

## INVITATION TO BID

### **SPECIFICATIONS ON A TRASH/BRUSH LOADER, BULK TRASH/JUNK BODY, MOUNTED ON A 26,000# CITY TRUCK & CHASSIS**

**SCOPE:** The intent of these specifications is to describe a trash/brush loader & bulk trash body mounted on an existing 26,000# City Owned Freightliner FL70 for use in the City's refuse collection system.

**GENERAL:** All equipment furnished shall be new, unused and of the manufacturer's current production design. All chassis modifications shall be within industry standards and be performed in a shop equipped to modify chassis for use with the knuckle loader and body. Bidder must accurately complete this specification sheet and include it as a portion of the bid response. Failure to submit form indicating any deviations from the specifications shall be grounds for rejection of bid. **Any deviations or exception from the stipulated specifications shall be listed on a separate sheet labeled "Exceptions to Bid Conditions and Specifications" and attached to the bid.**

#### **I. TRUCK SPECIFICATIONS**

- A. Successful bidder shall modify a city owned Freightliner FL70 VIN 1FVABSAK73HK33300 with 62,000 miles to accept the below specified knuckle boom loader and dump body.
- B. Chassis currently has a 14' chipper dump body mounted on it. Successful bidder shall remove chipper body, hoist, pump and PTO. Chassis currently has 108" CA. Successful bidder shall stretch the frame to 168" CA with 90" of after frame. New frame cut shall be welded and plated with "C" channel and bolted with huck bolts. This will ensure that frame bolts do not loosen with wear and will require no future torquing.

#### **II. SPECIFICATIONS FOR A HEAVY DUTY TRASH LOADER**

- A. **PEDESTAL AND BOOM:**
  - 1. Boom length to be 17 ft.
  - 2. Minimum lift capacity to be 1,200#. @ 17' including grapple.

- 3.** Boom pedestal to be constructed of high strength steel providing a 3:1 safety factor.
- 4.** All hydraulic hoses located at the operator position (boom pedestal) must be enclosed in protective sleeves.
- 5.** Boom pivot shall be mounted to the pedestal by means of a slewing ring/bearing that has a minimum capacity of 200,000 # static load and 90,000 ft # moment. Slewing ring shall be 2" thick and have an O.D. of 20" minimum. The ring should provide a self-locking mechanism. No external brake will be required or acceptable.
- 6.** Boom rotation of 270° minimum with mechanical stops for safety. Stops must be welded into machined recesses to ensure non-movement. Pedestal/pivot stops must have a minimum of 3 IN squared contact surface.
- 7.** Boom rotation shall be accomplished by a direct hydraulic swing drive through a slewing (bearing) ring & worm gear capable of producing 90,000 inch-pounds torque.
- 8.** Entire boom assembly shall be designed with a tensile strength to provide a safety factor of 3:1 at the rated load capacity.
- 9.** Main boom shall be constructed of high strength steel and will be equivalent with 4"x8" steel tubing.
- 10.** Tip boom shall be constructed of high strength steel and will be equivalent with 5"x6" steel tubing.
- 11.** Tip boom shall have a 4' telescopic extension tip section constructed from 4"x6" high strength steel tube.
- 12.** Main boom shall be equipped with mechanical stops to prohibit hydraulic cylinders from bottoming out.
- 13.** Boom pedestal to be mounted directly to the chassis frame rails. Mounting must include inside frame rail supports at the mounting points.
- 14.** The entire boom must be serviceable down to the component level, E.G., every hydraulic hose, fluid tubes, bracket, pin, etc. having to replace sub-assemblies in order to repair a component will not be acceptable.
- 15.** All boom connections requiring pins shall be equipped with replaceable bushings and heat-treated pins.
- 16.** All operating functions shall be hydraulically controlled from the operator station. The control set-up should freely move from the left hand and right hand side of the loader.

17. The pump shall provide multiple function control of the loader.

18. Operator controls shall be mechanical type. The body dump/outrigger control levers shall be located on a separate position with respect to the main crane controls. All controls shall be clearly identified as to function.

**B. TRASH GRAPPLE/BUCKET:**

1. Bucket shall have a 360° continuous rotation. Grapple shall have a replaceable hydraulic rotator. Rotator shall not be welded or be an integral part of the grapple.
2. Bucket is to be opened and closed by a hydraulic cylinder with a closing force/"bite" of 2,000 lbs.
3. Bucket is to be 2' long and capable of opening to 48" from lip to tip.
4. Bucket shall be fabricated with a bolt-on replaceable high strength high carbon steel cutting edge.
5. Bucket cylinders and hoses shall be enclosed in a grapple top housing for protection.

**C. HYDRAULICS:**

1. Reservoir shall be a minimum of 45 gallons. It shall have a dual level/temperature gauge on side of tank. An in tank suction strainer must be included.
2. Filter shall be a 10-micron, return line replaceable filter mounted on outside of the reservoir.
3. Cut-Off valves are to be provided for both pressure and suction.
4. All hoses shall be rated at 4,000-PSI working pressure.
5. Control valves shall have a 20 GPM rating.
6. Successful bidder must provide a computer printout at time of delivery showing particle testing of the hydraulic oil done just prior to the unit being shipped in order to illustrate cleanliness of the hydraulic system.

**D. POWER SOURCE:**

1. Unit to be mounted on any chassis that meets the manufacturer's recommended specifications with a heavy duty clutch style (hot shift) PTO and a heavy-duty hydraulic pump.

#### **E. THROTTLE CONTROL:**

1. Unit to have an electric operated throttle control to maintain proper engine speed when loader is operated under load. Switch for throttle control to be mounted on operator's platform for operator's convenience.
2. Throttle speed-up shall operate only when the transmission is in the neutral position.

#### **F. OUTRIGGERS:**

1. Outriggers shall be extendable to a distance that will resist loads of 85% of the tipping moment under maximum rated load.
2. The outriggers are to be equipped with smooth pads to cause minimum damage to contacted surface.
3. Outriggers shall telescope up and down and should be "A" frame style. Controls must be located a distinctive distance from the main boom controls.
4. Outrigger cylinders for stabilizing loader shall be mounted inside telescoping legs.
5. Outriggers shall retract to within the maximum highway width and will extend to a maximum width to resist the design load moment.

### **III. SPECIFICATIONS FOR HEAVY DUTY BULK TRASH BODY**

It is the intent of these specifications to describe a heavy duty trash body to be used in collection and loading of bulk trash, limbs, brush, leaves, building materials, etc., or any other materials. Material, workmanship, design and capacities are being specified for a piece of equipment that will be required to do a certain job.

#### **G. DUMP BODY:**

1. Capacity: 20 Cubic Yards
2. Length: 18 Feet.
3. Body shall be mounted with a space of between the cab and the front of the body for the operator's position.
4. Body floor shall be constructed of 3/16" sheet steel, minimum.

5. Body walls shall be constructed of 10 gauge steel. Wall stiffeners to be minimum 11 gauge formed channels on approximately 24" centers.
6. Front bulkhead and side walls shall be 48" high.
7. Body long members shall be constructed of structural channels 8" @ 9.8#/ft. Cross members shall be structural channels 4" @ 5.4#/ft on 12" centers.
8. Body shall have two (2) equal width barn type doors 48" high to swing completely around to each side wall with provisions to positively latch open for dumping.
9. Each door shall be hinged with two (2) 1" hinge pins. Hinges must be welded to the body and door must contain easily accessible grease fittings. Door latch will secure both doors at the top and bottom.
10. Rear doors shall be fabricated from 10 gauge steel with a frame of 4" structural channel.
11. Body shall have a rear safety bumper.
12. Two (2) body safety props shall be installed on each side of the chassis frame rails.

**H. BODY HOIST:** The hoist system shall be two (2) 2-stage telescopic hydraulic cylinders rated at 2,500 PSI working pressure. Cylinders shall be mounted to provide a 45° dump angle. Hoist cylinders must be mounted outboard the chassis frame for increased stability.

**I. LIGHTS AND REFLECTORS:**

1. Shall conform to current state and federal standards.
2. Body rear vertical bracing shall contain oval LED flashing lights with in-cab control.
3. Cab shall have rotating beacon with in-cab control.

**J. PAINT:**

1. The complete unit shall be cleaned of all weld slag and shall be painted with one (1) coat of primer.
2. Unit shall receive two (2) coats of high-grade enamel paint. Body shall be black and boom shall be safety orange.
3. Body shall have rear safety bumper with conspicuity tape applied. Body side rub rails shall have conspicuity tape applied. Body shall have body safety props installed on each side of the body.

**K. WARRANTY:**

1. Bidder must provide all warranties required below. Failure to provide such warranties may result in your bid being deemed non-responsive.
2. Entire unit to have a 1 year parts and labor warranty, a 1 year warranty on slewing drive, and a 1 year structural warranty.