Specs updated 8/10/2020 to add the following to the original posting

*Upgrade valve enclosure & reservoir to stainless steel

Lafayette Central Schools

Snow Plow:

-A 9' Municipal grade hydraulic reversible snowplow with easy attachment.
-Removable receiver brackets for maximum clearance for off season
-Quick release latch system with adjusted shoe height
-A rotating pivot bar allowing bade to pivot on uneven surfaces for cleaner scraping
-A-frame constructed from 3" square tubing with 1/2" plate pivot yoke and 1" diameter pivot bolt
-High strength heavy duty 4" tubular quadrant with 4 trip springs and 2 trip blade shock absorbers.
-Blade height of 31" constructed from 12 gauge mold board with 8 vertical ribs. 2" tubular power bar for torsional strength, a 4" high strength steel base channel and ½" X 6" high carbon steel cutting edge.
-High output LED two stud mounted headlights with turn signal combination. Wired into water tight isolation system that switches from truck to plows' lights automatically when plow is plugged in
-Plow shall have 6" rubber deflector bearing manufacturer's logo

Wing Plow:

-8' Wing blade, 7 ribs, 11 gauge moldboard
-Blade Height 29" with adjustable shoe
-Leading edge of plow mounting in front of rear axle & back edge of plow mounting behind rear axle for even weight distribution
-Quick attachment with quick coupler hydraulic hoses
-Color matched to front plow
-Full hydraulic controlled with cushion valve protection
-Electric shut-off valve for holding in stored position
-A ½" x 6" 1080 steel cutting edge with anti-catch leading edge
-The leading edge of the plow mounting shall be attached to a double hinged trip yoke with 1 ¼" quick coupler.
-The quick coupler shall couple to a 16" slider assembly and pin together using a 7/16" pin
-The drawbar shall be 3" tubing supported by two frame rail mounts located on each side of the truck frame, forward of rear axle
-The tail end of the plow mounting shall be attached to a 2 ½ hinged quadrant tubing with 2 trip springs allowing forward tripping motion of plow blade
-The quadrant shall use ½" yoke and wear collars to attach to a 2" wing tube using a 7/8" yoke bolt
-The wing tube shall telescope using a 32" double acting cylinder with ¾ bolt pins. The plow shall have an adjustable width from 0 to 5 feet.
-The wing assembly shall be attached using 2" ball coupling with a

quick release latch
-The rear mount shall be 3" channel mounted after the rear axle with stop block for plow in the stowed position.
-The lift assembly shall be 3" tubing attached to the right frame mount with 2 ½" support tube attached to 3" draw bar. The lift arm shall swivel 35* and use the 3/16" coupler pin to lock parallel to the truck body when plow is removed. A 5" lift cylinder shall be used for lifting and lowering the plow blade with the ability to shelf snowbanks.
-A 5/16 lift chain shall be used to attach the plow to the lift arm with a 5/8" quick release pin. The lift arm assembly shall be easily removed for the off season.

Dump Body:

Intent: It is the intent of these specifications to describe a multi-use heavy-duty crossmemeberless 304 stainless steel dump body. This dump body shall have a telescopic hoist and an integral conveyor built into the floor for conveying and/or spreading ice control materials, chips for seal coating, asphalt or shoulder material.

Body: The overall length of the dump body shall be 9' and overall width shall be 94". It shall have a capacity of 3 cubic yards without sideboards. The double wall sides of the body shall be 17" high and constructed of 12 gauge 304stainless steel. The top of the side shall have a 4-1/2" deep boxed top rail with a top radius bend of 1-1/8". For additional support the sides are designed with a full length formed inward "V" bend. The rear corner post shall be 12" wide and 6" deep.

The floor outside of the conveyor shall be of 10 gauge 302 stainless steel and constructed without the use of cross members. There shall be a single bar flight chain conveyor in the center of the floor running the entire length of the body. The floor shall be formed in the center to fully cover the chain links. The floor shall be supported by two formed 10 gauge 304 stainless steel trapezoidal longitudinals that span the entire length of the body.

Tailgate: The tailgate shall be 23" high and constructed of 10 gauge 304 stainless steel. The outer full width vertical gussets shall be 3" deep with radius bends of 1-1/8". The top of the tailgate shall be 4-1/2" deep with the 1-1/8" radius bend and bottom horizontal rail shall be full width. The tailgate shall have an opening in the center to accept a conveyor hood. The tailgate latch shall be made of ½" 304 stainless steel and have a 1" latch pin. There will be threaded rod adjustments and have two yokes with 5/8" pins. The tailgate hinge pin shall be 1" in diameter. The gate handle shall be made of 1" rod and will have a safety chain with a ring that will slide over the handle. All moving parts shall be equipped with accessible grease fittings.

Conveyor Hood: The conveyor hood shall be mounted in the center rear opening of the dump truck tailgate. It shall be capable of being shifted to a forward extended position inside the body, covering the rear end of the conveyor and to a rearward retracted position where a front face of the conveyor hood is flush with an inner face of the tailgate. Within the conveyor hood shall be the coal door assembly. The conveyor hood shall contain a vertically sliding door that is locked at different

adjustable settings by a treaded friction type locking handle. A horizontally revolving feed gate is not acceptable.

Conveyor: For ease of dumping operations, even tailgate spreading of aggregates the conveyor shall end flush with the rear of the body and shall not extend past the tailgate of the unit.

For overall high strength and structural integrity of the unit, the 34" wide conveyor shall be an integral part of the body. The inside face of the trapezoidal longitudinal shall also be the side of the conveyor.

The conveyor chain outside width shall be a minimum of 32" and shall run on a 10 gauge 304 stainless steel conveyor bedplate. The outside edge of the conveyor bedplate shall e welded to the inside face of the trapezoidal longitudinal.

When the conveyor chain is moving material towards the rear of the body, the material shall be fed through the doghouse opening in the tailgate. The rear of the floor and rear conveyor shall have no openings by which material shall pass through before it moves rearward through the doghouse in the tailgate. The rear of the floor and rear conveyor shall seal tight against the tailgate and doghouse when the coal door is closed. This tight seal shall eliminate any material leaking out of the body.

The conveyor shall feed material rearward through the coal door of the tailgate and shall be 32" minimum width. The sides of the conveyor which are also the longitudinal members of the body shall be constructed of 10 gauge formed 304 stainless steel channel. The D667K Pintle chain shall have a ¼" x 1 ½" bar flight welded to every link. The conveyor chain shall be powered by a 6:1 ratio spur gearbox mounted to one side of the rear mounted 1 ½" drive shaft. The gearbox shall be powered by a hydraulic motor.

Telescopic Hoist: The hoist shall be a front trunnion mounted telescopic design hoist. It shall be designed to operate up to 2000 PSI and shall be self-bleeding. It shall be installed with the largest stage at the bottom for stability. The cylinder shall lift the body via 1-7/8" pin mounting connected to the bottom front of the box.

The tubes comprising this cylinder shall be processed through a liquid salt bath nitriding treatment to enhance the surface hardness and corrosion resistance. The corrosion resistance obtained through this process will be roughly ten times that of the chrome plating. The cylinder shall be a bore seal design, with each section sealing against the ID of the next largest diameter tube. As the external surface of these tubes never make contact with a seal; scrapes and score that may occur over life of the hoist will not affect the sealing capabilities. There will be an oscillating collar on the outer cover of the cylinder to allow the body to be offset 5* to 7* without transferring that side load to either the truck frame or the cylinder tubes, and therefore enhancing stability, and longevity.

The piston rod shall be machined from ASI 4140 and nitrated using the QPQ method to establish the following mechanical properties:

Surface Hardness: Rockwell C60-C65
Surface Finish: RMS 20
(using ASTM B117 salt spray)
Approximately 7% surface area corrosion in 88 hours (or 10 times better than hard chrome plating)
Full Strength: Approximately 80%-100% increase using QPQ as compared untreated sample

Hydraulic Control: To operate the unit as a spreader, there shall be two variable speed hydraulic cab controls mounted in the cab. One control knob will govern the conveyor speed and the other will govern the spinner or shoulder conveyor speed.

Spinner: The spinner disc shall be a 20" steel plate. It shall have 6 formed vanes and be powered by a hydraulic motor mounted underneath the spinner disc.

Cab Shield: There shall be a ½ cab shield supplied made of 12 gauge 304 stainless steel. The ½ cab shield shall extend 27" from the front of the body.

Struck capacity of 9' body: 3.1 cubic yards without sideboards
Struck capacity of 11" body: 4 cubic yards without sideboards

Hitch: -Hitch plate shall be form fitted into truck frame with 8 ton ball pintle. Hitch plate shall gusseted back into frame rails 7" using ¼" plate steel. The hitch shall be welded and bolted using 5/8" bolts.
-Forged safety chain d-rings shall be welded to hitch plate 7" from ball pintle on each side. The pintle shall be 23" from top of ball to ground surface and bolted to hitch plate
-The hitch shall have a 3" ICC bumper welded to the hitch plate and the 7" gussets.
-A 7-way spade style plug shall be wired and mounted to hitch plate.

Lights: -Amber low profile LED mini light bar with reliable onboard circuitry, 360* degrees of continuous light output, and 20 flash patterns Federal Signal or Equal. Light to be mounted on roof of truck. Positioned for maximum degree of visibility. Wired into up fitter switch.
-Auxiliary lighting mounted into dump body at rear for spreader and on side for wing plow. Lights shall be 4" LED flood lights with adjustable housing. Wired into up fitter switches.
-Oval LED alternating amber lights mounted in rear corner posts and side of dump body, wiring
shall be 3 conductor wiring with flexible covering. Wired into up fitter switch; Superior Signal or equal.
-All wire connections shall be weather protected with heat shrink connectors.

Central Hydraulics System: -The hydraulic system shall be an under-hood clutch pump with a 17 GPM pump with electric clutch and a working pressure of 2000 psi. Custom brackets & add-on pulley with serpentine belt.
-The suction hose shall be 1" diameter hose and routed to hydraulic pump using hose clamps. The pressure hose shall be ¾" diameter and routed to valving using hose clamps.
-The valving shall include an adjustable priority valve giving priority to dual control spreader valve.

-A 15 gallon stainless steel reservoir with vented and screened filter cap assembly, sight glass with oil temperature sensor. The reservoir shall have 1 ½ suction screen and 1 ¼" 15 micron return filter.

-The hydraulic system shall have an electric 5 valve spool bank with 2000 psi main relief end cover and outlet cover with power beyond. The valve bank and spreader valve shall be mounted in a stainless steel enclosure. The enclosure shall be mounted on the passenger side.

-The hydraulic valve bank shall have valving for snowplow with power up gravity down, a double acting valve shall operate plow left and right. Valving shall have work port relief and crossover relief to protect snowplow assembly. The hydraulic hoses and fittings shall be 5/16" pressure hose routed from valving to front of vehicle and secured using hose clamps. The pressure hoses shall be secured to a bulkhead located in the bumper area. The bulkhead shall have 3/8" quick coupler for plow attachment.

-The hydraulic system shall have valving for a hoist cylinder for operating dump body. The valve shall be power up gravity down and shall have 2000 psi relief valve with a work port relief to protect dump body. The hydraulic hoses and fittings shall be 3/8" pressure hose routed from valve to hoist and secured using hose clamps.

-The hydraulic system shall have valving to operate a wing plow with power up gravity down for lift and a double acting valve for extending and retracting the wing the wing plow. The valving shall have work relief and cross-over relief to protect plow assembly. The hydraulic hoses and fittings shall be 3/8" pressure hose and routed on the right side to rear bulkhead, fittings securing with hose clamps.

-A switch panel shall be located in the cab for easy driver access. The switches shall be labeled. The electric valve wiring shall be routed and secured such that the wiring shall not get chaffed.

-An electronically controlled multi-function spreader system with variable ground speed control. The control system shall have color touch screen display, guided set-up and calibration, night mode, field up-grade able, 8 MB RAM, and 4 MB flash. The control system shall be ground speed triggered, have manual mode, remote pause, unload, conveyor stall input, open loop, and ground speed oriented spreading. The variable spreader valve shall be mounted inside frame rails and protected from road material. The valve shall have ¾" pressure hose and fittings ported into and out of valve.

-The spinner and conveyor shall have ½" pressure hoses and fittings

routed to bulkhead at rear of vehicle and secured with hose clamps.

-There shall be ¾" pressure return hose from a bulkhead at the rear of the vehicle to tank return and secured with hose clamps.

-The spreader hoses shall have quick couplers mounted to rear of vehicle.

-The control panel shall be mounted in area for easy driver access. the wiring shall be routed and secured such that it could not get chaffed.

-The oil shall be Hi-Performance hydraulic oil and dyed blue for easy identification.

Misc: -Install single axle poly fenders mounted to truck frame over rear axle with smooth finish

-Suspension enhancement Aeon rubber spring installed on rear axle

-97 Decibel Superior Signal back-up alarm mounted above hitch plate

-Stainless steel salt deflector mounted under front of body with V-shape to divert salt from frame and driveline