City of Scottsbluff, Nebraska

Monday, February 3, 2020

Regular Meeting

Item Consent4

Council to approve the bid specifications for the purchase of a Combination Sewer Cleaning Machine for Collection System Maintenance and authorize the city clerk to advertise for bids to be received on March 10, 2020 at 10:00 a.m.

Staff Contact: Lynn Garton, Wastewater Supervisor

Agenda Statement

Meeting Date: February 3, 2020

AGENDA TITLE: Council to consider approval of bid specifications for the purchase of a Combination Sewer Cleaning Machine for Collection System Maintenance and authorize the City Clerk to advertise for bids to be received on March 10, 2020 at 10:00 a.m.

SUBMITTED BY DEPARTMENT/ORGANIZATION: Public Works

PRESENTATION BY: Consent

SUMMARY EXPLANATION: As part of this fiscal year's budget, the Wastewater Department is scheduled to purchase a new Combination Sewer Cleaning Machine. The machine will be used to continue our sewer collection system jetting and maintenance program for the City's 101 miles of sewer main and 59 miles of storm sewer main.

We have worked with Legal to finalize these proposed specifications.

BOARD/COMMISSION RECOMMENDATION:

STAFF RECOMMENDATION: Staff requests that Council approve the bid specifications and authorize the City Clerk to advertise for bids to be received on March 10, 2020 at 10:00 a.m.

EXHIBITS

Resolution ☐ Ordinance ☐ Contract ☐ Minutes ☐ Plan/Map ☐

Please provide all visual presentation materials.

Other (specify) ☑ Bid Specifications

NOTIFICATION LIST: Yes ☐ No ☐ Further Instructions ☐

City of Scottsbluff
Office of the City Manager Effective date: January 20, 2017

CITY OF SCOTTSBLUFF

Water Reclamation
A Division of Public Works
2525 Circle Drive
Scottsbluff, NE 69361

BID SPECIFICATIONS

FOR THE PURCHASE OF

One New, Combination Sewer Cleaning Machine

Issue Date: February 19, 2020

Closing Date/Time: Tuesday, March 10, 2020 at 10:00 a.m.

Contact

Lynn A. Garton – Water Reclamation Supervisor
308-630-6292

NOTICE TO BIDDERS

For the Purchase of One New, Combination Sewer Cleaning Machine for the Department of Water Reclamation

The City of Scottsbluff (City) is soliciting bids for the purchase of one new Combination Sewer Cleaning Machine for the Department of Water Reclamation. All bids must be received by the City Clerk, of the City of Scottsbluff, 2525 Circle Drive, Scottsbluff, Nebraska, 69361, prior to 10:00 a.m., Tuesday, March 10, 2020. Bids must be submitted in a sealed envelope plainly marked "Bid for Combination Sewer Cleaning Machine". Inquiries shall be addressed to Lynn A. Garton, Water Reclamation Supervisor, 2525 Circle Drive, Scottsbluff, Nebraska, 69361, 308-630-6292. A copy of the Bid Instructions and Specifications may be obtained from the City Clerk at City Hall at the above location noted herein.

_____

Kim Wright
City Clerk

Publish – 3T
February 21, 2020
February 28, 2020
March 6, 2020

INSTRUCTIONS TO BIDDERS

1. All Proposals shall be submitted on Bid Forms provided with this document in order that they may be properly compared and evaluated.

2. The Bid shall be for One New, Combination Sewer Cleaning Machine.

3. The Bid shall be quoted F.O.B. Scottsbluff, NE.

4. Bids shall state the Make and Model of proposed unit and include complete detailed specifications with manufacturer's brochure, specifying the identical model being bid.

5. The City is exempt from Federal Excise or State Sales Taxes. A tax exemption certificate will be furnished by the City.

6. The Bids shall be submitted to the City Clerk's office by 10:00 a.m. on Tuesday, March 10, 2020, in a sealed envelope, and the envelope clearly marked "Bid for Combination Sewer Cleaning Machine".

7. The City reserves the right to reject any and all bids and to waive any irregularities for any reason deemed necessary.

8. Award of purchase will not become final until such purchase is approved by City Council.

9. City will pay for equipment meeting all specifications upon proper documentation of same, no sooner than the first Council meeting following delivery of same.

10. Delivery time from date order placed to vendor, shall be ninety (90) days or less.

11. Price that is stated on Bid Proposal Sheet shall be good for 30 calendar days following bid opening.

12. Any items of noncompliance or variations to the minimum specification requirements listed on the following pages shall be written and submitted with the Bid Proposal.

13. Actual equipment being bid must be available for inspection by City personnel after the bids are opened and before the next Council meeting when the purchase will be approved.

PROPOSAL FOR FURNISHING
ONE (1), NEW COMBINATION SEWER CLEANING MACHINE

Mayor and City Council
Scottsbluff, Nebraska

Gentlemen:

I (we) have examined the Notice to Bidders, dated February 18, 2020, Instructions to Bidders, and the Specifications, and submit the following proposal to furnish (1) One New, Combination Sewer Cleaning Machine for the Water Reclamation Department (Wastewater).

_____ _____ _____ **Bid Price: $_____**
Year Make Model #

Trade in:
One (1) Used 2003 Vac-Con Sewer Jet/Vac Truck: **Trade In: $_____**

Bid Price with Trade In: $_____

My Bid for the described Combination Sewer Cleaning Machine is:

_____
(amount written out fully)

If the City places an order with my firm for the specified equipment, I hereby certify I will deliver a new unit on or before: _____ which meets the specifications.
Month Day Year

Signature of Bidder:_____

Name of Bidder:_____

Company Represented by Bidder:_____

Address of Bidder:_____

Telephone and FAX Number of Bidder:_____

The following pages are specifications for the proposed Combination Sewer Cleaning Machine and are to be completed and attached to this bid proposal.
Any deviation from the specification should be noted. If more room is needed, please use the back side of the specification sheet(s).

MINIMUM SPECIFICATIONS FOR ONE NEW, COMBINATION SEWER CLEANING MACHINE

The new Combination Sewer Cleaning Machine (Machine) will be used for removing sand, stones, bottles, cans, grease, sludge and other debris from sanitary sewer and/or storm drain lines by the flushing action of high-pressure water. The Machine shall include a positive displacement (vacuum) blower and a hydraulically driven high-pressure water pump. The Machine shall be equipped with self-contained water supply as the water source for the high-pressure pump. The system shall have a capability of operating both vacuum and rodder simultaneously at rated operating pressure.

The Machine shall include an enclosed and sealed body for storage of the collected debris and self-contained water supply as the water source for the high-pressure pump.

As it is the intent that this Machine will have an anticipated life of ten years the manufacturer should answer the following general questions. Only bids from manufactures that have experience in manufacturing the Machine will be considered.

- How long has manufacturer been in the business of manufacturing the Machine? _____YRS
- How many Machines of this type has the manufacturer produced? _____
- Is the manufacturer of the Machine an ISO 9001:2000 certified facility? ____YES ____NO
- Is Machine bid a current production model? ____YES ____NO
- Bidder has enclosed manufactures literature, specifications and all pertinent information concerning this bid? ____YES ____NO
- Bid proposal was filled out thoroughly and all pertinent information requested was provided and any deviations thoroughly explained? ____YES ____NO
- Service location must be within a reasonable distance from the City's Treatment Facility at 3702 Rebecca Winters Road in Scottsbluff, NE 69361. Please list the firm that will be able to provide service for both the chassis and jetter of the Machine as well as any auxiliary equipment (i.e. dual engine units):

  Name of Service Station : _____
  Contact:_____
  Address:_____
  City _____ ST_____ Zip_____
  Telephone Number:_____
  Distance from Scottsbluff Treatment Facility:_____

COMMENTS:_____
_____
_____
_____
_____

CITY OF SCOTTSBLUFF - REQUEST FOR PROPOSAL

Combination Sewer Cleaning Machine

for the

Department of Water Reclamation

		COMPLY	
		YES	NO
1.0	**INTENT**		
1.01	The intent of this specification is to provide for the purchase or lease of one (1) new and unused single engine combination sewer and catch basin cleaner used for removing all debris commonly found in storm basins and leads and/or sanitary sewer lines and manhole structures using a front mounted operating station. The unit shall consist of a centrifugal compressor vacuum system, a hydraulically driven high pressure water pump, an enclosed sealed body for storage of collected debris and equipped with a self-contained water supply as the source for the water pump system. The unit shall have the capability of operating both vacuum and water system simultaneously at full operating speeds continuously. The Centrifugal Compressor system shall be powered by a hydrostatic drive system.		
2.0	**EQUIVALENT PRODUCT**		
2.01	Bids will be accepted for consideration on any make or model that is equal or superior to the equipment specified. Decisions of equivalency will be at the sole interpretation of the Purchasing and Public Services Director.		
2.02	Bidder shall demonstrate a reasonable likeness of the equipment being offered within a reasonable time of request. Equipment demonstrated shall be equipped with all accessories and components required in this specification to ascertain equivalence.		
2.03	A blanket statement that equipment proposed will meet all requirements will not be sufficient to establish equivalence. Original manufacturer's brochures of the proposed unit are to be submitted with the proposal.		
3.0	**BIDDER REFERENCES**		
3.01	To ensure adequate local availability of parts and competent service from experienced suppliers, bids are preferred from local vendors who have sold and serviced similar units. Bidder should include contacts with phone numbers of those customers.		
4.0	**SERVICE AND SUPPORT**		
4.01	Location of warranty service center and amount of inventory shall be noted which may be verified and inspected.		
4.02	Amount of OEM parts at this facility: $		
4.03	Years of servicing equipment being bid:		
4.04	Number of factory qualified service technician:		
5.0	**GENERAL**		
5.01	The specification herein states the minimum requirements of the . All bids must be regular in every respect. Unauthorized conditions, limitations, or provisions shall be cause for rejection. Any bid not prepared and submitted in accordance with the bid document and specification, or any bid lacking sufficient technical literature to enable the to make a reasonable determination of compliance to the specification will be considered "non-responsive" and grounds for rejection.		
6.0	**SUBFRAME**		
6.01	The equipment shall be of modular design consisting of vacuum system, water tanks system, debris body and drive system.		
6.02	A sub frame shall be fabricated to the exact dimensions of the truck chassis for mounting of modular components.		
6.03	All components of the module shall attach to the sub frame and not directly to the chassis.		
6.04	Sub frame shall be designed to ASME standards for maximum applied loads, chassis frame movement and even distribution of weight to the chassis and suspension.		
6.05	Sub frame shall be continuous and uninterrupted from back of cab to end of frame.		
7.0	**DEBRIS BODY**		
7.01	The body shall be cylindrical having a minimum usable liquid capacity of 15 cubic yards.		
7.02	The body shall be capable of high dump height of 60". Dump height of 60" must be achieved without the use of scissor lift mechanism.		

7.03	The debris storage body shall be constructed with a minimum 1/4" corrosion and abrasion resistant Ex-Ten steel.		
7.04	The debris storage body shall have a minimum yield point of 50,000 PSI and a minimum tensile strength of 70,000 PSI.		
7.05	Body shall have a rear door that is hinged at the top and is equipped with a replaceable neoprene type seal. Adjustable for periodic compensation of door seal wear.		
7.06	Dual outward mounted rear door props shall be included as standard to prevent operator from entering door swing path when engaging rear door prop.		
7.07	For optimal particulate separation, vacuum shall be drawn from separate ports in the top of the debris body.		
7.08	Body shall be dumped by raising the body to a 50 degree angle utilizing a forward mounted, double acting hydraulic dump cylinder.		
7.09	Dump controls, accessory controls, e-stop control shall be provided at a central curb side location directly behind the cab of the truck.		
7.10	For stability and safety, dumping must be accomplished while the pivot point of the body remains fixed to the subframe.		
7.11	Industrial style rear debris body door shall be flat, and shall open and close hydraulically by cylinders mounted at the top of the body. Door shall open 50 degrees from the fully closed position. Door shall be unlocked, opened, closed, and locked by a failsafe hydraulically activated sequential positive locking system, cam operated by a single hydraulic cylinder, with all controls located behind truck cab, forward of the debris body, so operator is not subject to sewage when dumping.		
7.12	Debris body shall have a body flush out system with a fan-type spray nozzle located in the front wall of the debris body to aid in the flushing of heavy debris. The nozzle shall also utilize (2) spray nozzles to flush the front most area of the debris body. System must produce a flow of 80GPM. Control valve shall be on the curb side of the unit.		
7.13	Body shall have a float type automatic shut-off system protecting the Fan System with (2) 10" stainless steel shut-off balls located in the debris body. Each float ball housing shall be within a non-corrosive slide-out screen assembly and be accessed without the use of tools.		
7.14	The debris body shall be equipped with a rear door drain to drain off excess liquids while retaining solids and shall include an air operated 6" knife, located at the 3:00 position. Valve controlled by switch located at the operator station. Valve to be supplied with cam-lock coupler and 25' of lay flat hose having camlock quick connects.		
7.15	(4) Type vertical (cyclone) centrifugal separators shall be installed in-line between the debris body and air mover, (2) per side for each debris body discharge port. Each dual separator shall include large fallout chamber and cleanout door.		
7.16	For safety, a minimum of (5) vacuum tubes shall be stored on curbside storage racks to minimize operator exposure to traffic side of unit. Shall include quick release retainer handles (no bungees or clamps).		
7.17	A curb-side, folding 3-pipe rack shall be provided, constructed of steel tubing, spring assisted. Shall include quick release retainer handles (no bungees or clamps).		
7.18	A fixed rear door mounted 2-pipe rack shall be provided. Shall include quick release retainer handles (no bungees or clamps).		
7.19	(2) Pipe Storage Racks Curbside waist level and (2) on rear door with quick releases.		
7.20	A splash shield shall be mounted around the lower 60% of door opening to direct liquid and debris away from the chassis. Shield shall be minimum 10" deep bolted assembly with no openings.		
7.21	A lubrication manifold system shall be provided to allow ground level greasing of boom lift and swing cylinders, float level indicator, top rear door hinges and debris body hoist cylinder pins.		
7.22	A 10" valve with 2" vent to atmosphere, electrically activated, air operated valve debris body vacuum relief system shall be located in the inlet of the vacuum system to allow the venting of the tank and relieve vacuum at the debris intake hose.		
7.23	A debris inlet deflector distributing load evenly in debris body shall be included.		

8.0	**WATER TANKS**		
8.01	The water tanks shall be manufactured from a non-corrosive material to prevent rust yet still provide for maximum strength.		
8.02	The water tank material shall require no internal coating and shall be repairable if patching is required.		
8.03	The water tanks shall be easily removed from the subframe to provide complete access to the truck chassis for maintenance purposes.		
8.04	The water tanks shall be adequately vented and connected to provide complete filling.		
8.05	The water tanks shall be totally separate from the debris tanks and provide no structural support.		
8.06	The water tanks shall share no common walls with the debris tanks to prevent corrosion.		
8.07	The water tanks shall come equipped with an anti-siphon device and 25' of hydrant fill hose and fittings.		
8.08	The water tanks shall carry a 10 year warranty against corrosion or cracking.		
8.09	All water tanks shall be fully baffled to form a maximum compartment storage of 150 gallons for each compartment. has determined that for the stability of the vehicle when turning and stopping and for safety of personnel that systems baffled at 150 maximum gallon compartments are preferred. Exceptions of requirement shall be explained in detail accompanied with detailed engineering drawings.		
8.10	The water tank shall be located for the lowest possible center of gravity while providing 100% gravity flooded intakes to water pump.		
8.11	Fresh water shall enter the tanks through an in line 6" air gap, all aluminum covered anti-siphon device.		
8.12	Water level sight tubes of non-yellowing plastic shall be installed on both tanks.		
8.13	The sides of these water tanks shall not extend more than 48" out from the centerline of the truck chassis.		
8.14	A fresh water drain system shall be provided to completely drain the fresh water system from one location utilizing the 3" Y-strainer on the pump.		
8.15	A minimum 6" connection between tanks shall be provided.		
8.16	For stability safety, the water tanks shall not elevate with debris body during dump cycle.		
8.17	A 3 in-line "Y" trap strainer shall be located at inlet of water tank fill air-gap.		
8.18	A 3 in-line "Y" trap Monel stainless steel strainer shall be located between the water cells and water pump.		
8.19	A 3" Gate Valve shall be provided at water pump.		
8.20	Water tank must be a certified metered capacity of 1500 gallons. Certification shall be necessary upon delivery.		
8.21	Water tanks shall be constructed of 14ga. 304 S.S with baffled compartments maximum 150 gallons each.		
8.22	Digital Level Indicator shall be provided.		
9.0	**VACUUM/VACUUM DRIVE SYSTEM**		
9.01	Vacuum shall be provided by compressing air within a two-stage 38" diameter centrifugal compressor.		
9.02	Compressor fans to be constructed of non-corrosive material.		
9.03	Each centrifugal compressor fan shall be constructed of non-corrosive, hardened chrome blades.		
9.04	Centrifugal compressor shall be warranted against corrosion for five years.		
9.05	The outer housing shall be constructed of 1/4" spun steel.		
9.06	Compressor housing shall be equipped with a drain not exceeding 2" diameter.		
9.07	Complete compressor and housing assembly shall be warranted against materials and workmanship for five years.		
9.08	Transfer case shall be activated by air via a one touch control located in cab with animated confirmation on screen.		

9.09	The compressor Hydrostatic Drive system shall utilize electronic controls located at the front operator station. The system shall be controlled on/ off with a switch that may be engaged or disengaged at any operating speed.		
9.10	The compressor controls will have a speed selection switch at the operator station to control compressor speed; manual levers on the hydrostatic pump to control compressor speed will not be accepted.		
9.11	The centrifugal compressor should be driven direct through a helical gear type step-up transmission drive with a step-up ratio 2 to 1.		
9.12	Hydraulic shut off valves shall be provided at the suction, return and filter lines to permit servicing of the hydraulic system.		
9.13	The drive shaft shall be supported via ball bearings and gears.		
9.14	Compressor shall be driven from a closed loop hydrostatic drive system utilizing available chassis power via split-shaft transfer case. The transfer case shall drive a variable displacement hydrostatic pump to energize a closed loop.		
9.15	The pump shall be mounted directly to the split shift transfer case. The pump will have a B10 life Rating of 10,000 hrs continuous duty.		
9.16	The hydraulic motor powering the compressor shall be a bent axis, bi-directional motor. Motor speed shall not exceed 2,500 RPM.		
9.17	The hydrostatic drive system shall utilize electronic soft start speed control to manage ramping speed.		
9.18	The control system shall provide a mode selection switch to control the compression drive in low vacuum, combination mode and full vacuum settings.		
9.19	The gear drive should attach directly to the rotor shaft without the use of multiple stage V-belts or jack shafts.		
9.20	The gears and bearings shall be lubricated with splash lubrication system, requiring no manual greasing.		
9.21	The drive system shall not utilize pillow block bearings that require excessive daily greasing.		
10.0	**VACUUM BOOM SYSTEM**		
10.01	Vacuum hose shall be designed for front operation with hose mounted and stored at front mounted work station. The hose must also allow for transport with a 5' vacuum tube attached for quick setup. The hose must also be able to be transported fully retracted to eliminate any obstruction to a driver view of the road. A front mounted location is required for ease of positioning vacuum hoses well as minimizing need for operator to swing hose into traffic.		
10.02	All connections between debris body and vacuum system will be of the self-adjusting pressure fitting type.		
10.03	Vacuum hose will remain stationary and not rise with debris body.		
10.04	A sub-frame mounted cab guard shall be mounted behind cab with boom rest cradle.		
10.05	All vacuum pipes shall be connected to vacuum pick up tube and extension pipes by adjustable over-center quick clamps to join the aluminum flanges on pipes.		
10.06	One (1) quick clamp for each pipe supplied shall be provided.		
10.07	Boom pedestal shall be directly mounted to module subframe.		
10.08	Boom support used for travel mode shall not interfere with access or require removal to tilt hood forward.		
10.09	A control station shall be equipped with a control joystick for all directions as well as a safety emergency shut-down button, which shall automatically eliminate power to boom.		
10.10	The vacuum boom shall have a heavy-duty flexible hose assembly joining the transition pipe to the debris body make break, and a 7” heavy duty hose at the suction end of the boom.		

10.11	Boom shall rotate 180 degrees and shall be operated by an electric over hydraulic system. Lift and swing movements shall be actuated by hydraulic cylinders.		
10.12	The 10x15 RDB style hydraulic telescopic boom with 180 degree rotation shall be located at the front work station in its retracted position, providing 282" minimum reach off the longitudinal axis of unit, providing a boom work area will be 850 square feet. The moving boom hose shall be 7" x 279" with yellow liner for durability. The boom hose shall hydraulically telescope a minimum of 10 feet forward from the operator's station storage position and shall have the ability to extend the hose downward 15' vertically without activating the hydraulic up/down function.		
10.13	Boom shall be fully controlled by a remote push button pendant control station with 25 ft. cable. Controls to include up / down, left / right, in / out boom functions, vacuum relief, e-stop and main power switch.		
10.14	A joystick for hydraulic control of the boom shall be installed on hose reel front panel.		
10.15	A removeable 4" diameter storage "Post" to stabilize the lower boom hose during transport. Storage device shall not interfere with raising hood.		
10.16	A cordless remote boom control system equipped to activate boom functions, throttle, water pump on/off, hose reel in/out, hose reel speed, vacuum relief on/off and emergency disengagement e-stop shall be provided.		
11.0	**WATER PUMP AND DRIVE**		
11.01	For most efficient use of horsepower and reduced fuel consumption, high pressure rodder pump shall be hydraulically driven via (2) variable displacement pumps		
11.02	Hydraulic powered rodder pump via (2) variable displacement hydraulic pumps utilizing (2) 10-bolt PTO's.		
11.03	High pressure water pump shall be rated capable of continuous delivery of 100 GPM at 2500 PSI (submit manufacturer support documentation).		
11.04	High-pressure water (rodder) pump system shall be completely controlled through the range with use of the MultiFlow Control and throttle located on the control panel.		
11.05	Digital flow meter shall be displayed in front LCD display. Flow meter shall be capable of displaying system flow in all pump operating modes. In addition, a low water alarm shall be provided.		
11.06	Water pump speed to remain fully adjustable via an independent operator input regardless of the selected vacuum drive speed.		
11.07	Variable flow systems routing water back-to-tank are not considered equal due to additional wear, horsepower and fuel consumption. Any deviation from this drive requirement should have full explanation of horsepower consumption.		
11.08	Water (rodder) pump shall include smooth and pulsation operation mode feature without altering pump flow.		
11.09	When required to assist nozzle breaking through obstructions, water pump "pulsation mode" shall provide a forward-acting nozzle surge. Pulsation surge wave shall allow nozzle to punch forward 2" to 18" depending on flow dynamics and length of hose in sewer pipe.		
11.10	Explanation of forward-acting pulsation method shall be submitted with bid or explained below. Systems that require the use of air induction into the water pump shall not be accepted.		
11.11	Water pump location shall provide a flooded gravity suction inlet to eliminate potential cavitations damage.		
11.12	An oil to water heat exchanger will be provided in the water system to cool all hydraulic fluids on the unit. State horsepower requirement to operate hydraulics at full speed:		
11.13	The water pump shall provide precise 0-80 GPM controlled flow at variable pressure up to 2500 PSI.		
11.14	An extreme cold weather recirculation system - minimum 25 GPM via transmission PTO at chassis engine idle speed.		

11.15	A hydro-pneumatic nitrogen charged accumulator system shall be provided with all control valves, piping and hoses for either continuous flow or jackhammer rodding.Accumulator shall be a 2.5 gallon capacity and 1000 to 2500 PSI pressure rating.		
11.16	Two (2) 1/2" high pressure ball valves shall be provided for draining the water pump and flushing sediment from the bottom of the pump.		
11.17	A nozzle rack accommodating (3) nozzles shall be provided in curbside toolbox. The nozzles shall be labeled on storage rack for pipe size/flow and application.		
11.18	System shall be relieved to protect operator.		
11.19	Handgun shall be supplied that allows for changing of flow pattern from a fine mist to a steady stream.		
11.20	Handgun shall come equipped with quick connect couplers.		
11.21	An additional 1" water relief valve shall be provided.		
11.22	A mid-ship quick disconnect handgun couplers shall be provided.		
11.23	A water pump hour meter shall be provided.		
13.0	**HOSE REEL**		
13.01	Hose reel assembly shall be direct frame mounted.		
13.02	Hose reel assembly shall be mounted on an independent frame that can be removed from brackets attached permanently to front of main truck frame members.		
13.03	Reel will be manufactured out of 1/4" spun steel for added structural strength and shall require no internal or external reinforcements that could damage rodder hose.		
13.04	Hose reel shall be driven by adjustable gear reduction chain and sprocket assembly.		
13.05	Hose reel shall operate at full rotational speed while chassis engine is at idle.		
13.06	Hydraulic Telescoping Rotating Hose Reel - 800' capacity of 1" hose shall be provided.		
13.07	The front mounted hose reel shall telescope 15" forward down centerline of truck.		
13.08	Entire reel assembly shall rotate 270 degrees on a large diameter ball bearing.		
13.09	Hose reel shall include a dual locking device to positively lock reel in any position across operating range.		
13.10	The hose reel shall rotate about the reel assembly centerline so the reel shall never extend beyond the truck width. Reel coverage diagram shall be submitted with bid.		
13.11	Controls shall accessible on both sides of the hose reel via a mounting station for the belly pack wireless remote control, allowing operator to work at either side of unit for safety purposes.		
13.12	600' x 1" Piranha Sewer Hose / 2500 Psi shall be provided		
13.13	An automatic hose level wind scroll device shall be supplied. An air-cylinder actuated pinch-roller shall exert downward pressure across full width of reel to retain hose on reel when encountering nozzle blockages.		
13.14	An air-cylinder actuated pinch-roller shall exert downward pressure across full width of reel to retain hose on reel when encountering nozzle blockages. Pinch roller must be activated via a one touch, backlit button with lighted feedback on the control panel.		
13.16	A hose footage counter shall be supplied to indicate the amount of hose travel within pipe.		
13.18	Digital footage counter displaying footage values shall be provided. System must be capable of resetting value to ensure operator safety. Shall be displayed on the 7” front control panel screen.		
13.19	25' Leader Hose		
15.0	**WASHDOWN EQUIPMENT**		
15.01	A handgun with 1/2" x 35' hose shall be provided at mid-ship to which allow the operator to deliver water to area served by pick up hose and to the inside of the debris body for clean out.		
15.02	Hand sprayer with adjustable spray-pattern to be provided with trigger-style gun.		
16.0	**IN CAB CONTROLS**		
16.01	All In cab controls are to be located on a single in cab control screen. This shall be a 7” full color display screen. It shall utilize 12 back lit tactile (glove ready) buttons on the sides of the screen as well as feature touch screen operation.		
16.02	All Back up camera Features shall be displayed on the In Cab Control Screen.		
16.03	All work lights shall be able to be activated or deactivated in cab with on screen controls.		

16.04	All standard arrow boards or arrow stick shall be controlled via an on screen controller		
16.05	All safety strobes and beacons shall be controlled via on screen controller		
16.06	Jet or Combo mode shall be activated via one touch button on the control panel. Control screen must display an on screen representation of the chassis drive system and must animate to show as drive systems activate or deactivate.		
16.07	Recirculation must be activated on the in cab control screen and visibly show that it is active at all times.		
17.0	**FRONT OPERATING STATION AND CONTROLS**		
17.01	Primary operator station will be located at front of truck on right curb side of hose reel.		
17.02	All operator controls should be located on a single control panel that can be rotated on a 90-degree arc for an operator customizable location. The control panel shall also feature the ability to raise and lower through a range of not less than 8” to accommodate operators of different height.		
17.03	Station shall include a 7” Touch enabled display screen with corresponding tactile buttons for reading critical machine data including (hose footage, hose reel speed settings, water pressure, water flow. Air mover information, chassis data, mode indicator, chassis fuel level, and diagnostic controls), Back lit button keypads with, laser etched function icons, and 4 light feedback indicators. These buttons shall operate the following functions: All setup functions (remote/panel selector, work lights, hose reel extend/retract, hose reel lock, and pinch roller activation) and Vacuum functions. Additionally, there will be separate sealed rocker switches for Water Pump on/off and Throttle up/down. There shall be a multi flow control dial for controlling the full range of the water pump.		
17.04	There shall be a hose reel joystick to control the pay in and pay out of the hose reel, this joystick shall offer speed control that increases the further the joystick is moved in either direction. There shall be an additional hose reel speed dial for setting specific speed ranges of the reel. There shall be a boom joystick that controls all function of the boom including up/down, left/right, and extend/retract. There shall be a E-Stop button to bring all machine		
17.05	Tachometer and hour meter for chassis engine provided at control station shall be provided.		
17.06	All Hydraulic Functions - Color Coded, Sealed Electric/Hydraulic NEMA 4 switches shall be provided.		
17.07	Fan Engagement/Vacuum Relief - Sealed Electric/Air NEMA 4 Switch shall be provided.		
17.08	Water pump hour meter shall be provided.		
17.09	PTO hour meter shall be provided.		
17.10	Front control screen shall display a water level indicator to show level of water through the range of the tank.		
17.11	Front control screen shall display the vacuum debris body level.		
18.0	**ELECTRICAL & SAFETY LIGHTING**		
18.01	The entire system shall be vapor sealed to eliminate moisture damage, "Nema-4" type or equal.		
18.02	IQAN Electronic Package: Chassis Tachometer, Blower Tachometer, Operating Mode, PTO Mode, Hydraulic Oil Temperature shutdown, Hose Reel Speed, Water Pressure, and E-Stop shall be included. E-Stop activation must turn off rodder pump, shutdown Hydraulics, set chassis throttle to idle, stop vacuum. E-stop must be located at each operator interface; including hose reel controls, pendant control, wireless control. Diagnostics for basic machine functions and all inputs and outputs shall be accessible via the display. Advanced diagnostics, updates, data retrieval, and remote diagnostics will be available via PC or Bluetooth connection.		
18.02	Logs, reports, and hour meters will be accessible via the display.		
18.03	All electrical connections shall be void of exposed wires or terminals nor should they be painted. Paint process shall be completed prior to installation of wiring.		
18.04	All wiring shall be color-coded and encased in conduit to scaled terminal boxes with circuit breakers.		
18.05	All other lights required by State and Federal Laws.		
18.06	One-piece directional 8-LED light arrow stick (Signal Master or equal) shall be mounted on rear door of debris body, with controls mounted in cab.		
18.07	Handheld, Pistol Grip LED Spot light with rechargeable Lithium Ion battery.		

18.08	Strobe L.E.D. Amber Beacon-Rear Door-Facing rear shall be provided.		
18.09	Strobe L.E.D. Amber Beacon- Front Cab Guard mounted shall be provided.		
18.10	Operator station shall have back lit buttons for low light operation.		
18.11	Hose reel manhole work lights shall be provided		
18.12	(2) L.E.D. Boom work lights shall be provided.		
18.13	L.E.D. Work light at midship curbside shall be provided.		
18.14	L.E.D. Lights, Clearance, Back-Up, Stop, Tail & Turn shall be provided.		
18.15	Mid-Ship L.E.D Bubble Type Turn Signals Shall be Provided		
19.0	**SAFETY EQUIPMENT**		
19.01	E-stop shall be located at each operator interface location. Standard locations to include: front hose reel, mid-ship curbside dump controls, & wireless controller (if equipped.)		
19.02	Electrical system controls shall be configured to allow for single point operation only. Upon engagement of controls at specified locations, additional controls shall be disabled.		
19.03	Electrical system must enable self-check to ensure all switches are in home position prior to critical function enablement. System must "lock out" controls when switch is not in home position.		
19.05	(1) Emergency Flare Kit		
19.06	(1) 5# Fire Extinguisher.		
19.07	Screen Backlighting shall be provided.		
19.08	Menu Driven Menu Screens shall be provided.		
19.09	Multi-View Available On Monitor, Up To (4) Camera Inputs and Up To (4) Simultaneous Views shall be provided.		
19.10	Back-Lit Soft Touch Controls shall be provided.		
19.11	Front Hose Reel Color Camera With 130 Viewing Angle shall be provided.		
19.12	Rear Back-up Color Camera With 130 Viewing Angle shall be provided.		
19.13	Left and Right-Side Mounted Color Cameras, Each With 130 Viewing Angle shall be provided.		
19.14	LED Low Light Assist On Each Camera shall be provided.		
19.15	Automatic Activation of Rear Camera When Transmission REVERSE is selected shall be provided.		
19.16	Automatic Activation of Appropriate Side Camera When Turn Signal is activated shall be provided.		
19.17	Normal Image / Mirror Image Orientation shall be provided.		
19.18	Manual Selection of Camera, Except In Reverse shall be provided.		
19.19	PAL compatibility shall be provided.		
19.20	Quad- Adapter shall be provided.		
19.21	Waterproof cable connector shall be provided.		
19.22	Digital water pressure shall be displayed in front LCD display. Pressure gauge shall be capable of displaying water system pressure in all pump operating modes.		
20.0	**SEWER TOOLS AND ACCESSORIES**		
20.01	(1) 30 Sand Nozzle		
20.02	(1) 30 deg. Sanitary Nozzle		
20.03	(1) 15 deg. Penetrator Nozzle		
20.04	(1) 1" Small finned nozzle pipe skid		
21.0	**VACUUM TOOLS AND ACCESSORIES**		
21.01	The basic vacuum tube package shall include the following:		
21.02	(1) 7" x 3' aluminum pipe		
21.03	(2) 7" x 5' aluminum pipe		
21.04	(1) 7" x 6'6" catch basin tube		
21.05	(4) 7" quick clamps		
22.0	**CHASSIS EQUIPMENT AND STORAGE**		
22.01	Two (2) front tow hooks shall be provided.		
22.02	Two (2) rear tow hooks shall be provided.		

22.03	A safety cone storage racks shall be provided to contain safety cones in the upright position.		
22.04	(1) Behind cab tool box with shelf.		
22.05	(1) Aluminum Toolbox with nozzle storage and dump controls mounted curbside shall be provided.		
22.06	(2) 18 In. x 16 In. x 12 In. Aluminum Toolbox - Front Bumper shall be provided.		
22.07	(1) 24" x 24" x 24" Aluminum Toolbox Mounted street side shall be provided.		
23.0	**MODULE FINISH**		
23.01	Painting of the module shall be with a DuPont Imron Elite Polyurethane Enamel Top Coat. Application is to be a wet top coat applied to a dried and sanded primer base. Color to be DuPont Oceanside Blue 748725.		
24.0	**CHASSIS SPECIFICATIONS**		
24.01	The unit shall be a new model. No discontinued models will be accepted and must be approved by body manufacturer when submitting bid. GVWR of 66,000 lbs.		
24.02	The unit shall be equipped with a diesel engine, turbo charged and after cooled, with a Cummins ISL-370; 370 HP @ 1900 RPM, 1250 LB/FT @ 1400 RPM		
24.03	Paint to be manufacturers silver		
24.04	The unit shall be equipped with an Allison 3000 RDS Automatic Transmission with PTO Provisions, with Oil Level Sensor.		
24.05	Front Axle - Meritor MFS-20-133A 20,000# Wide Track, I-Beam Type, Set Forward		
24.06	Front Suspension - 20,000# Flat Leaf Type		
24.07	Rear Axle - Meritor RT-46-160P 46,000# R-Series Tandem, 5.63 ratio, with locker		
24.08	Rear Suspension - 46,000# Hendrickson RT463		
24.09	114 inch BBC flat room aluminum conventional cab		
24.10	Wheelbase of 277 inches		
24.11	7/16 x 3-9/16 x 11-1/8 inch steel frame with 120 PSI rating		
24.12	1/4 inch C-Channel inner frame reinforcement		
24.13	71 inch rear frame overhang		
24.14	193.54 inch cab to axle		
24.15	Front Tires (2) 425/65R22.5 (Michelin) 20 Ply		
24.16	Rear Tires (8) 11R22.5 (Michelin) 14 Ply		
24.17	Wheels – Alcoa aluminum, hub piloted, 10 stud		
24.18	Brakes – Air with dual system for straight truck applications, anti-lock, dryer with heater		
24.19	Fuel Tank – 100 gallons		
24.20	Cab Equipment – Air conditioning, driver and passenger air ride seat, tilt steering, cruise control, AM,FM,CD radio, block heater, back up alarm, power windows, power locks, power mirrors.		
25.0	**TRADE IN**		
25.01	The Water Reclamation Dept. has the option to trade in a 2003 Vac-Con sewer jet/vac truck. It is available for inspection with appointment at the Treatment Plant.		

Mailing List
For
One New,
Combination Sewer Cleaner

Jeff Miles
Key Equipment
6716 Berger Ave.
Kansas City, KS 66111
913-788-2546

Mid-Iowa Solid Waste Equipment Co., Inc.
5105 NW Beaver Drive
Johnston, IA 50131
800-733-8731

Greg Oliverius
Nebraska Environmental Products
2621 West M Ct.
Lincoln, NE 68522
402-435-0061

Tom Donlon
Standard Equipment
2033 West Walnut St.
Chicago, IL 60612