



ADDENDUM NO. 1

DATE: 6-6-17

TO: ALL BIDDERS

FROM: JAMES TUCKER; SENIOR BUYER; BOYCE EVANS, PURCHASING AGENT

SUBJECT: BRUSH COLLECTION EQUIPMENT

BID TO CLOSE ON: 6-16-17

This addendum becomes a part of the quote specifications and modifies the original specifications as noted.

ITEM NO. 1: Please disregard the set of specifications that were issued with the original sealed bid request. Attached are the revised specifications that pertain to the brush collection equipment that is requested by the City of Knoxville.

END OF ADDENDUM NO. 1

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Background

It is the intent of these specifications to describe a 10' custom flatbed truck body with 50 ton, swivel-type rear pintle hook and receiver plate with an 18' detachable knuckleboom loader designed for the collection of brush, limbs, leaves, and other items picked up by the City of Knoxville Public Service Department. Also being requested is a Buyers brand 10' x 36' municipal snow plow or approved equal. Plow is to be installed on the truck. The chassis' have been pre-ordered and will be delivered directly to the winner of this bid to upfit as specified to achieve the goal of a turn-key final product. The loader shall be designed to safely load material into an attached trailer or an adjacent container and shall utilize a 10' main boom, 8' tip boom and rotating trash bucket to lift and load material. The detachable loader assembly shall also contain a two-way adjustable stabilizer assembly. The flatbed body shall have hydraulics available to a dump trailer (for use with or without the knuckleboom loader attached) and will have hydraulics available to other flatbed-mounted components used by the City of Knoxville (salt spreader, pothole patcher, etc.). This is referred to as a "zip-on, zip-off" system. Components need ability to be switched out within a 2 hour time frame.

Once the winning bidder is determined, then a pre-build meeting will be required between the City, the chassis vendor, at the time, place, and location of the City's choosing.

The chassis(s) will be delivered to the winning bidder's location as soon as they are built so bidders must be able to safely and securely accommodate the number of vehicles being requested in this bid at their location. The chassis model is a Freightliner 108SD. Once the first chassis arrives at the winning bidder's location, the City requests a single prototype/finished truck be delivered to the City of Knoxville location to approve before any additional trucks are assembled. Additionally, if the functionality of the prototype is not accepted by the City, as the type of equipment that meets the City's needs, then the City reserves the right to move to the next most responsive – low cost bidder for their prototype and subsequent purchases. In such an instance, the City would pay a fair and reasonable cost to the bidder for the un-accepted prototype.

The prototype must be delivered no later than 180 calendar days from the date that the successful bidder receives the chassis from the City. Time is of the essence due to the critical need of this equipment for City operations. As such, if the prototype is not delivered within the agreed to 180 days, then the City has the option to charge liquidated damages in the amount of \$250 per day for each day that the prototype is not delivered.

Bidders will be able to view the City-owned zip-on, zip-off equipment that will be mounted on the flatbed, if requested, by appointment.

The bidder shall address each of the bidding specifications listed in the subsequent pages in the space provided, indicating whether they meet or do not meet each specification. Additionally, bidders are to describe/clarify the proposed item or any deviation to each specification. These pages are to be included in the Bid Response. **Bidders will be considered non-responsive if**

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they do not state whether or not they meet each specification in the foregoing pages and describe their deviation(s) from the specifications, if any. Additionally, bidders are hereby advised that the City does not plan to accept deviations from the specifications listed in section 5.1 (boom length), 5.2 (tensil strength), and 5.5 (single boom design). Moreover, the City will not consider bids that do not provide the “zip-on/zip-off” functionality. Bidders who do not meet or exceed these specifications will be considered as non-responsive and their bids may be rejected..

1. SPECIFICATIONS – GENERAL

Item Number	Description	Meet Specification ?	Description/ Deviation
1.1	Unit(s) shall be in current production and current year model and shall include all components normally supplied by the manufacturer with the unit bid.		
1.2	Unit(s) being bid shall be supported for maintenance by a Dealer located within the City of Knoxville or one of the surrounding counties therein. Dealer shall have trained technicians and parts stock on hand to provide maintenance of “normal wear” items in a timely manner.		

2. FLATBED

Item Number	Description	Meet Specification ?	Description/ Deviation
2.1	The flatbed truck body shall have a 1” thick A-36 steel plate resting on top of the truck frame rails, extending from the end of the frame rails forward approximately 5 feet. This plate will have holes drilled to accept 1 1/8” diameter bolts for anchoring the detachable knuckleboom loader and other detachable equipment used by the City.		
2.2	This plate will be anchored to the chassis rails by ½” thick plate/flat bar welded and gusseted to the 1” plate and fastened to the frame rails with 20mm Huck fasteners (minimum of 5 per side). Attachment with tie-bolts is not acceptable.		
2.3	Forward of the 1” plate will be 4” tall tubular longsills. On top of the longsills and continuing rearward over the sides outboard of the 1” plate, 4” X 5.4# channel crossmembers will be utilized.		
2.4	The top of the flatbed will be covered with 3/16” steel diamond floorplate finished with a non-slip Linex (or equal) type coating.		

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Item Number	Description	Meet Specification ?	Description/ Deviation
2.5	A 7" recessed area with a steel cover will be provided in the center of the flatbed, ahead of the horizontal 1" plate, for location of the hydraulic and electrical connections for the knuckleboom loader and other detachable equipment used by the City. This specification is meant to enclose the hydraulic lines in a box that will be recessed on the bed of the truck closer to the cab.		
2.6	A tubular framed cab-protective headboard will be provided. The lower portion will be covered with 11 gauge steel diamond floor sheet and the upper section covered with steel expanded metal to allow visibility from the rear cab window.		
2.7	A 1" thick steel plate will be vertically located at the rear of the truck frame and welded to both the frame rails and the 1" horizontal plate. This plate will have a swivel-type pintle hook and 2 safety chain "D" rings attached and will have a cut-out for recessed rear hydraulic quick couplers.		
2.8	The flatbed will have access ladders at the left and right hand front corners and will have detachable hand rails for installation when the knuckleboom loader and other detachable equipment used by the City is attached.		
2.9	The flatbed will have LED lighting as needed to comply with FMVSS requirements plus LED stop/turn and LED amber strobe lights at the top in the headboard. Additional lighting will be attached to the knuckleboom stabilizer assembly to insure compliance with FMVSS lighting requirements when the loader is attached.		
2.10	A stainless steel toolbox shall be mounted on RH side up under bed. Toolbox shall be as large as can be accommodated in the space.		
2.11	Bed step: Left front corner cut out to accommodate 2 steps, minimum of 4" wide, covered with extruded steel for non-slip surface, level with cab steps and handholds for operator ease of access and to allow operator to move from cab of truck to bed without stepping down.		
2.12	LED lightstick (Star Warning Systems part #DL1530WAW) behind grill		
2.13	Grapple travel rack installed on back of bed to match City of Knoxville's current zip on-zip off equipment.		

3. HYDRAULICS

All bidders must provide a detailed hydraulic schematic with bid. If schematic is not included, bid will be considered non-compliant.

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NOTE TO BIDDERS: Hydraulic fluid in system shall be purchased from Certified Labs p/n HOCExtreme46. This allows compatibility with current fluid being used by City Fleet Services and prevent cross-contamination.

For informational purposes, below are the hydraulic specifications for the interchangeable City owned equipment:

Dump Trailers: 15 gmp@2000 psi
Salt Spreaders: 18 gpm@2000 psi
Asphalt Patchers: 7 gpm@2000 psi

Item Number	Description	Meet Specification?	Description/ Deviation
3.1	The hydraulic pump will be driven from a clutch shift power take off (PTO).		
3.2	The hydraulic pump will be cast iron housing, roller bearing design, and directly coupled to the PTO with a 1"-15T splined shaft.		
3.3	A single valve assembly will be located on the truck unit to provide safety relief of hydraulic pressure and to direct hydraulic flow from the pump to either the grapple well hydraulic pressure line coupler (grapple) or to the rear hydraulic pressure line coupler (trailer, pothole patcher, salt spreader). This valve will also control the flow rate of hydraulic oil available to various functions.		
3.4	Controls for the PTO/hydraulics will be located in the truck cab. Two modes of operation will be available (stationary and mobile). All controls shall utilize the 6 factory upfitter switches,		
3.5	"Stationary mode" directs full flow of the hydraulic pump to the selected pressure coupler, but with PTO engaged truck is limited to 10mph if the engine speed exceeds 1400 RPM. Oil flow to the grapple hydraulic coupler will only be available in "stationary mode".		
3.6	In "mobile mode", only a portion of the pump flow is available to the rear hydraulic pressure line coupler but the PTO will remain engaged while the truck is travelling at 40mph (salt spreader operation). In "mobile mode", the hydraulic flow may be turned on and off while either still or traveling without shifting the PTO on and off (stop and start spreader operation at any time).		
3.7	Shall have a 50 gallon steel, frame mounted hydraulic reservoir with side mounted sight glass.		
3.8	A drop-in style return line filter assembly will be mounted on top of the reservoir. The drop-in element will be maximum 10 micron, synthetic media and high capacity.		

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3.9	A 100 mesh in-tank suction strainer with bypass will be provided.		
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Item Number	Description	Meet Specification?	Description/ Deviation
3.10	A raised-neck bayonet style filler/breather cap with anti-splash provision will be installed on top of the hydraulic reservoir. The reservoir neck shall be angled at approx. 45 degrees to allow for easy access while adding fluid.		
3.11	A hydraulic cooler shall be installed on the return side with thermostatic controlled electric fan to increase air flow.		

4. TURRET

Item Number	Description	Meet Specification?	Description/ Deviation
4.1	The turret base will be welded and gusseted to a 1" thick bottom plate. This bottom plate will have drilled holes allowing for bolt on attachment to the 1" horizontal plate of the flatbed.		
4.2	The lower turret base plate is machined to a minimum of 1-3/16" thickness.		
4.3	The turret rotates on a heavy duty, minimum 26" diameter slewing ring bearing with gear teeth cut on the internal bearing ring, thus protecting the drive mechanism from the elements.		
4.4	The slewing ring bearing is driven by a 2-stage planetary gearbox powered by a low speed, high torque, disc-valve motor, producing an available turret rotate torque of at least 150,000 in-lbs.		
4.5	The hydraulic motor is equipped with integral, non-adjustable, cross port relief valves to protect the unit from shock loading while rotating the turret.		
4.6	Turret rotation shall be limited to 270° by means of positive mechanical stops to prevent loader operation over the truck cab.		
4.7	The upper turret base plate is 30" in diameter, and 1" thick after machining.		
4.8	The turret side plates are constructed of 1/2" plate, and the turret back is constructed of 1/2" plate.		

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Number	Description	Meet Specification?	Description/ Deviation
5.11	The tip boom side plates shall be ½” thick, welded to both sides of the boom with 3” OD x 2” ID DOM tubing pin bosses.		
5.12	All boom pivot points are equipped with replaceable 2” ID bronze or hardened steel bushings with a lubrication provision.		
5.13	“Boom over height” in-cab light and alarm		

6. BUCKET

Number	Description	Meet Specification?	Description/ Deviation
6.1	The bucket shall be heavy duty construction, 48” long, measuring 60” from side to side when fully opened.		
6.2	Ground clearance at the center of the bucket shall be 20” – 24” when it is fully opened, and resting on level ground.		
6.3	Rotation of the bucket is accomplished with a hydraulic rotator motor allowing 360° continuous rotation.		
6.4	The bucket shall be opened and closed via (2) hydraulic cylinders. The hydraulic oil lines to the cylinders will be routed through an integral swivel joint in the bucket rotator motor, allowing continuous rotation without hose damage. Includes ¼” bolt-on bucket cylinder covers.		
6.5	The bucket top plate shall be constructed of ¾” plate. The bucket tongs are constructed of 3/8” plate with a 3/8” x 3” bolt-on, reversible, replaceable edge strip.		
6.6	The bucket tongs shall form a reverse curve to help avoid scalping and digging on grass lawns.		
6.7	The bucket shall contain (8) tongs – 4 per side. The bucket sides are constructed of 7 gauge steel.		

7. STABILIZERS

Number	Description	Meet Specification?	Description/ Deviation
7.1	The loader shall be equipped with 2-way adjustable hydraulic stabilizers. Each side will have independent controls for up/down and be mounted on the rear of bed..		

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Number	Description	Meet Specification?	Description/ Deviation
7.2	The outer stabilizer cross tube and vertical tubes are constructed of a minimum 7" x 7" x 3/8"		
7.3	The inner stabilizer cross tubes and vertical tubes are constructed of a minimum 6" x 6" x 3/8"		
7.4	The stabilizer footpads will be 3/4" thick steel, ((2) 3/8" plates) - overall dimension - 10" x 11", connected to the pad brackets by a single 1" Grade 8 bolt/lock nut.		
7.5	The stabilizer vertical tubes are equipped with a powder coated housing containing two 6-LED strobing lights. Both sets of lights are wired to the same in-cab switch.		
7.6	"Stabilizers down" in-cab light and alarm		

8. KNUCKLEBOOM HYDRAULICS

Number	Description	Meet Specification?	Description/ Deviation
8.1	Main boom cylinder is min. 5" bore X 4" shaft X 34" stroke.		
8.2	Tip boom cylinder is 4 1/2" bore X 2 1/2" shaft X 32" stroke.		
8.3	Stabilizer in/out cylinders are (2) 3" bore X 1 1/2" shaft X 7" stroke.		
8.4	Control valve is open center with a main relief valve set at 2,150 psi.		
8.5	Dual "float" valves will be provided to allow turret swing and main boom up/down functions to "float" when the bucket is stowed in an attached dump trailer.		
8.6	Counter balance valves are installed on the main boom circuit and tip boom cylinder to prevent free fall in case of a hydraulic failure.		
8.7	The vertical stabilizer cylinders utilize dual pilot-operated check valves, preventing unwanted movement in the event of a hose failure and minimizing drift down of the stabilizers when the unit is parked for extended periods.		
8.8	All hydraulic hoses shall be 2-wire braided hoses, with an abrasion resistant jacket, rated at 4,000 psi working pressure (with exception of the pump suction hose which is of SAE100R4 construction). All hoses from valve to truck bed must be routed through the center of the pedestal.		

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Number	Description	Meet Specification?	Description/ Deviation
8.9	<p>Must have a diverter valve to divert hydraulic oil from loader controls to dump trailer controls and quick couplers for hydraulic lines. The diverter must be accessible from the driver's side rear of the vehicle and operated from the ground level for ability to flip the switch. Exact location will be determined at pre-build with winning bidder.</p> <p><u>All couplers shall be Dixon Hydraulic Couplers, part #s are:</u> Truck: 6HF6 (female) H6F6 (male) Boom: 4AGF4-PV (female) AG4F4-PV (male) Relief for rotator: 3KF3 (female) K3F3 (male)</p>		

9. CONTROLS

Number	Description	Meet Specification?	Description/ Deviation
9.1	The loader is equipped with dual "stand-up" operator stations with manual lever controls.		
9.2	The manual lever controls for loader functions shall be located at both control stations and shall be connected to a single valve bank via the control rod linkages. Stabilizer controls are located in the center between the 2 operator stations.		
9.3	The manual lever control locations are the same on both sides of the unit for operator convenience.		
9.4	The dual "float" valves will be located in the center, accessible to both operator stations.		
9.5	The control linkage assembly consists of 5/8" CRR control rods, 1/2" CRR handles with threaded control knobs, and MD Nylon control rod bearing blocks. The control rods are zinc plated for corrosion resistance.		
9.6	The valve bank is located inside pedestal for operator safety and ease of maintenance by allowing access to the valves for service.		
9.7	The following control functions are located at both operator's stations:		
	Throttle Advance: On/Off Bucket: Open/Close Bucket Rotation: CW/CCW Turret Swing: CW/ CCW Tip Boom: Retract / Extend Main Boom: Lower / Raise		

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Number	Description	Meet Specification?	Description/ Deviation
9.8	The following control functions are located in the center between the two control stations: Driver Side Outtrigger: Up / Down Passenger Side Outtrigger: Up/Down		

10. MOUNTING AND PAINTING

Number	Description	Meet Specification?	Description/ Deviation
10.1	Mounting to be done at the factory by certified, body-mount specialists.		
10.2	Any chassis sent to the factory that does not meet the minimum chassis requirements will not be mounted.		
10.3	The loader will receive one coat of an automotive-grade, 2-part epoxy primer, followed by (2) coats of Sherwin Williams automotive-grade acrylic urethane finished paint. Paint color to be WHITE. The underside of the body floor will be coated with Autobody Technologies, Inc. TRANSTAR TR4361 Quick Dry Rubberized undercoating or equal type coating.		
10.4	Top of body floor shall be coated with non-skid black Linex coating or similar.		

11. SPECIFICATIONS – LOADER LIFTING CAPACITIES

Note: All capacities are GROSS WEIGHTS, which include the weight of the bucket, and are based upon level, hard surfaces, with the stabilizers at their maximum extension.

Remember: do not exceed 85% of vehicle tipping movement.

Number	Description	Meet Specification?	Description/ Deviation
11.1	The loader lifting capacities are approx.: 9,785# @ 08 Feet 8,155# @ 10 Feet 6,355# @ 12 Feet 5,455# @ 14 Feet 4,555# @ 16 Feet 3,955# @ 18 Feet		

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12. PLOW

Buyers SnowDogg "Muni Series" Reversible Stainless Steel 10' Snow Plow or approved equal

Number	Description	Meet Specification?	Description/ Deviation
Minimum Moldboard Requirements:			
12.1	Quick mount level lift design to allow continuous level lift in any position		
12.2	Height of moldboard is 36"		
12.3	Length of moldboard is 10'		
12.4	12" integral shield moldboard		
12.5	Cutting path at 35degrees for the 10' length is 104"		
12.6	Unit shall consist of twin hydraulic reversing cylinders, rolled steel fully welded moldboard.		
12.7	10GA steel rolled moldboard with six (6) ½"x3" rolled ribs		
12.8	Each rib to be reinforced with a 1 ¼" steel bushing at each pivot point		
12.9	Trip stop at every rib to evenly space out trip force		
12.10	3" x 3" x ½" bottom angle with ½" x 3" gussets every 12"		
12.11	80" semi-circle to be 3-1/2" x 3-1/2" x ½" angle		
12.12	Top angle to have drain holes to allow moisture to escape		
12.13	Full length 3" x 3" x 3/8" structural channel horizontal braces for added rigidity		
12.14	Three (3) position attack angle adjustable to 5degrees, to 20degrees		
12.15	½" x 6" one piece powder coated cutting edge with standard punching		
Trip Assembly and Push Frame:			
12.16	Full moldboard trip with two (2) adjustable, external compression springs		
12.17	5/8" trip-spring anchor plates are continuous welded to the push frame providing greater strength		
12.18	3 ½" x 3 ½" x 5/16" x 96" structural steel tube push frame, two (2) ½" thick adjustable height running gear mounts, and two (2) ½" thick lift chain mounts		
12.19	Semi-circle is 3-1/2" x 3-1/2" x ½" angle welded to the push frame		

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Number	Description	Meet Specification?	Description/ Deviation
12.20	Four (4) moldboard-to-push frame pivot points with 1-1/4" bushings pinned to two 5/8" mounting ears with 1-1/4" plated pivot pins		
12.21	Twin 3" x 10" chrome plated hydraulic cylinders for heavy duty power reversing. Twin reversing cylinders to be located above the push frame to protect against road debris and ease of service.		
12.22	Plow-mounted adjustable cushion valve plumbed to cylinders. Valve to be adjustable (set at 2000psi), 10gpm and to have 1/2" SEA threads		
12.23	3 1/2" x 3 1/2" x 3/8" formed channel "A" frame supporting a 1-1/2" center reversing king pin mounted in a 2-1/4" tube with a 3/8" wall with grease fitting		
12.24	A-frame to be welded to a 1" x 5" x 33" base plate with a 1-1/2" pivot hole		
Paint:			
12.25	All metal surfaces to be SANDBLASTED to remove slag, splatter, oxide, and oil residue		
12.26	All surfaces to be high-pressure cleaned and degreased with phosphate solution. Moldboard is to be powdercoated orange. Push frame assembly and hitch components to be powdercoated black.		
Additional:			
12.27	5/8" wraparound curb guard		
12.28	12" x 3/8" 2-ply rubber deflector (belted) with mounting hardware		
12.29	Sight markers 3/4" x 28" fluorescent orange, nylon		
12.30	Carbide blades (3/4" x 6")		
12.31	Rubber blades (1-1/2" x 10")		
12.32	Plow running gear adjustable height, 2-1/2" structural steel tube housing with grease fitting, 1" screw adjustment with folding crank handle, 2" structural steel tube post with 1/2" x 5-3/4" diameter steel foot with multi-bolt pattern with steel casters		
12.33	Moldboard shoes		
12.34	Shall have a 12 volt electric hydraulic power unit. Power unit mounting location shall be discussed at pre-build conference.		

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Number	Description	Meet Specification?	Description/ Deviation
12.35	Removable remote controls shall be mounted in cab. Options shall be discussed with bidders during pre-build.		
12.36	Two (2) PTO settings: 1- Knuckleboom (limits truck speed to 10mph while PTO is engaged) 2- Spreader/Plow mode (limits to top speed of 40mph while PTO is engaged)		
12.37	Plow shall be attached to the vehicle by way of a quick disconnect mounting system.		
12.38	SnowDogg plow lights and mounting brackets shall be wired with a quick disconnect plug and mounted on front fenders of the truck, utilizing chassis factory wiring harness and connectors.		

13. TRAINING AND DELIVERY

Item Number	Description	Meet Specification?	Description/ Deviation
13.1	Training shall be conducted by a qualified Manufacturer's Representative at purchaser's location (Knoxville, Tennessee). Training shall be conducted with mechanics and operators and shall cover orientation for safety, proper operation and operator daily maintenance, as well as technical and diagnostic orientation for mechanics/technicians. Powerpoint presentations or other visual training materials shall be provided to allow future training.		
13.2	Turn-key vehicle shall be delivered complete, fully serviced, inspected for safety and safe operation, and ready to perform the work for which they are being purchased, with no less than 1/4 tank of fuel.		
13.3	<u>Delivery Location:</u> City of Knoxville Fleet Services 1400 Loraine St. Knoxville, TN 37921		
13.4	<u>Contact Information:</u> Contact Mr. Jeff Johnston, Shop Manager, to schedule delivery date and time. (865-951-3620)	NA	

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Item Number	Description	Meet Specification?	Description/ Deviation
13.5	The payment process will not begin until the vehicle is delivered and accepted.		
13.6	The successful bidder shall supply any operator's manuals, service manuals, parts books, wiring diagrams and applicable technical information for units purchased. CD versions are acceptable.		
13.7	Provide a MANDATORY hydraulic diagram and electrical diagram (excluding chassis) PER UNIT. Payment will not begin until received.		
13.8	Provide one "build sheet" per unit listing all parts used in assembling each. (If available)		
13.9	No dealer emblems, decals, or other form of advertisement or identification shall be attached to the vehicle. This includes no dealer emblems on mudflaps.		
13.10	Please state if a 12-month price lock would be honored to allow City of Knoxville to possibly purchase additional equipment.		