



**Water Authority of the Cayman Islands**

**Purchase of one (1) new 2018 Model  
Heavy Duty Combination Sewer Cleaner**

**PLEASE READ THIS IMPORTANT NOTE**

The Tender Documents for the above project can be obtained from the Engineering Services Department, Water Authority, 13G Red Gate Road, George Town.

The Tender Documents can also be downloaded directly from the Water Authority's website at [www.waterauthority.ky](http://www.waterauthority.ky) or from the Central Tenders Committee's website at [www.centraltenders.gov.ky](http://www.centraltenders.gov.ky)

All companies who obtain a set of the Tender Documents from either one of the above websites must immediately acknowledge receipt of these documents by sending an e-mail to [ContractReview@waterauthority.ky](mailto:ContractReview@waterauthority.ky) and include the company name, company physical address and contact e-mail address.

This acknowledgement is essential in order to be able to provide potential tenderers with Tender Addenda when issued.

For additional information contact us at [ContractReview@waterauthority.ky](mailto:ContractReview@waterauthority.ky) .



**Water Authority of the Cayman Islands**

**Purchase of  
one (1) new 2018 Model  
Heavy Duty Combination Sewer Cleaner**

**CTC/2018/WAC/002**

**Tender Documents**

10 January 2018

### Brief Description of the Works

The Water Authority of the Cayman Islands is requesting proposals for the purchase of one (1) new double engine combination sewer cleaner, capable of removing stones, grit, grease, sludge and other debris from sanitary sewer lines and/or manhole structures using a front mounted operating station.

The unit shall consist of a vacuum system, a high-pressure water pump, an 11-cubic yard capacity stainless-steel debris tank, and a self-contained water supply as the source for the water pump system. The unit shall have the capability of operating the vacuum and water systems independently.

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## Instructions for Tendering

### Introduction

1. These Instructions are to be used as a guide to Tendering for this contract. Failure to comply with these Instructions may result in the rejection of the Tender.

### Eligibility Criteria

2. Tenderers shall meet the following eligibility criteria in order to be considered and evaluated:
  - a. Companies must have the ability and capacity to provide the equipment within the time specified.
  - b. Companies must have the ability to provide future maintenance, repair parts and services.
  - c. Companies must provide references that will confirm the company's performance and quality on five completed projects covering the provision of combination sewer cleaners of sizes similar to that contained in this contract.

### Relevant Documents

3. Tenderers shall study all the "Tender Documents" comprising Instructions for Tendering, General Provisions, Tender Form (comprising Offer and Acceptance), Form of Bond and Specification. The whole of the Tender Documents shall be read and their true intent and meaning ascertained before submitting a Tender.
4. Except in so far as may be directed by the Water Authority in writing neither the Water Authority, nor any agent or servant in their employment has any authority to make any representation or explanation to Tenderers as to the meaning of these Tender Documents, or as to anything to be done or not to be done, or as to these instructions, or as to any other thing or matter, so as to bind the Water Authority as to the execution of these proposals.
5. Should any alteration or addition to the Tender Documents be deemed necessary prior to the date for submission of Tenders, these shall be issued by e-mail by the Deputy Director of the Water Authority to Tenderers in the form of a Tender Addendum.

If a Tenderer is in doubt about the meaning of any item in the Tender Documents, or if a Tenderer has any questions regarding the equipment specifications he shall notify the Water Authority by e-mail not later than 14 days before the due date for tender submission (sent to [ContractReview@waterauthority.ky](mailto:ContractReview@waterauthority.ky)).

The Deputy Director of the Water Authority shall then issue to **all** Tenderers an **explanation and/or a correction** in the form of a Tender Addendum.

Each Tender Addendum shall have a serial number and Tenderers shall acknowledge receipt of each Tender Addendum by e-mail to [ContractReview@waterauthority.ky](mailto:ContractReview@waterauthority.ky) Failure to acknowledge may result in a Tender being rejected. All Tender Addenda so issued become a part of the Tender Documents.

6. The Contract shall be carried out on a Lump Sum basis and no adjustment shall be made to any amounts payable by the Water Authority as a consequence of any variations in the cost of labour, plant, materials or transport.
7. Tenderers shall treat the Tender Documents and all details contained therein as private and confidential.

### Price to be Entered

8. The price inserted in the Tender Form shall be the full inclusive value of the equipment to be supplied F.O. B. Miami (see address below), in accordance with the Specification as completed by the Tenderer, together with all general risks, liabilities and obligations set forth or implied in the documents on which the tender is based, and including all allowances for overhead and profit. (Note: The price shall be deemed to include any special

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packing and preparation, such as is required to prevent any damage to, or deterioration of, the equipment during transit).

The price inserted on the Tender Form shall include for shipment of the equipment to the Water Authority's freight forwarder in Miami, FL:

Seaboard Marine  
8050 NW 79th Avenue  
Miami, FL 33166

Tel: 305 863 4741 / 4444  
Fax: 305 863 4788 / 4750

Attn: Elizabeth Sale-Chin  
Email: elizabeth\_sale-chin@seaboardmarine.com

### Preparing Tender

9. Contractors who submit a Tender shall be held to have thoroughly reviewed the Tender Documents and shall be held to have fully informed and satisfied themselves as to the nature and extent of this contract.
10. The Tender Form shall be signed by a person or persons legally authorized to bind Tenderer to the Contract. The individuals signing each document shall warrant that they are authorized to bind the Tenderer.
11. The Water Authority shall not be responsible for any costs or expenses incurred in the preparation and submission of the Tender.

### Return of Tenders

12. Tenderers shall be supplied with an electronic copy of the Tender Documents.

One full copy of the Tender Documents, which for the purpose of identification shall have each page signed by the Tenderer, shall be duly completed, and sealed in an envelope. On the outside of the envelope or courier box the tender # (CTC/2018/WAC/002) and title ("Purchase of Heavy Duty Combination Sewer Cleaner") shall be clearly written as the first lines of the address.

The tenders are to be returned no later than 12:00 pm (noon) on Wednesday 7 February 2018 in a sealed envelope to:

The Secretary of the Central Tenders Committee  
Treasury Department, Government Administration Building  
133 Elgin Avenue, George Town  
Grand Cayman KY1-9000

13. Only tenders received on time will be accepted. Faxed or electronic (e-mailed) tenders shall not be accepted. Tenders may be delivered by courier service but the Water Authority shall not be responsible for the failure of any courier service to deliver on time and any such late tender shall not be accepted.
14. The opening of the sealed offers by the Central Tenders Committee will take place on Wednesday 7 February 2018.
15. All entries and signatures shall be in indelible ink. No tender may be altered or amended after having been opened.

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**Information to be submitted by the Tenderer**

16. The Tenderer shall submit with his tender descriptive literature, brochures, catalogs, drawings, photos, references and other information which will be used to evaluate and award the tender. This information will become property of the Water Authority for the official records.
17. The Water Authority shall not be seen to have approved all or any part of the information submitted by the Tenderer unless the Tenderer is so notified in writing.

**Award of Contract**

18. Tender Evaluation Criteria: Although competitive pricing is essential in the award of this Tenderer, consideration shall also be given to:
  1. The ability of the Tenderer to comply with the Specifications set forth herein.
  2. The quality and performance of the equipment to be provided by the Tenderer;
  3. The ability of the Tenderer to provide future maintenance, repair parts and services for the equipment provided;
  4. The capacity of the Tenderer to perform the contract within the time specified, without delay.
19. All requirements identified in the Tender Documents must be satisfied in order to ensure that a Tender will qualify for consideration. Certain elements of the Tender are mandatory, the submission of these will determine whether a Tender is "compliant or not", failure to submit any mandatory items will result in a "failed" Tender and will not be assessed further. The mandatory items (Pass or Fail) are:
  1. Completed Tender Form (Offer on page 9)
  2. Acknowledgement of receipt of Tender Addenda (if any).
  3. Completed Specification, with noted exceptions/variations etc. (see pages 11 through 19)
  4. Company Information (i.e., experience, references, etc.).
  5. Warranty Form(s).
  6. Other required information (see Items 2 and 15 of these Instructions).
  7. A copy of the e-mail sent to [ContractReview@waterauthority.ky](mailto:ContractReview@waterauthority.ky) acknowledging receipt of the Tender Documents in order to be a registered potential Tenderer (\*).

Note\*: This only applies to those Tenderers who downloaded the Tender Documents directly from the Water Authority's website or the Cayman Islands Central Tender Committee's website.

20. The contract to purchase will be awarded to the most responsible, responsive tenderer whose submission, in the Water Authority's sole and absolute judgment, will best serve the interest of the Water Authority price and other factors considered, such as quality of equipment, conformity of the specifications and warranty.
21. The Water Authority reserves the right to waive any informality or minor defect in the tender and clarify any terms with the concurrence of the Tenderer; however, any substantial non-conformity in the offer, as determined by the Water Authority, shall be deemed non-responsive and the offer shall be rejected.
22. The Water Authority shall not be bound to accept the lowest or any of the Tenders. The Water Authority reserves its right to reject any or all Tenders, including without limitation the right to reject any or all non-conforming, non-responsive, unbalanced or conditional Tenders, and to reject the Tender of any Tenderer if the Water Authority believes that it would not be in its best interest to make an award to that Tenderer, whether because the Tender is not responsive or fails to meet any other pertinent standard or criteria established by Water Authority.
23. The Water Authority will give the Successful Tenderer a Letter of Acceptance within sixty (60) days after the Tender Opening.

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## General Provisions

### Qualification of Tenderer

1. The Water Authority may make such investigation as it deems necessary to determine the ability of the Tenderer to provide the services requested herein, and the Tenderer shall furnish to the Water Authority all information and data for this purpose as the Water Authority may request. The Water Authority reserves the right to reject any Tender should the evidence submitted by, or investigation of, the Tenderer fail to satisfy the Water Authority that such Tenderer is properly qualified to carry out the obligations of the Tender and to complete the requirements contemplated therein.

### Governing Law and Venue

2. This Tender, or any contract that may result from the award of this Tender, shall be deemed to be made under, and shall be governed by and construed in accordance with, the laws of the Cayman Islands. Any action brought to enforce the terms, or provision of this Tender or any contract that may result from the award of this Tender, shall have venue in the Cayman Islands

Unless settled amicably, any dispute or difference which arises between the Successful Tenderer (hereinafter referred to as the "Contractor") and the Water Authority out of or in connection with the Contract shall be settled by arbitration in accordance with the Cayman Islands Arbitration Law, 2012.

### Liabilities

3. The Contractor shall hold the Water Authority harmless from liability of any nature or kind because of use of any copyrighted, or un-copyrighted composition, secret process, patented or unpatented invention, articles or appliances furnished or used under this contract, and agrees to defend, at its own expense, any and all actions brought against the Water Authority or Contractor because of the unauthorized use of such items. For purposes of this document, "Water Authority" and "Contractor" includes their employees, officials, agents and representatives

### Warranty

4. Manufacturer shall fully warrant all materials and equipment furnished under the terms of this Tender against poor and inferior quality. While under warranty, manufacturer shall repair or replace inoperable materials or equipment in a timely manner to minimize the disruption of the Water Authority's operations. A copy or description of the manufacturer's warranty shall accompany each tender for the equipment proposed, detailing the scope and length of the warranty. Where the Contractor is also the manufacturer of the equipment provided under this Tender, the Manufacturer's Warranty requirement will supersede the successful Tenderer's warranty requirement of this Tender.

The warranty or warranties shall commence upon delivery of the equipment to the Water Authority's premises and acceptance by the Water Authority.

### Delivery and Inspection

5. The equipment shall be delivered to the Water Authority's premises located at 13G Red Gate Road, Grand Cayman, Cayman Islands.

(NOTE: The shipment must be consigned to the Water Authority – Cayman, and all Customs Importation Forms must be stamped and signed by the Water Authority to avoid import duties being levied).

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Prior to receiving, the equipment shall be inspected by the Water Authority to ensure that it meets the specifications. The equipment must be completely assembled, ready to operate, serviced with full tanks of fuel in truck engine and auxiliary engine by Contractor before delivery.

### Time for Delivery

6. The number of days for delivery of the equipment, calculated from the date the Agreement comes into effect, shall be 168 calendar days, or 24 weeks ("the period for completion").
7. If the Contractor fails to deliver the equipment to the Water Authority's facilities within the aforementioned time specified he will be subject to a penalty of US\$ 500.00 for each calendar day after the expiration of the period for completion until delivery is made. If in the opinion of the Water Authority the work has been delayed owing to exceptional circumstances, the Owner may extend the time for completion as it may consider fair and reasonable. (Exceptional circumstances being circumstances that were not foreseeable or could not have been avoided by taking reasonable precautions).

### Payment

8. Unless otherwise agreed between the Contractor and the Water Authority, the Water Authority shall establish an irrevocable international Letter of Credit in the favour of the Contractor at the value of the Tender Total. This Letter of Credit shall be opened at the counter of a bank to be named by the Contractor and shall be payable at sight upon presentation of the relevant documents. The Contractor shall copy all documents to the Water Authority at the time they are presented at the bank.

Payments shall be made as follows:

- (a) 25% of the value of the Tender Total as an advance payment within 14 days after the Contractor has furnished to the Water Authority an irrevocable letter of guarantee from a guarantor or surety acceptable to the Water Authority with a value equivalent to the advance payment. (Note: An acceptable Form of Bond is included in these Tender Documents, see page 10. The Bond shall enable the advance payment to be released).
- (b) 65% of the value of the Tender Total after presentation of invoices, On-Board Bill of Lading, All Risk Insurance including proof of payment, and freight charges including proof of payment (\*).

(\*). As per the Instructions for Tendering the price inserted in the Tender Form is the full inclusive value of the equipment to be supplied F.O. B. Miami, FL.

However, as per Item 5 above the Contractor is responsible to arrange delivery of the equipment to the Owner's premises located at 13G Red Gate Road, Grand Cayman, Cayman Islands. Therefore, in addition to the payment of the Tender Total, the Contractor will be reimbursed the actual cost of shipping the equipment from Miami to the Water Authority's premises in Grand Cayman (see item 8(c) below).

The cost of shipping shall include All Risk insurance, freight, harbour and port dues, wharfage, landing, pilotage, and double handling. Delivery, demurrage charges, unloading of the materials at the Employer's premises and all other costs incurred in Grand Cayman shall also be included in this item. All shipping cost items from Miami, FL shall be substantiated by invoices and proof of payment.

- (c) The remaining 10% shall be paid on the presentation of a letter from the Water Authority to the Contractor confirming that (i) the Contractor has delivered the equipment to the Water Authority's facilities and (ii) the equipment fully meets the agreed specifications and has successfully met the requirements of the Contract.

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**Tender Form**

**Offer**

The undersigned ("Contractor") offers to furnish and deliver to the Water Authority of the Cayman Islands ("Owner"), in accordance with the terms and conditions, requirements and specifications set forth in the Tender Documents

**one (1) New 2018 Model Heavy Duty Combination Sewer Cleaner Truck**

MANUFACTURER: \_\_\_\_\_

MODEL NO.: \_\_\_\_\_

for the sum of

\_\_\_\_\_ United States Dollars (in words)

\_\_\_\_\_ US\$ (in figures)

or such other sum as may be ascertained under the Contract.

The Contractor hereby certifies that he/she is an authorized representative of the company listed, and that he/she has the authority to sign on behalf of the company and assures that all statements made in the Tender are true.

The Contractor understands that the Owner is not bound to accept the lowest or any offer received for the Works.

This offer may be accepted by the Owner by returning one completed copy of this document (i.e., with signed Acceptance page) to the Contractor on or before Friday 6 April 2018, which will form a contract between the two parties.

Signature of Authorized Official: \_\_\_\_\_ Date: \_\_\_\_\_

Name of Authorized Official: \_\_\_\_\_

Capacity of Authorized Official: \_\_\_\_\_

Name of Company: \_\_\_\_\_

Business Address: \_\_\_\_\_

Telephone No.: \_\_\_\_\_ E-Mail Address: \_\_\_\_\_

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**Acceptance**

The Owner has, by signing below, accepted the Contractor's offer and agrees that in consideration for the execution of the Works by the Contractor, the Owner shall pay the Contractor in accordance with the Contract. This Agreement comes into effect on the date when the Contractor receives one original of this document signed by the Owner.

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Name: \_\_\_\_\_

Authorized to sign on behalf of:

Capacity: \_\_\_\_\_

Water Authority of the Cayman Islands

In the presence of:

Name: \_\_\_\_\_

Capacity: \_\_\_\_\_

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**Form of Bond**

**BY THIS BOND** We \_\_\_\_\_  
 (hereinafter called "the Contractor") and \_\_\_\_\_  
 whose registered office is at \_\_\_\_\_  
 (hereinafter called "the Surety"), are held and firmly bound unto the Water Authority of the Cayman Islands (hereinafter called "the Owner") in the sum of \_\_\_\_\_  
 United States Dollars ( US\$ \_\_\_\_\_ ) **(enter sum in words and figures)** payable on demand for the payment of which sum the Contractor and the Surety bind themselves, their successors and assigns jointly and severally by these present.

Sealed with our respective seals and dated this \_\_\_\_\_ day of \_\_\_\_\_ 2018.

**WHEREAS**

The Contractor and the Owner have entered into a Contract dated \_\_\_\_\_ 2018 for the former to supply a **one (1) New 2018 Model Heavy Duty Combination Sewer Cleaner Truck** (hereinafter called "the Equipment") and the latter has agreed to pay for the Equipment

The Employer has paid the Contractor the sum of US\$ \_\_\_\_\_ as an advance payment against the supply of the Equipment being supplied under the Contract.

**NOW THE CONDITIONS** of the above-written Bond are such that

if the Contractor fails to supply the Equipment in good condition to the Cayman Islands then the Owner shall be entitled to claim the total amount of this Bond and the Surety shall make payment on the Owner's demand; or  
 if the Contractor supplies the Equipment in good condition to the Cayman Islands then this obligation shall be null and void;

otherwise this Bond shall be and remain in full force and effect but no alteration in the terms of the said Contract nor any forbearance of forgiveness in or in respect of any matter or thing concerning the said Contract on the part of the Owner shall in any way release the Surety from any liability under the above-written Bond.

Signed and Sealed by \_\_\_\_\_ (Contractor)

in the presence of \_\_\_\_\_

Signed and Sealed by \_\_\_\_\_ (Surety)

in the presence of \_\_\_\_\_

\_\_\_\_\_  
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**Specification**

Purpose

The specification provided herein is not intended to be restrictive and is presented as representative of the type, quality, and quantity of goods sought. Tenderers are encouraged to submit proposals for truck combinations that closely meet or exceed the intent of the specification. All proposals will be considered.

Specification Compliance

The Tenderer shall note their compliance on each line by placing a checkmark in the box indicating either: compliance in the Yes column, or non-compliance in the No column. Each line item in the specification requires checking either the Yes or No box. **Any line item in the specification left blank shall be considered a non-responsive Tender and will be rejected.**

All deviations from, and variances and exceptions to, the specification, or where submitted literature does not fully support the meeting of the specification, shall be clearly cited and explained by the Tenderer.

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## SPECIFICATIONS - COMBINATION SEWER CLEANER

**Specification Compliance Indicate: Yes or No**

**(Note: Each specification line item requires checking either the Yes or No box)**

YES	NO	1.0	GENERAL
		1.1	The Heavy Duty Combination Sewer Cleaner Truck (hereinafter referred to as "the Equipment") shall be capable of removing stones, grit, grease, sludge and other debris from sanitary sewer and/or storm drain lines by the flushing action of high-pressure water. The high pressure sewer cleaner shall operate independently of the vacuum system and the vacuum system shall operate independently of the high pressure sewer cleaner
		1.2	The Equipment shall include an air conveying vacuum system to provide for the simultaneous removal of the debris flushed to the manhole by the high-pressure water system or for the removal of debris from sewers, sumps, catch basins, digesters, wet wells, bar screens, etc.
		1.3	The Equipment shall be capable of being operated by one man, with all operating controls for high-pressure water pump, hose reel, and vacuum, located at the front of the machine for safety.
		1.4	The Equipment supplied shall be the manufacturer's current production model and shall be provided with all of the standard gear and equipment as specified in the manufacturer's printed literature. In addition, the Equipment shall include the gear and equipment as per the attached specifications.
YES	NO	2.0	DEBRIS BODY
		2.1	Debris storage body shall have a minimum usable liquid capacity of 11 cubic yards. The debris body shall be round for maximum strength and constructed of 304 Stainless Steel for enhanced corrosion resistance.
		2.2	The rear door shall be dished and flanged for maximum strength, full opening, hinged at the top with low profile and adjustable style hinges.
		2.3	There shall be a minimum 5" diameter liquid drain valve, "knife valve type" and screen weldment inside for removing excess liquids. Drain shall have at least 10 feet of 6 inch lay flat hose.
		2.4	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.
		2.5	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.

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**Specification Compliance Indicate: Yes or No**

**(Note: Each specification line item requires checking either the Yes or No box)**

YES	NO	2.0	DEBRIS BODY - Continued
		2.6	The debris body shall have five (5) externally mounted door locks that lock hydraulically. One manual T bolt shall be installed for operator safety. A hydraulic grabber shall be installed and controlled by one hydraulic cylinder externally mounted for ease of service. The hydraulic locks and grabber shall be operated by one (1) sequential control. In order to allow the operator to control the discharging of liquids from the debris tank by cracking open the door prior to the dumping procedure, the hydraulic grabber shall engage the door at the bottom of the door from 0" - 6". Beyond the 6" stroke, the grabber shall automatically disengage the door, allowing for the dumping of the debris tank.
		2.7	Dual steel weldments with stainless steel screen 8" x 28" each providing up to 1,200 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.
		2.8	A double acting power up/power down hydraulic scissors lift mechanism shall be provided to raise the body to a minimum 50 degree angle. The scissors lift mechanism shall be 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 shall be 56,000 lbs.
		2.9	Dump controls shall be located on the curb side mid-ship of the unit, well forward of the dumping area for operator safety. A manual override system shall be provided in case of system failure.
		2.10	The debris body shall have a five-year warranty. A copy of the manufacturer's warranty statement shall be enclosed with the tender.
		2.11	An internal polyethylene float device with external indicator shall be supplied to show when the body is loaded to capacity.
		2.12	Debris body up indicator warning light mounted in the cab
		2.13	Rear door open indicator warning light mounted in the cab
YES	NO	3.0	AUTOMATIC VACUUM BREAKER
		3.1	The automatic vacuum breaker assembly shall be located inside the body.
		3.2	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.
		3.3	A 'debris body full' indication shall activate 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.
		3.4	The vacuum breaker system shall be automatically activated (closed) when the parking brake system is released to eliminate carryover during transit.
		3.5	The system shall be controlled/activated, at the front hose reel control station. This shall enable the operator to pick up large debris with the 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.

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**Specification Compliance Indicate: Yes or No****(Note: Each specification line item requires checking either the Yes or No box)**

YES	NO	4.0	<b>CENTRIFUGAL COMPRESSOR (FAN DESIGN)</b>
		4.1	The centrifugal vacuum compressor shall be of 3-stage construction (i.e. 3# 27" minimum diameter fans in tandem). The centrifugal compressor (fans) shall be constructed of Corten steel. The compressor's outer housing shall be spun from one piece of 3/16" steel for strength and provide proper airflow in operation. The vacuum system shall operate independent of the high-pressure water system.
		4.2	The compressor shall be driven by the chassis engine via a closed loop hydrostatic system using a variable high volume 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.
		4.3	To maximize long term durability by reducing the load on one side of the compressor, the compressor shaft shall extend through the compressor and shall be additional stabilized by using two high speed bearings, one at each side of the shaft. No exceptions shall be allowed to this requirement.
		4.4	A means of starting, stopping and varying the vacuum suction from the operator station at the front of the machine shall be provided.
YES	NO	5.0	<b>VACUUM PICK UP HOSE</b>
		5.1	The vacuum pickup 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.
		5.2	The 8" vacuum pickup hose shall be mounted on a boom that will provide a minimum of 18' vertical lift utilizing dual hydraulic cylinder and 230 degree of boom rotation powered hydraulically for non-interrupted smooth movement. The boom shall have a lift capacity of 500 lbs. at the front bumper.
		5.3	The boom shall 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.
		5.4	The boom shall hydraulically telescope a minimum of 10 ft. forward from the operator's station. The height of the boom shall 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.
		5.5	A cradle shall be provided to secure the boom during travel.
		5.6	Control of the boom shall be by means of a joystick control at the operator's station, requiring no cables at operator's feet for boom operation. A wireless remote control shall be provided for boom, vacuum breaker, chassis throttle, debris body functions, and emergency shut-off. A manual override system shall be provided for right/left, and up/down functions in case of system failure.
		5.7	A boom coverage chart shall be provided stating the square feet the boom covers.

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**Specification Compliance Indicate: Yes or No****(Note: Each specification line item requires checking either the Yes or No box)**

YES	NO	5.0	VACUUM PICK UP HOSE - Continued
		5.8	8-inch diameter pipe extensions, to clean to 20.5 feet deep, complete with clamps (one clamp per pipe), shall be provided and carried on the Equipment as follows: 1 each 6-1/2' Catch Basin Nozzle 1 each 6' Aluminum Pipe Extension 1 each 5' Aluminum Pipe Extension 1 each 3' Aluminum Pipe Extension 1 each 8-Inch Adjustable Air Gap for Underwater Vacuuming
YES	NO	6.0	WATER SUPPLY
		6.1	The water tanks shall have a minimum usable capacity of 1,300 U.S. gallons
		6.2	The water tanks shall be constructed of non-corrosive, non-metallic, durable, cross-linked polyethylene to eliminate rust, corrosion, and stress cracking.
		6.3	The water tanks shall be mounted at and below the truck frame level to provide a low center of gravity for truck stability.
		6.4	A 2-1/2 inch diameter x 25 feet long hydrant hose with hydrant wrench shall be supplied on the unit.
		6.5	An anti-siphon fill device shall be installed on the unit.
		6.6	Inspection ports shall be provided to fill or to add chemicals to the water system.
		6.7	A sight gauge to indicate water level shall be located within sight of the operator station.
		6.8	The water tanks shall be 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 landfills.
		6.9	The water tanks shall carry a ten year replacement warranty.
YES	NO	7.0	AUXILIARY ENGINE (WATER PUMP DRIVE)
		7.1	The water pump shall be driven by a John Deere 6 Cylinder (or 4-cylinder) Heavy-Duty Industrial Diesel engine in lieu of gas auxiliary engine. 170 Horsepower minimum.
		7.2	The engine shall contain integrated liners, one piece cast cylinder head and an electronic speed governor
		7.3	An electronic digital diagnostic and fault monitoring panel shall be mounted on the driver's 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 shall be accessible from ground level.
		7.4	Extended Warranty - 5 Year/5,000 Hours

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**Specification Compliance Indicate: Yes or No****(Note: Each specification line item requires checking either the Yes or No box)**

YES	NO	8.0	HIGH-PRESSURE WATER PUMP
		8.1	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.
		8.2	A continuous duty flow of 50 gpm and 3000 psi shall be provided.
		8.3	High-pressure relief valves shall be provided for both the high-pressure system and the hand gun system.
		8.4	The water pump shall operate independently of the vacuum system and shall be powered by the auxiliary engine via a clutchless, direct dual powerband drive system.
		8.5	The high-pressure water pump drive system shall carry a five year replacement warranty. Warranty shall exclude the drive engine, i.e. the auxiliary engine.
		8.6	The water pump shall be capable of running dry.
		8.7	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.
		8.8	The high-pressure water pump shall be equipped with a cold weather drain valve. The valve allows the operator to completely drain the high-pressure pump.
YES	NO	9.0	HOSE REEL ASSEMBLY
		9.1	The hose reel assembly shall be mounted on the front of the vehicle.
		9.2	The hose reel shall have a minimum of 30" inside diameter with a capacity of 500' x 1" hose
		9.3	The hose reel shall be hydraulically powered in both directions by means of a double chain and sprocket drive.
		9.4	The hose reel assembly shall have a hose footage counter
		9.5	The controls for operating the motor shall have a flow control device to regulate the rotational speed of the reel in both directions.
		9.6	All hydraulic hoses shall be behind a steel housing to protect the operator from hydraulic oil in the event of a hose failure.
		9.7	The hydraulic motor, chain, and sprockets shall have a protective cover or shall be mounted on the radiator side of the hose reel for operator safety.
		9.8	The hose reel shall articulate 180 degrees to the driver's side allowing the operator to work in any position through this arc. This allows greater flexibility in truck placement for manholes located in tough areas and provides greater safety to the operator. The reel shall extend beyond the width of the unit for greater flexibility for positioning the reel over offset manholes, catch basins, etc.
		9.9	A hydraulically controlled outrigger leg shall be supplied that comes in contact with the ground at any one position. A warning light shall be located in the cab to warn the operator that the outrigger leg is not in its transported position prior to moving the unit.
		9.10	A manual bypass system for the hose reel assembly shall be provided to manually pull the reel assembly away from its transported position. This feature allows operator to check fluids without starting engines.

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**Specification Compliance Indicate: Yes or No****(Note: Each specification line item requires checking either the Yes or No box)**

YES	NO	10.0	JET HOSE
		10.1	A 500' x 3/4" jet rodder hose shall be supplied rated for 3,000 psi working pressure and 7,500 psi burst pressure.
		10.2	A heavy duty hose guide (tiger tail) with 25' of nylon rope shall be provided.
		10.3	Nozzles shall be hardened steel with replaceable ceramic orifices as follows: 1 each Chisel head penetrator 1 each standard sanitary 1 each 50 gpm Grenade nozzle
YES	NO	11.0	MANHOLE CLEANING WATER SYSTEM (HAND GUN)
		11.1	The high-pressure pump and independent water tank assembly supplied shall be used for manhole cleaning. A smooth continuous flow of 20 gpm. and pressure of 600 psi shall be provided for ease of operation. A hand gun pressure relief valve set at 600 psi. shall be provided.
		11.2	One full functioning hand gun with on/off hand control, replaceable nozzle tip, 12-inch extension, adjustable spray and 50' x 1/2" hose with retractable reel shall be provided.
		11.3	The hand gun shall 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.
YES	NO	12.0	HYDRAULIC SYSTEM AND LUBRICATION
		12.1	The hydraulic system shall have at least a 55-gallon capacity.
		12.2	The hydraulic system shall incorporate a main shut off valve in case of hydraulic failure.
		12.3	The hydraulic system shall incorporate hydraulic pressure relief valves and pressure gauges for ease of trouble shooting and maintenance.
		12.4	The unit shall be equipped on the passenger side, mid-section of the module, with 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 shall also specify the frequency of each lubrication point.
		12.5	Remote plumbed grease fittings shall be provided for the vacuum compressor, boom rotation, and water pump drive areas.
YES	NO	13.0	ACCESSORIES
			A minimum twelve (12) month manufacturer's guarantee on the unit shall be provided
			A weathertight lockable toolbox behind the cab shall be provided, 16" x 42" x 96". (no less than 30 cubic inches capacity)
			1 each Debris body power flush out system
			1 each Rear splash shield, door flange mounted

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YES	NO	13.0	ACCESSORIES - Continued
			1 each Lazy Susan style, deck mounted pipe rack, to hold 5 pipes
			1 each Low water alarm with light
			1 each Remote boom grease fitting assembly (accessible from ground level)
			1 each Remote debris tank grease fitting assembly (accessible from ground level)
			1 each Remote articulating hose reel grease fitting assembly (accessible from ground level)
			1 each Automatic lubrication kit for 3-stage blower
			1 each Aluminum single roller level wind guide
			1 each 1" x 15' leader hose
			1 each Water pump remote oil drain
			1 each Safety Cone storage rack for no less than 4# 36" cones, rear of frame
YES	NO	14.0	CHASSIS
			The unit described shall be mounted on a truck chassis acceptable to the body manufacturer at the factory of the body manufacturer.
			The Equipment shall meet all current air quality standards, all Federal Safety Standards, and Department of Motor Vehicle Regulations from the State the Equipment is manufactured.
			2018 Freightliner Model 114 Service Duty 6x4 Conventional Chassis
			66,000 Pounds Gross Vehicle Weight Rating
			Diesel Engine - 370 Horsepower minimum
			Transmission - Allison 3000 Rugged Duty Services Automatic Transmission with Power Take Off provision or equivalent
			Vehicle weight certificates shall be supplied when the vehicle has been constructed from a cab and chassis configuration.
			Power Steering
			Extended Warranty - 5 Year/100,000 Miles
			Air Conditioned cab,
			Daytime Running Lights
			Back-Up Alarm
			Dash Mounted AM/FM Radio with Front Auxiliary Input
			Gray Vinyl Interior
YES	NO	15.0	LIGHTING
		15.1	The entire module electrical system shall be vapor sealed to eliminate moisture damage.
		15.2	All wiring shall be color-coded, labeled and run in sealed terminal enclosures.
		15.3	All module circuits shall be protected by circuit breakers.
		15.4	Clearance lights and reflectors shall be furnished in accordance with D.O.T. requirements

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<b>YES</b>	<b>NO</b>	<b>15.0</b>	<b>LIGHTING - Continued</b>
		15.5	Mirror-mounted LED beacon/strobe light, with limb guard – Whelen L21HAP LED Beacon with Whelen BGH Branch Guard
		15.6	LED strobe lights with limb guard – (2) front bumper, (2) rear bumper – Whelen 50A03ZCR – Amber
		15.7	LED Arrow board, rear debris tank door mounted for traffic control – Whelen Traffic Advisor™, Split Arrow Head Style with four operating modes (left, right, split and flash)
		15.8	LED Boom Mounted Flood Light, with limb guard
		15.9	LED Rear Mounted Flood Lights with limb guard
		15.10	LED work light mounted at auxiliary engine
<b>YES</b>	<b>NO</b>	<b>16.0</b>	<b>PAINT</b>
		16.1	Unit paint surface shall be shot blasted, primed and sanded prior to paint. Unit to be painted DuPont™ Imron® Elite White N0006EX polyurethane paint.
		16.2	Unit shall have reflective Blue side and boom stripes and rear door chevrons.
		16.3	Chassis shall be painted Black, using High Solids Polyurethane Chassis Paint.
<b>YES</b>	<b>NO</b>	<b>17.0</b>	<b>TRAINING AND MANUALS</b>
		17.1	Operator training shall be conducted by a factory-trained representative for a minimum of one day at the time of unit delivery.
		17.2	Two (2) printed copies each of (i) the vehicle service (maintenance) manual, (ii) the vehicle operator's manual and (iii) the complete parts manual for the sewer cleaner module shall be provided upon unit delivery. One (1) digital (electronic) copy of the same
		17.3	Applicable operational video(s) (DVDs) shall be provided for the Equipment and all mounted gear and equipment.

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