



STATE OF LOUISIANA
DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
TECHNICAL SPECIFICATIONS FOR

Sewer Cleaning Truck, Combination Vacuum/Jet

SERIES NO. 226-000

REV. 11/17/2023

EQUIPMENT SPECIFICATION 226-000C

GENERAL

This specification sets forth the minimum requirements for a Class 8 Single Unit Truck with a Combination Sewer Cleaning System.

Equipment shall be new, a production model of current manufacture, and must meet all state and Federal safety and emission standards in effect at time of order.

REPRESENTATIVE SPECIFICATIONS

A Freightliner 114SD with a VacAll AJV 1215 Combination Sewer Vacuum/Jet Cleaning System with appropriate options and standard features, was used to develop these specifications and establish equivalency evaluation criteria.

Equipment of similar style, type, character, quality, features, and purpose conforming to the following detailed requirements/specifications will be considered. For evaluation purposes, bidder's proposing an exception/equivalent option/feature to those specified herein, may be required to provide manufacturer/product information (catalogue sheets, detailed specifications, pictures, etc.). This information will be evaluated against the minimum requirements of this specification. Proposed submittals that are determined to not be equivalent to the established criteria will be rejected.

LOUISIANA AUTHORIZED DEALER(S)

Proposed item(s) must be from a manufacturer who has at least one (1) authorized dealer within the State of Louisiana where parts and service can be obtained. Authorized dealer(s) must have properly trained technicians plus all other resources necessary to perform warranty and repair services in complete accordance with the manufacturer's requirements. A letter certifying the ability to meet this requirement, inclusive of the company name(s) and address(es) of the Louisiana authorized dealer(s), should be supplied with the bid submittal and may be required prior to award.

DELIVERY & ACCEPTANCE

Vendor shall perform a test run of each unit to verify that all features and capabilities are operating properly at time of delivery. Documentation of testing may be required prior to acceptance by the Department.

Unit(s) must be delivered completely assembled (including all components, accessories, etc.) and ready for operation without any additional preparation including, but not limited to, ensuring all fluid levels are at their full mark, fuel tank(s) is full, all necessary lubrication has been performed, etc. A Louisiana safety inspection shall be performed on each vehicle prior to delivery and a Louisiana safety inspection sticker properly affixed.



Any unit delivered under this specification is subject to rejection if there is evidence of poor workmanship, by either the vendor or the original manufacturer. Noted defects and/or nonconformance findings may be corrected by the vendor. Corrections must be completed and approved by the Equipment Engineer or his representative prior to final acceptance.

Unit(s) shall be delivered "**on the ground**;" DOTD will not unload nor provide any unloading equipment to the vendor/delivery driver in order to offload the unit(s).

NOTE: The Department will have space available for equipment to be unloaded.

EACH UNIT MUST BE SUPPLIED WITH THE FOLLOWING DOCUMENTATION:

1. Notarized Bill of Sale
2. Certificate of Origin (MSO)
3. Dealer's Service Policy
4. Owner's/Operator's Manual(s)
 - a. One (1) Hardcopy
 - b. One (1) Digital Copy
 - i. Acceptable Formats: PDF delivered via USB "Flash Drive", or E-mail
5. Service Manual(s)
 - a. One (1) Hardcopy
 - b. One (1) Digital Copy
 - i. Acceptable Formats: PDF delivered via USB "Flash Drive", or E-mail
6. Build Sheet(s) – as applicable
 - a. One (1) Hardcopy
 - b. Build sheets should be writing in plain language (not company specific codes) and include, at a minimum, all standard & optional features of the delivered unit.

NOTE: Invoices will not be processed for payment until the unit(s) have been inspected by the Equipment Engineer or their representative and deemed in compliance with the specifications.

BID SUBMITTALS

Any additions, deletions, or variations from the specifications should be noted in the "Bidder's Exceptions" page of this specification. Exceptions that are noted to be less than a minimum requirement will not be accepted.

Any additions, deletions or variations from the manufacturer's standard published specifications should be noted on the "Bidder's Exceptions" page of this specification. Unless otherwise noted, any items appearing in the manufacturer's standard published specifications furnished by the Bidder are assumed to be included in the Bidder's submittal.

Bidder should note on their submittal any installation(s) to the equipment that will be performed by the vendor instead of the manufacturer.

Failure to note any specification exceptions, manufacturer specification alterations, and/or vendor installations prior to award may result in rejection of the equipment at the time of delivery.

THE NUMBER OF DELIVERY DAYS AFTER RECEIPT OF ORDER (ARO) MAY BE USED AS A FACTOR IN THE AWARD.

EQUIPMENT SPECIFICATIONS

NOTICE TO BIDDERS

Bidder should review the detailed "Equipment Specification" completely and respond to the compliance question at the end of each section by marking "X", in the space provided, for "Yes" or "No". Mark "Yes" to indicate that the equipment bid meets the section exactly as specified. Mark "No" if there are exceptions to any part of that section. Exceptions/deviations to any part of the specification are to be detailed on the "Bidder's Exceptions" page of this specification.

IN ORDER TO BE CONSIDERED FOR AWARD, BIDDER SHOULD RETURN THIS SPECIFICATION, COMPLETED IN FULL, WITH THEIR BID SUBMITTAL.

Note: All Values listed below are minimums unless noted otherwise.

1. Cab and Chassis

1.1. Chassis

1.1.1. GVWR: 66,000 lbs.

1.1.2. Frame

1.1.2.1. Frame Rails - Heat Treated Alloy Steel (120,000 PSI Yield)

1.1.2.2. 3,200,000 RBM, per rail - Bidder should list section modulus and yield strength below

Section Modulus: _____ Yield Strength: _____

Comply: ___ Yes ___ No

1.2. Cab & Axle Positions

1.2.1. Front axle: For the purposes of this solicitation, set-forward-axle (SFA) is considered equal to set-back-axle (SBA); however, SBA is the preferred option

1.2.2. Cab to axle (CA): 198.5" clear*

1.2.3. Center of axle to end of frame (AF): 96" *

1.2.3.1. *Values given here are minimums. Truck vendor and body manufacturer/upfitter shall coordinate in selecting a cab to axle dimension that works with the specified body and ensures the wheel well is aligned with the center of the axle. The required AF must be achieved with factory frame rails. Frame extensions to meet the required AF are not allowed. The AF must be sufficient to allow support of the full length of the body.

1.2.4. Must satisfy sewer cleaner requirements

Comply: ___ Yes ___ No

1.3. Cab

1.3.1. Aluminum conventional cab with fully padded high quality interior

1.3.2. Tinted safety glass

1.3.3. Full width exterior cab mounted sun shade with integral clearance lights

1.3.4. Cab entry handles, driver & passenger side

EQUIPMENT SPECIFICATIONS

- 1.3.5. Outside mirrors, driver & passenger side
 - 1.3.5.1. Power adjustable
 - 1.3.5.2. 90 sq. in. minimum
 - 1.3.5.3. Heated with integrated turn signals
 - 1.3.5.4. Two (2) adjustable spot mirrors, one (1) per outside mirror
- 1.3.6. Two (2) roof mounted air horns & one (1) standard electric horn
- 1.3.7. Air ride: driver and passenger seat, cab suspension
- 1.3.8. High-back style seats with arm rests mounted on seats (both driver and passenger)
- 1.3.9. Manufacturer's highest-level sound insulation package
- 1.3.10. Wing dash, if available
- 1.3.11. Gauge package including the following gauges:
 - 1.3.11.1. Air cleaner restriction
 - 1.3.11.2. Coolant temperature
 - 1.3.11.3. DEF
 - 1.3.11.4. Fuel
 - 1.3.11.5. Oil pressure
 - 1.3.11.6. Primary and secondary air pressure
 - 1.3.11.7. Speedometer
 - 1.3.11.8. Tachometer
 - 1.3.11.9. Voltmeter
 - 1.3.11.10. Gear indicator
 - 1.3.11.11. Odometer
 - 1.3.11.12. Total engine hours
 - 1.3.11.13. Trip hours
 - 1.3.11.14. Trip odometer
 - 1.3.11.15. Auto transmission oil temperature
 - 1.3.11.16. Engine oil temperature
- 1.3.12. Dual sun visors
- 1.3.13. Two (2) cup holders, integral to dash
- 1.3.14. 3-point seat belt for each seat. All seat belt webbing must be manufacturer's high visibility color (Orange, Red, Green, or Yellow).
- 1.3.15. Climate control, including air conditioning, heater, & defroster
- 1.3.16. Power windows & power door locks
- 1.3.17. Tilting and telescoping steering wheel

Comply: ___ Yes ___ No

1.4. Engine and Fuel System

- 1.4.1. Electronic diesel, 6-cylinder, gross HP 410 min. at 2100 RPM, 12.8L or larger
- 1.4.2. Gross torque 1450 lbs-ft. min. @ 1200 RPM, min.
- 1.4.3. To include:
 - 1.4.3.1. Heavy duty air cleaner
 - 1.4.3.2. Jacobs engine brake, or equal
 - 1.4.3.3. Full flow oil filters

EQUIPMENT SPECIFICATIONS

- 1.4.3.4. Heavy duty radiator (1500 sq. in. min)
- 1.4.3.5. On/off fan
- 1.4.4. Power down/shut down for high engine oil or coolant temperature
- 1.4.5. 100-gallon minimum fuel tank shall supply chassis engine. Tank shall be manufactured from aluminum and located under left-hand side of the cab
- 1.4.6. Six-gallon (6 gal.) minimum Diesel Exhaust Fluid (DEF) tank located to the rear of chassis fuel tank
- 1.4.7. Davco fuel processor or equal - mounted to outside of frame
 - 1.4.7.1. Visual element change indication that is integral to and non-removable from unit (to be located on driver's side near fuel tank)
 - 1.4.7.2. Water-in-fuel sensor with indicator in cab
- 1.4.8. Entire fuel system must be biodiesel compatible

Comply: ___Yes ___No

1.5. Electrical System & Lights

- 1.5.1. 12-volt system
- 1.5.2. 180-amp brushless alternator
- 1.5.3. Batteries with 2250 CCA combined
- 1.5.4. Aluminum battery box
- 1.5.5. Remote jump start studs, with tethered protective caps, located outside of the battery box
- 1.5.6. Battery disconnect switch, located inside cab, near driver's seat, similar to the below picture.



- 1.5.7. Four (4) dash mounted, rocker-style, factory installed, body circuit switches (upfitter switches) for simple on/off functions for accessories (PTO, warning lights, etc.; one (1) assigned to activate the PTO; one (1) assigned to operate the flashing warning lights; two (2) blank to be assigned by DOTD personnel.
- 1.5.8. All exterior lighting should be LED
- 1.5.9. Headlights:
 - 1.5.9.1. Automatic daytime running lights
 - 1.5.9.2. Automatic on if windshield wipers are turned on
 - 1.5.9.3. Automatic on with low ambient light levels
 - 1.5.9.4. Warning buzzer/alarm when headlight switch is on and ignition switch is in off position
- 1.5.10. Cruise control
- 1.5.11. Intermittent windshield wipers with washers
- 1.5.12. Self-cancelling directional signals

EQUIPMENT SPECIFICATIONS

1.5.13. Backup alarm, 97 dba

1.5.14. AM/FM radio with auxiliary front input, Bluetooth/hands free function and steering wheel controls

1.5.15. Two (2) 12V accessory power outlets with covers, mounted in dash (for cell phone chargers, GPS devices, etc.)

Comply: Yes No

1.6. Transmission and PTO

1.6.1. Automatic, Allison 4500RDS or equivalent with PTO Provision

1.6.2. Maximum cooling recommended by transmission manufacturer

1.6.3. PTO Controls

1.6.3.1. Air operated, inside cab. Dash mounted switch.

1.6.3.2. Warning light to indicate when unit is engaged

Comply: Yes No

1.7. Front Axle

1.7.1. Wide Track, heavy duty, 20,000 lbs. capacity min., springs to match axle rating

1.7.2. Wet-type visible cap axle seals, Stemco or equal

1.7.3. Dual Power Steering

1.7.4. Axle to be filled with synthetic lubricant

Comply: Yes No

1.8. Rear Axle

1.8.1. Heavy duty, tandem, single reduction speed, 46,000 lbs. capacity min.

1.8.2. Driver Controlled Locking Differential in Forward-Rear and Rear-Rear Axle

1.8.3. 54" axle spacing, Meritor RT-46-160

1.8.4. Tandem, walking beam type, 46,000 lbs. capacity min. rear suspension

1.8.5. Multi-leaf spring suspension with bronze center bushing

1.8.6. Axle to be filled with synthetic lubricant

Comply: Yes No

1.9. Gearing, Speed Governing & Performance

1.9.1. Top gear road speed and cruise control shall be electronically governed at 70 mph maximum

1.9.2. Transmission and axle ratio shall be selected for performance to be optimized at 65 mph while permitting truck to operate up to 70 mph on highway without excessive engine speed. Bidder should list the RPM @ 65 mph in the space below.

Comply: Yes No

RPM @ 65 mph _____

1.10. Wheels and Tires

1.10.1. Front Disc, 22.5x12.25 rims; Rear Dual Disc, 22.5x8.25 Rims,

EQUIPMENT SPECIFICATIONS

1.10.2. Extra polish aluminum, 10-stud, 285.75mm BC

1.10.3. Hub-piloted, flanged nut with steel hubs

1.10.4. (8) Tire, Rear 11R22.5 Load Range G HDR2 ECO Plus (CONTINENTAL), 491 rev/mile, 70 mph, Drive

1.10.5. (2) Tire, Front 425/65R22.5 Load Range L HAC 3 (CONTINENTAL), 465 rev/mile, 68 mph, All-Position

Comply: ___ Yes ___ No

1.11. Brakes

1.11.1. WABCO 4S/4M ABS brake system or equal

1.11.2. Front & rear service brakes shall be Q+ cast spider cam, double anchor, fabricated shoes

1.11.3. Automatic slack adjusters shall be supplied on front and rear brakes.

1.11.4. Parking brake shall be spring set on rear axle and cab controlled.

1.11.5. Low air warning light and buzzer shall be supplied.

1.11.6. To provide clean, dry air to the chassis brake system, a brake line air dryer with shield, heater and integral reservoir will be provided.

1.11.7. 18.7 CFM air compressor

Comply: ___ Yes ___ No

1.12. Paint

1.12.1. Manufacturer's Standard White

1.12.2. Black, High Solids Polyurethane Chassis Paint

1.12.3. Standard E Coat/Undercoating

Comply: ___ Yes ___ No

1.13. FMCSA/DOT Mandated Safety Items

1.13.1. 1.17.1. One (1) UL listed, 5 B:C rated, or higher, fire extinguisher securely mounted in cab

1.13.2. 1.17.2. One (1) set of three (3) bidirectional reflective triangles conforming to FMVSS No. 125

1.13.3. 1.17.3. At least one (1) spare fuse for each type/size used in the truck

Comply: ___ Yes ___ No

2. Combination Sewer Cleaner System

2.1. General

2.1.1. The systems described herein consist of one new mobile sewer and catch basin or manhole cleaning machine. The systems shall be capable of simultaneous high-pressure sewer line cleaning flushing and air-vac pick up of all liquids and solids from manholes and catch basins. This simultaneous operation will provide for maximum water pressure and vacuum at an engine speed not to exceed 2,100 RPM allowing for an adequate reserve HP from the engine.

Comply: ___ Yes ___ No

EQUIPMENT SPECIFICATIONS

2.2. Debris Storage Tank

- 2.2.1. 12 cu. yd. volumetric capacity, minimum. Each bidder shall provide a dimensioned drawing certifying usable solid debris capacity.
- 2.2.2. Constructed from Grade 50 carbon steel with a galvanized coating for corrosion resistance.
 - 2.2.2.1. Hot dip galvanized in accordance with ASTM A123 standards, including a three (3) step preparatory wash or be constructed of 304 stainless steel
- 2.2.3. Ejector unloading or hoist to dump systems are acceptable
 - 2.2.3.1. Single post type hoist cylinder with NTEA performance range
 - 2.2.3.2. Double-acting cylinder pins must be removable with retaining bolts
 - 2.2.3.3. Minimum lifting capacity of 56,000 lbs.
 - 2.2.3.4. Minimum dump angle of 50 degrees
 - 2.2.3.5. The hoist cylinder shall have safety check valves to prevent collapse from hydraulic failure
- 2.2.4. A rear door constructed of 1/2" high strength steel ASTM A572 grade 50 steel
 - 2.2.4.1. Hydraulically lock/unlock rear door, raise and lower using one hydraulic cylinder to perform the function. The cylinder shall be equipped with a check valve for safety.
- 2.2.5. Tailgate locking wedges shall have a reverse bevel to maintain a mechanical lock if hydraulic pressure should be lost for any reason.
 - 2.2.5.1. A replaceable, reversible neoprene seal shall be supplied for the tailgate.
- 2.2.6. Dumping and door controls will be located forward of the debris body on the driver's side for safety
- 2.2.7. An external, greaseable, float type debris level indicator with a stainless-steel ball shall be provided.
- 2.2.8. Debris inlet tube shall enter at top, front of tank and continue into tank and extend 3/4 of the specified tank length. Airflow shall then exit at the front of tank for best possible material separation.
- 2.2.9. Debris shall hit bolted on deflector plate at top of tank rather than rear bulkhead (door) to prevent premature wear.
- 2.2.10. A float type automatic vacuum shutdown system with a stainless-steel ball, housed in a carbon steel cage shall be provided. Systems requiring switches to accomplish this are unacceptable.
- 2.2.11. Body door hinges and pins shall be bolted to enable shim adjustment with grease fittings. Lock receivers shall also be shimmed for adjustment as seal wears.
- 2.2.12. Tailgate must hydraulically open, close & lock.
- 2.2.13. Decant system will be provided consisting of a 6" butterfly valve mounted at the lowest point of the rear door and 20' x 6" of lay flat hose with rack.
 - 2.2.13.1. Decant port to include a port plumbed with a 1/2" quick coupler and shutoff valve to aid in port cleanout via the washdown hose should the decant port become clogged.
 - 2.2.13.2. An internal carbon steel standpipe, 6" x 24" with strainer on top, shall be supplied for the decant port.
 - 2.2.13.3. The debris tank shall also be equipped with 4" sludge system capable of pumping 710 GPM @ 10' head while vacuuming
 - 2.2.13.4. A 3" ball valve and male cam lock will be provided on outlet.
 - 2.2.13.5. Include a 4" valve on sludge pump inlet, to be brass slam type and an internal hinged screen.
 - 2.2.13.6. A 3" decant line plumbed to the front of the unit with ball valve at front bumper
 - 2.2.13.7. Ball valve shall be equipped with male cam lock and include a jumper hose at rear with cam locks to hook pump to decant line at rear.
- 2.2.14. A safety body prop shall be supplied to secure the body during repairs. It shall be remotely operated so that the operator does not have to get under the debris tank while engaging the prop.

EQUIPMENT SPECIFICATIONS

- 2.2.15. An external rear door safety prop shall be provided as a secondary device to hold the door open for cleaning of debris body or inspection.
- 2.2.16. The debris body will be equipped with a full flow internal tank flusher system consisting of a minimum of seven (7) stainless steel nozzles
 - 2.2.16.1. Manifold shall be external and shall not encroach on inside of debris body.
 - 2.2.16.2. A high-pressure ball valve will be installed at the high-pressure manifold to control water to the tank flush and plumbed from manifold to tank flush.
- 2.2.17. A bolt-on carbon steel splash shield around sides and bottom of tailgate shall be supplied.
- 2.2.18. The debris body and water tanks shall be affixed on an independent frame, separate from the chassis and power frame.
- 2.2.19. Debris tank shall be mounted via a 3-point mounting system to allow flexing.
- 2.2.20. A manifold with all lube points plumbed so tailgate can be greased from ground
- 2.2.21. Ground level lube provision for float level indicator shall be supplied.
- 2.2.22. Debris tank shall have a lifetime warranty against rust, cracking, material and workmanship.

Comply: Yes No

2.3. Electrical System

- 2.3.1. The entire electrical system shall be sealed to IP66 ratings that exceed NEMA four standards.

Comply: Yes No

2.4. Water Tanks

- 2.4.1. Dual water tanks shall have a combined capacity of 1,500 U. S. gallons, minimum, and shall be internally baffled for safety.
- 2.4.2. Tanks shall be constructed of aluminum or stainless steel only. The shell and baffles shall be ¼" thick, minimum, and the end plates shall be at least ½" thick.
- 2.4.3. Each tank will be equipped with 2" ball valve low point drains, internal baffles and a six (6) inch crossover tube between tanks for quick and level filling.
- 2.4.4. Water tanks will not rise with the debris body while dumping.
- 2.4.5. Water-tanks will not share a common wall with debris tank and will be easily removed in the event of replacement or repair.
- 2.4.6. Tanks will be located above chassis frame rails to provide a flooded inlet to the water pump and protection from road damage and off-road uses and for ease of service to drive line components.
- 2.4.7. Unit will have an anti-siphon device with 4" air gap and fill hose storage rack.
- 2.4.8. Unit shall have an electronic water level indicator located at front operator control panel. A water level sight tube shall also be included.
- 2.4.9. Water tanks shall have a lifetime warranty against rust, cracking, material and workmanship.

Comply: Yes No

2.5. Air-Vac System

- 2.5.1. An automatic vacuum breaker assembly should be located inside the debris body.

EQUIPMENT SPECIFICATIONS

- 2.5.2. The vacuum system shall be provided by a positive displacement, rotary lobe-type blower capable of 4,000 CFM inlet volume and maximum 18" Hg.
- 2.5.3. The blower shall have a load rating of 8X24 4,000 CFM@18" Hg (245 H²O) 204HP@2,470 RPM.
- 2.5.4. The Air-Vac system shall have dual vacuum relief valves with one set at 17.5" Hg and one set at 18" Hg.
- 2.5.5. The vacuum system shall have an air operated 4" vacuum relief valve to vent ambient air to the blower intake in order to relieve vacuum in the body and suction tubes/hoses and will be controlled at control panel and on remote pendant.
- 2.5.6. A means of starting, stopping and varying the vacuum suction from the operator's station shall be provided.
- 2.5.7. The blower shall be driven from chassis engine via transmission and heavy duty OMSI transfer case and direct drive via drive shaft.
- 2.5.8. The transfer case will have a driver's side, remote mounted fill port and sight glass.
- 2.5.9. The cyclone separator shall be built out of high strength ASTM A572 grade 50 steel, capable of separating material down to 50-micron particles or coarser from the incoming air stream.
 - 2.5.9.1. The cyclone shall taper down to a dropout box with a clean out hatch.
 - 2.5.9.2. Dropout box shall have a two (2) inch drain with ball valve mounted at bottom of the box.
- 2.5.10. A stainless-steel removable strainer basket shall be installed before the blower inlet.
- 2.5.11. Unit shall have non-skid steps with handgrips allowing safe passage from ground level to a work platform at top of unit.
- 2.5.12. The blower shall contain a high efficiency exhaust silencer with an aluminum rain cap.
- 2.5.13. Blower will have a built-in tube rack that will hold four (4) 8" diameter suction tubes for a total of 24' of tubes with positive lock tube retainer in lieu of bungee straps.
- 2.5.14. Unit shall also include an additional rear door tube rack that holds (two) tubes, with positive lock tube retainer system in lieu of bungee straps.

Comply: ___Yes ___No

2.6. High Pressure Water Pump

- 2.6.1. 87 GPM @ 2,000 PSI, minimum.
- 2.6.2. Triplex, plunger-style, smooth-flow design. Pumps that require accumulators are unacceptable.
- 2.6.3. Starting from high pressure side of water pump, 1" I.D. plumbing up to hose reel, including water manifold, control valve and swivels.
- 2.6.4. Swivel must be designed so it can be tightened as it wears and be rebuilt.
- 2.6.5. The water pump shall be driven from chassis engine via transmission, heavy-duty OMSI transfer case and hydrostatic drive. Driving the pump off the front of the chassis engine crankshaft is unacceptable.
- 2.6.6. Water pump speed shall be fully adjustable without changing the engine RPM. Controls for starting and stopping the water pump and varying the flow and pressure shall be at the control panel. An integral oil to water heat exchanger with a 143,000 BTU per hour rating shall be included.
- 2.6.7. Water pump shall run independently from vacuum pump.
- 2.6.8. Full flow adjustable pressure regulator
- 2.6.9. Strainer on the water pump inlet.
- 2.6.10. Pump shall be equipped with drain valve on the low-pressure side at the bottom, center of the pump.
- 2.6.11. Water pump and vacuum system shall be able to simultaneously operate in continuous duty at maximum water pressure and flow while achieving maximum vacuum.

EQUIPMENT SPECIFICATIONS

- 2.6.12. Pressure and flow controls shall be located at the operator's station.
- 2.6.13. Water pump shall be positioned so it always has a positive feed from the water tanks, regardless of the water tank level.
- 2.6.14. The entire high-pressure water system shall have an air purge system to dewater all plumbing for winterization.
 - 2.6.14.1. The air shall be supplied by chassis air system that is isolated by a high-pressure ball valve and check valve.
- 2.6.15. Low-pressure spring retractable handgun hose reel with 50' of 1/2" hose for washdown.
- 2.6.16. Water system shall have a cold weather recirculation system driven by a 12-volt electric pump and isolated from main water system by manual ball valves.
 - 2.6.16.1. System must be capable of circulating 20 GPM of pressurized water through entire water system and hose reel without the use of chassis engine.
- 2.6.17. A hydro excavator package shall be included and will be frame mounted.
 - 2.6.17.1. It shall operate off the main water pump rated at 15-20gpm @ 2,000 psi.
 - 2.6.17.2. Water pump will be hydrostatically driven with an on/off control.
 - 2.6.17.3. It shall include an auto-rewinding spring-loaded hose reel with 50'.

Comply: ___ Yes ___ No

2.7. High Volume Debris Tank Flush-Out System

- 2.7.1. A nozzle system shall be installed in the debris tank in a manner so as not to become buried in the debris. This nozzle system will completely flush out the debris, and scour the bottom and inside or the rear door.
- 2.7.2. The system shall clean the tank without the need to tip the body above 15 degrees.

Comply: ___ Yes ___ No

2.8. Power Source

- 2.8.1. The high-pressure water pump and air-vac exhauster will be powered from the single chassis engine via a transfer case.
- 2.8.2. The system shall allow independent or simultaneous operation of all systems.

Comply: ___ Yes ___ No

2.9. Hose Reel Assembly

- 2.9.1. The hose reel shall be located at the front of the vehicle.
- 2.9.2. The hose reel should have a capacity of 800 feet of 1" diameter hose.
- 2.9.3. The controls for operating the motor shall have a flow control device to regulate the rotational speed of the reel in both directions.
- 2.9.4. The operator will easily be able to rotate and lock the reel at any angle desired within the rotation.
- 2.9.5. All hydraulic hoses shall be behind a protective housing to shield operator from hydraulic hose failure.
- 2.9.6. The hose reel shall rotate 230-degrees on a bearing mounted on the hose reel sub-frame.
- 2.9.7. Hose reel will rotate on a turntable slewing bearing with a friction brake that can be applied in any rotated position.
- 2.9.8. Hose reel brake band must be adjustable with turn buckle and be applied by an air cylinder.

EQUIPMENT SPECIFICATIONS

- 2.9.9. Hose reel must be mounted in the center of the chassis frame rails and not rotate out of centerline of frame rails into traffic for safety. The need for / use of an outrigger leg for support is unacceptable.
- 2.9.10. The hose reel shall tilt forward for access to the truck engine via a hydraulic cylinder powered by an electric power pack.
 - 2.9.10.1. Electric power pack shall run independently from main system.
 - 2.9.10.2. Power pack shall operate whether truck engine is running or not.
- 2.9.11. Unit shall have a manual dual roller telescoping level wind on hose reel.
- 2.9.12. Hose reel control panel will be easily removable and able to be mounted to either side of the reel, giving the operator the ability to always be positioned away from traffic or any other safety hazard.
- 2.9.13. Hose reel control panel shall have a remote shift (hot shift) for transfer case to engage and disengage the blower from the hose reel control panel. Safety switches shall be installed on the transfer case.
- 2.9.14. 600' of 1" x 2,500-PSI thermoplastic sewer cleaning hose installed on the reel.
- 2.9.15. The hose reel shall be equipped with a digital footage counter.

Comply: ___ Yes ___ No

2.10. Vacuum System and Hose (Boom)

- 2.10.1. Shall be front loading, attached at the front of the machine in order to provide ease of positioning the machine over the work area as well as afford maximum safety for the operator.
- 2.10.2. Boom shall be designed for front-end operation with 8" ID pick-up hose mounted and stored at front bumper. Need or use of support rod for boom storage is unacceptable.
- 2.10.3. Hydraulically powered up/down, left/right, and in/out shall be accomplished with a single joystick. Unit will be equipped with a true tube in a tube boom telescoping section with a travel of eight (8) feet six (6) inches.
- 2.10.4. Boom shall have a coverage area of 593 square feet. Submit diagram.
- 2.10.5. Boom lifting capacity of 1,000 lbs. with dual hydraulic lift cylinders. Lifting capacity of 550 lbs. minimum, when boom is fully extended.
- 2.10.6. A boom lifting eye shall be incorporated at the lower rigid tube to support lifting attachments.
- 2.10.7. Boom shall swing 90-degrees to each side of the truck via a hydraulic driven worm gear. A cylinder rotated boom is unacceptable.
- 2.10.8. Boom shall remain stationary and not rise with debris body.
- 2.10.9. All connections between debris body and vacuum system will be self-aligning.
- 2.10.10. Boom with steel elbow must be able to extend and retract without affecting the length of the pickup hose. Rubber hose in place of steel elbow is unacceptable.
- 2.10.11. Extra heavy-duty boom elbow shall have a preformed C channel welded to the outside radius of the elbow.
- 2.10.12. A remote manifold with all lube points plumbed so the boom can be greased from ground level shall be supplied.

Comply: ___ Yes ___ No

2.11. Operating Controls, Gauges, and Instruments

- 2.11.1. A portable control pendant permanently attached to the unit shall have controls to operate the boom power rotation with up/down, in/out, and vac relief functions.

EQUIPMENT SPECIFICATIONS

- 2.11.2. Hydraulic controls to lock and unlock the rear debris tank door as well as raise and lower the debris tanks will be located mid-ship curbside of the unit.
- 2.11.3. Controls for all functions shall be operable at the operator's position. All controls and valves shall be completely labeled.
- 2.11.4. Multiple control box positions for operator safety
- 2.11.5. Wired or wireless pendant controls available for operator use away from vehicle.
- 2.11.6. Chassis Engine Tachometer/Hour Meter on LCD Display
- 2.11.7. Vacuum Gauge on Color LCD Display
- 2.11.8. Water Pressure Gauge on LCD Display
- 2.11.9. Water Pump Hour Meter on LCD Display
- 2.11.10. Vacuum Pump Hour Meter on LCD Display
- 2.11.11. Hydraulic Pressure Gauge
- 2.11.12. Truck Engine Throttle - Electrically Controlled
- 2.11.13. Water Pump Engage/Hydraulic Flow Control
- 2.11.14. Blower Engage/Disengage
- 2.11.15. Electric Throttle Safety Return to Idle Switch
- 2.11.16. Reel Tilt
- 2.11.17. On/Off Water Pressure Valve
- 2.11.18. Hose Reel Direction and Speed Control
- 2.11.19. Single Boom Control Joystick to Control All Boom Functions
- 2.11.20. Single Reel Control Joystick for Direction and Speed Control
- 2.11.21. Remote Pendant Push Button Control
- 2.11.22. Hose Reel Articulation Brake Valve
- 2.11.23. Vacuum Relief
- 2.11.24. Boom Work Lights
- 2.11.25. Low Water Warning Light and Alarm
- 2.11.26. High Debris Level Indicator Hooked to Warning Light and Vacuum Relief

Comply: ___Yes ___No

2.12. Hydraulic System

- 2.12.1. Pump shall be transfer case-mounted piston pump with test ports for troubleshooting and shall produce 18 GPM at 2,000 PSI, 1,800 RPM, minimum.
- 2.12.2. The hydraulic reservoir shall be a modular component with a minimum of 40 gallons capacity and will have a level sight-eye and temperature gauge. Ten (10) micron filters shall be installed on both the suction and return lines and shutoff valves shall be installed on suction lines.
- 2.12.3. Unit shall be equipped with emergency 12-volt dc electric hydraulic powerpack to bypass system so boom, body and hose reel can be moved in the event of engine or hydraulic failure. Manual hand pump systems are not acceptable.

Comply: ___Yes ___No

2.13. Lights

- 2.13.1. Two (2) stop, turn, tail lights (LED D.O.T.)

EQUIPMENT SPECIFICATIONS

- 2.13.2. Two (2) backup lights
- 2.13.3. License plate light
- 2.13.4. All required ICC lights and reflectors.
- 2.13.5. Work area lights

Comply: ___ Yes ___ No

2.14. Warranty

- 2.14.1. Bidder must indicate warranty offered, which shall be no less than one (1) year parts and labor.
- 2.14.2. Any special extended warranty coverage on specific items must be indicated.

Comply: ___ Yes ___ No

2.15. Additional Features & Accessories

- 2.15.1. 24 feet of 8' aluminum tubing, including a catch basin tip.
- 2.15.2. 10' x 1" Leader hose shall be installed to end of the sewer hose.
- 2.15.3. One-inch radial, dual degree nozzle
- 2.15.4. One-inch rotating head, grease & root cutting nozzle with viscous-fluid optimized speed control
- 2.15.5. Manhole bottom hose guide - tiger tail
- 2.15.6. 25' x 2-1/2" Fill hose
- 2.15.7. Hydrant wrench and manhole hook
- 2.15.8. Camera System – two channel 7" color monitor with backup camera
- 2.15.9. Lube chart
- 2.15.10. Fenders with mud flaps
- 2.15.11. Front & rear tow hooks
- 2.15.12. One set of Operation & Maintenance manuals
- 2.15.13. One set of chassis Parts and Service manuals
- 2.15.14. Two (2) lockable steel toolboxes, 18"x18"x36", one on passenger side and one on driver side.
- 2.15.15. One, cross-body, aluminum, behind-cab toolbox for long-handled tool storage.
- 2.15.16. One traffic cone holder.

Comply: ___ Yes ___ No

2.16. Training

- 2.16.1. Minimum of 24 hours "hands-on" training for each unit sold directly to the crews which will be utilizing the equipment shortly after delivery and acceptance.
- 2.16.2. Follow-up "hands-on" training review approximately 90 days after initial training to verify safe and proper operation of the equipment.
- 2.16.3. Training should be coordinated with the DOTD Equipment section at 7686 Tom Drive, Baton Rouge, LA 70806, Ste. 42F

Comply: ___ Yes ___ No

BIDDER'S EXCEPTIONS

Instructions: Bidder should note all exceptions in space provided below. List the detail number from the aforementioned specification in the column to the left and the exception in the column to the right. Responses may be typed or hand-written. Handwritten responses must be legible. If additional space is needed, please print a duplicate copy of this sheet. "Bidder's Exceptions" page(s) should be returned with the bid submittal.

Examples:

1.6	Engine has 325 horsepower
1.18.3	Batteries have 2000 CCA combined.
2.2.8	Crossmembers are 4" channel on 12" centers.

**Spec./Detail
Reference**

Exception
