



City of Barre, Vermont

" GRANITE CENTER OF THE WORLD "

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January 23, 2017

To: Prospective bidders

From: S. Micheli

Re: Vacuum Street Sweeper Bid

Enclosed please find minimum specifications for latest Model Year Vacuum Street Sweeper.

Bids will be accepted until 3:00 pm eastern standard time on February 21, 2017.

The City reserves the right to reject any and all bids and to accept the bid deemed to be in the best interest of the City.

Scaled bids should be mailed/delivered to:

City of Barre
Office of City Manager
6 North Main St. Suite 3
Barre, Vermont 05641

GENERAL:

8.5 Cubic Yard debris hopper, dual gutter brooms, vacuum street sweeper, truck mounted on a Freightliner M2 conventional chassis. This specification describes an environmentally controlled and silenced street sweeper. Regenerative air sweeper bids will not be accepted.

INSTRUCTIONS FOR COMPLETING BID.

The sweeper to be furnished under this proposal shall be a truck chassis mounted type, 8.5 cubic yard volumetric capacity vacuum street sweeper, with dual gutter brooms. It shall be the manufacturer's latest model and design. These specifications shall be regarded as minimum. Bidders must furnish all descriptive literature, manufacturer's compliance certificates and all other data on the equipment proposed as required in this specification.

Bidder must answer YES or NO to each specification line item except where asked to state specific data. Failure to answer correctly, or failure to respond, may deem your bid as non-responsive.

All line items with a "NO" response, shall be explained in detail on the "Exceptions to Bid Specifications" pages provided at the end of this document.

BIDDER PROPOSED

YES / NO

1. Sound Control (Bidders MUST furnish compliance certificate)

1.1 The external sound pressure level shall be 79 dB(A)
Average at 16 meters per noise test code ISO 3746:
1996, while the impeller fan is rotating at 3,400 RPM.

1.2 The In-Cab sound level shall not exceed 68 dB(A)
max per noise test code ISO 3746:1996 while the
impeller fan is rotating at 3,400 RPM in sweeping
mode.

2. Truck Cab & Chassis

State:

Chassis Make:

Chassis Model:

Sweeper Make:

Sweeper Model:

3. Vehicle Weight

3.1. GVWR: 33,000 lbs. minimum.

3.2. Wheel Base maximum 178".

3.3. Cab shall be conventional type.

3.4 State G.V.W.R of chassis bid.

3.5 State empty weight of chassis bid.

3.6 State empty weight of sweep equipment.

4. Axles

4.1 Front axle shall be 12,000 lbs. minimum.

4.2 Rear axle shall be a two speed Meritor RS-21-230, 21,000 lbs. Capacity with ratio of 5.86/8.17:1.

4.3 Front & Rear oil seals shall be provided.

4.4 Front & Rear dust shields shall be provided

5. Suspension

5.1 Front suspension shall be 12,000 lbs. minimum at ground load rating.

5.2. Front shock absorbers shall be supplied.

5.3. Rear suspension shall be 23,000 lbs. minimum with multi-leaf springs.

6. Brake System – ABS

6.1. To ensure brake system performance, safety and service life Of chassis a WABCO 4S/4M ABS brake system will be supplied.

6.2. Front & Rear service brakes shall be "full air" "S" cam type. Front with 15"x4" and Back with 16.5"x7" brake linings.

6.3. Automatic slack adjusters shall be supplied On front and rear brakes.

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

6.5. Low air warning indicator shall be supplied.

6.6 To provide clean, dry air to the chassis brake system, increase life of and reduce maintenance costs, a Waco 1200 SS Brake Line Air dryer with heater will be provided.

6.7. A Cummins 18.7 CFM air compressor shall be supplied.

7. Steering

7.1 Complete OEM dual cross-over power steering system with complete dual gauges at each operator's position shall be furnished to permit operation from either Side of cab.

7.2 The following gauges and controls shall be furnished at the LEFT SIDE operator's position: oil pressure gauge, water temperature gauge, tachometer voltage digital display, speedometer, odometer, dual air pressure gauges, transmission oil temperature gauge, fuel gauge, hour meter, DEF gauge, and Centrally located ignition switch.

7.3 The following gauges and controls shall be furnished at the RIGHT SIDE operator's position: oil pressure gauge, water temperature gauge, tachometer speedometer, dual air pressure gauges, transmission oil temperature gauge, fuel gauge, DEF gauge, and Centrally located ignition switch.

8. Engine

8.1 Engine shall be a four cycle diesel, Turbo-charged and after cooled.

8.2 Engine shall be rated at 200 H.P. @ 2300 RPM With 6.71liters of displacement minimum.

8.3 Engine shall have a torque rating Of 520ft lbs. at 1,600 RPM.

8.4 Engine shall be water cooled with antifreeze Protection to -34 degrees Fahrenheit.

8.5 Engine shall have vertical muffler and exhaust pipe and be equipped with a Diesel Particulate Filter & SCR System for 2010 EPA emission requirements.

8.6. Integral electronic protection shutdown system for low oil Pressure and high water temperature.

9. Transmission

9.1. Transmission shall be an Allison 2500 Series automatic with return line filtration.

9.2 Transmission shall come installed with synthetic Transmission fluid.

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Engine Equipment

- 10.1. 12 volt alternator shall have a minimum of 160 amp output rating.
- 10.2. Three (3) batteries shall be maintenance free and each rated at 700 CCA (2,100 total).
- 10.3. A heavy duty dry air cleaner with dash mounted in-cab restriction indicator with graduations shall be supplied.
- 10.4. A Horton HT650 frontal air on/off clutch engine fan shall be supplied with automatic controls.
- 10.5. A full flow oil filter shall be supplied.

11. Cab

- 11.1. Cab shall have two (2) air suspension fully adjustable bucket seats with approved seat belts.
- 11.2. Seats shall be Bistro Model T910 with heavy duty cloth upholstery over foam rubber seat cushion.
- 11.3. Sun visors shall be supplied on both sides.
- 11.4. Door armrests shall be supplied on both sides.
- 11.5. Heater with full width defrosters, fresh air ducts and two-speed fan shall be supplied.
- 11.6. Dual, two speed electric intermittent windshield wipers with washers, operable from either side, shall be supplied.
- 11.7. Two (2) bright finishes heated and remote West Coast type mirrors, 7" x 16" and 8" convex mirrors Shall be supplied.
- 11.8. Two (2) 8" stainless steel fender mounted convex mirrors Shall be supplied to allow full view of sweeping equipment.
- 11.9. Factory A/C shall be supplied and mounted in cab.
- 11.10. AM/FM/WB radio shall be supplied.
- 11.11. Two (2) independent accelerator pedals shall be installed in cab to facilitate operation from either side.

11.12 A full 'cross-over' system to change steering control, throttle and all gauges, from left to right hand side and vice versa shall be supplied.

11.13. All cross-over functions shall be controlled by a single switch on the central console. This circuit shall be inter-locked to the parking brake and shall only be capable of being activated with The parking brake applied.

12. Fuel Tank

12.1. Minimum 42 gallon fuel tank shall supply chassis Engine. Tank shall be manufactured from aluminum And located under LH side of the cab.

12.2 SCR system tank shall be 6 gallons and located to the rear of the chassis fuel tank.

13. Lights

13.1. All lamps and reflectors shall comply with federal regulations.

13.2. Four-way hazard warning lights shall be supplied.

13.3 The following lights to be LED type: stop/tail/turn/back-up/marker.

14. Frame

14.1. Heavy Duty frame with a minimum RBM of 1,015,000 lb./in.

14.2 Frame Section Modulus of 12.69 minimum

14.3 Frame shall be tensile steel, 120,000 psi, minimum

14.4 Front tow hooks shall be supplied.

14.5 Steel front & rear bumpers shall be supplied (front shall have flexible plastic ends).

14.6 A weight load indicator shall be installed on frame

15. Wheels & Tires

15.1. All wheel rims shall be disc type 22.5 X 8.25.

15.2. Tires: two (2) front and four (4) rear premium radial tires; type 11.00R 22.5-14 ply rated.

15.3 Rear tire sets to be protected by Heavy Duty replaceable plastic fenders.

16. Warranty

16.1. The basic truck chassis & drive train shall be warranted by the manufacturer for two (2) years, unlimited miles unless otherwise specified.

SWEEPER

17. Power Pack

YES NO

17.1 Power shall be supplied by a heavy-duty turbo charged industrial diesel engine and fuel supplied from a minimum 50 gallon molded high strength composite fuel tank.

17.2 Engine shall be four cylinder, four cycles, water cooled and antifreeze protected to -40 degrees Fahrenheit.

17.3 Engine shall be 4.5 liter (275 cubic inches) displacement with 354 ft-lb of torque@ 1600 RPM minimum.

17.4 The engine must conform minimally to EPA Tier 3b regulations.

17.5 The unit shall be capable of operating within a temperature range of -40 degrees to +126 degrees Fahrenheit With the manufacturer's full warranty approval.

17.6 Separate heavy duty, dry dual element air filtration with restriction indicator and Turbo III pre cleaner to be provided.

17.7 Fuel system will have a primary filter & sediment bowl as first stage filtration from the fuel tank.

17.8 All daily engine inspections of oil level, coolant level and air filter restriction to be checked and monitored from inside the cab.

17.9 Engine water pump shall be a direct drive to eliminate possibility of engine damage due to drive belt breakage.

17.10 A 12 volt 55 amp alternator shall be furnished.

17.11 High coolant temperature and low oil pressure shutdown system shall be supplied.

17.12 The engine shall be sound suppressed and pod mounted in a low profile tub with a bolt-on heavy duty cowling liner and seal for maximum sound attenuation.

- 17.13 Engine tub shall be separately mounted from the body and shall be capable of being removed from the entire sweeper framework by four (4) _____
- 17.14 To reduce vibration & sound, ONLY the engine, transmission and turbine shall be "live" mounted and free floating. _____
- 17.15 The engine compartment shall be completely sealed with a bolt-on sound suppressing liner of 1.25 inches thick to reduce noise levels and protect against dust contaminants. _____
- 17.16 Engine shall have four (4) remote fluid drains accessible from ground level for coolant, hydraulic oil, and engine oil
And gearbox oil to allow for easy and cleaner maintenance. _____
- 17.17 For greater corrosion protection the engine muffler and exhaust pipe must be stainless steel. _____
- 17.18 Auxiliary engine fuel consumption shall not exceed 5.4 G.P.H (gallons per hour) while producing a continuous impeller fan speed of 3,400 RPM. State G.P.H. _____ G.P.H
- 17.19 Bidder shall state engine RPM required to generate an impeller fan speed of 3,400 RPM. _____ RPM
- 17.20 Throttle control of power output shall be adjusted by means of an electronic, infinitely variable actuator. _____
- 17.21 In- cab tachometer and hour meter shall be supplied. _____
- 17.22 Radiator shall have a sealed and dedicated air intake duct. To ensure the air is the cleanest possible the air intake
Duct shall be located in the roof of sweeper cowling. _____
- 17.23 Both a keyless start with integral cold weather start aid and an anti-crank device to prevent re-engagement of starter
While engine is running shall be furnished. _____
- 17.24 All sweeping controls shall be easily accessible to the operator from either side driving position. _____
- 17.25 Two position rocker switches shall be supplied for gutter brooms, nozzles and main broom. Position one shall be for raising and lowering, while position two shall activate water system for sweep gear. _____
- 17.26 Warning lights shall be furnished for low oil pressure, high water temperature, low voltage, body weight limit, low hydraulic oil level and low sweeper water tank level. _____
- 17.27 All of the above controls in addition to the chassis engine ignition, parking brake control, and gutter broom speed _____

1 Sweeper Hopper Body

18.1 The entire hopper body shall be fabricated from (9) gauge high content Chromium stainless steel. All seams shall be continuously welded. To permit longer life and lower the cost of operation, the entire debris hopper, excluding inlet wear plates and exhaust screens, shall carry a LIFETIME WARRANTY as long as the customer owns the sweeper. The warranty shall include, but not be limited to, the floor, sides, roof, And rear door. The warranty shall cover rust, corrosion and abrasion Perforation, including normal wear and tear. Vendors will be financially responsible for all repairs, parts and labor, including protective coatings for the life of the sweeper. 100% parts and labor with no Pro-rating or hour limitations. Vendors shall supply with their bids, warranty statements from the manufacturer in complete Compliance with the published warranty specifications. Failure to Do so, will deem your bid as non- responsive.

18.2 Body volume capacity shall be not less than 8.5 cubic yards with payload capacity of not less than 7.5 cubic yards.

18.3 A hydraulically operated, fully sealed, full width, top hinged rear door with 6 inch long rear discharge chute with side splash guards.

18.4 The door shall be opened, closed and latched hydraulically.

18.5 To prevent damage to the door and door seal, when dumping, the door must open a minimum of 125 degrees.

18.6 The door cylinder shall incorporate a counterbalance valve to prevent accidental closing in the event of a hydraulic hose or cylinder failure.

18.7 To prevent physical injury, the sweeper hopper body prop shall automatically engage and disengage when the hopper is raised and lowered. And the prop is to be the same width As the frame to provide full and even weight support.

18.8 To prevent physical injury, the sweeper shall incorporate a warning beeper anytime the debris hopper or rear door is being raised or lowered.

18.9 To prevent physical injury due to unintentional operation, a master safety switch must be depressed and simultaneously held while the operator activates the controls to raise/lower The debris hopper or rear door.

18.10 For maximum abrasion resistance the body intake tube shall be constructed of (10) gauge AIR steel and have bolt-in seals.

18.11 To prevent the body from being stuck in the raised position, the raise/lower cylinder shall be power up and power down.

18.12 To ensure complete emptying of the debris hopper, the hopper discharge angle must be 55 degrees minimum

18.13 The hopper body shall incorporate a inter-connecting transfer port to the water tank that will enable the machine to additionally function as a either a water tanker or flusher
With a total water capacity of 1,722 gallons.

18.14 Body intake tubes shall have equal distant mounting holes to permit quarter, half or three quarter turn rotation for extended life and even wear compensation.

18.15 To permit cleaning of the rear screens, and placement of large objects in the hopper, two (2) heavy duty inspection doors with heavy duty lever lock handles and Recessed seals that fit snugly over a raised flange on the body, providing a positive seal against leaking shall be provided on
Each side of the hopper with step and handle for operator safety.

18.16 Body shall have full width mesh filter screens which are at least 48" away from suction inlet tubes to allow for adequate material separation and reduce carryover into tunnel vent.

18.17 The screens shall be "one-handed" operation removable from Ground level without entering the hopper and without the use of tools.

18.18 Body roof shall incorporate an externally mounted, removable Plate to permit inspection and cleaning of upper air tunnel area.

18.19 The rear door shall have two (2) drain ports at staggered heights
To enable water to be drained off. One 3" located in upper left with a hose stowed on its own stowage bracket. One located in middle bottom of rear door with an 1 1/2" ball valve.

19. Vacuum Impeller Fan

19.1 Shall be single stage centrifugal type, direct drive, dynamically balanced. And capable of producing 59" of negative water column at the suction nozzle.

19.2 Impeller shall be 31.5" diameter, 3.15" wide and of stainless steel construction.

19.3 Impeller shall incorporate eight (8) hardened stainless steel vanes with built-in "wear safe" characteristics.

19.4 Impeller housing shall have a port for inspection and be constructed of AIR steel.

19.5 The connection of blower to drive system and engine via fluid coupler shall permit the blower to freely spin within its housing.

19.6 The impeller shall be driven via an adjustment Free 'step-up' gear-box. (BELTS ARE NOT ACCEPTABLE.) Step-up gear-box ratio shall be a minimum of 1: 1.79 permitting higher impeller speeds at low engine RPM.

19.7 The purchaser has demonstrated various types of vacuum sweepers and has determined that a minimum impeller fan speed of 3,400 RPM is required to effectively convey the bulk of material into the debris hopper.
State engine RPM required to generate an impeller Fan speed of 3,400 RPM

Engine speed	_____	RPM
Impeller speed	_____	RPM
Step up ratio.	_____	

19.9 Blower drive system: To permit longer life and lower cost of operation, the entire blower drive system, excluding the auxiliary engine and impeller, shall be guaranteed for 5 years. Warranty shall include all components between the engine flywheel and the blower. Warranty shall cover all components, including normal wear items, such as, but Not limited to, belts, pulleys, bearings, shafts, fluid couplings, clutches, seals, etc. Warranty shall include all parts and Labor for a period of 5 years. 100% parts and labor. No Pro-rating or hour limitations acceptable. Vendors shall submit warranty statements from the manufacturer with their bids, in strict compliance with the published warranty specifications. Failure to do so will deem your bid as non-responsive.

19.10 Blower exhaust port is to be sealed and air is to be exhausted rearwards over full width of the body through a sound suppressed roof tunnel vent.

20. Intake System

20.1 The intake system shall be a minimum of 10" I.D. Diameter featuring straight inlet tubes (no bends or curves) into the debris hopper to maximize air speed up to 300 mph.

20.2 To permit cleaning and removal of blockages the intake system shall separate when the debris hopper is raised. The make break inlet point shall be no more than 48 inches off of ground.

Gutter broom- Right and Left Side

- 21.1 Gutter brooms shall be one piece, of steel
tine construction, and 28" inch diameter.

- 21.2 Gutter brooms shall be direct hydraulic drive type
and relief valve protected.

- 21.3 Gutter brooms shall have variable speed from within the cab.
Rotational speed from 0-140 RPM independent of engine RPM.

- 21.4 Gutter brooms shall pneumatically raise/lower.

- 21.5 Gutter brooms shall incorporate a lock for transport
activated automatically from within the cab.

- 21.6 Gutter brooms and components shall be free floating,
of trailing arm configuration with adjustable "kick back"
feature to avoid damage if contact is made with
High curbs or other immovable objects.

- 21.7 Four (4) water spray jets shall be provided at each gutter broom
along with a LED work light.

- 21.8 Two (2) water spray jets to be mounted on lower
rear corners of cab. They are to be wired and
activated separately to provide additional dust
suppression when required.

- 21.9 Gutter brooms shall be capable of being operated
independently of all other sweep gear.

- 21.10 Gutter brooms shall be capable of sweeping on top of
sidewalk edge for the purpose of cleaning weeds, etc.
This feature shall also be used to trim grass edges on
curbs, edged parkways, etc.

- 21.11 The right and left side gutter broom components must
Be identical to permit interchangeability from side to side.

22. Wide Sweep broom

- 22.1. Polypropylene under-body broom shall be supplied.

- 22.2. Broom shall be 16" diameter minimum.

- 22.3. Broom length shall be 50" minimum.

- 22.4. To reduce the potential for damage, the wide sweep
broom shall be towed and not pushed when operating.

- 22.5 Wide sweep broom shall be enclosed within its own hood to prevent debris from being ejected. _____
- 22.6. Broom shall be hydraulically driven at a constant speed with adjustable pressure and flotation system. _____
- 22.7. Wide sweep broom shall have a minimum of four (4) water spray nozzles mounted at front bumper for early dust control. _____
- 22.8. Wide sweep broom shall be capable of being changed without removing any parts other than the broom side cover plate. _____
- 22.9. Wide sweep broom shall be capable of being operated independently of all other sweep gear. _____
- 22.10 The wide sweep broom down pressure can be accomplished from inside or outside cab via the pendant control. _____
- 22.11 Wide sweep broom shall have a road crown compensation pivot with remote greasing provision to provide simple, easy lubrication. _____
- 23. Suction Nozzles- Right and Left Side
- 23.1 Shall be alloy construction, rubber lined for increase life and low noise. And will include curb guards and rubber skirts. _____
- 23.2 Nozzles shall raise/lower pneumatically. _____
- 23.3 Nozzles shall have four (4) internal water jets to provide dust suppression and lubrication for debris conveying tubes and sweeper internal components. _____
- 23.4 Nozzle carriages shall each be provided with two (2) adjustable heavy duty rubber tired, 10" diameter wheels. Should the nozzle not meet this requirement, then a third wheel must be provided. _____
- 23.5 Nozzle wheels shall be capable of being independently adjusted. _____

- 23.6 An in-cab control shall permit the operator to remotely tilt the nozzle backwards to accommodate the ingestion of large items. _____
- 23.7 The right and left nozzle components must be identical (Unhanded) to permit interchangeability from side to side. _____
- 23.8 Nozzle assemblies are to be attached to the sweep gear framework via tool free, detachable, self-aligning draw bar and track independently of chassis. _____
- 23.9 Nozzles shall be capable of being operated independently of other sweeping gear. _____
- 24. Hydraulic System
- 24.1 The hydraulic system shall operate the following: wide sweep broom rotation, gutter broom rotation, wide sweep broom swiveling and lateral positioning _____
- 24.2 To ensure adequate cooling, reservoir capacity to pump output shall be minimum of 2:1 ratio. State pump output at recommended auxiliary engine operating speed. _____
- _____ GPM@ _____ RPM
- 24.3 Hydraulic oil reservoir capacity shall be 18.5 gallons minimum and capable of maintaining continuous operation without overheating. _____
- 24.4 All hydraulic circuits shall be protected by relief valves. _____
- 24.5 Hydraulic reservoir shall have a fluid level sight glass. _____
- 24.6 The hydraulic system shall incorporate two (2) filters. A 125 micron suction filter and a 25 micron return filter. _____
- 24.7 The body raise/lower shall be powered off the auxiliary engine. An electric over hydraulic back up system shall be furnished in the event the auxiliary engine does Not start. _____
- 24.8 The body dump controls shall be controlled via a handheld pendant to permit operation from within the cab or Outside the cab. The pendant shall have a 15' reach from the cab. _____
- 24.9 All sweeping gear functions shall be powered from its timing gear power take-off feature. _____
- 24.10 All hydraulic valves for sweep gear shall be equipped with LED status indicators for fast, easy diagnostics. _____
- 24.11 The hydraulic system shall have a quick disconnect test port. _____

Water System

- 25.1 Water tank shall be integral with the hopper body and shall be fabricated of stainless steel. To permit longer life and a lower cost of operation, the sweeper's water tank shall carry a LIFETIME WARRANTY as long as the customer owns the Sweeper. Warranty shall include and not be limited To rust, corrosion and abrasion perforation, cracking, warping, melting, UV damage etc. Vendor will be financially responsible for all repairs, parts and labor. 100% parts and labor with no pro-rating or hour limitations acceptable. Vendors shall supply warranty statements from the manufacturer with their bids in complete compliance with the published warranty specification. Failure to do so will deem your bid Non-responsive
- 25.2 Water tank capacity shall be 415 gallons minimum with an in-cab Gauge and tank must be baffled to minimize stress related movement
- 25.3 Water pump drive and related systems shall have an air purge protection system against freeze-up
- 25.4 Water pump is to be driven hydraulically from a direct coupled motor and be self-priming and not subject to damage when operated dry.
- 25.5 A 25' hydrant hose with quick connect coupling and wrench shall be furnished. Storage compartment shall be provided for both the hose and wrench when not in use.
- 25.6 Machine shall be equipped with a 25' wash down hose with an adjustable spray nozzle.
- 25.7 All water valves shall have manual drain provisions.
- 25.8 The water tank shall have three (3) drains and flush out ports.
- 25.9 Provision shall be made to enable water tank filling to be accomplished by either hydrant or garden type hose and be filled from either side of unit
- 25.10 All water system rigid lines' shall be constructed of nonferrous materials.
- 25.11 An external water filter shall be provided. The filter must be accessible with body lowered. A shut off (isolation) valve must be provided to facilitate servicing.

12 Water manifold be constructed stainless steel.

25.13 The water system shall have a quick connect test port.

25.14 The water system shall have an adjustable relief valve.

25.15 The water system connectors shall be push-in type for easy repair or replace.

26. Air System

26.1 The sweeper air system shall incorporate a safety device which will ensure that in the event of a pneumatic failure, the chassis braking system will be automatically protected and air brake pressure will be maintained.

26.2 A self-purging air dryer shall be provided with a built in timer to expel condensation.

26.3 Cold Weather Water Purge System to easily and quickly allow Operator to drain all air lines by operating a simple in-cab switch.

26.4 The regulator shall have a shut off valve to purge only The sweeper system while maintaining chassis air pressure.

26.5 All sweep system pneumatic valves shall be housed in a weather proof systems locker and activated by cab mounted rocker switches.

26.6 The pneumatic system shall have a quick connect test port.

26.7 All pneumatic hose connectors shall be "tool free" push-in type to facilitate easy servicing, removal or replacement.

26.8 Nozzle, and wide sweep broom pneumatic cylinders shall have a common seal repair kit to defray parts stocking cost

26.9 Pneumatic system air lines shall be color coded for easy recognition of "live supply," "switched supply" and "exhaust"

26.10 The pneumatic system shall operate the following functions:

- (1) wide sweep raise/lower/road pressure.
- (2) Nozzle raise/lower/tilt for large debris.
- (3} Gutter broom raise, lower and latch

System Controls Locker

- 27.1 All controlling elements for the sweeper's pneumatics, water and hydraulics shall be centrally housed in a Single easily accessible, sealed, and weatherproof locker.
- 27.2 Systems Locker will have an internal LED light for visibility and a recessed garage style door.
- 27.3 Each system shall be equipped with L.E.D. status Indicators on all solenoids for fast, easy diagnostics.
- 27.4 Test ports shall be provided for each system.
- 27.5 All electrical wiring shall be contained within flame Retardant conduit.
- 27.6 All wiring shall be color coded and numbered for easy troubleshooting.
- 27.7 All internal wiring shall conform to an IP65 standard, to Insure protection against dust and sprayed water intrusion.
- 27.8 All external wiring shall conform to an IP67 standard, to insure Protection against migration of dust and immersion into water.
- 27.9 Can-Bus Control System to provide easy fault diagnostics and data capture of daily and cumulative sweeping performance, such as fuel Consumption, average RPM, engine hours and hours to next service.

28. Safety

- 28.1 Two (2) rear LED Strobes with limb guards shall be supplied.
- 28.2 A back up alarm of not less than 107 dB(A) shall be Installed and shall sound when reverse gear is selected.
- 28.3 A "two footed" access ladder with 3 points of contact with sure grip treads shall be installed for the purpose Of gaining safe access to auxiliary engine compartment.
- 28.4 Automatic pickup in reverse gear of all sweeping Equipment shall be supplied.
- 28.5 A pre-programmed single master override sweep switch shall control all sweep gear. The sweeping gear shall raise and the water shall shut off when switch is Moved out of "work" position. All functions shall re-sume their previously programmed settings when The switch is returned to "work" position.

29. Paint

29.1 Sweeper components are to be aluminum oxide bead prior To the application of a corrosion resistant primer (60 micron nominal). The gloss top coat is to be two part epoxy paint finish, standard white (60 micron nominal).

29.2 All sweep gear and bracketry are to be hot washed, zinc phosphate and power painted dark grey for maximum protection in a sweeping environment.

30. Warranty

30.1 The sweeper auxiliary engine shall carry a two (2) year warranty, 100% parts and labor minimum. Include warranty statement with your bids.

30.2 Warranty repairs to include all parts and labor, 100% coverage, no pro-rating.

30.3 Sweeper components other than wear items shall carry a standard one-year warranty.

30.4 Hopper warranty shall be for life as per section 18.1 of bid specifications.

30.5 Blower drive warranty shall be five (5) years as per section 19.9 of bid specifications.

30.6 Water tank warranty shall be for life as per Section 25.1 of bid specifications.

31. Manuals

The following documentation shall be supplied upon delivery of unit:

31.1 Sweeper:
1-Driver/ Operator Guide, 1 parts list, 1 service/ Maintenance manual and 1 troubleshooting manual

31.2 Truck Chassis:
1-Owner/ Operator's Guide.

31.3 Transmission:
1-Driver's Handbook.

31.4 Sweeper Engine:
1-User's Handbook.

32. Required Options

- 32.1 Gutter broom pneumatic tilt. _____
- 32.2 Pneumatic gutter broom lateral control. _____
- 32.3 Simultaneous sweep allowing both gutter brooms and intakes to be used at the same time for a wider sweep path. _____
- 32.4 Bonded intake ducts, tubes, and wear plates. _____
- 32.5 Pneumatic hopper screen vibrator. _____
- 32.6 Hopper flushes out system. _____
- 32.7 Supa Wash 8 GPM, 1500 PSI hand lance for high pressure cleaning. Includes a 50' hose and auto reel for storage. _____
- 32.8 Rear vision camera with color monitor. _____
- 32.9 Two LED rear work lights. _____
- 32.10 LED cab mounted strobe with limb guard. _____

33. Cost

- 33.1 Provide an option price for a top mounted Powa Boom for catch basin cleaning. The basin cleaner shall include two six foot extensions, one four foot extension, a four foot crown, and a rear door rack and hopper side compartments for storage. _____
- 33.2 Provide an option price for an Autocar ACMD 42 class 7 cabs over chassis. _____
- 33.3 Provide extended warranty options/cost _____
- 33.4 Provide total cost for Vacuum Sweeper with required options including applicable Tax,title,registration (list separately) and trade in value for a Model year 2000 Johnston sweeper (list separately)

Exceptions to Bid Specifications

Spec line Item #

Explanation of Exception