GENERAL SPECIFICATIONS

700 GALLON TRAILER MOUNTED SEWER CLEANER WITH PIVOTING REEL

1.0 GENERAL INFORMATION

1.1 It is the intent of these specifications to describe the minimum requirements of one new trailer mounted sewer-cleaning machine. The sewer jetter shall be capable of high pressure sewer flushing and removal of debris from storm and sanitary sewer lines. Standard equipment and accessories will be those stated in the manufacturers published except when modified to meet these specifications

1.2 Controls for all functions shall be operable at the operator's station on the sewer cleaner.

1.3 Complete compliance to each section must be clearly noted by checking either **Yes** or **No**. Any **No** response must be fully explained in detail. Failure to do so will be reason for rejection of the bid. The attachment of a product brochure by itself will not be acceptable and will be grounds for rejection of the bid. It is not our intention to prohibit any potential bidder from bidding by virtue of these specifications, but to describe the equipment actually required. The Town of Arlington shall be the sole judge of granting exceptions.
Attach additional sheets if necessary.

Make and model of unit being offered _____

2.0 WATER TANKS

2.1 Yes ____ No ____ The unit shall be equipped with tandem 350 gallon, interconnected naturally baffled water tanks with a total usable liquid capacity of 700 U.S. gallons. In the event of an accidental rupture, this tandem tank design will give the operator the flexibility to isolate one tank and continue to operate on the remaining tank until repairs can be made.

2.2 Yes ____ No ____ The tanks shall be constructed of 3/8" thick, rotationally molded, high-density polyethylene specifically designed for sewer cleaner applications. The tanks shall incorporate UV stabilizers to prevent brittleness due to prolonged exposure to the sun. The tanks shall have full-length sediment chambers. To inhibit algae growth, the tanks shall be black in color.

2.3 Yes ____ No ____ The top section of the water tanks shall be domed to prevent sloshing and incorporate a 2.5" air gap channel along the top ridge to allow complete filling of the tanks without water spillage.

2.4 Yes ____ No ____ To allow for routine inspection and maintenance, the water tanks shall each have a 12 inch diameter threaded inspection hatchway on top. For added water pump protection, each tank opening shall include a removable strainer basket as standard equipment. Round agricultural type tanks are not acceptable.

2.5 Yes ____ No ____ The water tanks shall have a standard 10-year manufacturers warranty and be guaranteed for life against corrosion. Pro-rated water tank warranties will not be acceptable.
State manufacturers standard tank warranty being offered.

2.6 Yes ____ No ____ A water fill system, accessible from the curb side with a 2" NPT connection shall be provided. The fill system shall be an approved air gap, anti-siphon design to protect the potable water supply.

2.7 Yes ____ No ____ For ease of viewing, a water level sight indicator shall be located at the rear

operator's station easily visible by the operator when the reel is pivoted to either the curb or traffic side of the unit. In addition, a low water warning light shall be mounted on the aluminum control panel face.

2.8 Yes ____ No ____ The water tanks shall have molded-in mounting flanges. This flange shall allow direct anchoring of the water tanks to the frame, eliminating movement and chaffing. Water tanks that are anchored by fabric straps, metallic straps or metal bars that require periodic tensioning and can allow tank movement and chaffing will not be deemed acceptable.

2.9 Yes ____ No ____ A 2" drain valve shall be supplied on the curb side of the unit to drain and purge the water tanks for routine maintenance or winterization.

3.0 **WATER PUMP SYSTEM**

3.1 Yes ____ No ____ The system will include a heavy-duty, positive displacement, triplex plunger reciprocating water pump. The design capacity of the pump shall be 40 GPM. It shall be powered to produce 40 GPM at 2000 PSI. The suction side of the water pump shall have a flooded inlet to eliminate water pump cavitation. The suction line shall incorporate a stainless steel 20 mesh in-line strainer assembly.
State water pump manufacturer and model number.

3.2 Yes ____ No ____ The water pump shall be driven and controlled through a power take-off with an 8" over center clutch mounted on the auxiliary engine. An air valve for purging the water from the pump system for cold weather storage shall be provided.

3.3 Yes ____ No ____ A single three-way water flow control valve shall be provided and operated by a manual lever at the operator's station.

3.4 Yes ____ No ____ The entire pressure piping system shall be designed utilizing 3/4 inch ID high pressure rubber hose with double wire re-enforcement. Pump suction and low pressure lines shall be standard PVC fittings. The entire piping system shall include drain plugs to allow adequate draining for winterization.

3.5 Yes ____ No ____ A pressure relief valve with stainless steel internal parts shall be set at a maximum operating pressure of 2,000 PSI and sealed at the factory.

3.6 Yes ____ No ____ The water pump shall be capable of being operated independently or simultaneously with the hydraulic system to allow operation of the hose reel without running the water pump.

3.7 Yes ____ No ____ The water pump shall be mounted in a fashion as to allow easy access for routine inspections and maintenance without the need to remove the pump from the unit.

3.8 Yes ____ No ____ For added protection, the water pump, engine, fuel cell and hydraulic tank shall be enclosed within a metal shroud with lockable doors.

4.0 **POWER SOURCE AND PTO DRIVE SYSTEM**

4.1 Yes ____ No ____ The water pump shall be powered by an engine mounted power take-off (PTO) via a power band type drive belt. The engine shall be a water-cooled direct injected, 199 CID, 4-cylinder industrial diesel engine with a minimum rating of 65 horsepower @ 2600 RPM. The engine shall be certified to meet Tier 4 EPA requirements and have a bore of 3.74" and stroke of 4.53".

4.2 Yes ____ No ____ A heavy-duty 550 CCA battery and minimum 60 ampere alternator shall be provided.

4.3 Yes ____ No ____ The engine shall be covered by a standard 2-year or 2000-hour manufacturers' warranty. State engine manufacturer, model and warranty being offered and enclose a copy of engine manufacturers warranty policy.

4.4 Yes ____ No ____ A heavy duty, lever actuated PTO with 8" over center clutch will allow operation of the engine and hydraulic hose reel without engaging the water pump.

4.5 Yes ____ No ____ The engine compartment shall be enclosed within a 14 gauge steel shroud for protection and to insure overall quietness. Access to the engine, water pump, piping and hydraulic motor will be through vented side doors with lockable latches. The enclosure shall allow sufficient air flow for proper engine cooling in 90+ degree weather.

4.6 Yes ____ No ____ A 26" x 18" metal storage tray shall be located within the engine/pump compartment for secure storage of tools and accessories.

4.7 Yes ____ No ____ The following shall be included as standard equipment... High temperature and low oil pressure shut down gauges, hour meter, tachometer, ammeter and fuel gauge.

4.8 Yes ____ No ____ The engine fuel tank shall have a minimum capacity of 17 gallons and for safety, be located inside of the lockable engine compartment. A fuel gauge shall be supplied.

5.0 CONTROLS, GAUGES AND INSTRUMENTS

5.1 Yes ____ No ____ The unit shall be operable from one position located at the rear operator station. For maximum operator safety, the controls must be located on the curb side of the hose reel away from the flow of traffic and positioned in a way as to allow cleaning to be done by one person. Reel speed control and hose reel payout/retrieve lever must be positioned to allow operator to control both functions separately or simultaneously.

5.2 Yes ____ No ____ A control panel incorporating the following gauges and controls will be mounted at the hose reel assembly for ease of viewing and operation.

Tachometer with Hour Meter	PTO engage/disengage lever
Electronic engine throttle	Keyed ignition system
Water pressure gauge	Murphy bypass switch
On/off water control valve	Wash-down gun connection
Water level sight tube	Dual 12 volt accessory plugs
Hose reel speed control	Volt meter
Temperature gauge w/ shutdown	Oil pressure gauge w/ shutdown
Low water warning light	Emergency shutdown switch
Work light switches	LED strobe light switch

5.3 Yes ____ No ____ For added durability and corrosion protection, the control panel must be constructed out of aluminum or stainless steel.

5.4 Yes ____ No ____ The PTO clutch control lever shall be located on the operating end of the machine within easy reach of the operator while standing at the control panel.

6.0 PIVOTING HOSE REEL ASSEMBLY

6.1 Yes ____ No ____ The hose reel shall be mounted at the rear of the unit and manually pivot a minimum of 190 degrees. It shall lock into place at various positions within its arc via a spring loaded quick locking mechanism. The reel shall be a minimum of 14 inches from its lowest point to the ground, insuring adequate ground clearance.

6.2 Yes ____ No ____ The pivoting hose reel shall have a mounting base of at least 10" in diameter and be constructed of at least 3/8" steel plate. A 5/8" spring latch will allow the reel to pivot 95 degrees in each direction. The reel shall pivot on a 10" heavy-duty bearing for ease of positioning.

6.3 Yes ____ No ____ The hose reel shall be constructed of ¼", A36 steel and incorporate 2" rolled flanges to reduce the possibility of warping from hose swelling and high torque loads while in use.

6.4 Yes ____ No ____ The reel shall have a minimum useable capacity of 750 feet of 3/4-inch ID thermo-plastic sewer hose.

6.5 Yes ____ No ____ The unit shall be delivered with a minimum of 500 feet of 3/4 inch ID thermo-plastic sewer hose with 2500 PSI working and 6250 PSI burst pressure rating.

6.6 Yes ____ No ____ The hose reel shall be hydraulically powered in both directions and payout and retrieve via a hydraulic motor with chain reduction drive. It must have sufficient power to retrieve 750' of sewer hose under full pressure. Hose reels with direct-coupled hydraulic drives are unacceptable.

6.7 Yes ____ No ____ Water delivery to the pivoting hose reel shall be through a heavy-duty cast iron 90 degree swivel rotary coupling. This swivel shall be fully adjustable and repairable.

6.8 Yes ____ No ____ A hose reel pendant control with 20' of cable with quick-disconnect shall be furnished that will allow the operator to payout and retrieve the sewer hose from remote locations.

6.9 Yes ____ No ____ A heavy duty, hand operated roller hose guide/level wind shall be provided to facilitate uniform alignment of the hose onto the reel. For maximum strength, the hose guide arm must be constructed of 2" diameter or larger heavy wall pipe.

6.10 Yes ____ No ____ The level wind shall have a roller head with built-in footage counter that swivels 45 degrees in each direction. The head height must be located at the mid line of the reel drum. This design will allow effortless operation in manhole, storm drain and remote access applications. Hose guides located below reel mid line or that have fixed heads will not be deemed acceptable.

7.0 **WASH DOWN SYSTEM**

7.1 Yes ____ No ____ The hand gun system shall be an integral part of the water pump system incorporating a maximum of 1,200 PSI operating pressure with a quick connect fitting accessible at the hose reel station. A handgun rated at 5000 PSI will be provided with 25 feet of high-pressure hose and quick connect coupling.

8.0 **HYDRAULIC SYSTEM**

8.1 Yes ____ No ____ The hydraulic pump shall be driven directly from the engine. A built-in overload relief valve and hydraulic hoses rated for 2000 PSI maximum pressure shall be incorporated into the system.

8.2 Yes ____ No ____ The hydraulic oil reservoir tank shall have a minimum capacity of 17 U.S. gallons and be located in the lockable power deck compartment. A fluid level sight gauge shall be provided on the hydraulic tank for quick fluid level inspection.

8.3 Yes ____ No ____ A 10-micron replaceable spin-on cartridge hydraulic filter shall be provided.

9.0 **STORAGE**

9.1 Yes ____ No ____ A 26"x18" tool and accessory storage tray shall be located within the lockable engine compartment. In addition, there shall also be a sunken storage area located within the "A" frame tongue area made of expanded metal for additional storage spac

9.3 Yes ____ No ____ A fender mounted fill hose storage basket shall be included.

10.0 **TRAILER CONSTRUCTION**

10.1 Yes ____ No ____ The trailer shall have tandem leaf spring axles with a 6,000 lb. rating per axle for a GVWR of 12,000 lbs. The trailer shall also be equipped with electric brakes on all four wheels.

10.2 Yes ____ No ____ The wheels are to be at least 6 lug bolt style with load range "E", 16 ply LT245/75R16 radial trailer tires and wheels. RV and mobile home axles, wheels and tires are not acceptable.

10.3 Yes ____ No ____ The trailer frame shall be constructed of 6" heavy - duty channel iron with heavy-duty intermediate cross members and an "A" type hitch frame for stability. For added strength, a secondary 6" frame shall be mounted on top of the main trailer frame to facilitate water tank nesting and anchoring. This design shall aid in preventing torsional racking of the entire frame assembly at highway speeds or on uneven terrain.

10.4 Yes ____ No ____ Heavy-duty, 500 lb capacity trailer fenders shall be supplied and include non-skid surface treatment. The fenders shall extend a maximum of 12" beyond the sides of the unit.

10.5 Yes ____ No ____ The trailer shall include an adjustable 2-5/16" ball style hitch, electric brakes, break-away safety switch, heavy duty stabilizer tongue jack and two safety chains with hooks.

10.6 Yes ____ No ____ The unit will include two LED stop and turn taillights with license plate light at the rear, as well as all required ICC lighting and reflectors.

10.7 Yes ____ No ____ For overall operator safety, the entire unit must be of a low profile design as to allow the operator a full and unobstructed view of oncoming traffic and his surroundings. This design will also allow oncoming motorists a better view of City personnel and will greatly reduce the likelihood of tipping on uneven terrain due to its lower center of gravity. The units' approximate dimensions shall be 84" wide, 235" long. The water tanks and hose reel shall not exceed 66" in height from ground level when fully loaded. State dimensions of unit being offered.

10.8 Yes ____ No ____ **The trailers' design shall allow towing of the jetter at posted State and Federal highway speeds while fully loaded with water.**

11.0 **PAINT**

11.1 Yes ____ No ____ All exposed steel surfaces shall be professionally prepared for painting and protected with the following 5-step paint process.

(1) Sand blasting
(2) Phosphoric metal washing
(3) One coat of high build epoxy primer
(4) Two coats of white acrylic enamel or equal paint
(5) One coat of polyurethane clear-coat sealer.

12.0 **STANDARD ITEMS TO BE INCLUDED WITHIN BID**

Wash down gun with 25 feet of 1/2 inch hose
15 degree radial penetrator nozzle
35 degree radial nozzle
1 touch up paint
2 Operator part and service manual binders and 1 DVD manual (unit only)
2 Auxiliary engine manual binders
20' x ¾" HD rubber wire braided leader hose
Murphy high temp/low oil pressure shutdown system
Tandem rear mounted work lights with control panel mounted switch
Single front mounted work light with separate front mounted switch
LED amber strobe light with control panel mounted switch
Engine muffler
Flexible hose guide with rope (Tyger Tail)

13.0 **WARRANTY**

13.1 The bidder must indicate warranty being offered, which shall be no less than…

Yes ____ No ____ One-year basic unit manufacturers warranty.
Yes ____ No ____ Standard 10 year non pro-rated water tank manufacturers warranty.
Yes ____ No ____ Standard 5 year water pump manufacturers warranty with lifetime head corrosion coverage.
Yes ____ No ____ Standard 2 year/2000 hour diesel engine manufacturers' warranty.

13.2 Yes ____ No ____ Are there any special extended warranty coverage's on specific items being included? If so, they must be clearly indicated.

13.3 Yes ____ No ____ Unit shall be current 2014 year model and delivered in <u>new</u> condition. Successful bidder shall provide onsite training on both operation and maintenance of the equipment.

13.4 Yes ____ No ____ For convenience of routine service, repairs and follow-up training, the successful bidder shall maintain a service facility located within 50 miles of the Town of Arlington. <u>Indicate closest dealer service location</u>.

14.0 **LIST ANY EXCEPTIONS IN DETAIL (Attach additional sheets if necessary)**