRICAL:

| | | |
|---|---|---|
| 1. 12V Electrical System. | ____ | ____ |
| 2. 160 Amp Alternator. | ____ | ____ |
| 3. Three (3) Batteries, 2280 CCA. | ____ | ____ |
| 4. 12V Starter. | ____ | ____ |
| 5. Directional Signal Switch. | ____ | ____ |
| 6. Battery Cut-Off Switch. | ____ | ____ |

Exceptions:

## K. WHEELS & TIRES:

1. 22.5 x 9.00 front hub piloted, Ten (10) hole steel disc type wheels. ____ ____
2. 22.5 x 8.25 rear hub piloted, Ten (10) hole steel disc type wheels. ____ ____
3. **Front Tires**: 315/80R22.5 tubeless non-directional highway type treads tires (18 Ply minimum) ____ ____
4. **Rear Tires:** 11R-22.5 tubeless non-directional highway type treads tires (16 Ply minimum) ____ ____

Exceptions:

## L. STEERING:

1. Full power assist steering shall be provided. ____ ____
2. Right side of unit tilt column steering shall be provided. ____ ____

Exceptions:

## M. CAB EQUIPMENT:

1. Dual Control Cab with Dual Steering and Instrument Panel. ____ ____
2. Tinted Glass All Around. ____ ____
3. Stainless Steel West Coast Mirrors with Bright Finish LH and RH Convex Mirror. ____ ____
4. Mid Back Air Suspension Seats left and right hand side. ____ ____
5. AM-FM/CD/ Clock Stereo Radio. ____ ____
6. Factory Integral Air Conditioning. ____ ____
7. LH and RH Entry Assist Handles. ____ ____

Exceptions:

## N. WARRANTY: Bidder shall enclose a copy of the warranty on the chassis. ____ ____

Exceptions:

## BODY GENERAL SPECIFICATIONS:

## INTENT:

This specification describes a hydraulically actuated automated refuse collection body capable of handling 48-100 gallon wheeled containers. The body shall be capable of compacting and transporting refuse to a landfill or transfer station and discharging the load by means of hydraulically dumping load from the body.

## GENERAL TERMS:

All equipment furnished under this contract shall be new, unused and the same as the manufacturer's current production model. Accessories not specifically mentioned herein, but necessary to furnish complete unit ready for use, shall also be included. Unit shall conform to the best practice known to the body trade in design, quality of material and workmanship. Assemblies, sub-assemblies and component parts shall be standard and interchangeable throughout the entire quantity of units as specified in this invitation to bid. The equipment furnished shall conform to ANSI Safety Standard Z245.1-2007.

**Compliance with the specifications shall be so noted** in the yes or no columns with a check mark in space designated. If item being bid is not as specified **any additions, deletion, or variation** from the following specification **shall be so stated** in the space provided

**A. GENERAL:** A current model automated-type refuse body, new and unused, similar in design and performance characteristics to the HEIL CP Python, or equal by other manufacturer's, with all standard equipment as offered by the manufacturer and is to be designed and constructed in accordance with the appropriate parts of the current ANSI Z245.1 and Federal Motor Vehicle Safety Standards.

| | YES | NO |
|---|---|---|
| 1. Regular current model automated type side loading refuse body, FULLY INSTALLED with all necessary hydraulic lines, pumps, reservoirs, suction and return hydraulic filters, controls, etc. | ____ | ____ |
| 2. The body / tailgate shall have a minimum capacity of twenty-four (24) cubic yards capacity | ____ | ____ |
| 3. Body shall be mounted with a minimum of cab clearance. ____ | | ____ |
| 4. Body is to be built in such a manner as to exhibit the highest quality in materials and workmanship. | ____ | ____ |
| 5. Body hoist is to be a twin cylinder, hydraulically actuated system and be power up and gravity down. | ____ | ____ |
| 6. Cab interior to be equipped with indicator lights for body up, arm extended, tailgate open, and pump on/off. | ____ | ____ |

Exceptions:

## B. BODY CONSTRUCITON:

| | YES | NO |
|---|---|---|
| 1. Minimum body capacity, excluding the receiving hopper, shall be 24 cubic yards. | ____ | ____ |
| 2. Body interior shall have a smooth flat floor with NO TROUGH. Body sides and roof shall be smooth radius cornered construction. All materials shall be steel unless otherwise specified. | ____ | ____ |
| 3. Body floor material shall be 7 gauge minimum with a minimum yield of 50,000 psi. | ____ | ____ |
| 4. Body floor reinforcing cross members shall be 6" x 1 ¾" x 7 gauge formed structural channels, minimum. | ____ | ____ |
| 5. Body longitudinal beams shall be 10" structural channels 20# per foot. | ____ | ____ |
| 6. Body sidewalls shall be constructed of not less than 10 gauge thick steel with a minimum yield strength of 50,000 psi. | ____ | ____ |
| 7. Body roof shall be a minimum of 12 gauge steel with a minimum yield strength of 50,000 psi. | ____ | ____ |
| 8. All joints of the constructed body shall have the appropriate reinforcements to insure against joint failure or metal fatigue during the life of the unit. | ____ | ____ |
| 9. All body hinges, cylinder rod ends, trunnions and pivot points shall be supplied with grease fittings. | ____ | ____ |
| 10. Hopper capacity shall be a minimum of 3.3 cubic yards. | ____ | ____ |
| 11. Hopper floor shall be a minimum of ½" thickness abrasion resistant steel. | ____ | ____ |
| 12. A 24" x 64" x ⅜" 100,000 psi yield sheet overlay shall be welded to the body floor at the transition from the hopper floor to the body floor. | ____ | ____ |
| 13. Hopper sides shall be minimum of ½" thickness abrasion resistant steel. | ____ | ____ |
| 14. Curb side hopper wall shall be equipped with a replaceable rubber flap. Flap shall be constructed of 3-ply cord reinforced neoprene rubber. | ____ | ____ |

Exceptions:

## C. BODY PACKER PLATEN:

| | | |
|---|---|---|
| 1. A hydraulically actuated packing platen shall be suspended between two (2) self-aligning hardened steel bushings. Panel shall be fabricated from minimum ½" reinforced steel plate. | ____ | ____ |
| 2. Platen shall be capable of operating continuously so that refuse containers can be dumped with the platen in any position. | ____ | ____ |
| 3. Platen shall utilize both sides of the assembly to distribute the waste equally to both the right and left sides of the body. | ____ | ____ |
| 4. Packing platen and support bearings shall be capable of greasing without entering the hopper. | ____ | ____ |
| 5. A large red emergency stop button shall be provided to stop packing platen movement at any time. | ____ | ____ |
| 6. Packer platen control buttons shall be of the heavy duty industrial grade. | ____ | ____ |
| 7. Packer platen shall be activated by two (2) hydraulic cylinders mounted under the body and connected to the packing platen using 1¼" thick steel bars. | ____ | ____ |

Exceptions:

## D. HYDRAULIC SYSTEM:

| | | |
|---|---|---|
| 1. The hydraulic system shall be so designed to ensure simplistic maintenance and consist of all the hydraulic components needed to ensure successful operation of the units installed body. | ____ | ____ |

2. Hydraulic system shall also be designed to meet or exceed the SAE standards with regards to hydraulic systems design to include pressure, capacity, bends, filtration, corrosion prevention, etc. ____ ____
3. Hydraulic system shall NOT require the need for external hydraulic cooling devices. ____ ____
4. Quick disconnect fittings shall be provided in all areas requiring trouble shooting of the system. ____ ____
5. A set per unit, liquid filled gauges, of the appropriate type and pressure rating, shall be supplied with each unit for diagnostics purposes. ____ ____
6. The pump shall be a front engine, crank driven, Denison tandem vane pump with electronic over-speed control. The combined flow shall be 44 gpm @ 800 rpm. The lift section shall flow 28 gpm @ 800 rpm. The packer panel pump section shall flow 16 gpm @ 800 rpm. The packer panel pump shall flow up to a maximum 36 gpm @ 1800 rpm. ____ ____
7. The lift hydraulics shall operate at a working pressure of 2200 psi. ____ ____
8. A minimum 40 gallon capacity baffled hydraulic tank shall be provided. ____ ____
9. The hydraulic tank shall be compete with a screened fill pipe and cap, filter breather, clean out cover, oil level sight gauge and temperature gauge and suction line shut-off valve. ____ ____
10. An easily replaceable three (3) micron, in tank, return line filter shall be provided along with a 100 mesh reusable oil strainer in the suction line. ____ ____
11. All hydraulic routing, tubing, or hose shall be securely clamped in place to prevent vibration, abrasion, or noise. Nylon cable ties are not considered to be secure retainers. ____ ____
12. All Cylinders shall have a five (5) year warranty ____ ____

Exceptions:

## E. CART LIFTING SYSTEM:

1. A curbside mounted cart lifting system shall be provided. ____ ____
2. Lifting system base shall rest atop the chassis frame rails for superior vertical distribution of loads. Lift mechanisms mounted along the sides of a frame rail are not acceptable. ____ ____
3. The lifting system shall be able to be hydraulically activated to reach, grab, lift, dump, and return industry standard refuse carts ranging from 48 to 100 gallon in capacity. ____ ____
4. Arm reach shall be a minimum of 108” with a 1,250 lbs capacity minimum. ____ ____
5. Dump cycle time of the arm shall be no more than 10 seconds at maximum reach. ____ ____
6. The arm grabber shall utilize two grab fingers on one axis and one grab finger on an opposing axis and be augmented with rubberized grabber belts. ____ ____
7. The grab fingers shall prevent demolition of the refuse cart during the dump cycle. ____ ____
8. Grab fingers shall be designed to automatically close when dumping to prevent cart slippage. ____ ____
9. Refuse cart dump angle shall be a minimum of 45˚. ____ ____
10. The arm and fingers shall be operated utilizing an electric over hydraulic joystick control. ____ ____
11. Holding valves shall be utilized in the arm / grab system to prevent uncommanded movement. ____ ____
12. The joystick control shall be mounted at the left hand operators position. ____ ____
13. The joystick shall be labeled to indicate operational directions. ____ ____

Exceptions:

## F. BODY DUMPING MECHANISM AND TAILGATE:

| | YES | NO |
|---|---|---|
| 1. Unit shall discharge all material from the body by means of a body raise dumping action. | ____ | ____ |
| 2. Body raise cylinders shall be a minimum two-stage singe acting telescopic heavy duty chrome plated cylinder with a minimum bore diameter of 4½ " and be capable of dumping the body to approximately a 30˚ angle. | ____ | ____ |
| 3. This body raise cylinders shall be mounted outboard of the chassis frame rails and trunnioned with a 2½" solid through shaft. Cylinders shall include an orifice fitting in the base port to prevent the rapid descent of the body in the event of a hydraulic failure. | ____ | ____ |
| 4. Body shall be provided with two (2) structural body props to support the body in a partially raised position during maintenance. | ____ | ____ |
| 5. Tailgate shall be top hinged utilizing heavy duty steel pins and hydraulically open, close and latch. | ____ | ____ |
| 6. Tailgate shall be raised, lowered, locked and unlocked by two (2) hydraulically actuated double acting cylinders with a minimum 3" bore and 1⅛" diameter chrome plated rod. | ____ | ____ |
| 7. Tailgate cylinders shall be provided with an orifice fitting to prevent falling, sudden closure, or decent of the tailgate should a hydraulic failure occur. | ____ | ____ |
| 8. Tailgate shall be constructed of 10 gauge steel with a minimum yield strength of 50,000 PSI and reinforced where applicable. | ____ | ____ |
| 9. Unit to be equipped with rear under ride protection meeting FMVSS requirements. | ____ | ____ |
| 10. Tailgate shall be provided with a rubber seal to prevent liquid leakage during operation. | ____ | ____ |

Exceptions:

## G. CONTROLS:

| | | |
|---|---|---|
| 1. Lift and body controls shall be located in the cab convenient to the operator. | ____ | ____ |
| 2. Lift controls shall be self-centering type, returning to neutral position when released. | ____ | ____ |
| 3. Packing plated controls shall be electrically controlled from within the cab. A rocker switch shall start the automatic packing cycle. The packer shall also be capable of manual operating control in either direction. | ____ | ____ |

Exceptions:

## H. ELECTRICAL AND LIGHTING:

| | | |
|---|---|---|
| 1. The body functions in-cab control center shall be located in the cab convenient to the operator. | ____ | ____ |
| 2. All electrical wiring to be in split looms. No unprotected wiring is acceptable. | ____ | ____ |
| 3. Clearance, back-up and directional lighting shall be Lexan lens, shock mounted in protective housing, replaceable pop-out style. | ____ | ____ |
| 4. All lights shall be provided in accordance with FMVSS #108 and ANSI Z245.1-2007 plus mid body Turn signals on each side of the body and center mounted brake light on the rear. | ____ | ____ |
| 5. Two (2) rear tailgate mounted (left and right), high intensity LED, alternating, Flashing amber | | |

Strobe lights shall be provided, mounted center line of tailgate in height ____ ____

6. Two (2) Front of Vehicle mounted LED Flashing amber strobe lights ____ ____

Exceptions:

## I. MOUNTING AND PAINTING

**YES NO**

1. Unit shall be installed within accepted industry standards. There shall be no welding on the chassis frame. ____ ___
2. The entire body shall be properly cleaned of all dirt, grease, and weld slag. Cleaning shall be in keeping with accepted industry practices. ____ ___
3. A liberal coat of high grade Red self etching primer is to be applied. ____ ___
4. Top coat finish shall be high grade acrylic urethane enamel, with White body. ____ ___

Exceptions:

## J. MISCELLANEOUS:

1. A first aid kit and fire extinguisher shall be provided. ____ ____
2. A decal shall be tailgate mounted stating: "THIS VEHICLE MAKES FREQUENT STOPS AND TURNS" ____ ____
3. A body three (3) camera viewing system shall be provided and include a 7" minimum LCD flat screen swivel mounted monitor and include : Sound, Night Vision, 4 in 1 display, Electromagnetic Noise Resistance, and Auto Switch. ____ ____
4. Body shall be equipped with rear under ride guard. ____ ____

Exceptions:

## K. PARTS SERVICE, OWNER/OPERATOR MANUALS:

1. One set of owner/operator manuals, parts books, wiring diagrams, lubrication charts, complete service manuals, truck and body specific w/wiring diagrams and all other technical repair data for this unit(s) as equipped , shall be provided upon delivery.
2. The manuals provided with the unit(s) shall cover the cab/chassis and the complete automated Refuse body unit.

Exceptions:

## L. WARRANTY:

| | YES | NO |
|---|---|---|
| 1. Manufacturer's full warranty shall be applicable to this unit(s) as delivered (12 month minimum). | ____ | ____ |
| 2. Warranty claims shall be addressed within a period of 3 days from time of notification by the awarded vendor. | ____ | ____ |
| 3. Successful completion of any warranty repair shall be no longer than 2 weeks (10 business days) from time of notification. | ____ | ____ |
| 4. All Cylinders shall have a five (5) year warranty | ____ | ____ |

Exceptions:

## M. DELIVERY:

| | | |
|---|---|---|
| 1. Bid shall include Delivery cost, Unit shall be delivered to City of Pigeon Forge Sanitation Department 2434 Garland Harmon Drive, Pigeon Forge, Tennessee 37863 | ____ | ____ |
| 2. Unit(s) shall be delivered complete with a minimum of twenty five (25) gallons of fuel and NO dealer advertising logos shall be affixes to the interior or exterior of the unit(s) prior to delivery. | ____ | ____ |
| 3. Delivery must be made during regular working hours, 7am -3:30 pm, Monday through Friday, excluding Holidays. | ____ | ____ |
| 4. Delivered unit(s) shall come with all required paperwork to complete the purchase and registration process and shall include at a minimum: | | |
| a. Invoice | | |
| b. Mileage Statement (if applicable) | | |
| c. Manufacturer's Statement of Origin (MSO) (if applicable). | ____ | ____ |
| 5. Delivery acceptance of unit shall be refused in any part of the awarded specifications are not maintained. | ____ | ____ |
| 6. Upon delivery a representative of the manufacturer or selling dealer shall conduct a minimum of one (1) day training covering the operation and maintenance of the units (s). | ____ | ____ |
| 7. Bidder shall state, in days, the time required to effect delivery. | _____ days. | |

Exceptions:

## N. OPTION A: AUTO LUBRICATION SYSTEM:

Vendor shall quote add on price for the addition of the standard automatic Body and arm lubrication package. _____ Price

Exceptions: