

CITY OF CAYCE SC  
HIGH COMPACTION REAR LOADER  
BID SPECIFICATIONS

PURPOSE

It is the intention of these specification to describe the minimum requirements for a rear loading design refuse collection truck. The bidder shall represent by his bid that all equipment bid is new and unused.

Features that are regularly furnished as standard with this unit shall be supplied by the successful bidder. The chassis and body shall conform in strength, quality of material, and workmanship to that provided by the best manufacturing and engineering practice of the industry. Assemblies, sub-assemblies, and component parts shall be standard and interchange throughout the entire quantity on units as specified in the invitation if bid.

The equipment furnished shall conform to the latest version of ANSI Safety Standard Z245.1 for refuse collection equipment. The unit shall also conform to Federal Motor Vehicle Standard FMVCS-108 lighting standards for truck chassis and mounted bodies.

PROCESS

Interested bidders must submit written bid documents to:

Thomas White, Sanitation Manager

P.O. Box 2004

Cayce, SC 29017-2004

Or in person at:

City of Cayce

1800 12<sup>th</sup> Street Extension

Cayce, SC 29033

WRITTEN BIDS

**All bids must be submitted in writing using this bid document and must be received at City Hall before 2:00pm on**

**August 12, 2016**. The City accepts no responsibility for submission lost, mishandled or delivered late by delivery agents.

Bidders shall complete every space in this specification by making the appropriate notations in the column to the right of each item. If the item is exactly as specified, the bidder shall write "**Yes**" in the column beside that item. If the item bid is not exactly as specified, the bidder must write "**No**" in the column and provide detailed description of the deviation from the item specification, using a separate page- no exceptions.

Omission of a detailed description or specification of any point shall be regarded as meaning the only the commercial practice shall prevail and that only material of first quality and correct type, size, and design are to be used.

Bids will be opened at 2:00 pm on **August 12, 2016** at the City of Cayce Hall. The bid opening will be open will be the public. Appropriate city staff will review submitted bids and a recommendation will be presented to its next schedule meeting. The City of Cayce reserve the right to reject any and all proposals that are not deemed to be in the best interest if the citizens of the City of Cayce. Notification to awarded bidder, if any, will be made upon Council approval.

## ADDITIONAL INFORMATION

Interested bidders may contact Thomas White, City of Cayce Sanitation Manager, at 803 796-920 ext. 3027 for additional information.

### Tandem Axle Cab and Chassis

General Specification: or equal.

The intent of these chassis specification is to describe a tandem cab and chassis designed for 25-year rear loader truck application. The proposed chassis shall be of conventional design with standard cab and all necessary standard equipment for on and off road vocational use. This cab chassis will travel into a landfill.

#### GENERAL

YES/NO

1. Minimum certified GVWR shall be 60,000 pound \_\_\_\_\_
2. Tandem Rear Axle. \_\_\_\_\_
3. Vehicle shall be so that it will have a clear span of 158" inch from the rear of the cab to the center of the tandem. \_\_\_\_\_

#### ENGINE EQUIPMENT AND TRANSMISSION

1. Minimum 385 hp Cummins 1250 lbs. ft. of torque. \_\_\_\_\_
2. 2010 EPA rated emission. \_\_\_\_\_
3. Automatic 6-speed Allison 4500 RDS transmission rated for refuse duty. \_\_\_\_\_
4. 15.9 CFM Air Compressor - Single Cylinder \_\_\_\_\_
5. Delco 39MT HD/DCP starter \_\_\_\_\_
6. 75 MPH road speed limit \_\_\_\_\_

#### AXLE, SUSPENSION

1. 18,000 Lbs, Front Axle. Setback front axle. \_\_\_\_\_
2. 46,000lbs. Rear Axle no air bags \_\_\_\_\_
3. 13,000 lbs. Lift Axle installed in front of rear tandem. Air controlled from inside cab. \_\_\_\_\_

#### CHASSIS EQUIPMEN

1. Frame rails minimum RBM of 2.3 million. \_\_\_\_\_
2. (4) Batteries 12V maintenance free group 31 absorbed glass mat. \_\_\_\_\_
3. Battery Box mounted to cab floor under passenger seat w/jump post mounted on frame next to starter, \_\_\_\_\_
4. Dust Shields. \_\_\_\_\_
5. One 100 Gallons Fuel Tank mounted LH side. \_\_\_\_\_
6. Front Tow Hook center of bumper. \_\_\_\_\_
7. Vertical Exhaust not to interfere with body mounting or use. \_\_\_\_\_

#### CAB INTERIOR

1. All glass used shall be tinted and shatterproof. \_\_\_\_\_
2. Bostrom Talladega 915 high back seat for driver and 2 man passenger (driver's seat shall be air controlled). \_\_\_\_\_
3. Air Conditioning. \_\_\_\_\_
4. Dash mounted Air Restriction Monitor. \_\_\_\_\_

5. Tilt and Telescoping Wheel. \_\_\_\_\_
6. Air ride Seat for Driver with Armrest. \_\_\_\_\_
7. CB Radio Provisions in Overhead Console. \_\_\_\_\_
8. Suspended Pedals. \_\_\_\_\_
9. Driver data display and Warning Display. \_\_\_\_\_

#### CAB EXTERIOR. WHEELS AND TIRES

1. Shall be white ext. color with black chassis running gear. \_\_\_\_\_
2. Radiator mounted grill. \_\_\_\_\_
3. 385/65R22.5 Front Tire with steel hub piloted wheels. \_\_\_\_\_
4. 11R22.5 Rear Tires with steel hub piloted wheels. \_\_\_\_\_
5. Front bumper to be boxed .25inch steel construction with center tow pin and painted with chip guard paint. \_\_\_\_\_

#### EQUIPMENT

Truck shall be furnished complete with all equipment customarily furnished as "Standard" and all standard safety equipment as required by federal standards. The following shall be factory installed in addition to (or in the place of) the regular equipment.

1. Lights it meet all federal and state regulations. \_\_\_\_\_
2. Two front tow hooks mounted to the frame. \_\_\_\_\_
3. Direct reading gauges. \_\_\_\_\_
4. Two West Coast retractable heated mirrors. \_\_\_\_\_
5. Fresh air type cab heater and defroster. \_\_\_\_\_
6. Heavy-duty fully adjustable driver's seat (air controlled) \_\_\_\_\_
7. AM/FM CD radio/ Bluetooth \_\_\_\_\_
8. Dual air horns. \_\_\_\_\_
9. Deluxe factory installed air conditioning. \_\_\_\_\_
10. Battery disconnect switch. \_\_\_\_\_

#### WARRANTY

All equipment shall be warranted. A copy of the warranty is to accompany the bid. Also, the supplies shall furnish the name and location of nearest service center (parts and service). Vocational Warranty on engine and transmission.

#### SERVICE LITERATURE

The successful bidder shall furnish factory service bulletins for minimum of two years from the beginning of the contract (this is to include warranty bulletins). One cope of the shop manual is to be furnished to the City's Maintenance Shop upon delivery of the truck.

## 25-yard Rear Load Body

General Specifications: or equal

#### DIMENSIONS

1. The minimum capacity of the body shall be 25 cubic yards exclusive of hopper \_\_\_\_\_
2. The minimum capacity of the hopper shall be 4.0 cubic yards. \_\_\_\_\_
3. The body shall be designed at all high-density compaction of up to 1050 lbs. per cubic yard if dry household refuse. \_\_\_\_\_

4. The maximum overall width shall be 96 inches. \_\_\_\_\_
5. The overall length of the body shall be a minimum of 288 inches. \_\_\_\_\_
6. The maximum height above the chassis frame shall be 94 inches. \_\_\_\_\_
7. The inside width of the body shall be 90 inches at the widest point. \_\_\_\_\_
8. The inside height of the body shall be 82.5 inches at the highest point. \_\_\_\_\_
9. The minimum weight of the body 16,000 lbs. **Light weight bodies not acceptable.** \_\_\_\_\_

#### BODY CONSTRUCTION

1. The body shall have a smooth floor without a trough. Floors with trough or depression are not acceptable. No cylinders, valves or other hydraulic components shall be exposed to refuse packed into the body. \_\_\_\_\_
2. The body floor, sides and roof shall be designed and constructed to withstand maximum imposed of residential Refuse without structural damage or excessive wear. \_\_\_\_\_
3. The body sides shall be fabricated from 8 gauge hi-tensile steel and shall be of a curved one-piece design. Body side seams are unacceptable. \_\_\_\_\_
4. The body roof shall be fabricated from 8 gauge hi-tensile steel and shall be of a curved design. \_\_\_\_\_
5. A 28" X 34" body side door shall be located on the driver's side. The door shall be equipped with a spring-loaded latch, access ladder and grab handles. Door hinges must be hidden and located inside body. \_\_\_\_\_
6. The body floor shall be fabricated from 3/16 thick hi-tensile steel full width of the body with on depression or trough to accommodate the ejector cylinder. \_\_\_\_\_
7. The longitudinal shall be fabricated from 1/2" hi-tensile steel. \_\_\_\_\_
8. The floor cross member shall be tapered from the long sill outboard to the body side sheet. \_\_\_\_\_
9. The floor cross member shall be fabricated for 7 gauge hi-tensile steel. \_\_\_\_\_
10. The Body shall come with a minimum one-year part and labor warranty, hopper blade to have a two year structural warranty. (Please attach warranty statement) \_\_\_\_\_

#### TAILGATE DIMENSIONS

1. The hopper opening shall be 75" wide and 62" high to permit unobstructed loading of the tailgate hopper. \_\_\_\_\_
2. The top of the loading sill shall be 4 inches below the top of chassis frame to facilitate easy loading. \_\_\_\_\_
3. The overall height above the chassis frame with tailgate raised shall be 184 inches. \_\_\_\_\_

#### TAILGATE CONSTRUCTION

1. The tailgate side shall be fabricated for abrasion resistant 3/16 T-1 alloy 100,000 PSI minimum -yield strength steel. \_\_\_\_\_
2. The hopper floor and chute shall be a one-piece design fabricated from 1/2" T-1 alloy 100,000 PSI Minimum steel plate. \_\_\_\_\_
3. The tailgate side shall be reinforced with hi-tensile steel channels interlaced and fully welded to the side sheets. \_\_\_\_\_
4. The hopper and chute floor shall be reinforced with hi-tensile steel channels. \_\_\_\_\_
5. The tailgate shall be secured to the body with 1" diameter turnbuckles equipped with fast spin handles. \_\_\_\_\_
6. The tailgate seal shall extend a minimum 50" up the body side. \_\_\_\_\_
7. Two grab handles shall be located on each side of the tailgate. \_\_\_\_\_
8. The rear steps shall be fabricated from open grip strut material with a minimum standing surface of 330 square inches per step. The step shall comply with A.N.S.I standing. Steps shall be of bolt on design. \_\_\_\_\_
9. The hopper loading sill shall be constructed of 3" X 4" X 3/8" wall structural tubing. \_\_\_\_\_

#### PARKING MECHANISM



1. The packing cycle shall be controlled by a two-lever control system that allows the operator to start, stop and reverse the direction of any function at any point during the packing cycle. \_\_\_\_\_
2. The tailgate control valve shall be located under the top covers. \_\_\_\_\_
3. The packing blade assembly shall consist of two primary components: the slide blade and the sweep-
  - a) The packing blade assemblies shall be mounted on four wear shoe assemblies that travel on hardened steel wear tracks. The shoe assemblies shall be replaceable without removing the packing blade; two 3" diameter alloy steel pins shall attach the slide blade. These pins shall also support the two (2) lower wear block assemblies. \_\_\_\_\_
  - b) The slide blade shall be constructed from 3/16" hi-tensile steel plate. \_\_\_\_\_
  - c) The sweep blade shall be mounted to and pivot on the slide blade. \_\_\_\_\_
  - d) The sweep blade shall be fabricated from 1/2" T-1 steel plate, varying in thickness. \_\_\_\_\_
4. The packing blade assembly shall ride on four UHMW polyethylene shoe assemblies. **Metallic and or metal type shoes or rollers are unacceptable.** \_\_\_\_\_
5. The blade shall be operate with the use of linkage or link arms. \_\_\_\_\_
6. The packing blades shall be powered by two (2) 5" bore X 3" Rod x23 1/2" stroke sweep cylinders and two (2) 5" bore X 2 1/2" Rod X 43" stroke slide cylinders. \_\_\_\_\_
7. The slide and sweep cylinders shall have hardened chrome-plated rods and be of cushioned design, to reduce hydraulic shock, noise and impact related stresses. Sweep cylinder shall have hardened bushings at rod side pivot. \_\_\_\_\_
8. The packing blade shall operate at a minimum **22 seconds cycle time** with a 11-13 seconds reload time. \_\_\_\_\_
9. The sweep blade shall stop above the hopper sill prevent a pinch point. \_\_\_\_\_
10. Material in the hopper shall be compact between the packing panel assembly the ejector panel, The ejector shall hold pressure against the compacted material and be automatically advance by hydraulic load control valve operator assistance. \_\_\_\_\_

#### EJECTION SYSTEM

1. The load shall be ejected by a double acting, telescopic hydraulic cylinder that shall extend and retract the ejector panel the full length of the body without the use of clamp bars related hardware. \_\_\_\_\_
2. The ejector cylinder shall be 4-stage 6.5" cylinder. \_\_\_\_\_
3. The ejector panel shall be a 3/16" hi-tensile steel face sheet that is reinforced by structural steel tubing and formed channel of high tensile steel. \_\_\_\_\_
4. The ejector panel shall be mounted on four (4) high-density polyethylene wear shoes that shall be replaceable without removing the ejector panel from the body. **Metallic type shoes are unacceptable.** \_\_\_\_\_
5. The ejector panel shall be guided in the body by two guide tracks located on the body side 6" above the body floor. The tracks shall be 6" deep fabricated from 1/2" hi-tensile steel and fully welded to the body sides. \_\_\_\_\_
6. The ejector cylinder shall be mounted diagonally to the body floor and not require a trough or depression in the floor. Troughed floors are unacceptable. \_\_\_\_\_

#### CONTROLS

1. The ejector and tailgate lift controls shall be mounted at the left front of the body. \_\_\_\_\_
2. Ejector and tailgate controls shall be mounted directly to the valve spool. \_\_\_\_\_
3. A throttle advance switch shall be located convenient to the ejector and tailgate lift controls. \_\_\_\_\_
4. The tailgate control shall be located at the right rear of the tailgate. The two-lever design shall use spherical rod ends for positive control of movement of the packing mechanism all times. The tailgate controls shall comply with the applicable N.S.I. regulations. Levers to color coded for safety. \_\_\_\_\_
5. An automatic throttle advance device shall be incorporated with the tailgate controls. \_\_\_\_\_

#### HYDRAULIC SYSTEM

1. A heavy duty cast iron gear pump with a minimum capacity of 40 G.P.M. at 1200 R.P.M. shall be driven by a hot shift PTO with over speed protection. All switches, PTO warning lights and controls mounted on dash. \_\_\_\_\_
2. For extended life of all hydraulic components the maximum operation pressure shall not exceed 3000 P.S.I. \_\_\_\_\_
3. The hydraulic system shall incorporate an adjustable relief in the body valve and a regen valve for increased cycle time. \_\_\_\_\_
4. Hydraulic hoses and tubes shall be secured by clamps as required to prevent damage from abrasion and vibration. Hydraulic hoses and tubes shall use S.A.E. O-ring boss and JIC 37 degree flare ends for zero leaks. \_\_\_\_\_
5. Hydraulic hoses shall comply with the applicable S.A.E. standards for the designed specifications. \_\_\_\_\_
6. Hydraulic hoses are to have a 4:1 burst-to-working pressure safety factor. \_\_\_\_\_
7. The hydraulic oil reservoir shall have a minimum capacity of 42 gallons. The reservoir shall be equipped with filler, breather cap, sight glass, clean-out cover, 100 mesh suction filter, magnetic tank drain plug and gate valve at the suction outlet. The hydraulic reservoir shall not be a structural member of the body or the mount for the ejector cylinder. \_\_\_\_\_
8. A 6-micron synthetic micro glass tank to return line filter shall be located on the hydraulic tank and be equipped with a condition indicator. Pleated paper filter are not acceptable. \_\_\_\_\_
9. A suction screen filter of 100 mesh (141 micro) shall strain all the oil leaving the tank. Suction filter shall be equipped with a 5 P.S.I. bypass valve. \_\_\_\_\_
10. All hydraulic valves shall be sectional that would allow replacement of defective sections without replacement of the entire valve. \_\_\_\_\_
11. All cylinders and valves shall have SAE O-rings boss ports. \_\_\_\_\_

#### HYDRAULIC CYLINDERS

1. All cylinders shall have a working pressure rating of 3000 P.S.I. \_\_\_\_\_
2. The sweep and slide cylinder shall have hard chrome plated rods and be cushioned to reduce hydraulic shock at the end of the stroke. \_\_\_\_\_
3. The sweep, slide and tailgate lift cylinder shall carry a minimum full three year parts and labor warranty. \_\_\_\_\_
4. Tailgate cylinders shall have hardened chrome plated cylinder rods, and be equipped with restrictors to limits the speed of raising and lowering of the tailgate. \_\_\_\_\_
5. All rod cylinders shall have cast iron glands and pistons and be equipped with double wear bearing and premium seals. Aluminum glands and pistons are not acceptable \_\_\_\_\_
6. Telescopic cylinders shall have chrome plated cylinder sleeves and plungers. \_\_\_\_\_
7. All cylinders are to operate without direct contact with the compacted load. \_\_\_\_\_

#### ELECTRICAL

1. All electrical wiring shall be color-coded and in braided harness or loom. \_\_\_\_\_
2. Electrical harnesses shall be connected with a sealed aircraft type electrical connector. \_\_\_\_\_
3. Electrical wires shall be stranded copper type with a SXL covering to remain flexible and resist deterioration. \_\_\_\_\_
4. Electrical wires shall be function printed on the wire for easy identification. \_\_\_\_\_
5. Body electrical system shall be protected with its own fuse block. \_\_\_\_\_
6. All fuses shall be ATO type. \_\_\_\_\_
7. All limit switches shall be waterproof to prevent damage from the elements and pressure washing. \_\_\_\_\_
8. All lighting shall comply with F.M.V.S.S. # 108, with an additional set of two stop, tail and turn light mounted above the hopper on a light bar. \_\_\_\_\_
9. Clearance, backup, stop and directional lights shall be rubber grommet mounted with sealed light housing, lexan, vibration resistant filament and unitized sealed quick change prong connections. \_\_\_\_\_

10. A 112 DBs backup alarm conforming to current standards must be provided. \_\_\_\_\_
11. The alarm must also sound when the tailgate is not closed. \_\_\_\_\_
12. Rear LED integrated strobe system with (4) strobes on rear with in-cab switch, Lights to be mounted on rear light Bar (2) and bottom corners of tailgate (2). \_\_\_\_\_
13. Two (2) work lights mounted in tailgate to light up hopper and surrounding area for safe operation in morning and evening. \_\_\_\_\_
14. Tailgate to Cab buzzer system mounted on curbside to notify driver. \_\_\_\_\_
15. Emergency Hydraulic Shutdown button mounted curbside on the side of hopper for safety. \_\_\_\_\_

#### PAINING

1. All burrs and rough areas are to be ground smooth and all welds preened to remove slag. \_\_\_\_\_
2. Prior to application of any coating, all surfaces shall be thoroughly cleaned and conditioned to paint manufacturer's specifications. \_\_\_\_\_
3. The body shall then be coated with two (2) coats of a self-etching epoxy primer. \_\_\_\_\_
4. The entire body underneath shall be undercoated in a Rhino Lining protective coating installed against chipping, rust and wear under body and in wheel area. \_\_\_\_\_
5. Two finish coats of polyurethane enamel shall be applied to produce a high gloss finish. Color to be white to match cab. \_\_\_\_\_

#### ADDITIONAL EQUIPMENT

1. Twin Barker 612 tippers? on the rear with individual handles- one per side- setup for the City's roll carts. \_\_\_\_\_
2. Tippers to be plumbed using hard line and each tipper to have its own valve section for flow. \_\_\_\_\_
3. Tippers to be controlled using hard linkages identical to factory pack controls. One control per tipper located on the side of hopper. One per side. \_\_\_\_\_
4. Rear view camera system with in-cab monitor, 6" Colored-screen and auto on in reverse. \_\_\_\_\_
5. Body to be equipped with "Fast Pack" for faster cycle times of 22 seconds. \_\_\_\_\_
6. City decals to be supplied on both sides of the garbage body. \_\_\_\_\_

#### DELIVERY

1. Delivery of the specified truck must be guaranteed for not later than 120-----150 days. Failure to complete delivery and invoicing by that date may result in the City's refusal to complete the purchase. \_\_\_\_\_

#### OTHER

1. A list of at least 15 current South Carolina municipal users of the model being bid to be returned with the bid. The list must include contact names and phone numbers. Failure to return user list may void bidder submission. \_\_\_\_\_
2. Service and parts support to be located on more than 50 miles from the city maintenance shop. Factory replacements parts must be obtainable same day with on-site service available. \_\_\_\_\_
3. Warranty - Full 3 years hydraulic and 2 years structural warranty for the body. \_\_\_\_\_
4. Completed unit to be delivered ready to work with operator and service training. \_\_\_\_\_