TUSCARAWAS COUNTY METROPOLITAN SEWER DISTRICT

Specifications and Bid Forms for One (1) Combination Jet Vacuum Machine

Submit Bid to:
Rhonda Jordan, Clerk
Tuscarawas County Commissioners
125 East High Avenue
New Philadelphia, OH 44663

BIDDING DOCUMENTS

DATE: 7/27/2023

SECTION 000
TABLE OF CONTENTS

SECTION 001
ADVERTISEMENT FOR BIDS

Sealed bids will be received at the office of the Clerk of the Board of Tuscarawas County Commissioners, 125 East High Avenue, New Philadelphia, Ohio 44663 until 9:30 AM local time on August 23, 2023 for furnishing **one (1) Combination Jet Vacuum Machine**, and at said time and place, publicly opened and read aloud.

Contract documents, bid sheets, plan and specifications can be obtained at the office of the Tuscarawas County Sanitary Engineer, 9944 Wilkshire Boulevard NE, Bolivar, Ohio 44612.

Each bidder is required to furnish with its proposal a Bid Guaranty and Contract Bond in accordance with Section 153.54 of the Ohio Revised Code. Bid security furnished in Bond form, shall be issued by a Surety Company or Corporation licensed in the State of Ohio to provide said surety.

Each proposal must contain the full name of the party or parties submitting the proposal and all persons interested therein. Each bidder must submit evidence of its experiences on projects of similar size and complexity.

The Commissioners have the right to waive irregularities and to reject any and or all bids and to waive any informalities or irregularities in the bids received.

By Order of the Board of Tuscarawas County Commissioners

Chris Abbuhl
Greg Ress
Kristin Zemis

ATTEST: Rhonda Jordan, Clerk

Publish: The Times Reporter on July 27, 2023
https://tcmsd.org/projects-out-for-bid

Bid Tabulation will be posted on above website upon award of bid.

SECTION 002
BID PROPOSAL FORM

Bid Item: Combination Jet Vacuum Machine

Tuscarawas County Commissioners
125 East High Avenue
New Philadelphia, OH 44663

The undersigned, having familiarized themselves with the specifications for the bid items, hereby proposes to deliver FOB Bolivar, Ohio, one Combination Jet Vacuum Machine which meets the written specifications as provided by the Owner for the price set out below.

Base Bid for Combination Jet Vacuum Machine:

Name of Company / Bidder: _____

Make / Model of Product Bid: _____

Base Bid Price $_____

Alternate #1 - Supply a demo unit meeting the requirements of Specification Section 200:

Deduct from Base Bid Price $ (_____)

Alternate #2 – Proposed Trade-In Amount for the Owner's existing Combination Jet Vacuum Machine:
Submission of a trade-in amount is not mandatory; however, the Owner may make the selection based on the trade-in amount. Any Bidder wishing to submit a trade-in for the Owner's existing machine may schedule an inspection upon request with a minimum of twenty-four (24) hour notice being given to the Tuscarawas County Metropolitan Sewer District at (330) 874-3262.

Deduct from Base Bid Price $ (_____)

The Bid will be awarded to the lowest and best bidder. The Owner reserves the right to award the Base Bid alone or with any combination of the proposed Alternates which the Owner believes is in its best interest. The Owner may reject any or all bids.

Required Information
Bidder shall complete the following information relating to size, quantity and location of toolboxes being supplied with the bid.

Location	Quantity	Dimensions	Material & Thickness

Location	Quantity	Dimensions	Material & Thickness

Equipment Being Supplied

Blower	Manufacturer	Flow @ Pressure	RPM	

Water Pump	Manufacturer	Flow @ Pressure	RPM	

Chassis	Manufacturer	HP	GVW	Torque @ RPM

Respectfully Submitted,

_____ _____
Printed Name of Authorized Company Representative Phone Number

_____ _____
Signature of Authorized Company Representative Date
(attach evidence of authority to sign)

SECTION 003
SPECIFICATION COMPLIANCE FORM

Section	Provided Equipment Complies? (Y/N)	Explanation Attached? (Y/N)
200 – General Specifications		
201 – Debris Storage Body		
202 – Boom and Vacuum Pickup Hose		
203 – Positive Displacement Blower		
204 – Water Tank		
205 – High Pressure Water Pump		
206 – Hose Reel Assembly		
207 – Handgun Manhole Cleaning System		
208 – Hydraulic System/Lubrication		
209 – Storage Tool Boxes and Tow Hooks		
210 – Not Used		
211 – Cameras		
212 – Mounting and Delivery		
213 – Paint		
214 – Manuals		
215 – Warranty		
300 – Chassis Specifications		

Certification
I hereby certify that the compliance information listed above is true and accurate.

_____ _____
Printed Name of Authorized Company Representative Phone Number

_____ _____
Signature of Authorized Company Representative Date
(attach evidence of authority to sign)

SECTION 004

BID GUARANTY AND CONTRACT BOND

KNOW ALL PERSONS BY THESE PRESENTS, that we, the undersigned

_____ as Principal
(Name and Address of Contractor)

and

_____ as sureties,
(Name of Surety)

are hereby held and firmly bound unto the ***Tuscarawas County Board of Commissioners*** as obligee in the penal sum of the dollar amount of the bid submitted by the principal to the obligee on _____ to undertake the project known as the ***Combination Jet Vacuum Machine Procurement***. The penal sum referred to herein shall be the dollar amount of the principal's bid to the obligee, incorporating any additive or deductive alternate bids made by the principal on the date referred to above to the obligee, which are accepted by the obligee. In no case shall the penal sum exceed the amount of _____ dollars. (If the foregoing blank is not filled in, the penal sum will be the full amount of the principal's bid, including alternates. Alternatively, if the blank is filled in, the amount stated must not be less than the full amount of the bid including alternates, in dollars and cents. A percentage is not acceptable.) For the payment of the penal sum well and truly to be made, we hereby jointly and severally bind ourselves, our heirs, executors, administrators, successors, and assigns.

THE CONDITION OF THE ABOVE OBLIGATION IS SUCH, that whereas the above named principal has submitted a bid for the above referred Project.

Now, therefore, if the obligee accepts the bid of the principal and the principal fails to enter into a proper contract in accordance with the bid, plans, details, specifications, and bills of material; and in the event the principal pays to the obligee the difference not to exceed ten per cent of the penalty hereof between the amount specified in the bid and such larger amount for which the obligee may in good faith contract with the next lowest bidder to perform the work covered by the bid; or in the event the obligee does not award the contract to the next lowest bidder and resubmits the project for bidding, the principal pays to the obligee the difference not to exceed ten per cent of the penalty hereof between the amount specified in the bid, or the costs, in connection with the resubmission, of printing new contract documents, required advertising, and printing and mailing notices to prospective bidders, whichever is less, then this obligation shall be null and void, otherwise to remain in full force and effect; if the obligee accepts the bid of the principal and the principal within ten days after the awarding of the contract enters into a proper contract in accordance with the bid, plans, details, specifications, and bills of material, which said contract is made a part of this bond the same as though set forth herein;

Now also, if the said Principal shall well and faithfully do and perform the things agreed by the Contract to be done and performed according to the terms of said contract; and shall pay all lawful claims of subcontractors, materials suppliers, and laborers, for labor performed and materials furnished in the carrying forward, performing, or completing of said contract; we agreeing and assenting that this undertaking shall be for the benefit of any materials suppliers or laborer having a just claim, as well as for the obligee herein; then this obligation shall be void; otherwise the same shall remain in full force and effect; it being expressly understood and agreed that the liability of the surety for any and all claims hereunder shall in no event exceed the penal amount of this obligation as herein stated.

The said surety hereby stipulates and agrees that no modifications, omissions, or additions, in or to the terms of the said contract or in or to the plans or specifications therefor shall in any wise affect the obligations of said surety on its bond."

SIGNED AND SEALED This _____ day of _____, 20_____.

PRINCIPAL:

_____

BY: _____

TITLE: _____

SURETY: _____

_____

BY: _____
Attorney-in-Fact

SURETY COMPANY ADDRESS:

_____
Street

_____
City State Zip

SURETY AGENT'S ADDRESS:

_____
Street

_____
City State Zip

SECTION 100 - GENERAL PROVISIONS

Intent
The intent of these specifications is to describe one (1) current production Combination Jet Vacuum Machine meeting the following minimum specifications.

General
All component parts furnished shall be new, unused and the same as the manufacturer's current production model. Equipment, accessories, component parts and work not specifically mentioned in these specifications, but necessary to furnish a complete unit, shall also be provided as though they were specifically mentioned and delineated. Assemblies, subassemblies and component parts shall be standard and interchangeable throughout the unit specified.

Composition of the Bid
The bid price shall include all labor, component parts, equipment and services required to fully complete and deliver the specified unit(s) to the Tuscarawas County Metropolitan Sewer District.

Bid Forms
All bidders must use the forms provided by the Owner. Bidders must submit completed bid proposal forms in a sealed envelope or packet clearly marked on the outside: "BID FOR COMBINATION JET VACUUM MACHINE"

Additional specifications and bid proposal forms may be obtained from the office of the Sanitary Engineer at 9944 Wilkshire Boulevard NE, Bolivar, OH 44612 or by phoning (330) 874-3262.

Bid Clarification
Bidders may contact the Sanitary Engineer at (330) 874-3262 for additional clarification of these specifications. Written requests for such clarification should reach the Sanitary Engineer no later than five (5) working (M-F) days before the date on which bids are due. Prior to submission of bids, any ambiguities in the specifications shall be brought to the attention of the Sanitary Engineer. If necessary, an addendum will be issued to give effect to such clarification.

Bid Proposal
In their proposal Bidders will be required to state the make, model, size and other pertinent data asked for in the proposal forms with reference to the equipment they propose to furnish. All bids must be submitted on Section 002 – Bid Proposal Firm, which is included in these Bidding Documents.

Delivery and Transportation
The bid price for the complete unit(s) purchased or provided under warranty will include freight designated FOB Bolivar, OH. The bidder shall be required to pay all costs in transporting and delivery of the complete units to the Sanitary Engineer’s office at 9944 Wilkshire Boulevard NE, Bolivar, OH 44612.

Taxation
Tuscarawas County shall be exempt from all Federal, State or Local taxation. The Owner shall not be liable for additional payment to defer the cost of any tax or other imposition that might be made by Federal, State or Local taxing authorities.

Disposition of Bids
No bidder may withdraw a submitted bid for a period of sixty (60) days after the date of the opening of the bids. The Owner reserves the right to reject any or all bids or to waive any informalities in any bid.

Instructions

The unit bid will meet or exceed the following minimum specifications. Bidder shall complete every space with a check mark in the specifications "Comply" column to indicate if the bid is exactly as specified. If not, the "Does Not Comply" column must be checked and a detailed description provided. The Owner will evaluate and determine if the exception meets or exceeds the specification.

Bid Evaluation

The award of the contract shall be made according to the instructions in the Bid Form. The bond or bid guaranty of all unsuccessful bidders shall be returned to them by the Owner immediately upon awarding the contract or rejection of all bids.

SECTION 200 – GENERAL SPECIFICATIONS

1. The machine shall be capable of removal of debris including bottles, cans, grease, sand, sludge, stones, and other debris from sanitary sewers, and pumping stations by the flushing action of a high-pressure water jet and the vacuum system.
2. The machine shall be equipped with a self-contained water supply as the water source for the high-pressure pump. The high-pressure water pump shall be powered by the truck chassis engine as the power source.
3. The machine shall include an air conveying (vacuum) system, powered by the truck chassis engine. The system shall provide for the simultaneous removal of debris flushed to the manhole or pumping station by the high-pressure water system and shall successfully remove debris from sumps, manholes, wet wells, etc.
4. The machine shall be capable of being operated by one person. The operator's controls for the high-pressure water pump, hose reel, and the vacuum shall be located at the front the machine. The unit must be 2023 or newer, never titled with less than 50 hours of operating time. **The Bidder shall submit a Base Bid for a factory-new machine**. If a demonstration unit is available, the Bidder shall submit the amount that is to be deducted from the Base Bid to supply the demonstration unit.
5. The following manufacturers have been evaluated and approved by the Tuscarawas County Metropolitan Sewer District. Any manufacturers not listed below will be required to submit to demonstration testing, vehicle inspection, and detailed review of references in order to be considered. In the event an alternative manufacturer submits the lowest and best bid, such demonstration testing must be scheduled within ten (10) days after opening of the bids and prior to bid award. In the event the manufacturer is unable to comply with the demonstration testing requirements and/or schedule, their bid will be subject to invalidation.
    a. GapVax
    b. Sewer Equipment Co. of America
    c. Vacall
    d. Vactor

SECTION 201 – DEBRIS STORAGE BODY

1. The debris storage body shall be cylindrical with a minimum usable liquid capacity of 12 cubic yards.
2. The debris body shall be fixtured on an independent frame, separate from the chassis frame, and mounting via a three-point mounting system to allow flexing to occur, without causing frame damage.
3. The body shall be constructed of corrosion and abrasion resistant, high strength steel that is a minimum of 3/16 inch in thickness.
4. The rear door shall be full-opening, hinged at the top, and shall be equipped with a replaceable neoprene type seal to prevent leakage. The door shall be hydraulically operated to control sewage from splashing. The hydraulic cylinder(s) shall allow the door to be held open in any position from fully closed to fully open.
5. A minimum 6 inch diameter knife valve (fully open blade type) and 15 foot of 6 inch lay flat hose are to be provided on the rear door to permit the draining of excess liquids from the tank. The hose

shall be attached to the valve with a quick coupler. The valve handle shall be able to be reached and operated from ground level.

6. A debris deflector shield shall be located in the tank in such a manner that it will deflect material from the rear door preventing wear to the debris tank.
7. The debris body shall have the manufacturer's standard locks, which shall be hydraulically locked. The hydraulic locks shall be controlled by a hydraulic cylinder. Each lock shall be fully and independently adjustable. To insure the safety of workers during maintenance, two rear door props shall be provided to secure the debris door in the open position.
8. The debris body shall be dumped by raising the body to a minimum of a 50-degree angle, by using a forward mounted, power up and down hydraulic dump cylinder to assure stability during the dumping cycle. The cylinder shall have a lift capacity of 49,000 lbs.
9. Dump controls shall be located well forward of the dump area and along the passenger side of the truck for operator safety.
10. There shall be a minimum of a 5 year parts and labor warranty on the debris body.
11. A level indicator shall be supplied to show the level of the water/debris in the debris body.
12. A splash shield will be provided for the rear door to direct liquids and debris away from the chassis. The splash shield shall extend three-quarters of the way up the sides to prevent side spraying while dumping liquids when the rear door is opened.
13. The unit shall have pipe racks capable of holding a minimum 8 sections of piping. The racks shall be designed to accommodate pipe sizes ranging from 3 foot to 7 foot lengths in each rack position. The racks and piping must be accessible from the ground.
14. A lube manifold is to be provided on the unit. The manifold allows ground-level greasing of the boom and swing cylinders, float level indicator, top rear door hinges and debris body, and hoist cylinder pins.
15. The debris body shall be equipped with a stainless steel float ball system to stop debris body from filling when the body is full and to prevent debris body carry over into the vacuum inlet during transportation. The cage or screen for the check ball(s) shall be constructed of 304 stainless steel or Owner approved equivalent.
16. An automatic vacuum breaker assembly unit shall have the following functions. The vacuum breaker system shall be automatically activated when the vacuum system is off. The system shall provide the ability to be controlled at the front hose reel control station. This enables the operator to pick up large debris with the boom and place the debris on the road surface. Also, this system can be used in the event suction must be shut off in the case of an emergency.
17. The debris body shall be equipped with a body flush out system to be used to clean out the debris body following dumping of the debris. This system will be controlled from the curbside operator's station and shall draw water from the water tanks.
18. The vacuum system shall be designed to control debris from entering the air stream and entering the blower.
19. The debris body shall include a screened decanting system to enable dewatering of the tank without utilizing the dump feature of the debris body.

SECTION 202 – BOOM AND VACUUM PICKUP HOSE

1. The boom shall be located on the front of the truck by the hose reel.

2. It must be constructed using an anchored steel or aluminum tube for the outer sleeve and an inner 8 inch diameter suction tube constructed of steel. It must have a smooth welded steel elbow; segmental elbows are unacceptable.
3. All connections between the debris body and vacuum system must be self- adjusting, pressure-fitting couplings.
4. All boom actions are to be hydraulically controlled.
5. The boom is to have an electric over hydraulic solenoid system.
6. There must be an override on the hydraulic circuit to relieve the boom should it fail at any telescoped or rotated positions; mere manual relief by loosening a hydraulic coupling is unacceptable.
7. It is to be hydraulically driven up, down, left, right, extend, and retract.
8. A wireless pendant control for the boom is to be supplied, allowing the operator to remotely control the direction of the boom (up/down, left/right, extend/retract). Emergency shutdown and throttle control must be able to be accomplished from the pendant as well. The wireless pendant shall have the ability to be operated at a minimum distance of 20 feet from the front of the truck.
9. Additionally, a joystick control for boom operations is to be provided at the operator's station. Controls shall be proportional for smooth and accurate operation of the boom.
10. The emergency shutdown will also be located at the front operator station. Activation of the emergency shutdown shall disengage equipment and either idle down or shut-down the chassis engine.
11. The boom is to provide a minimum of 18.0 foot vertical lift and a minimum of 180 degrees of rotation. The height of the pick-up hose shall not change while the boom is being telescoped. It must telescope a minimum of 8 foot.
12. All inlet hoses and tubing internal diameter must be a minimum of 8 inch and shall remain stationary and not rise with the debris body.
13. The following 8 inch vacuum tubes shall be supplied: 3 sections at 7 foot, 5 sections at 5 foot, 2 sections at 3 foot. The tubes shall include a sufficient number of adjustable over center quick clamps to join all of the pipes by their aluminum flange ends.
14. The boom suction hose is to be transported by the front bumper with the supplied boom tie-down or storage post; keeping the boom in the stationary position while the unit travels over the road. A full cab protection device, independent of the cab, shall be provided to protect the cab from boom damage.
15. A pistol-grip LED spotlight (550 Lumens) shall be supplied.
16. Two LED flood lights shall be mounted on the vacuum hose at the steel elbow.
17. Two LED flood work lights shall be mounted on the rear of the debris body above the tailgate.
18. Two LED flood work lights shall be mounted mid-unit, one on each side of the unit.
19. The following amber warning LED lighting shall be installed to ensure visibility at all angles around the unit.
    a. One LED strobe light mounted on the upper front of the truck.
    b. One LED strobe light mounted on the upper rear of debris body. Two LED strobe lights mounted on the lower front of the truck.

c. Two LED strobe lights mounted on the lower mid-unit of the truck. Two LED strobe lights mounted on the lower rear of the truck.

20. All lights must be of a currently manufactured model. All lights will be connected to the truck's electrical system with controls mounted in the cab of the truck.

SECTION 203 – POSITIVE DISPLACEMENT BLOWER

1. The unit shall have the ability to vacuum to depths of 75 feet without the use of any special attachments.
2. A positive displacement rotary type blower will be the blower provided. The pump shall be rated at continuous duty at 18 inches of Mercury, minimum. It shall be capable of 4000 CFM @ 18 inch Hg.
3. To ensure longer blower life and quiet operation, maximum rated performance shall be achieved at a blower speed not to exceed 2500 RPM.
4. The blower will be operated by the front engine, through a transfer case, direct drive via drive shaft, or power take-off unit.
5. The blower is to be equipped with a silencer. An exhaust outlet shall be installed above the cab with a protective rain cap.
6. The unit will have a vacuum breaker valve. The valve must be able to be operated from the front operator's station and the wireless pendant control.
7. A centrifugal or cyclone separator is to be located in the inlet chamber to the positive displacement blower with the cleanout box. The separator shall remove particles from the air stream, protecting the positive-displacement blower from the dry material. The separator shall not be mounted within the debris body.
8. The vacuum pump must be capable of operating simultaneously or independently of the high-pressure water system.
9. A final filter must be supplied to limit the ingestion of solid or liquid abrasive material into the positive displacement blower. It must be positioned between the outlet of the debris body and inlet of the vacuum blower and contain a removable and cleanable stainless steel micro-screen(s). Systems incorporating an engineered cyclone to eliminate particles traveling downstream into the blower may also be considered.
10. The positive displacement blower shall be protected by a minimum of two vacuum relief valves.
11. Vacuum relief valves need to be protected with screens to prevent objects being pulled into the valves.

SECTION 204 – WATER TANK

1. Water tanks must have a minimum certified capacity of 1500 gallons of useable water.
2. The water supply is to be contained in aluminum, baffled tanks or constructed of non-corrosive, non-metallic, durable cross-linked polyethylene, or stainless steel, to eliminate rust, corrosion, and stress cracking.
3. The tanks must carry a minimum of a 10 year parts and labor warranty against defects in workmanship and potential corrosion caused by water, sunlight, and variable weather conditions.

4. The water supply should be located from behind the cab to the end of the frame rail in such fashion to assure optimum center of gravity and weight distribution from front to rear of the truck. Under no circumstances may the tanks extend beyond the width or length of the truck. The tanks shall not have to be removed to conduct any maintenance or service work on the unit.
5. The tanks are to be interconnected with a minimum of 4 inch lines for ease of rapid filling and the tanks shall be adequately vented.
6. Tanks are to be filled from a single curb-side point that is equipped with an anti- siphon device and y-pattern stainless steel strainer.
7. A water level gauge shall be provided and be within easy sight of the operator station and filling locations.
8. The water tank shall be separate from the debris tank. The tanks shall not share common walls or provide structural support to the debris tank.
9. No water shall leak from the fresh water tanks when dumping.
10. There shall be a stainless steel inlet filter to filter the water prior to entering the tanks.

SECTION 205 – HIGH PRESSURE WATER PUMP

1. The water pump shall be driven hydraulically by a hydraulic pump(s) powered by the transmission or rear engine PTO.
2. The high-pressure water pump shall be variable flow up to 80 gallons per minute at 2500 PSI continues duty operation. This shall be accomplished with ease from the operator station.
3. Controls shall be furnished whereby an operator can stop and start the pump at will from the control station.
4. All throttle controls are to be electronic.
5. The water side of the pump shall have all surfaces in contact with the water manufactured from the following materials: stainless steel, polyurethane, Teflon, rubber, or high strength gray iron.
6. The water pump should be capable of running at normal operating pressure and RPM without water for a 30 minute period of time without damage to the pump.
7. The machine shall have a water recirculation system to permit cold weather operation and to prevent freeze-up of the water pump, hoses, and valves while driving at highway speeds in freezing temperatures.
8. The hose reel control panel shall have the ability to allow the operator to change the speed of the pump to vary flow and pressure.
9. High-pressure relief valves shall be provided for both the high-pressure system and handgun system.
10. A 3 inch Y style strainer is to be installed prior to the water pump suction inlet to serve as an additional filtering device. The filter shall be 3 inch stainless steel, 80 mesh filter screen.
11. The water pump shall be capable of operating simultaneously and independently of the vacuum system.
12. The high-pressure variable flow water pump supplied shall be located below the entire water supply to ensure pump is flooded at all times.
13. The pump must not require priming.

14. A drain valve must be provided at the pump.

SECTION 206 – HOSE REEL ASSEMBLY

1. The machine shall be equipped with one continuous piece of 800 foot in length, 1 inch diameter jetter hose. The hose shall be capable of operating at 2,500 PSI with a 6,250 burst pressure.
2. The reel shall be capable of holding the entire 800 feet of 1 inch hose. The hose reel shall be a direct drive reel or the hose reel will be hydraulically powered in both directions by means of a double chain (minimum of 50 chains heavy) & sprocket drive.
3. The controls for operating the motor shall incorporate a flow control device to regulate the rotational speed of the reel in both directions.
4. Also, it must have a 1 inch rotating swivel joint that is adjustable and that has replaceable seals on the inlet line to provide free reel rotation.
5. The hose reel is to be equipped with an automatic mechanical level wind guide. It should rewind the hose in an orderly fashion. In the event of the level wind becoming out of synchronization, the level wind shall be manually adjustable to be resynchronized. Also, a manual level wind guide system will also be provided to be used in the event of failure of the automatic level wind system. It shall have the ability to be installed on a provided bracket with minimal effort.
6. A hose tensioner will be provided to help hold the hose in place on the reel.
7. A digital hose footage counter shall be provided. The counter shall accurately measure in 1 foot increments to indicate how much hose is in the sewer line. This shall be visible from the hose reel control center.
8. The hose reel shall be capable of rotating a minimum of 180 degrees to allow the operator to work in any position. All controls for operating the high-pressure water system will be mounted on this reel assembly frame.
9. The following minimum controls (joysticks, knobs, gauges) to be located on the operator's station at the hose reel.

Main engine settings	Variable electronic throttle
Water pump operation	On / Off
Positive displacement blower (vacuum)	On / Off
Hose reel	Payout and retrieve jetter hose
Hose reel	Extend, retract, and swivel controls
Hose reel pinch roller	Lock / Unlock
Hose reel speed control	
Boom operation	Left / Right, Up / Down, Extend / Retract
Multi-flow variable GPM control	
Vacuum breaker operation	
Vacuum gauge	
Hose footage counter	
Emergency shutdown	
Tachometer	

SECTION 206.01 – LATERAL CLEANING SYSTEM

1. The machine shall be equipped with a hose reel containing 400 feet of ½ inch diameter lateral cleaning hose mounted on the front of the truck.

SECTION 207 – HANDGUN MANHOLE CLEANING SYSTEM

1. The high-pressure water pump and independent water tank assembly furnished for the jetting system will be used for the handgun. The system shall be capable of hydroexcavation.
2. The handgun shall be rated at minimum of 20 GPM and 2,000 PSI.
3. One full functioning adjustable pattern handgun shall be supplied; such as a front handle controlled spray pattern, from stream to cone. The adjustable pattern shall be accomplished without changing of nozzles, the nozzle shall be replaceable. 50 foot of 1/2 inch high-pressure water hose on a retractable hose reel that is mounted mid-unit on the curbside shall be provided.
4. The handgun shall attach to the system via a quick coupler system.
5. The handgun system shall be able to be isolated and drained to prevent freezing in the winter time.
6. The controls for the handgun/hydroexcavation system shall be mounted on the passenger side of the vehicle for personnel safety.

SECTION 208 – HYDRAULIC SYSTEM/LUBRICATION

1. The hydraulic system shall have a main shut off valve in case of hydraulic failure and/or servicing of the filter.
2. A lube manifold shall be provided to grease any lubrication points from ground level.

SECTION 209 – STORAGE TOOL BOXES AND TOW HOOKS

1. Provide the manufacturer's standard tool box package. Each bidder will provide information regard the location, quantity, dimensions and material/thickness of the toolboxes where indicated on the Bid Form. There shall be sufficient toolboxes to store all nozzles, handgun, and hose guides.
2. A heavy-duty toolbox or alterative storage shall be supplied to hold a pickaxe, sledge hammer, two shovels, and a minimum of 8 safety cones.
3. Additional storage shall be provided to accommodate storage for longer tools.
4. Provide front bumper storage suitable for storage of coupler clamps.
5. All toolboxes shall be lockable. A minimum of 4 keys will be supplied with the locks.
6. Two heavy duty tow hooks shall be provided on the front and rear of the unit.

SECTION 210 – NOT USED

SECTION 211 - CAMERAS

1. Two cameras shall be installed with the monitoring screen mounted in the cab of the truck. One camera shall be a backup camera that is mounted on the rear of the debris body that is activated when the truck is in reverse. The second camera shall be mounted on the hose reel to assist in aligning the hose reel to the manhole.

SECTION 212 – MOUNTING AND DELIVERY

1. The unit shall be delivered with all equipment mounted on the chassis.
2. Transportation charges to Bolivar, Ohio shall be included in the bid price.

SECTION 213 – PAINT

1. All metal surfaces shall be shot or sandblasted and primed prior to painting or powder coating.
2. All hoses and fitting, as well as electrical wire and connections, shall be unpainted.
3. The unit will be white in color to match the current department color and truck chassis.

SECTION 214 – MANUALS

1. Complete parts books, complete manufacturers shop and service manuals covering the complete chassis, engine, transmission, axles, and all mounted components and related operator's manuals for optional mounted equipment.
2. Complete factory parts manual for jet-vacuum combination unit showing electrical, water, vacuum, and hydraulic systems.
3. Two hard copies and a digital copy will be provided for each of the above manuals.
4. Operators manuals shall be delivered with the unit along with necessary documents for licensing.

SECTION 215 – WARRANTY

1. Entire Combination Jet Vacuum Machine and all related equipment shall have a minimum one (1) year parts and labor warranty.
2. Water tanks shall have ten (10) year parts and labor warranty.
3. Debris tank shall have a five (5) year parts and labor warranty.

SECTION 300 – CHASSIS SPECIFICATIONS

Truck Description: New and unused current year model 2022 or newer 6 X 4 cab and chassis with a minimum GVW of 58,000 lbs. The chassis shall be a model that ensures the ability to obtain local service.

Truck Engine: Minimum 12.8 liter, direct injected, wet sleeve, turbocharged, air to air, inter-cooled, rated a minimum 435 horsepower at 1900 RPM and 1550 pounds of torque at 1,100 RPM. The engine electronics will accept a remote variable throttle for stationary operation through transmission mounted PTO and transfer case-driven PTO equipment. The air cleaner is to be manufacturers recommended duel air. Air restriction gauge, dash mounted or approved equal. Engine to include the turbo, injectors, starter, and alternator, will have a manufactures warranty of 7 years / 250,000 miles. Automatic engine shutdown system with low oil pressure, high coolant temperature, and low coolant level will be provided.

Fan: Automatic on/off control with manual switch control option.

Radiator: The radiator will be rated for stationary operation. It will also have rock guard and radiator mounted grill. Coolant and heater hoses will be silicone type with flex seal constant clamps.

Exhaust: Single, vertical exhaust with bright tailpipe and heat shield. Tailpipe will be rainspout or turn out style that will extend above the cab. The frame mount may require a longer CA measurement truck vendor will need to verify with the builder.

Fuel Tank(s): The fuel tank(s) shall be a single tank with a minimum capacity of 70 gallons or dual tanks with a minimum capacity of 50 gallons each.

Electrical: Circuits will be provided with circuit breakers rather than fuses. A cluster of ten switches will be provided that will deliver power to a terminal junction box external to the cab. Two in-cab power points will be provided. A brushless alternator will be a minimum rating of
160 amp shall be provided.

Transmission: The automatic transmission provided will be an Allison HD 4500 series 6 speed electronic. Transmission shall have 3 year unlimited mile warranty.

Drive Shafts: Main drive shaft will be a 1810HD series, the inter-axle shaft will be a 1710HD.

Steer Axles: This axle will be rated at 20,000 lbs. and will be a set-forward style. Dual steering gear sectors will be used.

Drive Axles: Drive axles will be rated at 40,000 lbs. Tandem axles to be equipped with a fully driver controlled locking differential and power divider lock. Axle ratio will equate to a maximum speed of 72 miles per hour at 1900 RPM. The rear end shall have a 2 year warranty.

Suspension: Front springs will be 54 inch multi-leaf rated at 20,000 pounds. The rear suspension will be a 40,000 pound Tuff-Trac or a 40,000 pound Hendrickson HN series.

Frame: The frame will be 120,000 PSI strength minimum. It will be double C channel style frame. The unit manufacturer or the truck vendor will provide 2 tow hooks front and 2 tow hooks back rated for the total Gross Vehicle Weight of the unit.

Gauges:

1. Direct read oil pressure gauge
2. Air pressure gauge
3. Dash mounted parking brake control
4. Electronic speedometer (MPH /KMH) Electronic tachometer
5. Electronic coolant temperature gauge
6. Low air pressure warning light and buzzer
7. Electric fuel gauge
8. Voltmeter gauge
9. Steering column mounted turn signals

10. Engine hour meter
11. Emergency flasher
12. Hub meter

Other Items:

1. Sloped tilt hood with radiator mounted grill.
2. Cab and hood length should be 111 inch minimum. Air ride cab.
3. High backed, air ride driver's seat shall be provided with cloth upholstery.
4. The seats will provide forward and backward tilt and slide adjustment, height, lumbar, lower pad, tilt, and free slide or lock option.
5. The dome light will be door activated (w/ a map light). Premium interior trim.
6. Cab will be air conditioned. Rear window in cab. Windows will be tinted.
7. Windshield intermittent electric with electric windshield washer and tank.
8. Two cup holders.
9. Steering wheel will be a tilt telescopic type.
10. Both 16 X 7 west coast heated mirrors will be motorized and controlled from the driver's position and installed with stainless steel hardware.
11. Two 5 inch steel spot mirrors will also be provided and mounted with stainless hardware.
12. 8 inch stainless steel fender mounted spot mirrors, right and left, will also be provided. Best insulation for sound control will be provided.
13. A roof mounted air horn or equal will be provided.
14. An exterior fiberglass sun visor will be provided.

Lights: Lights, cab markers, five LED Lights, headlights, two halogens Lights, taillights, two LED Lights, turn signal, LED Lights, mid-mount body marker and turn signal, LED Lights to meet all State and Federal requirements.

Brakes: The brakes will be S-cam style with automatic cam adjusters. All four brakes on the drive axles will be spring loaded parking brake canisters. Drum brake size to be rated for the axle. The air dryer will be Bendix, Model ADIP.

Tires:

1. Steer axle tires will be 425/65R22.5
2. Drive axle tire will be 1,110 X 22.5 or 11R X 22.5 / 14 Ply heavy duty radial with traction tread.
3. All rims will be 22.5 heavy duty, unimount, aluminum, hub - pilot with flanged nuts.

Miscellaneous:

1. The cab is to be painted white and the frame black to match the current department color.

2. Fender extensions on front fenders to limit rocks and debris from spraying while turning.
3. Magnetic traps fill plugs.
4. Back up alarm, electronic, 12 volt.
5. The unit manufacturer or truck supplier will supply tandem fenders with mud flaps for the rear of the unit. Additional fenders may be required for steering axle also, to contain rock and water spray. Sub frames with mud flaps that function as fenders are acceptable.
6. All state and federal safety requirements must be met.
7. Fire extinguisher installed in the cab to be 2.5 pounds.
8. Training on the operation of the new unit to be within one week of delivery.
9. One set of extra filters for the truck and body will be sent at the time of delivery to include: one complete set of oil, fuel, air, transmission, hydraulic, and water filters.
10. Bidder will provide the first service and inspection at the Sanitary Engineer's office at 9944 Wilkshire Boulevard NE, Bolivar, OH 44612. This will also include the bidder's mechanic available to train operators as to recommend manufacturers full-service procedure (100 to 150 hours).

Weight Requirements:

1. Weight shall be distributed correctly to remain within the legal load limits for the State of Ohio when the truck water tanks and fuel tanks are fully loaded. Bidder shall provide calculations to demonstrate compliance with the guidelines provided on the Ohio Department of Transportation's website. Bidder shall attach the calculations to the bid.
2. Gross vehicle weight with water tank and fuel tank loaded to full capacities shall not exceed the legal weight as calculated above. For this calculation use 8.3 lbs/gal for the weight of water. (Tare weight from "4." + Water weight ‹ legal weight from "2.").
3. Bidder shall attach a copy of a certified scale weight receipt for the truck tare weight equipped as bid with fully loaded water and diesel tanks.

Warranty:

1. Entire combination jet vacuum machine and all related equipment shall have a minimum one (1) year parts and labor warranty.
2. The chassis shall be covered by the manufacturer's warranty.
3. The truck engine shall be covered by a manufacturer's seven (7) year or 250,000 mile parts and labor warranty.
4. The truck transmission shall be covered by a manufacture three (3) year unlimited mile parts and labor warranty.
5. The truck drive axle / rear end shall be covered by a manufacture two (2) year parts and labor warranty.

Summary: The unit shall be a currently advertised production model as modified per specification and meet all State and Federal requirements. The Unit shall be furnished with all standard equipment advertised whether or not specifically called for here. The unit shall be complete with all equipment required and ready for immediate operation to function as listed above.