

ELGIN WHIRLWIND DETAILED SPECIFICATIONS FOR

The City of Nile's, Ohio

		COMPLY	
		YES	NO
5.0	SWEeper ENGINE with PATENTED SHARED POWER		
5.01	Shared power (patent # 9,010,467) is defined as a sweeper system that is power-driven by a combination of chassis and auxiliary engine horsepower. For gained economy, the sweeper system shall utilize horsepower captured by chassis regenerative braking.		
5.03	Auxiliary diesel engine shall be 4 cylinder, turbocharged, dynamically counter balanced 276 CID (John Deere 4045T or equal). Engine must be EPA Tier 4 final and CARB emission compliant.		
5.04	Auxiliary engine horsepower rating shall be 74 (55 kW) @ 2400 RPM, torque 224 lb-ft @1600 RPM.		
5.05	Auxiliary engine shall have ECU for throttle control and management of after treatment system; providing infinitely variable engine speeds from idle to engine rated speed.		
5.06	Horsepower transmitted from the chassis Allison 3500RDS transmission via Shared Power shall be applied back into the sweeper system on demand to provide additional horsepower for effective performance in sweeping applications using either single nozzle or simultaneous sweeping with dual suction nozzles.		
5.07	For greater heat dissipation, less noise and lower cost of maintenance, engine shall have individually replaceable wet sleeve cylinder liners.		
5.08	Engine shall be protected by a dual safety element dry type air cleaner & restriction indicator that indicates it is time to service the filter element.		
5.09	Engine shall be filled with 50/50 mixture anti-freeze/water for cold weather storage and or operation.		
5.10	Sweeper engine shall drive the blower fan by a heavy-duty five (5) "V" groove power belt, without the use of a step-up auxiliary gearbox. The power belt will provide ease of maintenance and is more cost effective than using a step-up auxiliary gearbox.		
5.11	To minimize noise and vibration, the entire joined engine and coupling shall be isolation mounted on the auxiliary frame.		
5.12	To accommodate both easy access and sound attenuation, the engine shall be enclosed on both sides by two access doors, one on each side of the sweeper body. These doors provide access to serviceable items without tilting the hopper.		
5.13	A fluid coupler shall be installed between the auxiliary engine and the power belt drive, which allows for smooth starting and stopping of the engine, while preventing the momentum of the fan system from driving the engine when the engine is turned off.		
5.21	Two extra keys to the auxiliary engine shall be provided.		
6.0	BLOWER		
6.01	The blower shall be driven by a five (5) "V" groove power belt for maximum performance and simplicity of construction, with tension adjustment not requiring repositioning of the engine.		
6.02	Shared power system shall provide all horsepower for fan speed of 3200 RPM to effectively convey the bulk of material into the debris hopper; debris types such as but not limited to trash,		

	sand, gravel, compacted dirt, rock, leaves and other organics.		
6.03	Shared power system shall provide all horsepower for effective & efficient use of both suction nozzles for simultaneous sweeping during applications requiring the use of dual nozzle sweeping for maximum sweeper productivity.		
6.04	Blower shall be a closed face turbine type, 31 3/8 in. diameter, with 9 vanes constructed of Hardox 500 steel for optimal combination of hardness and abrasion resistance for maximum service life. An open faced fan will not provide adequate combination of air flow and vacuum, and is not acceptable. Impellers constructed of material other than Hardox500 steel will not be accepted. For longevity of the fan and maximum bearing life, the impeller must be balanced to within .5 ounce-inches.		
6.05	The blower shall be constructed using a robotic arc welder for accuracy and repeatability to a minimum of 0.0225 in., including features such as touch sensing, weaving and seam tracking information to precisely lay a quality weld that is in accordance with AWS D1.1 standards. Blowers constructed from cast aluminum are not acceptable.		
6.06	The blower housing shall be constructed of 10 gauge abrasion resistant steel and lined with Linatex (or equal) for maximum extended wear in abrasive environments.		
6.07	The blower housing shall be constructed using a robotic arc welder for accuracy and repeatability to a minimum of 0.0225 in., including features such as touch sensing, weaving and seam tracking information to precisely lay a quality weld that is in accordance with AWS D1.1 standards.		
6.08	The blower housing shall have an inspection door for quick inspections without removing the blower housing or looking into the air exhaust opening. Access to this inspection door must be possible without tilting the hopper.		
6.09	The blower housing shall not be an integral part of the hopper. Replacement of the blower housing must not require any cutting and welding of the housing and or hopper.		
6.10	The blower shall be mounted on heavy-duty re-greasable bearings, capable of being greased from ground level. Greasing of the bearings must be possible without tilting the hopper.		
7.0	SUCTION NOZZLES AND HOSES		
7.01	The suction nozzle pick-up area shall be not less than 174 sq./in. with suction nozzle width a minimum of 32 inches.		
7.02	The suction hose shall have a quick disconnect coupling, not requiring any tools, at the lower area, near the suction nozzle. This is to allow easy access to both the suction nozzle and suction hose for inspection and cleaning when obstructions occur. The quick disconnect must be accessible without tilting the hopper.		
7.03	The entire suction hose quick disconnect section and hose transition piece into the suction hose gate valves must be of a bolt-on design for easy maintenance and service.		
7.04	All metal components, nozzle, tube, etc. shall be constructed of abrasion resistant steel for longer life in an abrasive environment. Cast aluminum components or components using rubber liners are not acceptable due to shorter service life.		
7.05	The suction hose shall be not less than 11 inches in inside diameter to allow for larger objects and large quantities of debris to enter the suction hose.		
7.06	The nozzles shall extend 15 inches beyond the wheel track for increased performance closer to the curb and better visibility of the nozzle from the cab. The nozzles shall have a replaceable wear edge for running against the curb.		
7.07	Both nozzles shall be capable of being deployed concurrently to allow simultaneous sweeping for maximum productivity.		
7.08	An integral automatic "jackknife style" gate valve shall be bolted on the top of the suction hose where the material enters the hopper. The gate valve is automatically activated with the suction		

	nozzle activation and prevents material from dropping back down the nozzle tubes when the vacuum is stopped. The gate valve also prevents material/debris from being dropped into the suction nozzle when the sweeper is traveling.		
7.09	The jackknife style gate valve is of such a design that it cleans itself from debris. It is operated by a heavy-duty air cylinder that activates the gate valve. This cylinder shall be similar to other air cylinders used in the air system of the sweeper for interchangeability of parts and easy service.		
7.10	The suction nozzle shall ride on two heavy-duty caster wheels. These caster wheels shall be of a pivoting design. This allows the nozzle to move sideways, better staying in the path of debris and following road contours, as well as improving service life. Non-pivoting caster wheels are not allowed as they have a reduced service life.		
7.11	The suction nozzle shall be equipped with a front mounted shutter. This shutter allows easy entry of large objects and large quantities of leaves. The shutter must be replaceable as a separate part, rather than replacing the entire suction nozzle. Suction nozzles that pivot in the back creating a shutter opening in the front, or suction nozzles that have no shutter as part of their design shall not be allowed.		
7.12	Sweep path: Nozzle only = 32 inches		
7.13	Side broom and nozzle = 52 inches		
7.14	Extension broom and nozzle = 78 inches		
7.15	Side broom, extension broom and nozzle = 95 inches		
7.16	Dual side brooms, extension broom and dual nozzle = 144 inches		
8.0	SIDE BROOM		
8.01	The right side broom shall be a free floating trailing arm design with inward motion safety to prevent damage when sweeping and encountering a fixed obstacle. The trailing arm shall be of a parallelogram design for simple, non-binding action/motion and for constant bristle and wear pattern.		
8.02	The side broom shall be 36-inch diameter minimum, with hydraulically driven rotation.		
8.03	The side broom shall be pneumatically raised, lowered and suspended by heavy duty pneumatic cylinders that are common with other pneumatic cylinders on the sweeper for ease of service and maintenance.		
8.04	Adjustable down pressure shall be pneumatically controlled by the operator from the cab.		
8.05	The broom hydraulic motor drive shall provide not less than 4500 in/lbs. of torque for superior digging power.		
8.06	The side broom assembly shall have greaseless pivot pins for ease of maintenance.		
8.07	The side broom assembly shall be supported in the storage position by a transport hook.		
8.08	The side broom shall be controlled from in the cab by simple rocker switches.		
8.09	To prevent exposure to accidental laceration by the bristle tips, side brooms shall retract with wire bristle tips unexposed. No exception will be allowed to this safety requirement.		
8.10	Sidebroom set consists of 4 steel segments with polyethylene broom bristles.		
8.13	Electrically operated tilting mechanism allows operator to change inward/outward tip of the right Sidebroom. Angle can be changed from the cab while sweeping. This allows efficient sweeping of irregular surface that could require special manual setting of the broom.		
8.15	Optional in-cab control activates shutter door at different interval settings on the right side nozzle for easy entry of light bulky items that would not normally force open the standard shutter door.		
8.17	The variable speed control provides the ability to alter the rotational speed on the Sidebroom to adjust to changing road or sweeping conditions from light, bulky to heavy debris. It also extends the life of the Sidebroom. It does not always have to turn fast for particular conditions so the Sidebroom will wear less.		

9.0	EXTENSION BROOM		
9.01	The extension broom shall be 54 inches long, 16 inches in diameter, disposable, and reversible.		
9.02	The extension broom shall be hydraulically driven (with relief valve), pneumatically raised, lowered, and suspended.		
9.03	The extension broom shall operate at an 18 degree windrow angle minimum for quicker sideways movement of debris. The broom can pivot for left hand side or right hand side sweeping and is activated by a heavy duty pneumatic cylinder that is common with other pneumatic cylinders on the sweeper for ease of service and maintenance.		
9.04	The extension broom hydraulic motor drive shall provide not less than 4500 in/lbs. of torque for superior digging power.		
9.05	Suspension shall be by pneumatic lift with out-of-cab variable down pressure control for maximum digging power and wear control.		
9.06	The extension broom shall have a greaseless pivot pin.		
9.07	The extension broom rotation shall stop and all sweeping functions shall raise automatically, when transmission is placed into reverse or when the sweeper is put in transport mode.		
9.08	A broom cover shall be provided.		
10.0	HOPPER		
10.01	Volumetric capacity shall be 8 cubic yards minimum.		
10.02	Hopper shall be constructed of 10 gauge steel sides, and quarter inch floor.		
10.03	A weight actuated full load indicator shall be mounted in the cab on the control panel.		
10.04	The hopper tilt angle when dumping shall be a minimum of 50 degrees. Dumping shall be accomplished by tilting the hopper via a two-stage telescopic cylinder. The use of multiple cylinders for tilting the hopper shall not be acceptable. The use of a moving raker bar which is attached to the rear door inside the hopper in lieu of tipping the hopper for dumping shall not be acceptable.		
10.05	The hopper floor angle shall be a minimum of 10 degrees.		
10.06	A removable, replaceable and adjustable, abrasion resistant "scoop" style steel deflector shall be located at each suction inlet. This deflector is to direct material to the center of the hopper for optimal loading conditions.		
10.07	The hopper rear door shall be hinged at the top of the door and opened by means of a hydraulic cylinder. The hopper rear door should open at a minimum angle of 90 degrees to be perpendicular to the hopper opening for maximum dumping action. The has evaluated many styles and considers this design to be the most effective for dumping and cleaning. No exceptions to this requirement will be acceptable.		
10.08	Hydraulic cylinder movement shall be controlled by the use of two hydraulic valve levers on the right-hand side of the hopper to view discharging of debris out of the hopper during dumping for maximum safety.		
10.09	For maximum operator safety the rear hopper door shall have an external door prop. No exception to this safety requirement shall be accepted.		
10.10	The hopper rear door shall include an automatic lock mechanism for a tight fit and optimal sealing between the hopper and the rear door.		
10.11	The rear door seal shall be a water resistant heavy-duty reinforced D style rubber seal for optimal sealing. Foam seals that can absorb moisture and freeze are not acceptable.		
10.12	Two 34.5" x 43.5" screens, for a total screen area 3000 square inches, of not less than 11 gauge steel shall be installed to allow air to move freely from the hopper into the blower area. The hopper screens shall be hinged and pinned to allow easy cleanout.		
10.13	The front section of the hopper must cover the auxiliary engine, and must be constructed of		

	heavy fiberglass. This fiberglass consists of a roof section and two fiberglass side doors that allow access to the serviceable items for ease of maintenance. All these items must be accessible without tilting the hopper.		
10.14	The hopper shall cover the main water tank of the water system and will provide easy access to the water system components. Water tanks that are an integrated part of the hopper shall not be allowed.		
10.15	When raising the hopper the water tank shall not raise with the hopper. The water tank shall be mounted to the sweeper frame and shall be removable for service. Not raising the water tank when raising the hopper puts less strain on the dump system.		
10.16	The hopper shall have hopper cut-outs at each side of the hopper. These cut-outs provide easy access to the quick disconnect section on the suction nozzle and allow the suction hose and nozzle to have side-way movement for establishing more suction power at the curb.		
10.23	An inspection door is built into the right side of the hopper, the door allows odd sized debris to be manually put into the hopper.		
10.25	An inspection door is built into the right side of the hopper. This option also provides an additional step, mounted on the rear bumper, and an easy to reach handle, mounted on the right side of the hopper, that both provide easy access to the inspection door and excellent viewing of the load in the hopper.		
10.28	The 8 in. (203 mm) diameter, 9.5 ft. (2,896 mm) long wandering hose is located at the rear of the machine. It is capable of deep cleaning catch basins with controls at your fingertips. Push buttons mounted on the suction nozzle control the hydraulically assisted up and down movement of the nozzle. Spray water is injected for dust control and hose lubrication. This system is approved for the addition of (4) 4 ft. aluminum wandering hose extensions.		
10.31	Two four ft. (1,219 mm) long steel extension can be used with the hydraulically assisted wandering hose. Steel tubes can be assembled up to 12 feet (3,657 mm) in length (limit 3).		
11.0	SPRAY WATER SYSTEM		
11.01	The water system shall consist of two water tanks. Both shall be removable for service and shall have a total capacity of 335 gallons. Both tanks shall be constructed of rust proof polyethylene.		
11.02	The water tanks shall be frame mounted with no part sharing any common wall with the hopper and shall not raise during hopper dumping for better weight distribution.		
11.03	Two electric 12 volt, diaphragm type pumps will provide a capacity for 8 GPM @ 40 PSI to the suction nozzle, the side broom and the extension broom. Belt driven pumps are not acceptable.		
11.04	One water pump is fully dedicated to supplying water to the Right Hand suction nozzle, Right Hand side broom and extension broom for optimal dust control.		
11.05	One water pump is fully dedicated to supplying the Left Hand suction nozzle, Left Hand side broom and optional front spray bar for optimal dust control.		
11.06	Each water pump must have two flow rates, selectable by the operator from within the cab and capable of running dry without damage.		
11.07	A 16 ft. 8 inch fill hose with NST coupling and anti-siphon connector with strainer shall be supplied.		
11.08	A water level gauge shall be provided on the control console within the cab.		
11.10	Three (3) water spray nozzles are located at each side broom for optimal dust control.		
11.11	Seven (7) removable water spray nozzles are located inside the suction nozzle. Water spray nozzles that spray on the outside of the nozzle are not acceptable.		
11.12	The water filter, located near the water pumps must be easy to access and clean without tilting the hopper. A ball valve must be provided to allow cleaning of the filter without the loss of water from the water tanks.		
11.13	All water piping shall be external to the operator cab. For safety, no water lines capable of		

	leaking or bursting shall be within the cab.		
11.14	The extension broom is supplied with four (4) rubber mounted, quick disconnect spray nozzles for easy cleaning and maintenance. Non rubber mounted and non quick disconnect water nozzles are not acceptable.		
11.15	All water lines shall be color-coded green for easy identification. Pressure water lines shall be Nylon PFT line for maximum life. All suction and fill water hose is a synthetic rubber braid reinforced hose for maximum life. Any other materials are not acceptable.		
11.16	All water connections are either Presto-matic push to lock or Push Lok fittings for easy assembly and maintenance and long life.		
11.17	A 2.5" anti-siphon air gap shall be supplied on the water tank fill to prevent contamination of supply water.		
11.19	Cab controlled front water spray bar assists with wetting down debris under extremely dusty conditions. Four removable brass nozzles mounted under the front bumper of the truck on copper pipe keep the system corrosion resistant.		
11.22	Unit shall include a High pressure wash down system. Also included is a 25' length of 1/2 inch diameter hose and spray nozzle with couplings on both right and left-hand side of sweeper.		
12.0	HYDRAULIC SYSTEM		
13.01	Tandem hydraulic pump shall be a direct gear driven style pump for maintenance free operation, having a flow capacity of 8.3 GPM @ 2500 RPM.		
12.02	Reservoir capacity shall be not less than 23 gallons and have an exterior sight gauge. The reservoir must be located in the enclosed auxiliary engine compartment for quick inspections without tilting the hopper.		
12.03	Hydraulic oil cooler shall be standard to provide adequate cooling with fresh air intake and accessible without raising the hopper. The hydraulic system shall operate below 200°F.		
12.04	All hydraulic circuits shall have quick disconnect pressure check ports for ease of maintenance.		
12.05	To minimize the hazards of potential leakage, all high pressure fittings shall be "O" ring face seal (OFS) on hose ends or "O" ring boss on hydraulic ports. Other systems shall not be acceptable.		
12.06	There shall be a 10 micron spin-on hydraulic filter. Exchange of the filter must be possible without tilting the hopper.		
12.07	To further reduce the chance of hydraulic system contamination and joint leakage use of standard pipe threads requiring pipe dope shall not be acceptable.		
13.0	PNEUMATIC SYSTEM		
13.01	The pneumatic system shall have DOT, prestomatic push to lock fittings for ease of maintenance and service. Any other fittings are not acceptable		
13.02	There shall be a PR4 type pressure protector for the chassis air system to protect the chassis air system at air pressures below 85 PSI.		
13.03	A separate air tank for all sweeper air components shall be provided.		
13.04	All pneumatic cylinders must be rated to 150 PSI and have separate rod seal and wiper to prevent contamination entering the cylinder.		
13.05	Each cylinder shall be controlled by a single, two positions, solenoid valve mounted on a manifold with common input and exhaust. A manual override shall be provided on each solenoid valve for trouble shooting and function lockout.		
13.06	There shall be a filter with polycarbonate bowl to filter out contaminants down to 5 microns to prevent contamination in the air system.		
13.07	All air lines should be color-coded silver and function stamped for ease of identification maintenance. Non color coded lines are not acceptable.		
14.0	ELECTRICAL SYSTEM		

14.01	Sweeper electrical system shall be independent from the electrical system of the chassis.		
14.02	Sweeper engine shall have one (1) 925 CCA, 12 volt battery.		
14.03	Sweeper engine shall have a 95 amp alternator.		
14.04	Sweeper shall have an electronic back-up alarm for additional warning and safety when chassis is in reverse.		
14.05	Sweeper lighting shall include rear identification lights, side broom and rear clearance lights.		
14.06	Sweeper warning lights shall include hopper up, hopper full load and hopper rear door open.		
14.07	Sweeper wiring harnesses shall be color-coded and hot stamped with appropriate word designation labeled every four inches, i.e. "Ignition", "Side Broom" on each wire.		
14.08	All electrical circuits must be protected by automotive style blade fuses.		
15.0	CONTROLS		
15.01	All sweeper controls shall be mounted on a central terminal for use from either right or left positions. This allows the operator to view all important auxiliary engine information from either operating position.		
15.02	The controls shall include all sweep, spray water, and lighting functions.		
15.03	The in-cab controls for hopper dump, located on the stationary central console, shall include hopper raise / lower, hopper door open / close. For safety, hopper dump controls that are pendent mounted shall not be considered.		
15.04	The controls for sweep, spray water, and lighting functions shall be conventional rocker switches.		
15.05	Controls for auxiliary engine ignition and throttle, side broom down pressure and manual reset circuit breakers shall be located on the control console.		
15.06	The control console shall have a quick release access cover that can be fully hinged over a pivoting hinge		
15.07	Controls for sweep system shall include sweep/resume feature; allowing the automatic raise when chassis transmission gear selector is put into reverse of side brooms and pickup head.		
16.0	INSTRUMENTS		
16.01	Sweeper engine instruments shall include tachometer, hour meter, oil pressure, fuel, voltage, and coolant temperature for complete information for the operator on the condition of the auxiliary engine.		
16.02	Sweeper engine instruments shall include an auxiliary engine air intake restriction indicator for ease of maintenance, a rear door "open" indicator, a "raised" hopper indicator and a "full" hopper indicator to notify the operator of hopper and hopper rear door conditions.		
16.03	Sweeper instruments shall include diagnostic information for the sweeper engine and sweeper functional information to include sweeper engine hours, side broom hours, water level, vacuum enhancer position and hopper door position.		
17.0	MISCELLANOUS SWEEPER OPTIONS		
17.05	Tool for opening and closing the fire hydrant for filling up the water tank.		
18.0	PAINT		
18.01	All visible exterior metallic surfaces shall be coated prior to assembly with polyester powder coat. The paint must be a minimum of 2 mils thick. The uses of acrylic enamels and/or polyurethanes are not acceptable.		
18.03	Vehicle shall have an accent color of Grey on the lower portions of the unit.		
18.18	The sweeper body is painted RAL 3001 Signal Red.		
19.0	MANUALS		
19.01	A sweeper operation manual shall be provided.		
19.02	A sweeper parts manual shall be provided.		
19.03	A John Deere operation manual shall be provided.		

19.04	A John Deere parts manual shall be provided.		
20.0	WARRANTY		
20.01	Manufacturer's warranty shall be not less than one (1) year on entire sweeper, including all parts and labor.		
20.02	Manufacturer's warranty shall be not less than three (3) years on chassis engine, including all parts and labor.		
20.03	Manufacturer's warranty shall be not less than lifetime protection against rust-through of the water tank.		
20.04	Bidders submitting literature stating warranties which do not fully comply with warranty requirements of this specification must submit a letter from the manufacturer certifying warranty compliance as an integral part of their proposal. Failure to comply may cause the proposal shall be deemed "non-responsive" and rejected without further review.		
21.0	SERVICE AND TRAINING		
21.01	Vendors shall have a full parts and service facility within a reasonable distance from the Garage. State location and distance.		
21.02	A qualified technician shall provide complete training to personnel at the Garage. Training shall include safety, operation, maintenance and service.		
22.0	DELIVERY		
22.01	Sweeper shall be delivered F.O.B. in new operating condition.		
22.02	Acceptance shall be subject to the inspection and approval of the .		
22.01	Bidder shall state delivery time after receipt of order:		
23.0	QUALITY		
23.01	Sweeper shall be manufactured by a company with a registered quality standard no less than ISO 9001.		
24.0	OPTIONAL ITEMS		
24.01	The may choose, at its sole discretion, to add any or all of the optional items to this purchase. Bidder shall state the amount to be added to the Bidder's Proposal, should each item be selected. ADDITIONAL COST: \$		
25.0	CHASSIS SPECIFICATIONS		
	AXLES: Front - 12,000 lbs. with 12,000 lbs. (5443 kg) springs Rear – Single speed 21,000 lbs. (9525 kg) with 23,000lbs (10,432 kg) taper leaf springs with auxiliary leaf spring for stability. Ratio – 6.43:1 Gross Vehicle Weight Rated (GVWR) - 33,000 lbs. (15,000 kg) BRAKES: <u>Service:</u> Type - Full air, anti-lock Front - 15 in. x 4 in. (38.1 cm x 10.2 cm) drum Rear - 16.5 in. x 7 in. (42 cm x 17.8 cm) drum Compressor Capacity - 18.7 CFM Auto slack adjusters, front and rear <u>Parking:</u> Type - Spring set, air release		

CHASSIS:**New, Unused, Current Model Year**

Manufacturer: Freightliner or equivalent

Model – M2

Frame:

Type - Rail, High Strength 80,000 PSI, 15.9 section modulus

Size - 10.1 in. x 3.4 in. x 0.28 in. (26 cm x 8.64 cm x 0.711 cm)

DIMENSIONS: (with sweeper mounted)

Wheelbase - 176 in. (4470 mm)

Cab to axle - 110 in. (2794 mm) usable

Overall Length - 264 in. (6706 mm)

Overall Height - 110 in. (2743 mm) w/o beacon

Overall Width - 96 in. (2438 mm)

Dumping Clearance Height - 236 in. (5994 mm)

Turning Radius – 22'6". (6858 mm) (curb to curb)

Travel Speed – 62 MPH

ELECTRICAL SYSTEM:

Voltage - 12V

Alternator - 160 Amp.

Battery - Two (2) 12 Volt 1850 CCA Maintenance Free

ENGINE:

Manufacturer: Cummins

Model – ISB 6.7 200

Cylinders - In-Line 6

Displacement - 409 cu. in. (6.7 L)

Horsepower - 200 (150 kW) @ 2400 RPM

Torque - 520 lb. ft. (708 Nm) @ 1600 RPM

Oil Filter - Full-flow, spin on type

Oil Capacity – 4 us gal.. (15 L) with filter

Air Cleaner – High Capacity dry type with safety element & restriction indicator

Fuel Tank Capacity - 50 gal. (189 L)

Fuel Filter

ODB II Diagnostics

INSTRUMENTS (Dual Operating Positions):

Water temperature gauge, tachometer, speedometer with LH side trip odometer, fuel gauge, voltmeter, air pressure, oil pressure, transmission temperature, diagnostic on the left hand side and all FMVSS required gauges on the right hand side.

EXHAUST: - 2016-2019 on-board diagnostics (OBD), 2010 EPA/CARB/GHG 17. Particulate trap, selective catalytic reduction, 6 gallon diesel emission fluid tank and R.H vertical tailpipe behind cab.

	<p>WARNING LIGHTS:</p> <p>WARNING LIGHTS AND CHIME: Low coolant level, high coolant temperature, warning lights and buzzer, low air pressure</p> <p>SEATS: Basic High Back Air Suspension Driver and Passenger Seats w/ Mechanical Lumbar and Integrated Cushion Extension</p> <p>DUAL STEERING: Type - Full power hydraulic Size - 18 in. (457 mm) diameter steering wheel with adjustable tilt steering column.</p> <p>TRANSMISSION: Allison 3500RDS 6-speed automatic</p> <p>WHEELS: Front & Rear - 22.5 in. x 8.25 in. (57.2 cm x 21.0 cm) steel disc type</p> <p>TIRES: Front & Rear - 11R 22.5 Load Range G (14 ply rating)</p> <p>ADDITIONAL FEATURES INCLUDED: AM/FM/WB Radio w/ CD Player, Bluetooth and Microphone, USB, Front and Rear Aux. Inputs RH and LH 8" Stainless Steel Fender Mounted Convex Mirrors w/ Tripod Brackets Left and Right Remote Control West Coast Mirrors Convex Mirrors (L & R) 8 in. (203 mm) molded in under west coast mirrors Dual Steering Air Conditioner Viscous Fan Tinted Glass—All Windows Engine Hour Meter Electric Horn Electric Windshield washers with delay Cruise Control Auto Shutdown Blue stripe coolant hoses with constant tension clamps Bendix air dryer w/heater 750 watt block heater Dual Cup holders 12 Volt Power Supply Front Tow Hooks Electric Door Locks and Windows Daytime Running Lights</p> <p>Battery, Parking Brake</p>		
26.0	EXCEPTIONS AND DEVIATIONS		

26.01	Bidder shall fully describe every variance, exception and/or deviation. Additional sheets may be used if required.		
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