

Company Name	FRONTIER EQUIPMENT SALES, L.L.C.
Doing Business as (if applicable)	
Contact Person for Solicitation Response	CLARK KERR
Phone	405-354-2611
Email	frontiercdk@gmail.com
Address For Purchase Orders-Number & Street-Post Office Box (some companies have ordering addresses that are are different than the payment address)	PO BOX 850114
City, State, Zip	YUKON , Ok. 73085
Contact Person for Contract/Ordering/Price Information/Equipment Additions/Changes/Discontinuations	CLARK KERR
Phone	405-354-2611
Fax	405-354-2992
Email	frontiercdk@gmail.com
Secondary Contact for Contract/Ordering	NA
Phone	NA
Fax	NA
Email	NA
Address For Payment-Number & Street-Post Office Box (some companies have a different Payment/remittance address than the ordering address)	PO BOX 850114
City, State, Zip	YUKON, OK. 73085
Contact Person/Department for payment	CLARK KERR
Phone	405-354-2611
Fax	405-354-2992
Email	frontiercdk@gmail.com
Counties You can provide products/warranty service/repair parts to	<u>XX</u> All counties in Oklahoma OR just these counties:
	(include any special conditions, such as territory or district maps on a separate sheet)
Continued-counties	OR all BUT these counties:
Trade-ins	<u>XX</u> Available _____ Not Available (Include any special conditions on a separate sheet)
Payment Discount (i.e. 15 days)	Net <u>NA</u> days
Supplier will be responsible for notifying the contracting officer when the contact information changes	Notes: (Special ordering instructions-please attach any special instructions on a separate sheet)

Training:

All equipment offered includes at least one day on site training by a qualified representative.

Suppliers must submit specifications for all equipment bid, as well as options available. Please submit these specifications on a cd or dvd or flash drive. Any descriptive brochures provided for advertising purposes will be posted with contracts on the Central Purchasing website, although it is preferred that vendors have a website where customers can go and view the products. The Central Purchasing Statewide Contract website will be updated as necessary.

The manufacturer's price list date that you are being asked to provide is considered the "starting point" of the contract and is to be used as a measurement of price increases throughout the contract. (i.e. at the end of the contract year, the purchases will be compared to annotate any price changes that were made.) You will be expected to provide brochures and descriptive literature to those customers who request it and the contracting officer responsible for the maintenance of the contract. Although you will not be required to send actual pricing sheets as the prices are updated, you will be required to notify the contracting officer when there are price increases and a note will be made to the website where your contract will be located.

Communication is the key to this contract being successful. The Supplier will be expected to notify the Contracting Officer of any changes in the Company status, such as mergers, discontinuation of equipment, addition of equipment lines and changes in the contact information for the contract. It is imperative that the Contracting Officer be able to contact someone at all times during business hours, especially when helping an entity make a decision on equipment they want to purchase.

With the age of technology, customers are more likely to use the internet to research the equipment they are interested in buying. We will put a link to your website on the contract website. Please provide a guide to the use of your website if you require a name and password to access current pricing, if listed, at no subscription cost to the State of Oklahoma. Also, please provide any additional enhancements such as any special ordering features available to users or a site with pricing specific to the Oklahoma contract even though we are not requiring you to offer a direct link to the Oklahoma-specific contract pricing or your current price lists.

Website:

Log-in required? Yes X No

Some Government entities who will be buying from this contract will be expected to provide their accounting offices with a pricing sheet or pricing sheet reference date at the time they prepare their payment method. This pricing sheet will clearly state the Price Book/Catalog Number and Date. This sheet is to be attached to the quote provided by the Supplier. The quote will reference the Statewide contract number being used for the purchase. All set up charges, testing, and freight charges are to be included in the total price less discount offered.

Discounts offered will remain the same or can be increased throughout the contract period. Multiple Unit discounts are encouraged.

Please fill in what applies below, if it doesn't apply, please fill in "n/a" Attach more sheets for each piece of equipment if this varies according to the equipment you sell.

Multiple Unit discount: NA % (In addition to the equipment discount) based on NA Units purchased
NA Dollar amount

If Units, how many? NA If dollar amount, how much? NA

OEM Repair Parts: 0 % After Market Parts: 0 %

Electronic (cd, dvd) Repair Parts manual: 0 % "Hard Copy" Repair parts manual: 0 %

Electronic (cd, dvd) Operator Manual: 0 % "Hard Copy" Operator's manual: 0 %

Electronic (cd, dvd) Service Manual: 0 % "Hard Copy" Service Manual: 0 %

Extended Warranty offered? XX Yes No If yes, please attach information for the extended warranty purchase. Discount offered +20 %

Scan tools (for diagnostics) offered? Yes XX No %

Diagnostic software and hardware included with equipment? Yes XX No If yes, please attach information.

US-Jetting offer no extended warranty
See attached for warranty and extended warranty info

ATTACHMENT A

Sewer Cleaners, Centrifugal Compressor Fan Type, For Truck Mounting

If you have different discounts for different sizes of equipment or options, you WILL have to list the items. If you need more space, attach sheets in the same format as this one.

[illegible]

Attachments/Accessories: -3 %

Options: -3 %

Installation Charge: 1,950.00

Special Notes: _____

[illegible]

NOTE: The discount given only applies to the Vac-Con manufactured portion, not the chassis. We receive no discount on chassis prices. If chassis are to be provided by Frontier Equipment Sales, L.L.C. they will be provided ~~them~~ at the Vac-Con net price. No discounts are given on chassis.

ATTACHMENT B

Sewer Cleaners, Positive Displacement Type, For Truck Mounting

If you have different discounts for different sizes of equipment or options, you WILL have to list the items. If you need more space, attach sheets in the same format as this

[illegible]

Attachments/Accessories: =3 %

Options: -3 %

Installation Charge: 1,950.00

Special Notes: _____

*MINIMUM REQUIREMENTS SUCH AS PROPER CAB TO AXLE AND GVW WILL HAVE TO BE MET.

NOTE: The discount given only applies to the Vac-Con manufactured portion, not the chassis. We receive no discount on chassis prices. If chassis are to be provided by Frontier Equipment Sales, L.L.C. they will be provided them at the Vac-Con net price. No discounts are given on chassis.

CK

Jet Rodders, For Truck And Trailer Mounting

[illegible]

Special Notes:

[illegible]

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Jet Rodders, For Truck And Trailer Mounting

[illegible]Options: +7 %

Installation Charge: 1,795.00

Special Notes: _____

[illegible]

SOLICITATION PACKAGE - PAGE 21

Jet Rodders, For Truck And Trailer Mounting

[illegible]

Special Notes: _____

The discount given only applies to John Bean portion of equipment, not chassis. We receive no discount on chassis pricing. Chassis are to be provided by Frontier Equipment Sales, L.L.C. they will be provided at the John Bean net price. No discounts are given on chassis.

Hydro-excavators, Truck And Trailer Mounting

[illegible]

Special Notes:

[illegible]

CK

Sewer Inspection Equipment

[illegible]

Special Notes: _____

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ATTACHMENT F

Miscellaneous Sewer Equipment

If you have different discounts for different sizes of equipment or options, you WILL have to list the items. If you need more space, attach sheets in the same format as this

[illegible]

Attachments/Accessories: -3 %

Options: -3 %

Installation Charge: NA

Special Notes: _____

[illegible]

Warranty Information

Description of warranty rights

From the date of delivery through the applicable warranty period, RapidView LLC will, at its option, repair or replace free of charge any warranted item, which is proven to RapidView LLC's reasonable satisfaction to be defective. All warranty inspections and warranty repairs must be performed by approved RapidView LLC Authorized Service Centers. For the name of the Service Center nearest you, please call or write to:

RapidView LLC, 1828 W. Olson Rd. Rochester, IN 46975, 800-656-4225

IBAK Video Inspection equipment warranty period is 1 year. Other manufacturer's warranties apply on items not manufactured by IBAK or RapidView LLC.

Conditions to warranty service

For this warranty to become effective, the following requirements must be met:

1. Any postage, insurance and shipping charges of warranted items to a RapidView LLC Authorized Service Center must be prepaid by the purchaser, and these costs are not included under this warranty.
2. The purchaser must be able to provide proof of the original purchase from RapidView LLC or one of its accredited sales distributors or agents if requested.

Exclusions from the warranty

This warranty does not apply to any loss or damages resulting from: (i) normal wear and tear; (ii) alteration, misuse, abuse, or improper installation, operation or maintenance by purchaser or any third party; (iii) accident, fire, flood, or Acts of God; or (iv) inaccurate or incomplete information or data supplied or approved by purchaser. By way of example, without limitation, the warranty does not cover the specific conditions described below:

1. Equipment which has been damaged due to:
 - * Connection to incorrect line voltages.
 - * Use of incorrect fuses.
 - * Use in contravention of operating instructions.
 - * Improper or unauthorized repairs.
2. Damage to warranted items sustained in shipment to purchaser.
3. Equipment that has had any of its identification, instructional or "sealing" labels removed or tampered with.
4. Any unit that has had its serial number altered, defaced or removed.

RapidView LLC will not be responsible for any changes, modifications or repairs, either in cost or consequence, made by personnel not authorized by RapidView LLC.

RapidView LLC will not be responsible for the loss of or damage to equipment while in the possession of any authorized or unauthorized service agency.

RapidView LLC reserves the right to make changes in design and improvements upon its products without assuming any obligation to install such changes upon any of its products previously manufactured.

Loaner Policy

RapidView LLC will, at its option, provide loaner equipment when available for equipment within the warranty period. All loaner equipment will be shipped on the customer's account, billed to the customer. Loaner equipment will be invoiced at the time of shipment. This invoice will be credited in full upon return of the equipment in good working condition. RapidView LLC makes no guarantee of loaner equipment availability.

EXCEPT AS EXPRESSLY SET FORTH ABOVE, RAPIDVIEW LLC MAKES NO WARRANTY OF ANY KIND WHATSOEVER, AND RAPIDVIEW LLC EXPRESSLY DISCLAIMS ANY WARRANTIES IMPLIED BY LAW, INCLUDING, BUT NOT LIMITED TO, ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

RAPIDVIEW LLC'S LIABILITY UNDER THIS WARRANTY SHALL BE LIMITED TO REPAIR OR REPLACEMENT OF THE EQUIPMENT. IN NO EVENT SHALL RAPIDVIEW LLC BE LIABLE UNDER ANY THEORY OF RELIEF, INCLUDING, WITHOUT LIMITATION, BREACH OF WARRANTY, BREACH OF CONTRACT, TORT (INCLUDING NEGLIGENCE), STRICT LIABILITY, OR OTHERWISE, ARISING OUT OF OR RELATED TO THE EQUIPMENT FOR INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OF ANY NATURE, INCLUDING, WITHOUT LIMITATION, LOSS OF PROFITS, DAMAGE TO PROPERTY, LOSS OF USE, OR THE COST OF PROCUREMENT OF SUBSTITUTE GOODS.

SOME STATES DO NOT ALLOW LIMITATIONS ON IMPLIED WARRANTIES OR THE EXCLUSION OR LIMITATION OF CONSEQUENTIAL DAMAGES, SO (IF REQUIRED BY LAW) CERTAIN OF THE LIMITATIONS OR EXCLUSIONS MENTIONED ABOVE MAY NOT APPLY TO YOU. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY ALSO HAVE OTHER RIGHTS, WHICH VARY FROM STATE TO STATE.

RapidView LLC
1828 W. Olson Rd
Rochester, Indiana 46975

Past Proven **Future Ready**

Pipeline Inspection Equipment

www.rapidview.com



Equipment Packages

RapidView IBAK North America | 1828 W. Olson Rd. Rochester, IN 46975
(800) 656-4225 | www.rapidview.com



Equipment Packages



Portable Mainline System

The ultimate in flexibility and capability! The Portable Mainline System package includes everything you need to inspect 4"-12" diameter pipelines. Easily transported in an all-terrain vehicle, pickup truck or SUV, this system is perfect for off-road inspections. Add accessories such as auxiliary light rings, high traction wheelsets and additional weights to increase your capabilities even further! This system is Economic, ergonomic and versatile.

Package includes: T66 Tractor, Orion Camera, KT 180 Reel with 660' of cable, BK 3.5 controller, downhole rollers and a pressure test set.



Core / Core PLUS Mainline Systems

The economic package ready for vehicle installation. The Core Mainline System package includes everything you need to inspect 4"-12" diameter pipelines. With an automatic level wind, positionable boom and rack mount controller this system is the perfect package for someone starting to inspect mainline pipes and wanting the added safety and comfort of an inspection vehicle or trailer. Add accessories such as auxiliary light rings, high traction wheelsets and additional weights to increase your capabilities even further!

Package includes: T66 Tractor, Orion Camera, KW 180 Reel with 660' of cable, BS 3.5 controller, downhole rollers and a pressure test set.

Core PLUS system includes: Upgrade to KW305 1000' cable drum, additional granulated wheels and auxiliary light ring for larger diameter inspections.



Premium Mainline System

This package contains all the inspection equipment you need to conduct video inspections in 5"-48" pipe. With the more powerful synchronized cable reel, 1000 foot capability, larger more powerful tractor and Orpheus camera you will be able to conduct inspections with speed and accuracy. The built in cable winch lowers the tractor into the manhole, reducing stress on personnel and helps prevent damage. This is the perfect system for contractors and cities who conduct mainline normal mainline inspections, but require the capability to inspect larger lines.

Package includes: T76 Tractor, Orpheus Camera, KW 305 Reel with 1000' of cable, BS 3.5 controller, downhole rollers and a pressure test set.



Elite Mainline System

The top of the line package for true professionals. This package includes the revolutionary ARGUS large diameter inspection camera which can increase your inspection capabilities up to 120" diameter pipelines! This system adds capabilities that can open up new revenue possibilities for professional pipeline inspectors.

Package includes: T76, Argus Camera, KW 305 Reel with 1000' of cable, BS 3.5 controller, large pneumatic wheels, downhole rollers and a pressure test set.

Add a LISY 3.0 Lateral Launch System

Now you can easily add a LISY 3.0 Lateral Launch attachment to a Premium or Elite package. The LISY 3.0 attaches to the T76 or T86 tractor. Expand into lateral launching at reduced cost. Call your representative today to discover how easy adding a lateral launch system can be!



Specifications for one (1) 600 Gallon, 4018
High Pressure Water Jetting Unit

Please Check "Yes" or "No" for each of the specified items below. Items Checked "Yes" Must meet the specifications exactly. All items checked "No" must clearly be marked with the exceptions on a separate sheet of paper. The City reserves the right to review exceptions and judge the possibility of their acceptability. Failure to note any exceptions or any misrepresentations will result in the rejection of bid. The City reserves the right to accept any bid that it deems meets or exceeds said expectations.

1. GENERAL

- 1.1 It is the intent of these specifications to describe the minimum requirements for ONE (1) high pressure hydraulic sewer cleaner designed to use high velocity water jets in storm, sanitary and combined sewers, pipe drains and other conduits to remove obstructions, sand, solidified grease, roots and other materials. The unit, including all necessary equipment, shall be complete and ready for use. All parts not specifically mentioned which form part of the complete unit shall conform in design, strength and quality of material and workmanship to the highest standards of engineering practice. ALL EQUIPMENT IN SAID SPECIFICATIONS SHALL BE DELIVERED IN NEW, AND UNUSED CONDITON, DEMONSTRATOR UNITS WILL NOT BE ACCEPTED.

Yes_____ No_____

- 1.2.1 The high-pressure sewer-cleaning unit shall be the manufacturer's standard as may be modified to meet the specifications. It shall be equipped with the manufacturer's equipment and accessories, which are the advertised and published literature for the unit.

Yes_____ No_____

2. **PUMP**

2.1 The pump shall be of ceramic plunger design and capable of continuous operation at maximum designed pressure and capable of running dry without damage for a minimum period of 30 Minutes. The pump will produce 4000 PSI and a flow of 18 gpm. Crankshaft speed on the pump shall not exceed 960 rpm.

Yes_____ No_____

2.2 The pump shall contain three (3) cylinders and have a stainless steel manifold incorporating a safety relief disc system. Pump run dry feature requires no clutches or low water warning systems.

Yes_____ No_____

2.3 The pump shall be high torque driven and requires no lubrication on the drive system. (No gearbox or couplings are required). The pump shall contain three (3) cylinders and the fluid end shall be of stainless steel construction. Cast iron or carbon steel pump heads are not acceptable. Pump plungers must be precision ground ceramic.

Yes_____ No_____

2.4 Pump should have an air gap between crankcase and plunger to prevent water from entering crankcase. Delivery valves failure must under no circumstances result in water entering the crankcase.

Yes_____ No_____

2.5. Pump shall be capable of pumping fresh, salt, and brackish water as well as specified chemicals without damage to the pump.

Yes_____ No_____

2.6. Pump shall be rated for temperatures of not less than 160 degrees in continuous duty operation.

Yes_____ No_____

2.7.1 City reserves the right to have manufacturer provide certification of actual flow at working pressure and horsepower requirement for the unit.

Yes_____ No_____

2.8 Pump must have single air bleed valve for air removal from water system.

Yes_____ No_____

2.9 Pump shall have 3 inlet and 3 delivery-Cartridge Style Check Valves, all of which will be field replaceable within 10 minutes. Valves shall be Stainless Steel.

Yes_____ No_____

2.10 Pump must have oil sight gauge and pump oil shall not exceed four quarts.

Yes____ No____

2.11 Pump will equipped with constant lubricating wicks and access points for each Cylinder.

Yes____ No____

3. **TANK**

3.1 The unit shall contain (2), rotationally molded, UV stabilized water tanks with a total capacity of 625 Gallons. Minimum of 24 minutes of running time.

Yes____ No____

3.2 Construction shall be of heavy duty polyethylene with UV light Inhibitors.

Yes____ NO____

3.3 An overhead type tank filling assembly with a 2" fire hydrant fitting shall be located on the curbside. An adaptor to convert from 2" hydrant fitting to 3/4" garden hose shall also be supplied. A positive air gap anti siphon system shall be incorporated to protect the portable water supply.

Yes____ No____

3.4 Tank shall contain a 1-1/4" spherical valve to enable easy gravity draining of water.

Yes____ No____

3.5 The tank shall be vented and shall have a removable lid to permit inspection and access into the tank.

Yes____ No____

3.6 All plumbing from water tank bulkhead to inlet side of pump shall not exceed 3 feet. Inlet plumbing shall contain water tank valve, inline filter and water dump valve within this 3 feet.

Yes____ No____

4. **TRAILER**

4.1 Tandem axle trailer with (2) 6,000 lbs axles. (12,000 lbs.GVW).

Yes____ No____

4.2 Equipped with 750-16, 16 x 6.75 6H Spoke Trailer Tires

Yes____ NO____

4.3 Trailer shall be equipped with an Electric Braking System and 7 Pin Round Connector.

Yes____ No____

4.4 All necessary clearance and running lights shall be included. Yes____ NO____

4.5 Trailer must be Furnished with a 2 5 16" Ball Hitch Assembly.

Yes____ No____

4.6 Trailer fenders must have checker plating on front to prevent rocks and road debris from chipping paint.

Yes____ No____

4.7 Trailer must have rear tag light

Yes____ No____

4.8 Trailer wheels rims shall be chrome

Yes____ No____

4.9 Trailer fenders must be square to allow city to decal and number. Rounded Fenders are not acceptable.

Yes____ No____

4.10 No wiring or plumbing shall be located beneath trailer frame that could result in damage.

Yes____ No____

4.11 LED, recessed lighting package shall be provided for turn signals, brakes, and hazard lights.

Yes____ No____

4.12 Trailer axles must be torque flex and no leafs or springs are acceptable. Must be balanced suspension.

Yes____ No____

4.13 Trailer frame must have straight ¼" thick 2 x4 channel both sides front to rear with no welds.

Yes____ No____

5. **CONTROL**

5.0 Control panel must be completely digital. All digital display and engine control functions will be managed by software programmable micro controllers

Yes____ No____

5.1 Control panel must display Digital and Analog Water Pressure.

Yes_____ No_____

5.2 Safety shutdown functions must include engine oil pressure sensor and engine temperature shutdown.

Yes_____ No_____

5.3 Unit shall be equipped with automatic glow plug function.

Yes_____ No_____

5.3.1 All controls must have fuse protection for beacon light, utility light, water selector valves, and digital display board.

Yes_____ No_____

5.4 Control panel must be equipped with twist lock connections for easy removal

Yes_____ No_____

5.5 All gauges, switches, levers, etc. necessary for the operation of the unit shall be on the curb side of the unit adjacent to the hose reel so that the operator has complete control of the cleaning operation while working from one location.

Yes_____ No_____

5.6 The following instruments and controls shall be included as standard:

- i) Keyed engine ignition switch, charging light, oil pressure light and throttle,
- ii) Pressure gauge for water system, must not freeze
- iii) Engine hour meter, analog
- iv) High Pressure/Recycle Selector Control Valve
- v) Hydraulic Lever for controlling the speed and direction of the reel when moved backwards or forwards from a central position.

Yes_____ No_____

5.7 All components and controls shall be mounted on a single control panel with NEMA 4 Water-Tight Housing or Equivalent and shall have a dedicated ground

Yes_____ No_____

5.9 All electrical wiring must be color coded for quick disconnect.

Yes_____ No_____

5.10.1.1 Operational information shall also be provided in English and Spanish and will be visible from the operator station.

Yes_____ No_____

6. **HOSE REEL**

6.1 The hose reel shall be designed to withstand maximum working pressure without distortion.

Yes_____ No_____

6.2.1 Capacity of the hose reel shall not be less than 600 ft. of 5/8" ID High Pressure Jetting Hose.

Yes_____ No_____

6.3 The outside diameter of the drum shall not exceed 31 1/2".

Yes_____ No_____

6.4 The reel shall be driven by hydraulic power in both directions. The reel is to be directly driven by the hydraulic motor. No chains or couplings are acceptable. The hydraulic drive shall have sufficient power to retract the hose when fully extended into the sewer with the sewer cleaning jet in operation.

Yes_____ No_____

6.6 Reel shall be direct drive with no internal fittings. All hose connections must be external to allow tightening without removing the hose. No chain drive will be accepted.

Yes_____ No_____

6.7 Hose guide must have Deron on both plates of reel stand to ensure no metal or metal contact.

Yes_____ NO_____

6.8 Hydraulic and high pressure hose must have anti-rub coating to protect from cutting.

Yes_____ NO_____

6.9 All high pressure or electrical wiring shall be installed inside aluminum tray on swivel reels to prevent wear or damage.

Yes_____ No_____

6.10 Hose reel must pivot on an industrial type, heavy duty grease-able ball bearing. Reel will have a minimum of seven (7) locking positions with 2" intervals.

Yes_____ No_____

7. HOSE REEL DRIVE SYSTEM

- 7.1.1 The hydraulic power for powering the hose reel shall be by means of a pump directly driven from the auxiliary engine; hydraulic motor with direct drive to the hose reel; an oil reservoir; a direction and speed control valve and hydraulic hose rated to withstand the maximum system pressure.

Yes_____ No_____

- 7.2 The oil filter shall be the return type and have a replaceable cartridge.

Yes_____ NO_____

- 7.3 The oil reservoir tank shall have a capacity of at least 6.5 gallons. The tank shall be metal construction. Plastic tanks not acceptable.

Yes_____ No_____

- 7.4 Hose reel shall be mounted in such a manner that debris does not create residue on other components (tool box).

Yes_____ No_____

8. SEWER CLEANING HOSE

- 8.1 The unit shall be equipped with a 500 ft. continuous length of reinforced thermoplastic hose.

Yes_____ NO_____

- 8.2 Sewer Hose shall be 1/2" ID, Kevlar Lined, and have a minimum Bursting Rating of 16,000 PSI

Yes_____ No_____

9. PIPING

- 9.1 All piping subjected to high pressure shall have a minimum burst pressure of 14,000 psi.

Yes_____ NO_____

- 9.2 The unit shall be equipped with a dual filtration system. An 80-mesh clear water filter of the in-line type shall be installed in the suction line at a location permitting easy accessibility for cleaning. In addition, an 80-mesh bag filter will be fitted in each water tank.

Yes_____ No_____

- 9.3 All inlet water line plumbing from water tank bulk head to pump shall not exceed Three feet and shall be a minimum of Schedule 80 grade.

Yes_____ NO_____

10. ENGINE - AUXILIARY

- 10.1 The engine shall be a three-cylinder, air-cooled, HATZ Diesel Industrial type diesel (or approved equal) having a minimum capacity of 157 cubic inches. The unit will have maximum DB rating of 76 at 7 meters.

Yes_____ No_____

- 10.1.2 Engine shall be equipped with a Silent Pack Enclosure. Maximum 72 noise decibels. NON-Silent Engines without soundproof enclosures will not be accepted.

Yes_____ No_____

- 10.2 The following accessories shall be furnished:

- i) 12 Volt keyed ignition system with battery charging alternator and charging light,
- ii) Cable variable speed control throttle,
- iii) Centrifugal Governor,
- iv) Replaceable cartridge type oil filter.

Yes_____ No_____

- 10.3 Lubricating oil consumption shall be less than 0.75% of full load fuel consumption.

Yes_____ No_____

- 10.4 The engine shall have a minimum continuous rating of 55 hp at 2,600 rpm.

Yes_____ No_____

- 10.5 The engine fuel tank shall have a minimum capacity of 16 gallons.

Yes_____ No_____

- 10.6 Engine must have high temperature automatic shut down.

Yes_____ No_____

- 10.7 Fuel Tank shall be constructed of 16 Gauge Aluminum to prevent Rust and Corrosion.

Yes_____ No_____

11. PAINTING

- 11.1 All components of Jetting Unit shall be primed and Powder Coated White

Yes_____ No_____

11.2 The Frame shall be primed, powder coated, and painted black.

Yes_____ No_____

11.3 All screws, bolts shall be rust proof or stainless steel throughout entire unit.

Yes_____ No_____

11.4 Hose Reel shall be, primed, powder coated, and painted "Safety Red" for easy visibility

Yes_____ No_____

12. **TOOLBOX - STORAGE**

12.1.1 (2) toolboxes shall be located on each fender with a minimum of 24 cubic feet of storage at rear of machine. Toolboxes shall contain nozzle holders, and each shall measure no less than 72" L x 13" W x 16 ¼" H. (If NO, Specify Toolbox Storage Space)

Yes_____ No_____

12.2 Toolboxes shall be constructed of 16 Gauge Aluminum to prevent rust and corrosion

Yes_____ No_____

12.3 Battery must be mounted in toolbox and shall be completely enclosed.

Yes_____ No_____

13. **SAFETY EQUIPMENT**

13.1 Manhole floodlight and "Rotating" safety beacon are mounted on the unit.

Yes_____ No_____

13.2 Reflective, DOT safety tape will be mounted on rear and both sides of unit.

Yes_____ No_____

13.3 DOT Approved LED Lighting System and LED Side Markers to be provided on 4 Corners of trailer

Yes_____ No_____

14. **PULSATION SYSTEM**

14.1 The unit will feature an automatic pulsation system to induce an intermittent pulse into the hose so that it breaks the friction and allows the hose to travel long distances, negotiate multiple turns, and free hose when it becomes stuck in pipe.

Yes_____ No_____

14.2 The jet must be capable of climbing vertically 80 feet.

Yes_____ No_____

15 STANDARD EQUIPMENT (Included into total Price of Bid)

15.1 Two Stainless RPD drain jets in the following combinations:

- | | | |
|--|----------|---------|
| 1. 3 Rear, 1 Forward, Penetrator Nozzle, 15 degree | Yes_____ | No_____ |
| 2. 6 Rear, Flushing Nozzle, 35 degree | Yes_____ | No_____ |

15.2 Finned Nozzle Extension (Threaded) Yes_____ No_____

15.3 10 ft. Orange Leader Safety Hose - 14,000 psi minimum bursting pressure. Yes_____ No_____

15.4 3" Tiger Tail Hose Protector. Yes_____ No_____

15.5 Manufacturer to provide training on safety, operator use and maintenance. Min. of 1 day. Yes_____ No_____

15.6 Operations, Service manual and service DVD must accompany unit. Yes_____ No_____

15.7 500 ft. of ½" ID Hose, 16,000 PSI Bursting Pressure Yes_____ No_____

15.8 Hydraulic Speed Control Valve for Operator convenience with (10) Lockable Settings
Yes_____ No_____

15.8.1 Anti-Freeze Circulation System provided allowing the ENTIRE Water system to be Winterized with a Minimum of 16 Gallon Aluminum Storage Tank. (Front Mounted)
Yes_____ No_____

15.9 25 ft. Fill Hydrant Hose with Quick Connect Yes_____ No_____

15.10 Hardened Steel Tiger Tail Holder (Mounted) Yes_____ No_____

15.11 An Un-Loader "Relief" Valve shall be mounted to the pump and pre-set to the Maximum working pressure. In addition, a pressure relief Blow-Out Disc System Will be incorporated on the opposite side of the water pump, as a secondary Protection for the Pump.

Yes_____ No_____

15.12 10 Extra, 5000 PSI Pressure Discs

Yes_____ No_____

15.13 Electric Reel with 25 ft. ½" Hose for Gun (MOUNTED) Yes_____ No_____

15.14 3000 PSI Wash-Down Gun w/ o degree and Fan tip Nozzles

Yes_____ No_____

15.15 WH Warthog Nozzle by Stoneage Tools, Grease and Root Cutter for 6-24" Pipe (NO Exceptions)

Yes_____ No_____

15.16 Manhole Hook and Hydrant Wrench to accompany unit.

Yes_____ No_____

16. **OPTIONAL EQUIPMENT:**

16.1 Heavy Duty Vac-Pump with 20 ft. Discharge Hose, 72 GPM output Y__ N__

16.2 Arrow Board Directional Lighting Panel Y__ N__

16.3 SAS Sand & Sludge Nozzle for 8-24" Pipe w/ Extension Y__ N__

16.4 "Power Pullout" Hose Reel w/ 3 ft. Hydraulic Driven RAM Y__ N__

16.5 Upper Manhole Roller (Upstream Pulley Guide) Y__ N__

Warranty

Unit Shall be equipped with a (1) One Year, Bumper to Bumper Warranty, including all components except for Specified Wear and Tear Items. Diesel Engine Shall have a (2) Two Year, 250 Hour Manufacturer's Warranty. High-Pressure Water Pump Shall have a (2) Year, 250 Hour Warranty on all "Hard" Parts. Water Tanks Shall have no less than a (5) year Warranty. Trailer Axles Shall have no less than a (5) Year Warranty.

Specifications for one (1) 600 Gallon, 4025
High Pressure Water Jetting Unit

Please Check "Yes" or "No" for each of the specified items below. Items Checked "Yes" Must meet the specifications exactly. All items checked "No" must clearly be marked with the exceptions on a separate sheet of paper. The City reserves the right to review exceptions and judge the possibility of their acceptability. Failure to note any exceptions or any misrepresentations will result in the rejection of bid. The City reserves the right to accept any bid that it deems meets or exceeds said expectations.

1. GENERAL

- 1.1 It is the intent of these specifications to describe the minimum requirements for ONE (1) high pressure hydraulic sewer cleaner designed to use high velocity water jets in storm, sanitary and combined sewers, pipe drains and other conduits to remove obstructions, sand, solidified grease, roots and other materials. The unit, including all necessary equipment, shall be complete and ready for use. All parts not specifically mentioned which form part of the complete unit shall conform in design, strength and quality of material and workmanship to the highest standards of engineering practice. ALL EQUIPMENT IN SAID SPECIFICATIONS SHALL BE DELIVERED IN NEW, AND UNUSED CONDITON, DEMONSTRATOR UNITS WILL NOT BE ACCEPTED.

Yes_____ No_____

- 1.2.1 The high-pressure sewer-cleaning unit shall be the manufacturer's standard as may be modified to meet the specifications. It shall be equipped with the manufacturer's equipment and accessories, which are the advertised and published literature for the unit.

Yes_____ No_____

2. **PUMP**

2.1 The pump shall be of ceramic plunger design and capable of continuous operation at maximum designed pressure and capable of running dry without damage for a minimum period of 30 Minutes. The pump will produce 4000 PSI and a flow of 25 gpm. Crankshaft speed on the pump shall not exceed 960 rpm.

Yes_____ No_____

2.2 The pump shall contain three (3) cylinders and have a stainless steel manifold incorporating a safety relief disc system. Pump run dry feature requires no clutches or low water warning systems.

Yes_____ No_____

2.3 The pump shall be high torque driven and requires no lubrication on the drive system. (No gearbox or couplings are required). The pump shall contain three (3) cylinders and the fluid end shall be of stainless steel construction. Cast iron or carbon steel pump heads are not acceptable. Pump plungers must be precision ground ceramic.

Yes_____ No_____

2.4 Pump should have an air gap between crankcase and plunger to prevent water from entering crankcase. Delivery valves failure must under no circumstances result in water entering the crankcase.

Yes_____ No_____

2.5 Pump shall be capable of pumping fresh, salt, and brackish water as well as specified chemicals without damage to the pump.

Yes_____ No_____

2.6. Pump shall be rated for temperatures of not less than 160 degrees in continuous duty operation.

Yes_____ No_____

2.7.1 City reserves the right to have manufacturer provide certification of actual flow at working pressure and horsepower requirement for the unit.

Yes_____ No_____

2.8 Pump must have single air bleed valve for air removal from water system.

Yes_____ No_____

2.9 Pump shall have 3 inlet and 3 delivery-Cartridge Style Check Valves, all of which will be field replaceable within 10 minutes. Valves shall be Stainless Steel.

Yes_____ No_____

2.10 Pump must have oil sight gauge and pump oil shall not exceed four quarts.

Yes____ No____

2.11 Pump will equipped with constant lubricating wicks and access points for each Cylinder.

Yes____ No____

3. **TANK**

3.1 The unit shall contain (2), rotationally molded, UV stabilized water tanks with a total capacity of 625 Gallons. Minimum of 24 minutes of running time.

Yes____ No____

3.2 Construction shall be of heavy duty polyethylene with UV light Inhibitors.

Yes____ NO____

3.3 An overhead type tank filling assembly with a 2" fire hydrant fitting shall be located on the curbside. An adaptor to convert from 2" hydrant fitting to 3/4" garden hose shall also be supplied. A positive air gap anti siphon system shall be incorporated to protect the portable water supply.

Yes____ No____

3.4 Tank shall contain a 1-1/4" spherical valve to enable easy gravity draining of water.

Yes____ No____

3.5 The tank shall be vented and shall have a removable lid to permit inspection and access into the tank.

Yes____ No____

3.6 All plumbing from water tank bulkhead to inlet side of pump shall not exceed 3 feet. Inlet plumbing shall contain water tank valve, inline filter and water dump valve within this 3 feet.

Yes____ No____

4. **TRAILER**

4.1 Tandem axle trailer with (2) 6,000 lbs axles. (12,000 lbs.GVW).

Yes____ No____

4.2 Equipped with 750-16, 16 x 6.75 6H Spoke Trailer Tires

Yes____ NO____

4.3 Trailer shall be equipped with an Electric Braking System and 7 Pin Round Connector.

Yes____ No____

4.4 All necessary clearance and running lights shall be included. Yes____ NO____

4.5 Trailer must be Furnished with a 2 5 16" Ball Hitch Assembly.

Yes____ No____

4.6 Trailer fenders must have checker plating on front to prevent rocks and road debris from chipping paint.

Yes____ No____

4.7 Trailer must have rear tag light

Yes____ No____

4.8 Trailer wheels rims shall be chrome

Yes____ No____

4.9 Trailer fenders must be square to allow city to decal and number. Rounded Fenders are not acceptable.

Yes____ No____

4.10 No wiring or plumbing shall be located beneath trailer frame that could result in damage.

Yes____ No____

4.11 LED, recessed lighting package shall be provided for turn signals, brakes, and hazard lights.

Yes____ No____

4.12 Trailer axles must be torque flex and no leafs or springs are acceptable. Must be balanced suspension.

Yes____ No____

4.13 Trailer frame must have straight ¼" thick 2 x4 channel both sides front to rear with no welds.

Yes____ No____

5. **CONTROL**

5.0 Control panel must be completely digital. All digital display and engine control functions will be managed by software programmable micro controllers

Yes____ No____

5.1 Control panel must display Digital and Analog Water Pressure.

Yes_____ No_____

5.2 Safety shutdown functions must include engine oil pressure sensor and engine temperature shutdown.

Yes_____ No_____

5.3 Unit shall be equipped with automatic glow plug function.

Yes_____ No_____

5.3.1 All controls must have fuse protection for beacon light, utility light, water selector valves, and digital display board.

Yes_____ No_____

5.4 Control panel must be equipped with twist lock connections for easy removal

Yes_____ No_____

5.5 All gauges, switches, levers, etc. necessary for the operation of the unit shall be on the curb side of the unit adjacent to the hose reel so that the operator has complete control of the cleaning operation while working from one location.

Yes_____ No_____

5.6 The following instruments and controls shall be included as standard:

- i) Keyed engine ignition switch, charging light, oil pressure light and throttle,
- ii) Pressure gauge for water system, must not freeze
- iii) Engine hour meter, analog
- iv) High Pressure/Recycle Selector Control Valve
- v) Hydraulic Lever for controlling the speed and direction of the reel when moved backwards or forwards from a central position.

Yes_____ No_____

5.7 All components and controls shall be mounted on a single control panel with NEMA 4 Water-Tight Housing or Equivalent and shall have a dedicated ground

Yes_____ No_____

5.9 All electrical wiring must be color coded for quick disconnect.

Yes_____ No_____

5.10.1.1 Operational information shall also be provided in English and Spanish and will be visible from the operator station.

Yes_____ No_____

6. HOSE REEL

6.1 The hose reel shall be designed to withstand maximum working pressure without distortion.

Yes_____ No_____

6.2.1 Capacity of the hose reel shall not be less than 600 ft. of 5/8" ID High Pressure Jetting Hose.

Yes_____ No_____

6.3 The outside diameter of the drum shall not exceed 31 1/2".

Yes_____ No_____

6.4 The reel shall be driven by hydraulic power in both directions. The reel is to be directly driven by the hydraulic motor. No chains or couplings are acceptable. The hydraulic drive shall have sufficient power to retract the hose when fully extended into the sewer with the sewer cleaning jet in operation.

Yes_____ No_____

6.6 Reel shall be direct drive with no internal fittings. All hose connections must be external to allow tightening without removing the hose. No chain drive will be accepted.

Yes_____ No_____

6.7 Hose guide must have Deron on both plates of reel stand to ensure no metal or metal contact.

Yes_____ NO_____

6.8 Hydraulic and high pressure hose must have anti-rub coating to protect from cutting.

Yes_____ NO_____

6.9 All high pressure or electrical wiring shall be installed inside aluminum tray on swivel reels to prevent wear or damage.

Yes_____ No_____

6.10 Hose reel must pivot on an industrial type, heavy duty grease-able ball bearing. Reel will have a minimum of seven (7) locking positions with 2" intervals.

Yes_____ No_____

7. HOSE REEL DRIVE SYSTEM

- 7.1.1 The hydraulic power for powering the hose reel shall be by means of a pump directly driven from the auxiliary engine; hydraulic motor with direct drive to the hose reel; an oil reservoir; a direction and speed control valve and hydraulic hose rated to withstand the maximum system pressure.

Yes_____ No_____

- 7.2 The oil filter shall be the return type and have a replaceable cartridge.

Yes_____ NO_____

- 7.3 The oil reservoir tank shall have a capacity of at least 6.5 gallons. The tank shall be metal construction. Plastic tanks not acceptable.

Yes_____ No_____

- 7.4 Hose reel shall be mounted in such a manner that debris does not create residue on other components (tool box).

Yes_____ No_____

8. SEWER CLEANING HOSE

- 8.1 The unit shall be equipped with a 500 ft. continuous length of reinforced thermoplastic hose.

Yes_____ NO_____

- 8.2 Sewer Hose shall be 5/8" ID, Kevlar Lined, and have a minimum Bursting Rating of 16,000 PSI

Yes_____ No_____

9. PIPING

- 9.1 All piping subjected to high pressure shall have a minimum burst pressure of 14,000 psi.

Yes_____ NO_____

- 9.2 The unit shall be equipped with a dual filtration system.
An 80-mesh clear water filter of the in-line type shall be installed in the suction line at a location permitting easy accessibility for cleaning. In addition, an 80-mesh bag filter will be fitted in each water tank.

Yes_____ No_____

- 9.3 All inlet water line plumbing from water tank bulk head to pump shall not exceed Three feet and shall be a minimum of Schedule 80 grade.

Yes_____ NO_____

10. **ENGINE - AUXILIARY**

- 10.1 The engine shall be a four-cylinder, water-cooled, Kubota Diesel Industrial type diesel (or approved equal) having a minimum capacity of 157 cubic inches. The unit will have maximum DB rating of 76 at 7 meters. (Optional 4-Cylinder Air-Cooled Hatz Diesel for NO Additional Charge).

Yes_____ No_____

- 10.1.2 Engine shall be equipped with a Silent Pack Enclosure. Maximum 72 noise decibels. NON-Silent Engines without soundproof enclosures will not be accepted.

Yes_____ No_____

- 10.2 The following accessories shall be furnished:

- i) 12 Volt keyed ignition system with battery charging alternator and charging light,
- ii) Cable variable speed control throttle,
- iii) Centrifugal Governor,
- iv) Replaceable cartridge type oil filter.

Yes_____ No_____

- 10.3 Lubricating oil consumption shall be less than 0.75% of full load fuel consumption.

Yes_____ No_____

- 10.4 The engine shall have a minimum continuous rating of 84 hp at 3,000 rpm.

Yes_____ No_____

- 10.5 The engine fuel tank shall have a minimum capacity of 16 gallons.

Yes_____ No_____

- 10.6 Engine must have high temperature automatic shut down.

Yes_____ No_____

- 10.7 Fuel Tank shall be constructed of 16 Gauge Aluminum to prevent Rust and Corrosion.

Yes_____ No_____

11. **PAINTING**

- 11.1 All components of Jetting Unit shall be primed and Powder Coated White

Yes____ No____

11.2 The Frame shall be primed, powder coated, and painted black.

Yes____ No____

11.3 All screws, bolts shall be rust proof or stainless steel throughout entire unit.

Yes____ No____

11.4 Hose Reel shall be, primed, powder coated, and painted "Safety Red" for easy visibility

Yes____ No____

12. **TOOLBOX - STORAGE**

12.1.1 (2) toolboxes shall be located on each fender with a minimum of 24 cubic feet of storage at rear of machine. Toolboxes shall contain nozzle holders, and each shall measure no less than 72" L x 13" W x 16 ¼" H. (If NO, Specify Toolbox Storage Space)

Yes____ No____

12.2 Toolboxes shall be constructed of 16 Gauge Aluminum to prevent rust and corrosion

Yes____ No____

12.3 Battery must be mounted in toolbox and shall be completely enclosed.

Yes____ No____

13. **SAFETY EQUIPMENT**

13.1 Manhole floodlight and "Rotating" safety beacon are mounted on the unit.

Yes____ No____

13.2 Reflective, DOT safety tape will be mounted on rear and both sides of unit.

Yes____ No____

13.3 DOT Approved LED Lighting System and LED Side Markers to be provided on 4 Corners of trailer

Yes____ No____

14. **PULSATION SYSTEM**

14.1 The unit will feature an automatic pulsation system to induce an intermittent pulse into the hose so that it breaks the friction and allows the hose to travel long distances, negotiate multiple turns, and free hose when it becomes stuck in pipe.

Yes____ No____

14.2 The jet must be capable of climbing vertically 80 feet.

Yes____ No____

15 STANDARD EQUIPMENT (Included into total Price of Bid)

15.1 Two Stainless RPD drain jets in the following combinations:

- | | | |
|--|---------|--------|
| 1. 3 Rear, 1 Forward, Penetrator Nozzle, 15 degree | Yes____ | No____ |
| 2. 6 Rear, Flushing Nozzle, 35 degree | Yes____ | No____ |

15.2 Finned Nozzle Extension (Threaded) Yes____ No____

15.3 10 ft. Orange Leader Safety Hose - 14,000 psi minimum bursting pressure. Yes____ No____

15.4 3" Tiger Tail Hose Protector. Yes____ No____

15.5 Manufacturer to provide training on safety, operator use and maintenance. Min. of 1 day. Yes____ No____

15.6 Operations, Service manual and service DVD must accompany unit. Yes____ No____

15.7 500 ft. of 5/8" ID Hose, 16,000 PSI Bursting Pressure Yes____ No____

15.8 Hydraulic Speed Control Valve for Operator convenience with (10) Lockable Settings
Yes____ No____

15.8.1 Anti-Freeze Circulation System provided allowing the ENTIRE Water system to be Winterized with a Minimum of 16 Gallon Aluminum Storage Tank. (Front Mounted)
Yes____ No____

15.9 25 ft. Fill Hydrant Hose with Quick Connect Yes____ No____

15.10 Hardened Steel Tiger Tail Holder (Mounted) Yes____ No____

15.11 An Un-Loader "Relief" Valve shall be mounted to the pump and pre-set to the Maximum working pressure. In addition, a pressure relief Blow-Out Disc System Will be incorporated on the opposite side of the water pump, as a secondary Protection for the Pump.

Yes_____ No_____

15.12 10 Extra, 5000 PSI Pressure Discs

Yes_____ No_____

15.13 Electric Reel with 25 ft. ½" Hose for Gun (MOUNTED) Yes_____ No_____

15.14 3000 PSI Wash-Down Gun w/ o degree and Fan tip Nozzles

Yes_____ No_____

15.15 WH Warthog Nozzle by Stoneage Tools, Grease and Root Cutter for 6-24" Pipe (NO Exceptions)

Yes_____ No_____

15.16 Manhole Hook and Hydrant Wrench to accompany unit.

Yes_____ No_____

16. **OPTIONAL EQUIPMENT:**

16.1 Heavy Duty Vac-Pump with 20 ft. Discharge Hose, 72 GPM output Y__ N__

16.2 Arrow Board Directional Lighting Panel Y__ N__

16.3 SAS Sand & Sludge Nozzle for 8-24" Pipe w/ Extension Y__ N__

16.4 "Power Pullout" Hose Reel w/ 3 ft. Hydraulic Driven RAM Y__ N__

16.5 Upper Manhole Roller (Upstream Pulley Guide) Y__ N__

16.6 Upgrade to 750 Gallon, 14,000 lbs Trailer Y__ N__

Warranty

Unit Shall be equipped with a (1) One Year, Bumper to Bumper Warranty, including all components except for Specified Wear and Tear Items. Diesel Engine Shall have a (2) Two Year, 250 Hour Manufacturer's Warranty. High-Pressure Water Pump Shall have a (2) Year, 250 Hour Warranty on all "Hard" Parts. Water Tanks Shall have no less than a (5) year Warranty. Trailer Axles Shall have no less than a (5) Year Warranty.



Specifications - Industrial

Select a Model

DEBRIS BODY

☐ Yes ☐ No

Debris storage body has have a minimum usable liquid capacity of 16 cubic yards. The body is round for maximum strength and constructed of 3/16 inch Corten A steel for corrosion resistance.

Dump controls are located on curbside mid-ship of the unit, well forward of the dumping area for operator safety. A manual override system is provided in case of system failure.

The debris body has a five year warranty.

An internal polyethylene float device with external indicator is supplied to show when body is loaded to capacity.

An outlet box providing airflow passageways is mounted directly over the 14 inch diameter debris body outlet. These passageways are a minimum of 8 inch diameter each.

A sealing surface on this outlet box rests against an adjustable inlet box when in the full down position.

An 8 inch clean-out/inspection door is provided at the top of the outlet box for ease of cleaning and inspection.

An external liquid level indicator is provided as standard.

Individual rubber isolated cradles is mounted on each side of the debris body where it rest on the frame.

The dump angle is minimum of 50 degrees.

REAR DOOR

☐ Yes ☐ No

The rear door is constructed of 3/16 inch Corten A steel.

It opens to a full 90 degrees to the sealing flange, allowing a completely unobstructed dump path.

All hydraulic locking/unlocking and open/close functions are located at the operators control pane.

A positive locking/sealing mechanism is provided.

Method of locking is shimmable to allow for gasket wear.

WET AND DRY SINGLE MODE

☐ Yes ☐ No

Twin cyclonic baghouses are provided and are 3/16 inch steel .

The unitized design of these baghouses allows for easy removal for repairs or replacement.

Twenty-six pleated cartridge type filters are provided.

The baghouses are accessible from the topside of the unit and have individual lids for opening to expose the filters, plates, and reverse pulse/air cannon air tubes.

All baghouses have a conical shaped material collection area. Each has an 8 inch flange with an 8 inch easy opening butterfly valve.

The baghouse inlets are located as to provide a material capacity of .75 cubic yard or 145 gallons in each baghouse.

FINAL STRAINER

☐ Yes ☐ No

The final strainer is made of all 3/16 inch steel. It is flanged mounted with rubber gaskets at blower connection, and rubber isolators at frame mounting.

An 18 inch blower inlet access door is provided for ease of blower inspection and maintenance.

Vacuum relief valving is mounted into the final strainer .

The final strainer filtration system consists of a single bag and provides 99 percent filtration of particles less than 10 micron.

A lid is provided for ease of cleaning/removal of final filter.

TOP SIDE ACCESS

☐ Yes ☐ No

Access to baghouses, air passageways and final strainers is provided.

Catwalks are provided so the operator has a level working surface.

POSITIVE DISPLACEMENT BLOWER

☐ Yes ☐ No

The blower is a The blower is rated at C.F.M.'s.

All blower legs and flanges are rubber isolated mounted.

BLOWER DRIVE

☐ Yes ☐ No

The blower is driven by the truck engine via a Cushman or Cotta transfer case and PTO. This same transfer case is utilized to drive the hydraulic pump.

The blower drive system is engaged from the truck cab via air shifters mounted within easy reach of the operator.

OPERATORS CONTROL PANEL

☐ Yes ☐ No

The operator's control panel is mounted within easy reach from ground level and contains the following gauges/controls:

- Vacuum gauge
- Air pressure gauge
- Transfer case temperature gauge
- Digital tachometer
- Hourmeter
- Air pulse timer
- Circuit breakers
- All necessary warning and operation lights and indicators.

This panel is rubber isolated mounted, moisture and dust resistant.

A plexi-glass panel is supplied for viewing all gauges/lights while door is closed.

HYDRAULICS

☐ Yes ☐ No

All hydraulic functions are accomplished from a single location unless otherwise required for a selected option.

The hydraulic system will provide all capacities required for sufficient oil cooling and for any options which may be purchased at a later date.

ELECTRICAL

☐ Yes ☐ No

All electrical circuits are color coded and numbered for ease of maintenance.

All circuits are protected by appropriate re-settable circuit breakers, not fuses.

Proper wiring schematics are included in owners manual.

The vacuum manufacturers electrical circuitry supplies a circuit breaker system, independent of the chassis circuit breaker system.

VACUUM BREAKER

☐ Yes ☐ No

The vacuum breaker is operated via a toggle switch in the control panel. This is utilized to completely break vacuum for operator safety.

The vacuum breaker is able to operated at max. rpm.

MATERIAL RETURN

☐ Yes ☐ No

6 inch kanaflex hose runs from the bottom of each baghouse to the upper, rear of the debris tank. There is a 4 inch gate valve located on the bottom of each baghouse that opens and closes allowing air flow from the baghouse to the debris body, cleaning out the baghouse. Before the debris body, there is an 8 inch butterfly valve allowing air flow into the tank. Opening the valve on the bottom of the baghouse and the 6 inch butterfly valve cleans out each baghouse. This allows the operator to clean the baghouses while maintaining vacuum and without

ACCESSORIES

LIGHTING

PAINT

TRAINING AND MANUALS

MOUNTING

[illegible]



SPECIFICATIONS - COMBINATION SEWER CLEANER

Select a ModelSystem.InvalidCastException: Conversion from type 'DBNull' to type 'String' is not valid. at Microsoft.VisualBasic.CompilerServices.Conversions.ToString(Object Value) at ASP.speclongx_aspx.getQuote(Int32 qID, Int32 ID) in C:\HostingSpaces\ctsinc\vacconquotes.com\wwwroot\SpecLongx.aspx:line 122

COMPLY, Indicate: Yes or No

GENERAL

☐ Yes ☐ No

DEBRIS BODY

☐ Yes ☐ No

Debris storage body has a minimum usable liquid capacity of cubic yards. The debris body shall be round for maximum strength and constructed of 3/16 inch ASTM A242 Corten A steel for enhanced corrosion resistance.

There shall be a diameter liquid drain valve, "knife valve type" and screen weldment inside for removing excess liquids. Drain will have 10 feet of 6 inch lay flat hose.

A rear door safety prop shall be provided. For ease of maintenance there shall be no hydraulic components located inside the debris body or rear door.

The debris body has five (5) externally mounted door locks that lock hydraulically. One manual T bolt is installed for operator safety.

Dual steel weldments with stainless steel screen 8" x 28" each providing up to 1200 square inches of added filtration for the vacuum system shall be provided inside the debris tank. These weldments shall be removable and require no cutting or welding.

Dump controls are located on curbside mid-ship of the unit, well forward of the dumping area for operator safety. A manual override system is provided in case of system failure.

The debris body has a five year warranty. A copy of manufacturer's warranty statement shall be enclosed with bid. If pro-rated so state:_____

An internal polyethylene float device with external indicator is supplied to show when body is loaded to capacity.

AUTOMATIC

VACUUM

☐ Yes ☐ No

BREAKER

The automatic vacuum breaker assembly is located inside the body.

The automatic vacuum breaker assembly shall be controlled by an electric over hydraulic circuit. The entire system shall be replaceable via a bolt on assembly. The assembly shall consist of a 12" inlet and two 8" ports that provide air flow to the vacuum system.

A full indication activates an automatic vacuum breaker shut down system that completely shuts down 100 percent of the airflow to the vacuum system to prevent overfilling and wastewater discharge into the atmosphere.

The vacuum breaker system is automatically activated (closed) when the parking brake system is released to eliminate carryover during transit.

The system is controlled/activated, at the front hose reel control station. This enables the operator to pick up large debris with boom and place debris on the road surface. This system can be used for safety in the event suction must be shut off in case of an emergency.

☐ Yes ☐ No

The vacuum system shall operate independent of the high-pressure water system.
something else

A means of starting, stopping and varying the vacuum suction from operator station at the front of the machine is provided.

Unit must be capable of vacuuming under water without air induction. A manometer/vacuum test may be required to demonstrate the system performance.

The have a non-prorated warranty.

**VACUUM PICK
UP HOSE**

☐ Yes ☐ No

Shall be front loading, attached at the front of the machine in order to provide ease of positioning the machine over the manhole, as well as afford maximum safety for the operator.

The will be mounted on a boom that will provide a minimum of vertical lift utilizing dual hydraulic cylinder and 230 degree of boom rotation powered hydraulically for non-interrupted smooth movement. Boom to have a lift capacity of 500 lbs. at the front bumper.

The boom will be powered by an electric over hydraulic system: up/down by dual lift cylinders. The right/left movements shall be hydraulic via worm gear rotation.

A manual override system shall be provided for right/left, and up/down functions in case of system failure.

A manual override system shall be provided for right/left, and up/down functions in case of system failure.

A boom coverage chart shall be provided stating the square feet the boom covers.

8 inch diameter pipe extensions with clamps will be provided and carried on the truck as follows:

- 0 6-1/2' Catch Basin Nozzle
- 0 6' Aluminum Pipe Extension
- 0 5' Aluminum Pipe Extension
- 0 3' Aluminum Pipe Extension

WATER SUPPLY

☐ Yes ☐ No

The water tanks shall have a minimum usable capacity of U.S. gallons.

The water tanks shall be constructed of non-corrosive, non-metallic, durable, cross-linked polyethylene to eliminate rust, corrosion, and stress cracking.

The water tanks shall be mounted at and below the truck frame level to provide a low center of gravity for truck stability.

A 2-1/2 inch diameter x 25 feet long hydrant hose with hydrant wrench is supplied on the unit.

An anti-siphon fill device is installed on the unit.

Inspection ports shall be provided to fill or to add chemicals to the water system.

A sight gauge to indicate water level is located within sight of the operator station.

The water tanks are protected by a minimum of 11 gauge steel plating mounted below the water tanks for protection against road hazards when unit travels over the road, off the road or to land fills.

The water tanks carry a ten year replacement warranty.

AUXILARY

**ENGINE (WATER
PUMP DRIVE
ENGINE)**

☐ Yes ☐ No

The auxiliary engine used to drive the water pump is a liquid cooled, wastegate, turbo charged, after cooled, common rail, diesel powered, cylinder heavy-duty industrial engine.

The engine shall have a minimum cubic inch displacement of CID and rated at BHP at 2400 RPM. The engine shall contain integrated liners, one piece cast cylinder head and an electronic speed governor.

An electronic digital diagnostic and fault monitoring panel shall be mounted on the drivers side of the unit and be able to display various engine operation conditions including but not limited to engine rpm, hours, percentage engine load, coolant temperature, oil pressure, current and stored engine faults and current fuel consumption. A

standard integrated safety shutdown system will be provided in the engine ECU and will shut the engine down in the event of low oil pressure or excessive coolant temperature. The ignition system start stop switch will be located at the operator's station. The auxiliary engine shall be shrouded and have a hinged door on the driver's side of the unit. The engine oil dipstick, oil filter, fuel filters, and air filters are accessed from the ground level on the driver's side of the unit.

**HIGH-PRESSURE
WATER PUMP**

☐ Yes ☐ No

The high pressure water pump shall be rated to deliver smooth continuous pressure and flow through the entire flow range of the pump. The high pressure shall have smooth continuous flow for both the high pressure system and the hand gun system.

A continuous duty flow of g.p.m. and p.s.i shall be provided.

High-pressure relief valves are provided for both the high-pressure system and hand gun system.

The water pump operates independently of the vacuum system and is powered by the auxiliary engine via clutchless, direct dual powerband drive system.

The high-pressure water pump drive system carries a five year replacement warranty. Warranty excludes the drive engine, i.e. auxiliary engine.

The water pump is capable of running dry.

Controls for starting and stopping the water pump and to vary the flow and pressure shall be at the front hose reel operator's station.

The high-pressure water pump is equipped with a cold weather drain valve. The valve allows the operator to completely drain the high-pressure pump.

☐ Yes ☐ No

☐ Yes ☐ No

**MANHOLE
CLEANING
WATER SYSTEM
(HAND GUN)**

☐ Yes ☐ No

The high-pressure pump and independent water tank assembly supplied shall be used for manhole cleaning. A smooth continuous flow of 20 g.p.m. and pressure of 600 p.s.i. shall be provided for ease of operation. A hand gun pressure relief valve set at 600 p.s.i. shall be provided. One full functioning hand gun with on/off hand control, replaceable nozzle tip, 12 inch extension, adjustable spray will be provided.

The hand gun will attach to the system via a quick couple connection at the curbside of the unit. To avoid being coiled at the operator's station a hand gun holder will be provided at the front bumper.

**HYDRAULIC
SYSTEM AND
LUBRICATION**

☐ Yes ☐ No

The hydraulic system has a 55-gallon capacity.

The hydraulic system shall incorporate a main shut off valve in case of hydraulic failure.

The hydraulic system shall incorporate hydraulic pressure relief valves and pressure gauges for ease of trouble shooting and maintenance.

The unit is equipped on the passenger side, mid-section of the module, a permanent weatherproof white vinyl lubrication chart that points out lubrication points on the module and specifies what type of lubrication and hydraulic fluids are required. The chart also specifies the frequency of each lubrication point.

Remote plumbed grease fittings are provided for the vacuum compressor, boom rotation, and water pump drive areas.

☐ Yes ☐ No

A minimum twelve (12) month manufacturer's guarantee on the unit will be provided.

☐ Yes ☐ No

The entire module electrical system is vapor sealed to eliminate moisture damage.

All wiring is color-coded, labeled and run in sealed terminal enclosures.

All module circuits are protected by circuit breakers.

Clearance lights and reflectors are furnished in accordance with D.O.T. requirements.

☐ Yes ☐ No

Unit paint surface is shot blasted, primed and sanded prior to paint. Unit to be painted.

with DuPont Imron 5000 polyurethane paint.

Unit shall have reflective

Chassis shall be painted

☐ Yes ☐ No

Operator training will be conducted by a factory-trained representative for a minimum of one day at the time of delivery. 2 copy(ies) of the operating and maintenance manual for the sewer cleaner module shall be provided upon unit delivery. An operational video will be provided with the unit.

☐ Yes ☐ No

The unit described will be mounted on a truck chassis acceptable to the body manufacturer at the factory of the body manufacturer.

EXCEPTIONS AND DEVIATIONS:

Bidder shall fully explain every variance, exception, and or deviation to the bid specifications. Additional sheets/lines may be added if required.

[illegible]



SPECIFICATIONS - HIGH PRESSURE SEWER CLEANER

Select a ModelSystem.InvalidCastException: Conversion from type 'DBNull' to type 'String' is not valid. at Microsoft.VisualBasic.CompilerServices.Conversions.ToString(Object Value) at ASP.speclong_hs_aspx.getQuote(Int32 qID, Int32 ID) in C:\HostingSpaces\ctsinc\vacconquotes.com\wwwroot\SpecLong_HS.aspx:line 93

COMPLY, Indicate: Yes or No

GENERAL

☐ Yes ☐ No

WATER SUPPLY

☐ Yes ☐ No

The water tank has a usable capacity of U.S. gallons.

The water tank is constructed of to eliminate rust, corrosion, and stress cracking.

The water tank is mounted at the truck frame level to provide a low center of gravity for truck stability.

A 2-1/2 inch diameter x 25 feet long hydrant hose with hydrant wrench is supplied on the unit.

An anti-syphon fill device is installed on the unit.

Inspection port is provided to fill or to add chemicals to the water system.

A sight gauge to indicate water level is located within sight of the operator station.

The water tank has a twelve month replacement warranty.

WATER PUMP

☐ Yes ☐ No

DRIVE

The heavy-duty industrial diesel engine has a CID of a rated gross horsepower of bhp at 2500 rpm.

The engine is equipped with a counter balanced crankshaft, rubber-isolating mounts, automatic safety shut downs for low oil pressure and high water temperature, as well as an exhaust silencer.

All guages, auxiliary engine tachometer, oil pressure, water temperature, hour meter, and shut down system are located on the driver's side of the unit in a locable control panel. The auxiliary engine start and stop controls are at the hose reel operator station for safety and convenience. The shrouded auxiliary engine has a hinged driver's side door for the access to the engine. Oil checking is accomplished from ground level on driver's side of the unit.

HIGH-PRESSURE

☐ Yes ☐ No

WATER PUMP

The high pressure water pump is rated to deliver smooth continuous pressure and flow through the entire flow range of the pump.

A continuous duty flow of g.p.m. and p.s.i. is provided.

High-pressure relief valves are provided for both the high-pressure system and hand gun system.

The water pump is capable of running dry.

Controls for starting and stoping the water pump and to vary the flow and pressure shall be at the hose reel operator's station.

The high-pressure wate pump will be equipped with a cold weather drain valve. The valve allows operator to completely drain the high-pressure pump.

☐ Yes ☐ No

MANHOLE

☐ Yes ☐ No

**CLEANING
WATER SYSTEM
(HAND GUN)**

The high-pressure pump and independent water tank assembly supplied are used for manhole cleaning.

A smooth continuous flow of 20 g.p.m. and pressure of 600 p.s.i. is provided for ease of operation.

A hand gun pressure relief valve set at 600 p.s.i. is provided.

One full functioning hand gun with on/off hand control, replaceable nozzle tip, 12 inch extension, adjustable spray hand gun hose with quick disconnects is provided.

The hand gun attaches to the system via a quick couple connection at the curbside of the unit. To avoid being coiled at the operator's station a hand gun is provided at the bumper.

**HYDRAULIC
SYSTEM AND
LUBRICATION**

☐ Yes ☐ No

The hydraulic system has a 45-gallon capacity.

The hydraulic system incorporates a main shut off valve in case of hydraulic failure.

The hydraulic system incorporates hydraulic pressure relief valves and pressure gauges for ease of trouble shooting and maintenance.

The unit is equipped on the passenger side, mid-section of the module, a permanent weatherproof white vinyl lubrication chart.

The chart points out lubrication points on the module and specifies what type of lubrication and hydraulic fluids are required. The chart also specifies the frequency of each lubrication point.

Remote plumbed grease fittings are provided for the water pump drive areas.

ACCESSORIES

☐ Yes ☐ No

A minimum twelve (12) month manufacturer's guarantee on the unit will be provided.

LIGHTING

☐ Yes ☐ No

The entire module electrical system is vapor sealed to eliminate moisture damage.

All wiring is color-coded, labeled and run in sealed terminal enclosures.

All module circuits are protected by circuit breakers.

Clearance lights and reflectors are furnished in accordance with D.O.T. requirements.

PAINT

☐ Yes ☐ No

Unit paint surface is shot blasted, primed and sanded prior to paint.

Unit to be painted with DuPont Imron 5000 polyurethane paint.

Chassis shall be painted

**TRAINING AND
MANUALS**

☐ Yes ☐ No

Operator training to be conducted by a factory-trained representative for a minimum of one day at the time of delivery.

2 copy(ies) of the operating and maintenance manual for the sewer cleaner module shall be provided upon unit delivery.

An operational video will be provided with the unit.

**MOUNTING
AND DELIVERY**

☐ Yes ☐ No

The unit described is mounted on the truck chassis at the factory of the body manufacturer.

[illegible]



SPECIFICATIONS - COMBINATION SEWER CLEANER

Select a ModelSystem.InvalidCastException: Conversion from type 'DBNull' to type 'String' is not valid. at Microsoft.VisualBasic.CompilerServices.Conversions.ToString(Object Value) at ASP.speclong_sing_aspx.getQuote(Int32 qID, Int32 ID) in C:\HostingSpaces\ctsinc\vacconquotes.com\wwwroot\SpecLong_Sing.aspx:line 116

COMPLY, Indicate: Yes or No

GENERAL

☐ Yes ☐ No

DEBRIS BODY

☐ Yes ☐ No

Debris storage body has a minimum usable liquid capacity of cubic yards.

The body shall be round for maximum strength and constructed of 3/16 inch ASTM A242 Corten A steel for enhanced corrosion resistance.

The rear door shall be dished and flanged for maximum strength, full opening, hinged at the top with low profile and adjustable style hinges maintaining a 12" maximum overall height. There shall be a diameter liquid drain valve, and screen welment inside for removing excess liquids. Drain will have 10 feet of 6 inch layflat hose.

The rear door shall be supplied with a debris deflector shield located inside the debris tank that encompasses 75 percent of the rear door. The debris deflector shield shall deflect material from rear door and aid in draining off excess liquids. A rear door safety prop shall be provided.

For ease of maintenance there shall be no hydraulic components located inside the debris body or rear door.

The debris body has five (5) externally mounted door locks that lock hydraulically. One manual T bolt is installed for operator safety.

Dual steel weldments with stainless steel screen 8" x 28" each providing up to 1200 square inches of added filtration for the vacuum system shall be provided inside the debris tank. These weldments shall be removable and require no cutting or welding.

Dump controls are located on curbside mid-ship of the unit, well forward of the dumping area for operator safety. A manual override system is provided.

The debris body has a five year warranty. A copy of manufacturer's warranty statement shall be enclosed with bid. If pro-rated so state:

An internal polyethylene float device with external indicator is supplied to show when body is loaded to capacity.

AUTOMATIC

☐ Yes ☐ No

VACUUM

BREAKER

The automatic vacuum breaker assembly is located inside the body.

The automatic vacuum breaker assembly shall be controlled by an electric over hydraulic circuit. The entire system shall be replaceable via a bolt on assembly. The assembly shall consist of a 12" inlet and two 8" ports that provide air flow to the vacuum system.

A full indication activates an automatic vacuum breaker shut down system that completely shuts down the airflow to the vacuum system to prevent overfilling and wastewater discharge into the atmosphere.

The vacuum breaker system is automatically activated (closed) when the parking brake system is released to eliminate carryover during transit.

The system is controlled/activated, at the front hose reel control station. This enables the operator to pick up large debris with boom and place debris on the road surface. This system can be used for safety in the event suction must be shut off in case of an emergency.

☐ Yes ☐ No

The system is operated independent of the high-pressure water system.

The compressor is driven by the chassis engine via a closed loop hydrostatic system using a variable piston pump and motor. This system shall include a heat exchanger for extreme ambient conditions and to maintain the pump suction oil temp at 160 deg. F. max. The heat exchanger shall be protected by a 30-micron filter and cold weather by pass valve. Hydrostatic loop filtration shall be accomplished by a 10 Beta micron return filter and a 10-micron Absolute (no bypass) charge filter.

A means of starting, stopping and varying the vacuum suction from operator station at the front of the machine is provided. The system is capable of vacuuming under water without air induction. A manometer/vacuum test may be required to demonstrate the system performance.

The shall have a non-prorated warranty.

VACUUM PICK

☐ Yes ☐ No

UP HOSE

Shall be front loading, attached at the front of the machine in order to provide ease of positioning the machine over the manhole, as well as afford maximum safety for the operator. The boom will have will be mounted on a boom that will provide a minimum of verticle lift utilizing dual hydraulic cylinder and 230 degree of boom rotation powered hydraulically for non-interrupted smooth movement. Boom to have a lift capacity of 500 lbs. at the front bumper.

The boom will be powered by an electric over hydraulic system: up/down by dual lift cylinders. The right/left movements shall be hydraulic via worm gear rotation.

A manual override system shall be provided for right/left, and up/down functions in case of system failure.

A boom coverage chart shall be provided stating the square feet the boom covers.

8 inch diameter pipe extensions with clamps will be provided and carried on the truck as follows:

0 6-1/2' Catch Basin Nozzle

0 6' Aluminum Pipe Extension

0 5' Aluminum Pipe Extension

0 3' Aluminum Pipe Extension

WATER SUPPLY

☐ Yes ☐ No

The water tank shall have a minimum usable capacity of U.S. gallons.

The water tanks shall be constructed of non-corrosive, non-metallic, durable, cross-linked polyethylene to eliminate rust, corrosion, and stress cracking.

The water tanks shall be mounted at and below the truck frame level to provide a low center of gravity for truck stability.

A 2-1/2 inch diameter x 25 feet long hydrant hose with hydrant wrench is supplied on the unit.

An anti-syphon fill device is installed on the unit.

Inspection ports shall be provided to fill or to add chemicals to the water system.

A sight gauge to indicate water level is located within sight of the operator station.

The water tanks are protected by a minimum of 11 gauge steel plating mounted below the water tanks for protection against road hazards when unit travels over the road, off the road or to land fills.

The water tanks carry a ten year replacement warranty.

HIGH-

PRESSURE

☐ Yes ☐ No

WATER PUMP

The high pressure water pump shall be rated to deliver smooth continuous pressure and flow through the entire flow range of the pump. The high pressure shall have smooth continuous flow for both the high pressure system and the hand gun system.

A continuous duty flow of g.p.m. and p.s.i shall be provided.

High-pressure relief valves are provided for both the high-pressure system and hand gun system.

The water pump operates independently of the vacuum system and be powered by hydrostatics.

The water pump is capable of running dry.

Controls for starting and stopping the water pump and to vary the flow and pressure shall be at the front hose reel operator's station.

The high-pressure water pump is equipped with a cold weather drain valve. The valve allows the operator to completely drain the high-pressure pump.

☐ Yes ☐ No

☐ Yes ☐ No

**MANHOLE
CLEANING
WATER SYSTEM
(HAND GUN)**

☐ Yes ☐ No

The high-pressure pump and independent water tank assembly supplied shall be used for manhole cleaning.

A smooth continuous flow of 20 g.p.m. and pressure of 600 p.s.i. shall be provided for ease of operation.

A hand gun pressure relief valve set at 600 p.s.i. shall be provided.

One full functioning hand gun with on/off hand control, replaceable nozzle tip, 12 inch extension, adjustable spray will be provided.

The hand gun will attach to the system via a quick couple connection at the curbside of the unit. To avoid being coiled at the operator's station a hand gun holder will be provided at the front bumper.

**HYDRAULIC
SYSTEM AND
LUBRICATION**

☐ Yes ☐ No

The hydraulic system has a 55-gallon capacity.

The hydraulic system shall incorporate a main shut off valve in case of hydraulic failure.

The hydraulic system shall incorporate hydraulic pressure relief valves and pressure gauges for ease of trouble shooting and maintenance.

The unit is equipped on the passenger side, mid-section of the module, a permanent weatherproof white vinyl lubrication chart that points out lubrication points on the module and specifies what type of lubrication and hydraulic fluids are required. The chart also specifies the frequency of each lubrication point.

Remote plumbed grease fittings are provided for the vacuum compressor, boom rotation, and water pump drive areas.

ACCESSORIES

☐ Yes ☐ No

A minimum twelve (12) month manufacturer's guarantee on the unit will be provided.

LIGHTING

☐ Yes ☐ No

The entire module electrical system is vapor sealed to eliminate moisture damage.

All wiring is color-coded, labeled and run in sealed terminal enclosures.

All module circuits are protected by circuit breakers.

Clearance lights and reflectors are furnished in accordance with D.O.T. requirements.

PAINT

☐ Yes ☐ No

Chassis shall be painted

☐ Yes ☐ No

☐ Yes ☐ No

**EXCEPTIONS
AND
DEVIATIONS:**

This image shows a single sheet of white paper with horizontal blue ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.



Specifications - 3.5 CUBIC YARD COMBINATION MACHINE

System.InvalidCastException: Conversion from type 'DBNull' to type 'String' is not valid. at
Microsoft.VisualBasic.CompilerServices.Conversions.ToString(Object Value) at
ASP.speclong_3ydx_aspx.getQuote(Int32 qID, Int32 ID) in
C:\HostingSpaces\ctsinc\vacconquotes.com\wwwroot\SpecLong_3YDx.aspx:line 117

GENERAL

☐ Yes ☐ No

DEBRIS BODY

☐ Yes ☐ No

Debris storage body has a minimum usable liquid capacity of 3.5 cubic yards.

The body is round for maximum strength and constructed of 3/16 inch Corten steel for corrosion resistance.

There shall be a diameter liquid drain valve, and screen weldment inside for removing excess liquids. Drain will have 10 feet of 6 inch lay flat hose.

A rear door safety prop is provided.

A double acting power up/power down hydraulic scissors lift mechanism is provided to raise body to a minimum 60 degree angle. The scissors lift mechanism is designed to support a minimum of 24 inches of the debris tank width to provide stability and when dumping on uneven ground. The lift capacity of hydraulic scissors lift cylinder is 56,000 lbs.

Dump controls are located on the curbside mid-ship of the unit, well forward of the dumping area for operator safety.

The debris body has a five year warranty.

An internal polyethylene float device with external indicator is supplied to show when body is loaded to capacity.

BLOWER

☐ Yes ☐ No

The operates independent of the high-pressure water system and is powered by the truck engine by means of a direct drive hydrostatic pump off a transfer case.

A means of starting, stopping, and varying the vacuum suction from operator station at the front of the machine is provided.

System is capable of vacuuming under water without special attachments.

The has a warranty.

WATER SUPPLY

☐ Yes ☐ No

The water tank has a usable capacity of 500 U.S. gallons.

The water tanks are constructed of non-corrosive, non-metallic, durable, cross-linked polyethylene to eliminate rust, corrosion, and stress cracking

The water tanks are mounted at and below the truck frame level to provide a low center of gravity for truck stability.

A 2-1/2 inch diameter x 25 feet long hydrant hose with hydrant wrench is supplied on the unit.

An anti-syphon fill device is installed on the unit.

Inspection port is provided to fill or to add chemicals to the water system.

A sight gauge to indicate water level is located within sight of the operator station.

The water tanks are protected by a minimum of 11 gauge steel plating mounted below the water tanks for protection against road hazards when unit travels over the road, off the road or to land fills.

The water tanks carry a ten year replacement warranty.

**VACUUM PICK
UP HOSE**☐ Yes ☐ No

The boom is front loading, attached at the front of the machine in order to provide ease of positioning the machine over the manhole, as well as afford maximum safety for the operator.

The diameter hose is mounted on a boom that provides a minimum of 18 foot vertical lift utilizing dual hydraulic cylinders and 270 degree of boom rotation powered hydraulically by worm gear for non-interrupted smooth movement. Boom has a lift capacity of 500 lbs. at the front bumper.

A 5' x telescopic boom is supplied that telescopes a minimum of 5 feet straight forward from fully retracted position to provide greater work area in front of the vehicle.

The boom is powered by hydraulically: up/down by dual lift cylinders. The right/left movements are by hydraulic gear rotation.

Control of the boom is by means of a joystick control at the operator's station, requiring no cables at operator's feet for boom operation.

A manual override system shall be provided for right/left, and up/down functions in case of system failure.

Suction hose is transported on the front bumper.

diameter pipe extensions with clamps will be provided and carried on the truck as follows:

- 0 6-1/2' Catch Basin Nozzle
- 0 6' Aluminum Pipe Extension
- 0 5' Aluminum Pipe Extension
- 0 3' Aluminum Pipe Extension

**HIGH PRESSURE
WATER PUMP**☐ Yes ☐ No

A high pressure, continuous smooth flow triplex water pump is direct driven hydrostatically via chassis engine and operates independent of the vacuum system.

A continuous duty flow of g.p.m. and p.s.i. is provided.

High-pressure relief valves are provided for both the high-pressure system and hand gun system.

The water pump is capable of running dry.

Controls for starting and stopping the water pump and to vary the flow and pressure are at the front hose reel operator's station.

The high-pressure water pump is equipped with a cold weather drain valve. The valve allows the operator to completely drain the high-pressure pump.

**MANHOLE
CLEANING
WATER SYSTEM
(HAND GUN)**☐ Yes ☐ No

The high-pressure pump and independent water tank assembly supplied are used for manhole cleaning.

A smooth continuous flow of 20 g.p.m. and pressure of 600 p.s.i. is provided for ease of operation.

A hand gun pressure relief valve set at 600 p.s.i. is provided.

One full functioning hand gun with on/off hand control, replaceable nozzle tip, 12 inch extension, adjustable spray hand gun hose with quick disconnects is provided.

**HYDRAULIC
SYSTEM AND
LUBRICATION**☐ Yes ☐ No

The hydraulic system has a 45-gallon capacity.

The hydraulic system incorporates a main shut off valve in case of hydraulic failure.

The hydraulic system incorporates hydraulic pressure relief valves and pressure gauges for ease of trouble shooting and maintenance.

The unit is equipped on the passenger side, mid-section of the module, a permanent weatherproof white vinyl lubrication chart.

The chart points out lubrication points on the module and specifies what type of lubrication and hydraulic fluids are required. The chart also specifies the frequency of each lubrication point.

Remote plumbed grease fittings are provided for the water pump drive areas.

**HYDROSTATIC
SYSTEM**

☐ Yes ☐ No

The system is a closed loop system consisting of (1) filter (10 micron), two (2) hydrostatic pumps and motors and an air to oil heat exchanger. The heat exchanger is capable of flow from 4-80 g.p.m. and is equipped with a 25 p.s.i. full flow check valve for cold weather start up. The heat exchanger keeps oil at 110 - 160 degrees F. operating range at 90 degrees F ambient temperature.

ACCESSORIES

☐ Yes ☐ No

A minimum twelve (12) month manufacturer's guarantee on the unit will be provided.

LIGHTING

☐ Yes ☐ No

The entire module electrical system is vapor sealed to eliminate moisture damage.

All wiring is color-coded, labeled and run in sealed terminal enclosures.

All module circuits are protected by circuit breakers.

Clearance lights and reflectors are furnished in accordance with D.O.T. requirements.

PAINT

☐ Yes ☐ No

Unit to be painted with DuPont Imron 5000 polyurethane paint.

Unit has reflective boom and side stripes, and rear chevrons.

Chassis shall be painted

**TRAINING AND
MANUALS**

☐ Yes ☐ No

Operator training will be conducted by a factory-trained representative for a minimum of one day at the time of delivery. 2 copy(ies) of the operating and maintenance manual for the sewer cleaner module shall be provided upon unit delivery. An operational video will be provided with the unit.

**MOUNTING
AND DELIVERY**

☐ Yes ☐ No

The unit described will be mounted on a truck chassis acceptable to the body manufacturer at the factory of the body manufacturer.



SPECIFICATIONS - HYDROEXCAVATOR

Select a ModelSystem.InvalidCastException: Conversion from type 'DBNull' to type 'String' is not valid. at Microsoft.VisualBasic.CompilerServices.Conversions.ToString(Object Value) at ASP.slong_xcavatorx_aspx.getQuote(Int32 qID, Int32 ID) in C:\HostingSpaces\ctsinc\vacconquotes.com\wwwroot\Slong_Xcavatorx.aspx:line 100

GENERAL

☐ Yes ☐ No

The machine uses high pressure water and vacuum to exavate varying type of soil -- commonly used for daylighting, slot-trenching, potholing and fiber-optic lines, cables or utility pipe location as well as removing sand, grit, grease, sludge, stones and other material from catch basins, pumping stations and other facilities.

The machine has a high pressure water system and a self-contained water supply.

The machine has an air conveying system capable of excavating soil and/or removing debris from catch basins, sumps, digesters & wet wells and includes a sealed body for storage and removal of the collected debris.

The machine is capable of being operated by one man, with all operating controls located at the front of the machine for operator safety.

DEBRIS BODY

☐ Yes ☐ No

Debris storage body has have a minimum usable liquid capacity of cubic yards. The body is round for maximum strength and constructed of 3/16 inch Corten A steel for corrosion resistance.

There shall be a diameter liquid drain for removing excess liquids. The drain to have a valve installed at the opening. Drain will have 10 feet of 6 inch layflat hose.

Dump controls are located on curbside mid-ship of the unit, well forward of the dumping area for operator safety. A manual override system is provided in case of system failure.

The debris body has a five year warranty.

An internal polyethylene float device with external indicator is supplied to show when body is loaded to capacity.

AUTOMATIC

VACUUM BREAKER

☐ Yes ☐ No

The automatic vacuum breaker assembly is located inside the body.

A full indication activates an automatic vacuum breaker shut down system that completely shuts down 100 percent of the airflow to the vacuum system to prevent overfilling and wastewater discharge into the atmosphere.

The vacuum breaker system is automatically activated (closed) when the parking brake system is released to eliminate carryover during transit.

The system is controlled/activated, at the front hose reel control station. This enables the operator to pick up large debris with boom and place debris on the road surface. This system can be used for safety in the event suction must be shut off in case of an emergency.

☐ Yes ☐ No

The is operated independent of the high-pressure water system.

The vacuum system operates independent of the high-pressure water system and is powered by the truck engine via hydrostatics. The vacuum drive is a closed loop hydrostatic system using a variable piston pump and motor.

This system includes a heat exchanger for extreme ambient conditions and to maintain the pump suction oil temp at 160 degrees F. max. The heat exchanger is protected by a 30-micron filter and cold weather bypass valve. Hydrostatic loop filtration is accomplished by a 10 Beta micron return filter and a 10 micron Absolute (no bypass) charge filter.

A cyclone separator system is also be provided.

A means of starting, stopping and varying the vacuum suction from operator station at the front of the machine is provided. The system is capable of vacuuming under water without special attachments.

The shall have a non-prorated warranty.

VACUUM PICK UP

☐ Yes ☐ No

HOSE

Is front loading, attached at the front of the machine in order to provide ease of positioning the machine over the manhole, as well as afford maximum safety for the operator.

The 8 inch diameter hose is mounted on a boom that provides a minimum of 18 feet of vertical lift and 270 degree of boom rotation. The boom is powered hydraulically for non-interrupted smooth movement. Boom to have a lift capacity of 500 lbs. at the front bumper.

The boom will be powered by an electric over hydraulic system: up/down by dual lift cylinders. The in/out, up/down are hydraulically powered.

The boom telescopes a minimum of 10 feet forward from the front of the operator's station. The height of the pick up hose does not change while the boom is being telescoped.

A manual override system shall be provided for right/left, and up/down functions in case of system failure.

A boom coverage chart shall be provided.

8" diameter pipe extensions with clamps will be provided and carried on the truck as follows:

0 6-1/2' Catch Basin Nozzle

0 6' Aluminum Pipe Extension

0 5' Aluminum Pipe Extension

0 3' Aluminum Pipe Extension

WATER SUPPLY

☐ Yes ☐ No

The water tank has a minimum usable capacity of U.S. gallons.

The water tanks are constructed of non-corrosive, non-metallic, durable, cross-linked polyethylene to eliminate rust, corrosion, and stress cracking.

The water tanks are mounted at and below the truck frame level to provide a low center of gravity for truck stability.

A 2-1/2 inch diameter x 25 feet long hydrant hose with hydrant wrench is supplied on the unit.

An anti-syphon fill device is installed on the unit.

Inspection ports shall be provided to fill or to add chemicals to the water system.

A sight gauge to indicate water level is located within sight of the operator station.

The water tanks are protected by a minimum of 11 gauge steel plating mounted below the water tanks for protection against road hazards when unit travels over the road, off the road or to land fills.

The water tanks carry a ten year replacement warranty.

HIGH-PRESSURE

WATER PUMP FOR HYDROEXCAVATING SYSTEM

☐ Yes ☐ No

The high pressure water pump is rated to deliversmooth continuous pressure and flow through the entire flow range of the pump.

A continuous duty flow of g.p.m. and p.s.i. is provided.

High-pressure relief valves are provided for both the high-pressure system and hand gun system.

The water pump operates independently of the vacuum system and is powered hydraulically.

The water pump is capable of running dry.

Controls for starting and stopping the water pump and to vary the flow and pressure are at the front hose reel

operator's station.

The water pump is equipped with a cold weather drain valve. The valve allows operator to completely drain the high-pressure pump.

MANHOLE CLEANING

WATER SYSTEM

☐ Yes ☐ No

(HAND GUN)

The high-pressure pump and independent water tank assembly supplied shall be used for manhole cleaning.

A smooth continuous flow of 10 g.p.m. and pressure of 600 p.s.i. shall be provided for ease of operation.

A hand gun pressure relief valve set at 600 p.s.i. shall be provided.

One full functioning hand gun with on/off hand control, replaceable nozzle tip, 12 inch extension, adjustable spray will be provided.

The hand gun will attach to the system via a quick couple connection.

HYDRAULIC SYSTEM

☐ Yes ☐ No

AND LUBRICATION

The hydraulic system has a 45-gallon capacity.

The hydraulic system incorporates a main shut off valve in case of hydraulic failure.

The hydraulic system incorporates hydraulic pressure relief valves and pressure gauges for ease of trouble shooting and maintenance.

The unit is equipped on the passenger side, mid-section of the module, a permanent weatherproof white vinyl lubrication chart that points out lubrication points on the module and specifies what type of lubrication and hydraulic fluids are required. The chart also specifies the frequency of each lubrication point.

Remote plumbed grease fittings are provided for the vacuum compressor, boom rotation.

ACCESSORIES

☐ Yes ☐ No

A minimum twelve (12) month manufacturer's guarantee on the unit will be provided.

LIGHTING

☐ Yes ☐ No

The entire module electrical system is vapor sealed to eliminate moisture damage.

All wiring is color-coded, labeled and run in sealed terminal enclosures.

All module circuits are protected by circuit breakers.

Clearance lights and reflectors are furnished in accordance with D.O.T. requirements.

PAINT

☐ Yes ☐ No

Unit paint surface is shot blasted, primed and sanded prior to paint. Unit to be painted.

with DuPont Imron 5000 polyurethane paint.

Unit shall have reflective

Chassis shall be painted

TRAINING AND

MANUALS

☐ Yes ☐ No

Operator training will be conducted by a factory-trained representative for a minimum of one day at the time of delivery. 2 copy(ies) of the operating and maintenance manual for the sewer cleaner module shall be provided upon unit delivery. An operational video will be provided with the unit.

MOUNTING AND

DELIVERY

☐ Yes ☐ No

The unit described will be mounted on a truck chassis acceptable to the body manufacturer at the factory of the body manufacturer.
