

City of Chattanooga

Addendum #1

R143050 / B304451

Combination Vacuum/Sewer Truck

(1) The specifications have been changed. Revised specifications are attached.

(2) The due date for Bids is unchanged. Sealed Bids should be delivered to the Purchasing Office by 2:00 PM on October 13, 2016.

Bidders should acknowledge receipt of this Addendum by signing below and submitting a signed copy of this Addendum with their Bids.

Receipt of this Addendum is acknowledged by \_\_\_\_\_

on behalf of \_\_\_\_\_  
Supplier

**City of Chattanooga  
Public Works Department  
City Wide Services Division**

**Specifications for  
One (1) New and Unused Current Production  
Combination Vacuum/Sewer Truck**

**INTRODUCTION**

These specifications describe the vehicle and accessories to be purchased by the City of Chattanooga City wide Services Division, Public Works Department. These specifications consist of three parts: (1) Required Features – these requirements must be met without exceptions for a bid to be considered acceptable, (2) Preferred Features – attributes/performance that the City wants, however exceptions to Preferred Features are allowed with explanation (The more Preferred Features that are met by a bid, the better the bid.), and (3) Options – additional features/conditions that are optional (i.e., may or may not be offered by Suppliers and may or may not be purchased by the City); Options will be priced as separate line items.

These specifications are intended to be flexible enough for all Suppliers to bid competitively. Any specific brand names or part numbers used herein may be substituted for with another brand provided it is equal to or better than specified; documentation of 'equal to or better' is required.

**BASIS FOR AWARD**

This purchase is primarily a low price competition among acceptable bids (i.e., those bids from responsible bidders meeting all Required Features). However, the City will accept the Best Bid meaning, in this context, the lowest bid that provides the most Preferred Features and Best Value. Options (if offered by Suppliers) will be priced separately and accepted or not at the City's sole discretion.

## **REQUIRED FEATURES**

### **GENERAL**

1. The entire vehicle/apparatus is to conform to D.O.T., FMVSS, NFPA, and OSHA and to the requirements of all other applicable regulatory agencies.
2. Parts not specifically mentioned that are necessary to furnish a complete chassis or body/apparatus must have been produced using the automotive industry's best manufacturing practices. This pertains to design, quality of materials and workmanship.
3. Loose and miscellaneous equipment is to be provided only as required by D.O.T and specifications.
4. Each bid is to be accompanied by a set of manufacturer's and, as applicable, vendor's specifications. These are to consist of a detailed description of the proposed vehicle/apparatus and equipment. The specifications are to indicate size, type, model and make of all component parts and equipment. A CAD drawing of the proposed vehicle indicating wheelbase, Cab to axle and Cab to end of frame measurements is desired. All weights and horsepower/torque, transmission ratios, and axle ratios shall be approved by engineering per vehicle manufacturer to include all detachable components and operations.
5. All warranties will be listed with specific details as to time, including any and all exclusions. No warranties can be Terminated or canceled for any reason during the warranty coverage as stated in bid where specified. No travel or drive time for warranty work will be paid while under any manufacturer's warranty.
6. All power train components, assemblies, subassemblies, and component parts will be designed and constructed with due consideration to the nature and distribution of the load to be sustained and to the general character of the service for which the vehicle is designed and will be subjected to when placed in service. All parts of the vehicle will be strong enough to withstand the general service under full load. The vehicle will be so designed that the various parts are readily accessible for lubrication, inspection, adjustment and repair.

7. All vehicles will be supplied with a line sheet to include as-built and current part numbers of any and all components installed on vehicle.
8. The specified vehicle will be capable of reaching and maintaining a minimum speed of 20 MPH on any grade up to and including 25% or 15 degree grade. The vehicle will be capable of attaining a true speed of 35 MPH in 25 seconds on level ground and programmed not to exceed 68 MPH.
9. Factory service manuals, electrical schematics, Hydraulic schematics and component locators are to be supplied for body and chassis.

### Radio Requirements in Cab

1. 20 amp circuit power and ground shall be provided with an additional 4 amp ignition feed.
2. RG58 Antenna cable with 800 MHz NMO mount and mini UHF connector.

The cable part numbers are below:

Coax cable includes NMO connector and "Dixie Cup" style antenna

Tessco 90 degree Mount P/N 98998- Antenna P/N 304196 – Brass Mount P/N 422966

HLN6863 Accessory and fuse holder assembly

HKN4192 Power cable

### WARRANTY

1. Warranty period shall be for two (2) years on the Engine and Axles, one (1) Year on Cab and Chassis, three (3) Years Transmission. The body shall have a one (1) year, Water pump Five (5) year, Debris tank and Water Tanks shall have a Lifetime warranty. All pumps, cylinders, electrical components,

Valves and PTO shall have a Minimum of one (1) Year with No exceptions, excluding wear items.

2. Bidder shall include copy of warranty terms and conditions with the bid.
3. All warranty registrations will be completed by Vendor and copies provided upon delivery. All warranties will begin on any and all components on the in-service date or delivery date if no special training is needed to begin operating vehicle.
4. Vendor must have a service facility within a 50 mile radius of Chattanooga.

MY BID MEETS ALL REQUIRED FEATURES: YES \_\_\_\_ NO \_\_\_\_

Signed by Bidder: \_\_\_\_\_

#### SPECIFICATIONS FOR COMBINATION SEWER CLEANER/VACUUM TRUCK

Preferred Specifications: One new and unused 2017 current production model sewer cleaner/vacuum truck to be equipped per the following preferred specifications:

YES NO

CHASSIS: Chassis shall be International 7400 series or equal. Chassis shall have left and right tow hooks mounted front and rear. GVWR 62,000, Chassis color shall be Viper Red. \_\_\_\_\_

ENGINE: Minimum 350 Net SAE horsepower Cummins w/Jacobs Engine brake, water-cooled, diesel engine with 1000 lb/ft of torque. Donaldson dry-type air filters with restriction indicator. \_\_\_\_\_

1. Shall include automatic engine shutdown with alarm and activated

By low or high engine oil pressure and high coolant temperature

2. Engine shall meet or exceed the CARB certified, current emissions standards

3. Anti-freeze -40 degrees protection extended life coolant

4. Fan Clutch

5. Single stage air filter

6. Shall have silicone radiator hoses and heater hoses

### TRANSMISSION:

1. Transmission shall be automatic Allison 3000 RDS 5-speed

2. Transmission shall meet engine hp & torque rating

3. Push button controls dash mounted

4. Shall have synthetic automatic transmission fluid

5. Transmission TCM mounted inside cab (NO EXCEPTIONS)

6. PTO location right side of transmission

7. Oil cooler for transmission (Modine) water to oil type

### FUEL TANK:

1. Shall have a single 100 gallon fuel tank mounted LH side alum

2. Shall have fuel/water separator frame or engine mounted

3. Fuel cooler mounted in front of cooling module

### Cab

1. The Cab shall be a conventional cab design

2. Interior color shall be grey

3. Exterior color shall be white

4. Shall include factory installed air conditioning and heater	-----	-----
5. Shall have an electronic PTO activations switch, IP mounted	-----	-----
6. The driver's seat shall be factory installed air ride, high back bucket	-----	-----
7. Passenger seating factory installed air ride, high back bucket	-----	-----
8. Shall have all vinyl seat cover and trim	-----	-----
9. Shall have intermittent windshield wipers	-----	-----
10. Shall include cup holders	-----	-----
11. Shall have rubber floor mats black in color throughout cab	-----	-----
12. Shall have heated outside driver and passenger side mirrors, with spot mirrors. West coast type 7" x 16" with LED light and powered	-----	-----
13. Parking brake alarm system, electric horn sounds in repetitive manner when vehicle park brake is not set and driver door opened	-----	-----
14. Shall have tinted windows	-----	-----
15. Shall have tilt steering wheel	-----	-----
16. Shall have electric windows and locks	-----	-----
17. Shall have a AM-FM/CD/Blue tooth stereo radio-electronically tuned display, clock, seek-scan, and 2 speakers	-----	-----
18. Shall have power steering	-----	-----

#### BRAKE SYSTEM:

	YES	NO
1. Air dual system for straight truck applications	-----	-----
2. Air brake ABS full vehicle wheel control system (4-Channel)	-----	-----
3. Automatic slack adjusters front and rear	-----	-----
4. Front brakes Air disc 22.5 with 18" brake chambers w/extended		

Service air disc type brake pads, size 22.5

5. Rear brakes Air disk 22.5 with 20' brake chambers w/ extended

Service air disc type brake pads, 22.5

6. Meritor Wabco air dryer with heater

7. Automatic drain valve with heater for air tank

8. Air compressor 18.7 CFM capacity

9. Dust brake shields front and rear brakes

10. Parking brake control yellow knob, located on IP

#### EXHAUST SYSTEM:

1. Single, horizontal, after treatment device frame mounted right side

Under cab includes single vertical tail pipe back of cab with special

Temperature control for stationary applications

2. Switch for exhaust ON'/OFF type, inhibits diesel particulate filter regeneration

As long as switch is in on position

2. Engine Compression brake (Jacobs) with on off switch

3. Stop-Light wiring modified stop-lights turned on when engine compression

Brake is activated

#### ELECTRICAL:

1. Alternator shall be 160 amp or greater

2. Shall include 3- 925 CCA batteries 12 Volt

3. Shall be standard 12-volt system

4. Back up alarm electric 102 DBA

5. Starter switch key operated

6. Windshield wiper switch 2-speed with wash and intermittent feature



And forces wipers to slowest intermittent speed when park brake set	-----	-----
7. Single electric horn	-----	-----
8. Windshield wipers single motor electric	-----	-----
9. Jump start stud located on positive terminal of outermost battery	-----	-----
10. Stop, turn, tail & back up lights dual, rear LED	-----	-----
11. Turn signal switch self-cancelling	-----	-----
12. Clearance marker lights (5) LED amber	-----	-----
13. Starting motor 12 volt	-----	-----
14. Headlights 2 light system halogen	-----	-----
15. Air horn	-----	-----
16. Block heater 120 volt/1000 watts	-----	-----
17. Block heater socket located below driver's door	-----	-----
18. Battery cut off with lock out system (cole-herse)	-----	-----
19. Test exterior lights for pre-trip inspection cycle all lights except backup	-----	-----
20. Headlights on with wipers will turn if windshield wipers are turned on	-----	-----
21. Parking brake alarm electric horn to sound when vehicle park brake in Not set with ignition "OFF" and any door opened	-----	-----
22. Battery warning green battery on indicator, mounted left side of IP, to be Used with factory installed battery disconnect switch	-----	-----
23. Low coolant level with audible alarm	-----	-----
24. Circuit breakers manual-reset with trip indicators	-----	-----
25. (2) Remote power module modules mounted inside cab behind seat (NO EXCEPTIONS) with 12 latched switch's mounted in dash from factory	-----	-----

## FRONT END:

- |  |       |       |
|--|-------|-------|
| 1. Front axle shall be 16,000 lbs capacity I-beam type     | ----- | ----- |
| 2. Front taper-leaf springs 16,000 lb capacity with shocks | ----- | ----- |
| 3. Chrome grill  | ----- | ----- |
| 4. Full length front bumper chrome                         | ----- | ----- |
| 5. Chrome headlight bezel                                  | ----- | ----- |
| 6. Synthetic lubricant front bearings                      | ----- | ----- |

## REAR END:

- |  |       |       |
|--|-------|-------|
| 1. Shall be single reduction with 46,000 lbs capacity driver controlled locking<br>Differential in rear-rear axle  | ----- | ----- |
| 2. Axle ratio shall be 5.63- MPH not over 65 by computer setting   | ----- | ----- |
| 3. Rear suspension Chalmers 854-46H-HS walking beam type with high stability<br>Restrictor cans and (8) torque rods less shocks  | ----- | ----- |
| 4. Differential lock protection: rear axle "MUST" be equipped with a safety<br>Feature, which shall automatically disengage the locking differential at<br>A speed of approximately 20 MPH |       |       |

## WHEEL BASE:

- |   |       |       |
|---|-------|-------|
| 1. The wheel base shall be contingent on body | ----- | ----- |
|---|-------|-------|

## FRAME RAILS:

- |   |       |       |
|---|-------|-------|
| 1. Channel straight 31.72 SM, 120,000 PSI | ----- | ----- |
| 2. RBM minimum 3,526,000                  | ----- | ----- |
| 3. Frame rails to be painted viper red    | ----- | ----- |
| 4. 10.125" x 3.580" x 0.312" frame rails  | ----- | ----- |

5. Shall have frame mounted tow hooks

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6. Shall have full "C" channel frame reinforcement

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#### WHEELS AND TIRES:

YES NO

1. Front wheels 22.5 x 12.25 non-polished aluminum 10 stud

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2. Rear wheels 22.5 x 8.25 steel 10-hole hub piloted white 2 hand hole

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3. Front tire 385/65R22.5 XZY-3 Michelin LRJ-18 Ply (NO EXCEPTIONS)

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4. Rear tire 11R22.5 XZE2 Michelin LRH-16 Ply (NO EXCEPTIONS)

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#### AA: ACCESSORIES:

1. Must have (3) sets of keys

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2. All lighting to meet all OSHA, ANSI, and state requirements and must be in

Accordance with Motor Vehicle Safety Standard 108. ALL brake, turn, taillights

Marker lights and strobe lights MUST BE LED

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3. (4) alternating flashing LED lights amber in color mounted on front grill

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4. Truck chassis to be multiplexed wiring

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5. NMO Cable MUST be routed through mirror arm and inside cab with

It mounted on mirror arm

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6. 20 amp continuous circuit power and ground (10 gauge wires for both)

Shall be provided with an additional 4 amp ignition fee

7. Safety equipment with (2) fire extinguishers Mounted

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## MOBILE CATCH BASIN AND HIGH VELOCITY COMBINATION SEWER CLEANER

### General: B-10/1450

*The system described herein consists of one new mobile sewer and catch basin cleaning machine. The system shall be capable of simultaneous high-pressure sewer line cleaning/flushing and air/vac pick up of all liquids and solids from sewers and catch basins. This simultaneous operation will provide for maximum water pressure and vacuum at an engine speed not to exceed recommended RPM allowing for an adequate reserve horsepower from the engine. Controls for all functions shall be operable at the rear operator's station.*

### 1.0 DEBRIS STORAGE TANK

**1.1 - The debris tank volume shall be 10 cubic yards (2020 gallons) and 9 cubic yards minimum usable capacity.**

Comply (Yes) \_\_\_\_\_ (No) \_\_\_\_\_ Will supply \_\_\_\_\_

**1.2 - Each bidder shall submit a dimensional drawing certifying minimum usable capacity with bid documents.**

Comply (Yes) \_\_\_\_\_ (No) \_\_\_\_\_ Will supply \_\_\_\_\_

**1.3 - The cylindrical (round) debris tank shall be constructed from A/36 1/4" steel to withstand a vacuum of not less than 360 column inches of water. The tank bulk heads shall be 3/8" bubble type. The use of square, oblong or oval tanks, which require heavy steel plates and additional welding, will not be acceptable.**

Comply (Yes) \_\_\_\_\_ (No) \_\_\_\_\_ Will supply \_\_\_\_\_

**1.4 - The entire debris tank shall be hinged at the rear and designed for hydraulic dumping at 45 degrees.**

Comply (Yes) \_\_\_\_\_ (No) \_\_\_\_\_ Will supply \_\_\_\_\_

**1.5 - The use of hydraulic pistons, hoses and/or internal baffles inside the debris tank will not be accepted.**

Comply (Yes) \_\_\_\_\_ (No) \_\_\_\_\_ Will supply \_\_\_\_\_

**1.6 - A steel splash shield shall be permanently attached beneath rear door to direct the debris away from the rear of the tank when dumping.**

Comply (Yes) \_\_\_\_\_ (No) \_\_\_\_\_ Will supply \_\_\_\_\_

- 1.7 - A full diameter, height/width, top hinged rear door shall hydraulically open and close to a 90-degree angle to eliminate dragging the door through the discharged debris. This shall be accomplished by means of a power open, power close hydraulic cylinder. For ease of maintenance, cleaning and dumping, partial doors, flat steel doors will be considered unacceptable.**

Comply (Yes) \_\_\_\_\_ (No) \_\_\_\_\_ Will supply \_\_\_\_\_

- 1.8 - The door shall seal by a heavy-duty rubber seal attached to the debris tank shell, seals attached to the door will not be accepted due to maintenance considerations.**

Comply (Yes) \_\_\_\_\_ (No) \_\_\_\_\_ Will supply \_\_\_\_\_

- 1.9 - The door shall seal by means of four individual hydraulic cylinder locks, which shall eliminate the need for any system require unlatching at the rear of the unit. This shall provide for maximum safety to operating personnel. The use of high maintenance mechanical linkage systems, operated from one hydraulic cylinder, that require manual adjustment or systems mounted inside the debris tank will be deemed unacceptable.**

Comply (Yes) \_\_\_\_\_ (No) \_\_\_\_\_ Will supply \_\_\_\_\_

- 1.10 - Two 5 in. tempered glass liquid level sight eyes shall be installed on the rear door to indicate liquid level. High maintenance, mechanical body load indicators with float devices are unacceptable**

Comply (Yes) \_\_\_\_\_ (No) \_\_\_\_\_ Will supply \_\_\_\_\_

- 1.11 - An automatic stainless steel ball and rubber socket check valve system will be installed inside the debris tank to prevent over-filling. When debris tank is full, the ball check valve shall automatically stop the flow of air to the exhauster, therefore, protecting it from water intake.**

Comply (Yes) \_\_\_\_\_ (No) \_\_\_\_\_ Will supply \_\_\_\_\_

- 1.12 - A manual tank prop shall be supplied.**

Comply (Yes) \_\_\_\_\_ (No) \_\_\_\_\_ Will supply \_\_\_\_\_

**1.13 - The air drawn from the debris body must pass through a filter screen with adequate size to protect the vacuum system. The screen shall be easily removable from ground level.**

Comply (Yes) \_\_\_\_\_ (No) \_\_\_\_\_ Will supply \_\_\_\_\_

**1.14 - A 6 in. diameter bronze, quick opening gate valve and 10' X 6" lay flat hose with cam-lock type connection and storage rack will be located on the bottom of the rear door, no higher than 5 feet above ground level to allow for the removal of excess liquids. A screen covering a minimum of  $\frac{3}{4}$  of the rear door area shall allow for 80% of debris tank liquids to be drained off without raising debris tank. The screen shall pivot during the dump cycle to allow for easy cleaning.**

Comply (Yes) \_\_\_\_\_ (No) \_\_\_\_\_ Will supply \_\_\_\_\_

**1.15 - A lifetime warranty shall be supplied for the debris tank. A copy of the warranty shall be submitted with the bid.**

Comply (Yes) \_\_\_\_\_ (No) \_\_\_\_\_ Will supply \_\_\_\_\_

## 2.0 WATER TANK

**2.1 - A minimum usable capacity of 1450 gallons supplied for the operation of the sewer flushing system.**

**A 300 gallon tank shall be metallic style, coated steel. The tank shall be an intricate part of the debris tank and manufactured of the same material.**

**4 - 287.5 gallon saddle tanks shall be molded out of  $\frac{3}{8}$ " thick; ultra-violet stabilized stress-reinforced polyethylene. Due to maintenance considerations aluminum tanks, which may dent, or crack, will not be acceptable. All tanks shall be mounted above the chassis frame to eliminate potential road damage**

Comply (Yes) \_\_\_\_\_ (No) \_\_\_\_\_ Will supply \_\_\_\_\_

**2.2 - A lifetime warranty shall be supplied. A copy of the warranty shall be submitted with the bid.**

Comply (Yes) \_\_\_\_\_ (No) \_\_\_\_\_ Will supply \_\_\_\_\_

**2.3 - Bidder shall provide an annual inspection of the water tanks at no additional cost for the life of the unit.**

Comply (Yes) \_\_\_\_\_ (No) \_\_\_\_\_ Will supply \_\_\_\_\_

**2.4 - A water fill system with direct full flow from the water hydrant shall be located at the curbside. The 2.5 in National Standard Fire thread female swivel connection shall be provided for the complete filling of the water tank system.**

Comply (Yes) \_\_\_\_\_ (No) \_\_\_\_\_ Will supply \_\_\_\_\_

**2.5 - The fill system shall include an air gap anti-siphon design to protect the potable water supply. An anti-splash valve shall be located inside the fill system to prevent spillage from the water tank while in transit. Two water level sight tubes shall be provided at locations visible to the operator.**

Comply (Yes) \_\_\_\_\_ (No) \_\_\_\_\_ Will supply \_\_\_\_\_

**2.6 - The water supply to the pump shall allow dumping of the debris tank and operation of the water pump while in the full dumped position. To insure a complete cleanout of sediment, water tanks shall also raise with debris body during dump mode. A 2.5 in. quick opening drain in the lowest point of the water tank system shall be included allowing for periodic flushing out of water tank sediments.**

Comply (Yes) \_\_\_\_\_ (No) \_\_\_\_\_ Will supply \_\_\_\_\_

### **3.0 WATER PUMP SYSTEM**

**3.1- The system shall include a heavy-duty tri-plex water pump. The pump shall be capable of operating flow from 0-80 GPM and from pressures from 0-2500 PSI without changing nozzles. This pneumatic valve shall allow for water and air pressure to be reciprocally proportional. The airflow shall be switched ON or OFF by means of a 3/2-way solenoid valve whereas air pressure and in turn the water pressure shall be adjustable by means of an air regulator. This shall be accomplished by using a pneumatic valve regulator, which is controlled at the rear and side operator stations. Pump shall have a five-year warranty. A copy of the pump manufacturer's statement of warranty shall be submitted with the bid.**

Comply (Yes) \_\_\_\_\_ (No) \_\_\_\_\_ Will supply \_\_\_\_\_

- 3.2 - An inlet strainer shall be provided which shall allow for easy cleaning without the use of special tools and may be cleaned while water tanks are full shall be provided.**

Comply (Yes) \_\_\_\_\_ (No) \_\_\_\_\_ Will supply \_\_\_\_\_

- 3.3 - The pump shall be mounted above the chassis frame and forward of the debris tank to avoid damage from rough roads and off road travel.**

Comply (Yes) \_\_\_\_\_ (No) \_\_\_\_\_ Will supply \_\_\_\_\_

- 3.4 - The truck chassis engine shall drive the water pump via a heavy duty split shaft power take off, and a variable speed "Kevlar" reinforced Poly Chain. Engagement/disengagement can be accomplished either from inside the cab or at the operator's station via dual clutch PTO. The use of low cost transfer cases, high maintenance hydraulic drives, auxiliary engines or standard cogged drive belts will not be acceptable.**

Comply (Yes) \_\_\_\_\_ (No) \_\_\_\_\_ Will supply \_\_\_\_\_

- 3.5 - Pump engagement/disengagement shall be by means of a toggle switch on rear of truck at operator's station.**

Comply (Yes) \_\_\_\_\_ (No) \_\_\_\_\_ Will supply \_\_\_\_\_

- 3.6 - An air valve for purging the water from the pump system for storage shall be provided. Pull valves located on water pump shall also be supplied to drain trapped water within the pump.**

Comply (Yes) \_\_\_\_\_ (No) \_\_\_\_\_ Will supply \_\_\_\_\_

- 3.7 - A single three-way water flow control valve shall be provided and operated by a manual lever at the operator's station.**

Comply (Yes) \_\_\_\_\_ (No) \_\_\_\_\_ Will supply \_\_\_\_\_

- 3.8 - The entire pressure piping system shall be designed in 1 in I.D. with a pressure relief valve set at maximum operating pressure of 2500 PSI and sealed at the factory.**

Comply (Yes) \_\_\_\_\_ (No) \_\_\_\_\_ Will supply \_\_\_\_\_



- 3.9 - A wash down system will be part of the primary water pump system and include a quick connect hose fitting with a pressure relief valve set at 800 PSI.**

Comply (Yes) \_\_\_\_\_ (No) \_\_\_\_\_ Will supply \_\_\_\_\_

- 3.10 – A secondary adjustable spray hand gun rated at 800 PSI will be provided with 50 ft of 1/2 in. high pressure hose mounted on a retractable hose reel.**

Comply (Yes) \_\_\_\_\_ (No) \_\_\_\_\_ Will supply \_\_\_\_\_

#### **4.0 AIR VAC SYSTEM**

- 4.1 - The system shall include a positive displacement rotary lobe type exhauster. This system shall be capable of a minimum 217 inches of negative water pressure at 3600 CFM. Air conveyance systems are not acceptable.**

Comply (Yes) \_\_\_\_\_ (No) \_\_\_\_\_ Will supply \_\_\_\_\_

- 4.2 - Lubrication for the positive displacement exhauster shall be by means of self-contained splash system with sight eyes provided to check oil level.**

Comply (Yes) \_\_\_\_\_ (No) \_\_\_\_\_ Will supply \_\_\_\_\_

- 4.3 - The rating of the vacuum system at sea level will be a minimum of 217 column inches of water at maximum RPM.**

Comply (Yes) \_\_\_\_\_ (No) \_\_\_\_\_ Will supply \_\_\_\_\_

- 4.4 - The truck chassis engine shall drive the positive displacement exhauster via a heavy duty split shaft power take off, and a variable speed "Kevlar" reinforced Poly Chain. Engagement/Disengagement can be accomplished either from inside the cab or at the operator's station. The use of low cost transfer cases, high maintenance hydraulic drives or auxiliary engines will not be acceptable.**

Comply (Yes) \_\_\_\_\_ (No) \_\_\_\_\_ Will supply \_\_\_\_\_

- 4.5 - Blower engagement and disengagement shall be by means of a toggle switch on rear of truck at operator's station.**

Comply (Yes) \_\_\_\_\_ (No) \_\_\_\_\_ Will supply \_\_\_\_\_

- 4.6 - A horizontally mounted cartridge type drum filter and cyclone separator will be incorporated between the exhauster and the debris tank. It shall be mounted to allow the settling of contamination out of the main airflow.**

Comply (Yes) \_\_\_\_\_ (No) \_\_\_\_\_ Will supply \_\_\_\_\_

- 4.7 - Vacuum unloader valves will be built into the vacuum system to maintain high negative pressure**

Comply (Yes) \_\_\_\_\_ (No) \_\_\_\_\_ Will supply \_\_\_\_\_

- 4.8 - A vacuum/pressure gauge shall be supplied at the operator's station.**

Comply (Yes) \_\_\_\_\_ (No) \_\_\_\_\_ Will supply \_\_\_\_\_

- 4.9 - A self-aligning connection between the debris tank and the air-vac system shall be supplied.**

Comply (Yes) \_\_\_\_\_ (No) \_\_\_\_\_ Will supply \_\_\_\_\_

## **5.0 SUCTION INTAKE BOOM**

- 5.1 - Debris loading into the tank will be through a one (1) piece 8" extra heavy-duty wire reinforced rubber hose assembly that allows for periodic rotation to prevent premature wear of the entire assembly. Boom hose assemblies with costly metallic elbows that cannot be rotated are unacceptable.**

Comply (Yes) \_\_\_\_\_ (No) \_\_\_\_\_ Will supply \_\_\_\_\_

- 5.2 - The boom shall rotate a minimum of 360 degrees by a gear drive.**

Comply (Yes) \_\_\_\_\_ (No) \_\_\_\_\_ Will supply \_\_\_\_\_

- 5.3 - A boom coverage diagram shall be supplied with the bid.**

Comply (Yes) \_\_\_\_\_ (No) \_\_\_\_\_ Will supply \_\_\_\_\_

- 5.4 - Rotation, extension, lift and air vac valve shall be controlled by a portable pendant control from any location around the machine**

Comply (Yes) \_\_\_\_\_ (No) \_\_\_\_\_ Will supply \_\_\_\_\_

- 5.5 - The boom shall extend via dual hydraulic cylinders to a minimum of 23 ft. from centerline and rise to a minimum height of 19 ft.**

Comply (Yes) \_\_\_\_\_ (No) \_\_\_\_\_ Will supply \_\_\_\_\_

- 5.6 - Boom shall be top loading to insure that when filling, debris tank liquids are by design transferred toward the rear discharge door. This tank intake system shall allow for maximum storage of debris starting at front of debris tank and filling to the rear discharge door -creating best possible center of gravity between the chassis front and rear axles for maximum control and stability while in transit.**

Comply (Yes) \_\_\_\_\_ (No) \_\_\_\_\_ Will supply \_\_\_\_\_

- 5.7 The boom shall be capable of lifting 1000 lbs.**

Comply (Yes) \_\_\_\_\_ (No) \_\_\_\_\_ Will supply \_\_\_\_\_

#### 6.0 INTERNAL BOOM VALVE

- 6.1 - If a positive displacement exhauster is supplied, an internal boom valve shall be supplied. The valve shall pneumatically be operated for greater speed and located outside the debris tank.**

Comply (Yes) \_\_\_\_\_ (No) \_\_\_\_\_ Will supply \_\_\_\_\_

- 6.2 - By closing the internal boom valve, the operator will completely stop all airflow through the vacuum tube allowing the user to build an instantaneous 217 in. of water volume vacuum within the debris tank.**

Comply (Yes) \_\_\_\_\_ (No) \_\_\_\_\_ Will supply \_\_\_\_\_

- 6.3 - By quickly opening the valve, an updraft will loosen compacted solids that would normally require removal by mechanical means.**

Comply (Yes) \_\_\_\_\_ (No) \_\_\_\_\_ Will supply \_\_\_\_\_

#### 7.0 DEBRIS TANK FLUSH OUT SYSTEM

- 7.1 - A system of nozzles shall be installed in the debris tank. These nozzles will completely flush out the debris, and scour the top, sides, bottom, and the inside of the debris tank and rear door.**

Comply (Yes) \_\_\_\_\_ (No) \_\_\_\_\_ Will supply \_\_\_\_\_

- 7. 2 - There shall be a minimum of four (4) high-pressure nozzle heads. Each nozzle shall have a sufficient number of orifices to clean the entire tank.**

Comply (Yes) \_\_\_\_\_ (No) \_\_\_\_\_ Will supply \_\_\_\_\_

- 7.3 - Two (2) nozzles shall be suspended from the top of the debris tank by flexible, heavy duty, wire reinforced rubber hose to prevent damage normally associated with steel pipe within a debris tank to assist in the removal of compacted debris. Two (2) additional nozzles shall be mounted at the front debris tank wall at the bottom to scour the floor of debris tank and assist with cleaning of rear door screen.**

Comply (Yes) \_\_\_\_\_ (No) \_\_\_\_\_ Will supply \_\_\_\_\_

## 8.0 HOSE REEL ASSEMBLY

- 8.1 - The hose reel shall be mounted on the rear door of the unit. The reel shall rise with the rear door during the dump cycle so as to prevent debris from being dumped on the reel itself. The mounting system shall be heavy duty and require no foot style support. Such systems utilizing foot stabilizers shall be deemed unacceptable due to maintenance considerations.**

Comply (Yes) \_\_\_\_\_ (No) \_\_\_\_\_ Will supply \_\_\_\_\_

- 8.2 - The rear hose reel shall be mounted to assure adequate ground clearance, and to allow for access to manholes behind highway guard rails.**

Comply (Yes) \_\_\_\_\_ (No) \_\_\_\_\_ Will supply \_\_\_\_\_

- 8.3 - The rear reel capacity shall be a minimum of 800 feet of 1" I.D. sewer hose.**

Comply (Yes) \_\_\_\_\_ (No) \_\_\_\_\_ Will supply \_\_\_\_\_

- 8. 5 - The rear reel and control panel shall hydraulically articulate into a position over the manhole via a 180 degree arc. The hinge for articulation shall be on the curbside of the rear door. The articulation shall allow the reel to be positioned directly over a manhole located five feet off the curb.**

Comply (Yes) \_\_\_\_\_ (No) \_\_\_\_\_ Will supply \_\_\_\_\_

- 8.6 - Sewer hose payout and retrieve shall be accomplished by three means: (1) push button at operator's panel, (2) pneumatic foot pedals as to allow operator hands free operation and (3) wireless remote control.**

Comply (Yes) \_\_\_\_\_ (No) \_\_\_\_\_ Will supply \_\_\_\_\_

- 8.7 - Reels that swivel or rotate over a center axis, or require a stability foot will not be considered as equal.**

Comply (Yes) \_\_\_\_\_ (No) \_\_\_\_\_ Will supply \_\_\_\_\_

- 8.8 - The rear reel shall travel a working radius of 9 ft. from left to right to facilitate manhole entry. The hose reel shall automatically lock into place.**

Comply (Yes) \_\_\_\_\_ (No) \_\_\_\_\_ Will supply \_\_\_\_\_

- 8.9 - A heavy-duty hose level wind guide with mechanical counter will assist with placing of the hose evenly on the rear hose reel.**

Comply (Yes) \_\_\_\_\_ (No) \_\_\_\_\_ Will supply \_\_\_\_\_

#### **9.0 CLEANING HOSE**

- 9.1 - The unit shall be delivered with a minimum of 600 ft. of 1 in. I.D. sewer hose with 3000 PSI working pressure.**

Comply (Yes) \_\_\_\_\_ (No) \_\_\_\_\_ Will supply \_\_\_\_\_

- 9.2 - The unit shall be supplied with a 10 ft. flexible leader hose.**

Comply (Yes) \_\_\_\_\_ (No) \_\_\_\_\_ Will supply \_\_\_\_\_

#### **10.0 OPERATING CONTROLS, GAUGES AND INSTRUMENTS**

- 10.1 - A portable pendant control with a quick disconnect shall be attached to the unit and operate all power functions of the boom. It will include power rotation with an automatic position lock, hydraulic boom movement up and down, plus telescoping in/out, and the air-vac internal boom valve. These functions shall also be controlled by use of the wireless remote.**

Comply (Yes) \_\_\_\_\_ (No) \_\_\_\_\_ Will supply \_\_\_\_\_

**10.2 - Hydraulic controls to open and close the debris tank door as well as raise and lower the debris and water tanks, lock and unlock the rear door will be at the curb side of the unit, well forward to the dumping area to provide maximum operator safety.**

Comply (Yes) \_\_\_\_\_ (No) \_\_\_\_\_ Will supply \_\_\_\_\_

**10.3 - In addition, the following gauges and controls shall be mounted at an angle for ease of viewing on the hose reel assembly**

Comply (Yes) \_\_\_\_\_ (No) \_\_\_\_\_ Will supply \_\_\_\_\_

**10.4 - Chassis tachometer**

Comply (Yes) \_\_\_\_\_ (No) \_\_\_\_\_ Will supply \_\_\_\_\_

**10.5 - Vacuum gauge**

Comply (Yes) \_\_\_\_\_ (No) \_\_\_\_\_ Will supply \_\_\_\_\_

**10.6 - Hose reel speed control**

Comply (Yes) \_\_\_\_\_ (No) \_\_\_\_\_ Will supply \_\_\_\_\_

**10.7 - Water pressure gauge**

Comply (Yes) \_\_\_\_\_ (No) \_\_\_\_\_ Will supply \_\_\_\_\_

**10.8 - Electronic actuated engine throttles, one at each control panel mounted and one at location of debris tank hydraulic dump valve.**

Comply (Yes) \_\_\_\_\_ (No) \_\_\_\_\_ Will supply \_\_\_\_\_

## **11.0 MISC., TOOLS, ACCESSORIES, STORAGE**

**11.1 – Three (3) locking, aluminum toolboxes shall be provided. The boxes shall be constructed of 100 Aircraft grade diamond plate tread bright aluminum with a mirror finish. They shall be sealed and weatherized with stainless steel "T" latches. Toolbox measurements shall be as follows: one (1) – 72" x 15" x 36", one (1) – 48" x 20" x 10" and one (1) – 24" x 20" x 10".**

Comply (Yes) \_\_\_\_\_ (No) \_\_\_\_\_ Will supply \_\_\_\_\_

**11.2 - Horizontal Lube storage rack shall be provided on both driver side and passenger side of unit to accommodate one (1) 8" x 6' intake tube, (3) 8" x 6' extension tubes, (1) 8" x 5' extension tubes and (1) 8" x 3' extension tube.**

Comply (Yes) \_\_\_\_\_ (No) \_\_\_\_\_ Will supply \_\_\_\_\_

**11.3 - Aluminum fenders shall be installed to protect the unit from road material during transport. The unit will have mud flaps connected to the fenders**

Comply (Yes) \_\_\_\_\_ (No) \_\_\_\_\_ Will supply \_\_\_\_\_

#### **11.4 STANDARD ITEMS TO BE INCLUDED**

<b>Quantity</b>	<b>Item</b>
<b>1</b>	<b>15 Degree Nozzle</b>
<b>1</b>	<b>35 Degree Nozzle</b>
<b>1</b>	<b>Lower Hose Guide (plastic) with storage tubes located below rear splash shield</b>
<b>2</b>	<b>Complete operator/service manuals</b>
<b>1</b>	<b>Tube Connector Tool</b>
<b>2</b>	<b>8" x 6' intake tube with clamp &amp; gasket, band-lock type</b>
<b>3</b>	<b>8" x 6' extension tube with clamp &amp; gasket, band-lock type</b>
<b>2</b>	<b>8" x 5' extension tube with clamp &amp; gasket, band-lock type</b>
<b>1</b>	<b>8" x 3' extension tube with clamp &amp; gasket, band-lock type</b>
<b>1</b>	<b>Dual side mounted boom extension cylinders</b>
<b>1</b>	<b>Cold weather recirculation</b>
<b>1</b>	<b>Body power back-up system, 12V</b>
<b>1</b>	<b>Boom up warning light &amp; alarm</b>
<b>1</b>	<b>IntelACount – digital footage counter for rear hose reel</b>
<b>1</b>	<b>Back-up alarm, 12V</b>
<b>2</b>	<b>12V electric outlet (one @ each control station)</b>
<b>1</b>	<b>Low water warning light &amp; alarm</b>
<b>1</b>	<b>Perforated (mesh) tool basket under side toolbox</b>
<b>1</b>	<b>Remote lubrication manifold</b>
<b>1</b>	<b>Provision dual camera system – back-up and manhole spotter</b>
<b>1</b>	<b>25' fill hose with fill station storage basket</b>
<b>1</b>	<b>Petcock valve on water pump y-strainer cap</b>
<b>1</b>	<b>All DOT lighting LED1 Left &amp; right rear tow hooks</b>
<b>1</b>	<b>2 Pints Touch-up Paint (1 chassis black 1 Body color match)</b>

Comply (Yes) \_\_\_\_\_ (No) \_\_\_\_\_ Will supply \_\_\_\_\_

## 12.0 PAINT

**12.1 - All exposed metal surfaces shall be professionally prepared for painting with the minimum acceptable being (1) one coat of high build epoxy primer and (2) Two coats of Acrylic Enamel or equal paint to match chassis cab.**

## 13.0 LIGHTS

**13.1 - The body shall include two stop and turn tail lights, two backup lights, and a license plate light, and all required clearance lights and reflectors. All DOT lighting to be LED type.**

Comply (Yes) \_\_\_\_\_ (No) \_\_\_\_\_ Will supply \_\_\_\_\_

**13.2 - Two (2) LED amber strobes shall be supplied to illuminate rear work area.**

Comply (Yes) \_\_\_\_\_ (No) \_\_\_\_\_ Will supply \_\_\_\_\_

**13.3 – Dual retractable LED boom mounted work lights.**

Comply (Yes) \_\_\_\_\_ (No) \_\_\_\_\_ Will supply \_\_\_\_\_

**13.4 – LED arrow board mounted at top rear of unit.**

Comply (Yes) \_\_\_\_\_ (No) \_\_\_\_\_ Will supply \_\_\_\_\_

**13.5 – 20' LED retractable spotlight shall be mounted at rear of unit.**

Comply (Yes) \_\_\_\_\_ (No) \_\_\_\_\_ Will supply \_\_\_\_\_

**13.6 – Boom clearance lights, LED.**

Comply (Yes) \_\_\_\_\_ (No) \_\_\_\_\_ Will supply \_\_\_\_\_



**14.0 WARRANTY**

***14.1 - Bidder must indicate warranty offered, which shall be no less than twelve months parts and labor. Any special extended warranty coverage on specific items must be indicated***

Comply (Yes) \_\_\_\_\_ (No) \_\_\_\_\_ Will supply \_\_\_\_\_