

### Camel® 1200 Truck-Mounted, Combination High-Pressure Jet /Vacuum Machine

**1500 GALLON - 12 CUBIC YARD - DUMP TYPE DEBRIS BODY**

#### **INSTRUCTIONS**

The bidder shall indicate compliance to each section of the specifications by a **yes** or **no**. Any **no** indication must be fully explained in the deviations, exceptions, exclusions space, or it will be assumed that the features and performance are as specified and will be supplied without exception. If additional space is needed, bidder shall attach (on bidder's letterhead) a statement of deviations, exceptions, exclusions. Failure to deliver unit as specified will result in rejection of the unit and non-payment.

#### **GENERAL**

The equipment described herein shall be utilized for the purpose of simultaneous high pressure hydraulic flushing of sanitary and storm drain sewer pipes and removal of liquids and solids from the manhole by use of vacuum generated by a positive displacement dual lobe blower. All operations shall be able to be performed by one operator. All material from the manhole shall be deposited within one cylindrical debris tank. The entire unit is to be of a single engine design. The chassis engine is to power all functions of the combination unit. Units utilizing additional engines and fan type vacuum air movement are unacceptable due to weight, fuel costs, emissions, and maintenance costs.

#### **A) Water Storage Tanks**

1. 1500 gallon minimum usable capacity.
2. Water storage saddle tanks mounted no lower than chassis frame rails.
3. Rotational molded non-cross linked polyethylene construction with ultraviolet stabilizer and minimum ¼" thick wall. Must be repairable type polyethylene.
4. Bottom of tank protected by ¼" steel to eliminate potential puncture from road debris.
5. The total tank capacity shall be divided into 250 gallon, separate, self-baffling cells and interconnected together. Individual tanks shall all be mounted at the same level to prevent pressurization and breather problems.
6. Tank to pump suction shut-off valve with cast iron, "Y" type strainer with stainless steel filter element.
7. Easily accessible inspection ports provided on top of each tank.
8. Lifetime "no rust-through or corrosion warranty" provided.
9. Minimum 4" air gap on fill tube to prevent siphoning of water from storage tanks back into hydrant.
10. Clear sight level indicator tubes mounted both sides of unit

**Water Storage Tanks - Comply:** Yes \_\_\_\_\_ No \_\_\_\_\_

**Deviations, exceptions, exclusions:**

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### B) Water Pump

1. Double acting, single piston hydraulic powered water pump with 1:1 oil to water ratio
2. Rated design capacity of 100 GPM and 3,000 PSI continuous duty
3. Hydraulic pump and water pump shall be sized to produce 80 GPM @2000 PSI
4. Single hydro-pneumatic nitrogen charged 2-1/2 pound accumulator with on/ off valve shall be provided to handle pressures from 1400 to 3000. Hydro-pneumatic accumulator shall be equipped with valve to allow operator to selectively activate blockage busting or smooth flow characteristic.
5. Piston and/or packing must not require greasing.
6. Switch at control panel shall control engagement and disengagement and variable flow from 0 to full pressure.
7. Pump driven hydraulically by a tandem hydraulic pump powered by a transmission-mounted hot shift PTO.
8. Pump mounted below water tanks, forward of debris tank to assure flooded inlet at all times to prevent cavitation.
9. Single two way ball valve for sewer nozzle operation.
10. Multi flow system with dial valve at control panel to allow full vacuum with independent control of water pressure and flow
11. An in line water charged oil cooler shall be installed between the water tanks and the pump. The oil cooler shall not be installed within another component such as a water or oil tank.
12. For maintenance and serviceability, the water pump shall not require removal from the unit chassis for maintenance or repair. Additionally there shall be a maximum of three seals required for reassembly of the pump.

**Water Pump - Comply:**    Yes \_\_\_\_\_    No \_\_\_\_\_

**Deviations, exceptions, exclusions:**

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### C) Vacuum System Positive Displacement

1. Vacuum Pump Rotary lobe positive displacement "Roots type" using two figure-eight impellers rotating in opposite directions to move entrapped air around the case to the outlet port. Pump shall be rated for continuous duty.
2. Unit equipped with a high efficiency exhaust silencer.
3. Vacuum pump direct shaft driven from the transfer case without the use of belts, poly chains or intermediate hydraulic or hydrostatic systems. Power supplied from chassis engine via transfer case.
4. Controls supplied in cab to engage and disengage vacuum pump for operator safety.
5. Two (2) automatic opening vacuum relief valves shall be provided.

6. Single 14" diameter, internal stainless steel float ball supplied for automatic vacuum system shut off when unit is full. (Electric shut off systems not acceptable). A minimum 113 square inches must be provided at the air exit duct to reduce air velocity and carryover.
7. An externally mounted, vertical cyclone separator with a 16" diameter clean out door shall be incorporated between the positive displacement vacuum pump and the debris tank. The clean out door shall be accessible from ground level. The cyclone shall have a minimum 2012 cubic inch internal operating size and be rated to 50 micron.
8. Vacuum relief vent door switch located at operators station to automatically relieve vacuum. Switch shall open a vent door via an air cylinder to relieve the vacuum without disengaging the vacuum pump.
9. Vacuum pump shall produce 4500 CFM and 18" Hg
10. Vacuum Pump to be Roots Model 824 RCS

**Vacuum System Positive Displacement - Comply:** Yes \_\_\_\_\_ No \_\_\_\_\_

**Deviations, exceptions, exclusions:**

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### **D) Debris Body – Dump Unloading**

1. Minimum volumetric capacity of 12.0 cubic yards.
2. Cylindrical shaped for strength and corrosion resistance. Flat sided debris tanks are specifically prohibited due to flex and weld deterioration
3. Designed to withstand 360" of water vacuum.
4. Debris tank to be constructed of abrasion and corrosion resistant ¼" Exten steel, with a yield point of 50,000 PSI and tensile strength of 70,000 PSI
5. Unloading of body is accomplished without going behind unit when body is full.
6. Hydraulic powered open and close, full height and width flat rear door with self-compensating, double lipped neoprene seal located on door. Rear door to be opened and closed by two (2) power up/down hydraulic cylinders. The door shall hydraulically open 90 degrees to allow easy access to the debris body interior for clean out.
7. Four (4) mechanical, wedge pin and receiver, hydraulically operated tailgate latches shall be supplied for securing rear debris tank door. Hydraulic latching shall be accomplished by a single hydraulic cylinder with mechanical linkage, separate from the door open close cylinders. The design of the locking system will not allow tailgate to open if hydraulic power is lost. Systems requiring separate manual latches to secure the door in the event of hydraulic system failure are unacceptable.
8. Exterior mechanical liquid level gauge with stainless steel float and rod.
9. Internal tank manifold flushing system with eight jets working from the water pump.
10. The debris inlet pipe shall be bolted to the debris tank and not require welding to replace
11. The make/break connection between debris inlet pipe and boom must compensate for uneven road and ground conditions by way of spring-loaded and gasketed mating plates.

12. Body shall be raised with a two stage double acting telescopic cylinder to enable the debris body to be powered up or down. The cylinder shall be trunion mounted with greaseable pins. The debris body is to have a minimum dump angle of 50 degrees.
13. Rear body pivot pins to be greasable to increase pin life.
14. Controls for latching/unlatching, opening/closing, and raising/lowering the debris body shall be located on the passenger side and forward of the debris tank.
15. Rear gravity drain valve shall be a minimum 6" diameter opening for decanting of liquids from debris body and shall include a knife valve with locking handle and 10' of fabric drain hose.
16. Body drain capable of pneumatic back flushing in order to unclog without opening tailgate
17. A combined visual and audible alarm must provide an alert whenever the debris body or tailgate is being raised or lowered

**Debris Body Comply:** Yes \_\_\_\_\_ No \_\_\_\_\_

**Deviations, exceptions, exclusions:**

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### E) Air Purging System

1. Self-contained system for purging water from jetting hose, handgun lines and pump to prevent freeze-up supplied.

**Air Purging System - Comply:** Yes \_\_\_\_\_ No \_\_\_\_\_

**Deviations, exceptions, exclusions:**

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### F) Hose Reel, Front Mount "Rotating"

1. The hose reel assembly shall be front mounted at the center of the unit with 180 degree manual rotation to facilitate manhole entry and reduce traffic flow interruption. Manual rotation shall occur between the headlights of the truck chassis keeping the reel at a centered position at all times.
2. Hose reel assembly shall rotate on a large diameter ball bearing and include a pneumatically actuated lock, which will positively lock the reel in any position across its operating range.
3. The hose reel shall have a minimum capacity of 1000' of 1" I.D. sewer hose. Drum and flanges constructed of ¼" steel, designed to withstand maximum working pressure without distortion. The drum shall have a minimum of 30" diameter to prevent hose damage. The reel shall be supported by two (2) heavy duty self-aligning pillow block bearings, bolted to a ¼" thick support frame.
4. 600 feet of 1" dia. plastic sewer cleaner hose supplied, with 2500 PSI working, 6250 PSI burst pressure ratings minimum. Hose must be constructed per standards established by NSWMA. Rubber type sewer hoses are not acceptable.

5. Reel driven by a double chain, hydraulic drive producing a minimum 14,600 in/lbs. torque and a variable speed from 0 to 50 RPM. The reel frame must be capable of pivoting down to allow for tilting of the chassis hood by use of an electric over hydraulic system powered by a 12 volt DC power pack.
6. A means to lower and raise the hose reel frame shall be provided that does not require the truck engine to be running.
7. Manually controlled level wind provided, utilizing four rollers. The top roller must be designed to pivot over center to allow for sewer hose removal without having to completely rewind back on the reel.
8. A containment system enclosing the top ¼ of the hose reel shall be provided, consisting of a guard constructed entirely of Lexan. The transparent containment system permits viewing of hose reel and sewer hose, while protecting the operator from hose burst or coupling failure.

**Hose Reel Front Mount "Rotating" - Comply:** Yes \_\_\_\_\_ No \_\_\_\_\_

**Deviations, exceptions, exclusions:**

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### G) Power Boom

1. The power boom shall have a minimum of 250 degree hydraulic rotation and be lockable in any position.
2. A boom rest for transport shall be directly mounted to the sub frame.
3. Boom shall not raise with debris body.
4. The boom shall have an articulated function that provides a vertical range of motion of no less than 21' (44 degrees) upward and 3' (19 degrees) downward from its horizontal position.
5. Boom shall be equipped with a heavy duty channel reinforced elbow for added life.
6. The lift capacity at the boom end with boom fully extended shall be 1,000 pounds minimum.
7. A joy stick shall be permanently mounted to the operator control station for boom functions: up, down, left and right, in/out.
8. The boom shall be remote controlled from a removable pendant station. A 6 pole boom pendant capable of up to 20 functions shall be supplied with: up, down, in, out, right, left.
9. The boom vacuum pipe shall be 8" and reach a minimum of 26' from centerline of unit. Hydraulic boom extension of 8' shall be true telescoping tube inside of tube design which will extend and retract without affecting the vertical position of the boom terminus. The boom structural support tubes shall be equipped with ultra-high molecular poly slides to reduce friction of the sliding portions of the assembly and not require lubrication.
10. The travel storage position shall be at front right corner of truck bumper for driver visibility.

**Power Boom - Comply:** Yes \_\_\_\_\_ No \_\_\_\_\_

**Deviations, exceptions, exclusions:**

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### H) Control Center

1. The operator control center shall be located at the front of unit.
2. The control center shall include a digital display including:
  - Tachometer
  - Engine oil pressure
  - Engine temperature
  - Fuel consumption
  - Fuel level
  - Sewer hose footage counter with 10 bank memory
3. Single two way ball valve for jetter hose on/off.
4. Hose reel joystick control -pay in/pay out with speed control. Joystick shall be universal mounting type to allow individual operator selection of directional movement and comfort.
5. Boom joystick control
6. Water pressure gauge
7. Emergency kill red knob
8. Vacuum relief control switch
9. Vacuum Supercharger valve control switch (if optional Supercharger valve is required)
10. Reel tilt control switch
11. Reel pivot brake control switch
12. Water pump variable flow control
13. Throttle control
14. In the event of failure by the chassis to provide power to the hydraulics, a 12 volt power-pack will provide emergency hydraulics to the body, boom and hose reel. All standard body, boom and hose reel control inputs will function when under the emergency hydraulics.

**Control Center - Comply:** Yes \_\_\_\_\_ No \_\_\_\_\_

**Deviations, exceptions, exclusions:**

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### I) Vacuum Tubes and Brackets

1. 8" O.D. aluminum tubes with male/female fittings supplied for ease of assembly.
2. One (1) 7' section, two (2) 5' sections, and one (1) 3' section supplied. One (1) gasket and over center clamp for each tube supplied. No tools required with clamps.
3. Four (4) tube storage rack, located on rear door with nylon tube holders

**Vacuum Tubes and Brackets - Comply:** Yes \_\_\_\_\_ No \_\_\_\_\_

**Deviations, exceptions, exclusions:**

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**J) Toolbox**

1. One (1) lockable diamond plate aluminum toolbox, 18"x18"x48" frame mounted, passenger side

**Toolbox - Comply:** Yes \_\_\_\_\_ No \_\_\_\_\_

**Deviations, exceptions, exclusions:**

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**K) Nozzles**

1. One (1) 1" x 15 degree steel nozzle with hardened orifice supplied.
2. One (1) 1" x 35 degree steel nozzle with hardened orifice supplied.
3. One (1) 1" nozzle extension supplied.

**Nozzles - Comply:** Yes \_\_\_\_\_ No \_\_\_\_\_

**Deviations, exceptions, exclusions:**

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**L) Water Washdown System**

1. Main water pump shall supply water source with means of regulating pressure from 0 to 2000 PSI available at handgun.
2. Retractable hose reel with live center complete with 50' x ½" hose provided with quick disconnect.

**Water Washdown System - Comply:** Yes \_\_\_\_\_ No \_\_\_\_\_

**Deviations, exceptions, exclusions:**

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**M) Accessories**

1. 2½" x 25' fill hose with fittings for filling water tanks supplied, including storage bin.
2. Minimum 5000 psi rated handgun shall be supplied.
3. One (1) "tiger tail" hose guide supplied complete with rope.
4. One (1) LED strobe light mounted top rear of body
5. One (1) LED strobe light mounted at front section of boom.
6. One (1) LED top rear traffic advisor
7. Quarter fenders – front and back of rear wheels
8. Two (2) each operation, maintenance and parts manual supplied.

**Accessories - Comply:** Yes \_\_\_\_\_ No \_\_\_\_\_

**Deviations, exceptions, exclusions:**

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### N) Paint

1. Urethane paint: unit to match chassis cab.
2. Color

**Paint - Comply:** Yes \_\_\_\_\_ No \_\_\_\_\_

**Deviations, exceptions, exclusions:**

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### O) Warranty

1. Warranty minimum one (1) year on sewer/catch basin cleaner on defects in material and workmanship.
2. Minimum ten (10) years on debris tank on defects in material and workmanship.
3. Minimum ten (10) years on water tanks on defects in material and workmanship.
4. Lifetime rust-through and corrosion on water tanks.
5. Minimum three (3) years on single piston water pump on defects in material and workmanship.  
Wear items are not included in warranty.

**Warranty - Comply:** Yes \_\_\_\_\_ No \_\_\_\_\_

**Deviations, exceptions, exclusions:**

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### P) Safety

1. The entire unit shall be no more than 11' 6" in overall height to reduce high center of gravity tipping risk.  
Bidder to state overall height of unit \_\_\_\_\_
2. To eliminate obstruction of a driver's field of vision, the boom hose or tube end must be removable from the boom elbow. For safety of personnel, removal of the boom hose or tube must be able to be completed from ground level without the use of ladders, lifts, steps or any other access assisting device.

**Safety - Comply:** Yes \_\_\_\_\_ No \_\_\_\_\_

**Deviations, exceptions, exclusions:**

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### Q) Chassis Specifications - Minimum

#### 60,000 Lb. GVW

1. 370 hp Diesel Engine, 1150 lb-ft Torque
2. Electronic Engine Warning System
3. Remote Mounted Engine Control
4. 160 Amp Alternator
5. Dual Batteries 1850 CCA Total
6. Circuit Breakers
7. 13.2 CFM Air Compressor
8. Dust Shields on Air Brake Chambers, Front and Rear
9. Air Dryer with Heater
10. Allison 3000 RDS P Automatic Transmission with 10 Bolt PTO's at 4 and 8 o'clock position with Oil Cooler, Push Button Control
11. Transmission Temperature Gauge
12. 20,000 lb. Front Axle and Suspension Set Back
13. 40,000 lb. Rear Axle, 5.57 Ratio
14. Electric Over Air Power Divider Switch with Indicator Light
15. Hendrickson RT-403 Rear Suspension
16. Vertical Exhaust
17. 120,000 PSI Frame with Outer C Channel 120,000 PSI Reinforcement
18. Integral Front Frame Extension, 20"
19. 70 Gallon Fuel Tank
20. Full Gauge Cluster – Speedometer, Tachometer, Oil Pressure, Dual Air Gauges, Coolant, Volts, Fuel, Transmission Temp
21. Overhead Storage Pockets (2)
22. Cruise Control
23. Driver Air Seat
24. Fixed Passenger Seat
25. Dual Mirrors with Dual Convex Spot Mirrors
26. AM/FM Radio w/ Weatherband
27. Air Conditioning
28. Tinted Glass
29. Air Horn
30. Disc Wheels aluminum front
31. Disc wheels steel rear
32. Front Tires: 425/65R 22.5 G 286A Radial 20 Ply
33. Rear Tires 11R 22.5G 164 Radial 14 Ply Mud & Snow
34. Body Builder Wiring and Interface
35. Wheel base and frame dimensions according to body builders requirements
36. Paint: White

### Preferred Options

#### 1. WIRELESS REMOTE CONTROL

- a. A wireless remote control shall be provided in addition to the wired pendant control. The control shall be contained in a water proof / shock proof housing with a carrying case with belt and shoulder strap. The wireless remote control shall have the following functions:
  - b. Boom up/down, in /out, left/right
  - c. Engine throttle
  - d. Water flow and pressure
  - e. Vacuum relief vent door
  - f. Emergency button that will automatically open vacuum relief vent door, kick out vacuum pump PTO and bring engine to an idle.
  - g. A reset function to return the unit to normal operation after emergency button has been pushed. For safety purposes, this reset function will require constant pressure and will require a minimum of five seconds between activation of the reset and the return of the unit to normal operation.
  - h. The wireless remote shall control the sewer hose pay out / retrieve function of the hose reel.
  - i. Rear Door Unlock, Raise, Dump or Eject, Lower and Lock

#### 2. ELECTRONIC DEBRIS TANK LEVEL SENSOR

- a. Radar sensing for liquid or dry material
- b. Four level LED indicator lights with rapid blink when tank is within ½ yard of being full.
- c. Once full, system automatically opens vent door

#### 3. CARTRIDGE FILTER

- a. Vacuum pump shall be protected by an HX cartridge filter capable of containing particles sized 10 micron or larger.
- b. HX Cartridge filter housing shall be constructed on ¼" steel 28" in diameter and 22" in depth.
- c. Filter housing shall have one single door hinged on the left for easy access. Door shall be secured by one single 12" "T" bolt.
- d. Filter element shall be 22" x 21" constructed of washable rigid polyester, unitized in a stainless steel housing, 98% efficient @ 10 microns. Filter element shall have qty of 130-2" pleats with a total filter area of 120 sq. ft.

#### 4. SUPERCHARGER VALVE

- a. Hydraulically operated vacuum supercharger valve shall be supplied. The valve shall close off the air flow through the boom, creating full rated vacuum inside the debris tank.
- b. When opened, a supercharged velocity of air shall rush through the boom and vacuum tubes.

#### 5. LED Strobe/Advisor Package No. 2

- a. Two (2) LED strobe lights mounted top rear of body
- b. Two (2) LED strobe lights mounted at front section of boom.
- c. One (1)LED top rear traffic advisor

**6. LED Strobe/Advisor Package No. 3**

- a. Two (2) LED strobe lights mounted on lower front of unit
- b. Two (2) LED strobe lights mounted mid-length of unit
- c. Two (2) LED strobe lights mounted on lower rear of unit

**7. LED Strobe/Advisor Package No. 4**

- a. Wiring and mount for one (1) front-mounted strobe light or beacon
- b. Wiring and mount for two (2) rear-mounted strobe lights or beacons
- c. Strobe lights to be supplied and installed by others

**8. JETTING/HYDRO-EXCAVATION WATER HEATER**

- a. 465,000 BTU rating
- b. Diesel fired

**9. WINTER RECIRCULATION**

- a. Winter recirculation system will enable travel over the road without damaging pump, drive systems or truck transmission.

**10. HIGH TEMPERATURE BLOWER RELIEF VALVE**

- a. Vacuum pump shall be protected by a high temperature relief system.
- b. When high temperature is reached the system will automatically open the vacuum vent door to allow cool outside air into the system to protect the blower from overheating.

**11. VACUUM GAUGE AT CONTROL CENTER**

- a. Unit shall have vacuum gauge located at operator's control center.

**12. REMOTE GREASE PACKAGE – TAILGATE AND BOOM BEARING/MOTOR**

- a. Boom bearing and motor grease to be delivered by way of fittings located on the passenger side of the body. Fittings to be no higher than 42" above the ground.
- b. Tailgate grease to be delivered by way of a single fitting and grease manifold. The single fitting is to be located on the tailgate and at a no higher than 72" off the ground.

**13. REAR 6" GRAVITY DRAIN WITH 3" PLUMBING TO FRONT BUMPER**

- a. A 3" line shall be plumbed from the rear 6" drain valve to the front bumper to gravity drain liquids from the debris tank.
- b. The terminus of the line shall have a bronze gate valve, 10' of 3" lay flat hose, cam-lock fitting and storage bin for the hose.

**14. REAR MOUNTED MANUAL 420 GPM TRASH PUMP AND REAR 6" GRAVITY DRAIN WITH 3" PLUMBING TO FRONT BUMPER**

- a. A hydraulic powered 420 GPM manually operated trash pump shall be located on the rear door / outside of the debris tank.
- b. The pump shall have a pick up located inside the tank approximately 12" above the bottom of the tank.
- c. The intake pipe for the pump shall have a filter screen and stainless steel baffle encompassing the screen.
- d. Controls to engage the pump shall be adjacent to the dump controls, curb side of the unit.
- e. A 3" line shall be plumbed from the rear 6" drain valve to the front bumper to gravity drain liquids from the debris tank.
- f. The terminus of the line shall have a bronze gate valve, 10' of 3" lay flat hose, cam-lock fitting and storage bin for the hose.

**15. FRONT 6" GRAVITY DRAIN WITH 3" PLUMBING TO FRONT BUMPER**

- a. A 3" line shall be plumbed from the front 6" drain valve to the front bumper to gravity drain liquids from the debris tank.
- b. The terminus of the line shall have a bronze gate valve, 10' of 3" lay flat hose, cam-lock fitting and storage bin for the hose.

**16. FRONT MOUNTED MANUAL 420 GPM TRASH PUMP AND FRONT 6" GRAVITY DRAIN WITH 3" PLUMBING TO FRONT BUMPER.**

- a. A hydraulic powered manual 420 GPM trash pump shall be mounted externally on the front section of the debris body.
- b. The pump shall have a pick up located inside the tank approximately 12" above the bottom of the tank.
- c. The intake pipe for the pump shall have a filter screen.
- d. Controls to engage the pump shall be adjacent to the dump controls, curb side of the unit.
- e. A 3" line shall be plumbed from the front 6" drain valve to the front bumper to gravity drain liquids from the debris tank.
- f. The terminus of the line shall have a bronze gate valve, 10' of 3" lay flat hose, cam-lock fitting and storage bin for the hose.

**17. REAR MOUNTED MANUAL 420 GPM TRASH PUMP.**

- a. A hydraulic powered 420 GPM manually operated trash pump shall be located on the rear door / outside of the debris tank.
- b. The pump shall have a pick up located inside the tank approximately 12" above the bottom of the tank.
- c. The intake pipe for the pump shall have a filter screen and stainless steel baffle encompassing the screen.
- d. System shall have rear discharge with 25' x 3" layflat hose.
- e. Controls to engage the pump shall be adjacent to the dump controls, curb side of the unit.

**18. FRONT MOUNTED MANUAL 420 GPM TRASH PUMP.**

- a. A hydraulic powered manual 420 GPM trash pump shall be mounted externally on the front section of the debris body.
- b. The pump shall have a pick up located inside the tank approximately 12" above the bottom of the tank.
- c. The intake pipe for the pump shall have a filter screen.
- d. System shall have 3" side discharge with 25' x 3" layflat hose.
- e. Controls to engage the pump shall be adjacent to the dump controls, curb side of the unit.

**19. 6" FRONT DRAIN WITH RIV VALVE**

- a. 6" diameter front-mounted body drain.
- b. Bronze gate valve with locking handle.
- c. 10' of lay flat drain hose.

**20. REAR DRAIN VERTICAL STANDPIPE**

- a. Vertical standpipe inside tailgate, 18" in height with screen.

**21. STAINLESS STEEL BAFFLE ON INTERIOR OF TAILGATE**

- a. Full height stainless steel door baffle located inside tailgate.
- b. Baffle to be bolted in to allow for replacement without cutting, welding or torching.

**22. REAR SPLASH SHIELD**

- a. The debris tank shall have a rear splash shield installed from the 3 to 9 o'clock position at the tailgate.

**23. DEBRIS TANK/WATER TANKS INTERCONNECT**

- a. Debris body / water tank interconnect system to combine tanks for extended jetting purposes.
- b. System shall have two valves to be able to use water from either debris or water tanks or both tanks together.

**24. FULLY AUTOMATIC POWER LEVEL WIND**

- a. Automatic power level wind consisting of machined scroll and follower.
- b. Means to time follower must be included.

**25. HOSE REEL TENSIONING SYSTEM**

- a. Roller tensioning device to prevent the hose from developing loose wraps when a sewer line obstruction is encountered or reel speed is faster than nozzle speed.
- b. A means of reducing tensioning pressure to zero when not being utilized.
- c. Automatically controlled hose tensioner utilizing two or more adjustable air cylinders for pressure.
- d. A means of adjusting air pressure to provide tensioning force regardless of how much hose is on the reel.

**26. DIGITAL FOOTAGE COUNTER ON HOSE REEL**

- a. Sewer hose footage counter shall be electronic with digital readout.

**27. LOW WATER WARNING ALARM WITH MESSAGE DISPLAY**

- a. Low water alarm located at front operators station.
- b. System to have shutoff override to silence the alarm.

**28. RETRACTABLE HOSE REEL WITH LIVE CENTER – 50' LONG X ½" HOSE**

- a. Retractable hose reel with live center complete with 50' x ½" hose provided with quick disconnect.

**29. HYDRO-EXCAVATION ACCESSORY KIT**

- a. One (1) 8" x 6" Reducer.
- b. One (1) 6" x 6' Dig tube with non-conducting cuff.
- c. One (1) Handgun with on/off trigger.
- d. Two (2) ¾" x 6' Pipe extensions with quick disconnects.
- e. One (1) Urethane coated nozzle with three replaceable jets.
- f. One (1) Spring return hose reel with 50' of ½" hose.

**30. BEHIND THE CAB VERTICAL TUBE STORAGE RACK MOUNTED TO VACUUM PUMP EXHAUST SILENCER**

- a. Two (2) 3-tube vertical storage racks to be mounted on passenger side.
- b. Tube racks on driver side, potentially placing workers in the roadway during accessing, are not acceptable.

**31. TOOLBOX – 22 X 13 X 60, DRIVER SIDE**

- a. One (1) Lockable aluminum diamond plate toolbox, 22" x 13" x 60"
- b. Located on the driver side of the unit.

**32. ADDITIONAL TOOLBOX – 18 X 18 X 48, PASSENGER SIDE**

- a. One (1) Lockable aluminum diamond plate toolbox, 18" x 18" x 48"
- b. Located on the passenger side of the unit.

**33. LED FLOOD LIGHTS ON BOOM – TWO (2)**

- a. Two (2) LED floodlights to be mounted on opposite sides of the boom elbow.
- b. Light sources other than LED are not acceptable.

**34. LED FLOOD WORK LIGHTS – TWO (2) ON TAILGATE AND TWO (2) ON POWER UNIT**

- a. Two (2) LED floodlights to be mounted on opposite sides of the boom elbow.
- b. Two (2) LED floodlights to be mounted on at the rear above the tailgate.
- c. Two (2) LED floodlights to be mounted mid-unit on opposite sides.
- d. Light sources other than LED are not acceptable.

**35. HANDLIGHT WITH 25' LONG RETRACTABLE CORD**

- a. Hand light with 25' cord on a retractable reel.

**36. FRONT AND REAR TOW HOOKS**

- a. Two (2) Front mounted tow hooks.
- b. Two (2) Rear mounted tow hooks.

**37. Additional Accumulator**

- a. Additional 1 pound nitrogen-charged accumulator with on/off valve. The accumulator is equipped with a valve to allow operators to selectively activate the blockage busting feature.
- b. One pound accumulator with operating pressure from 800psi to 1400psi.

**- END OF SPECIFICATIONS -**

***Contact Super Products with any questions regarding these product specifications.***