



STATE OF LOUISIANA
DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
TECHNICAL SPECIFICATIONS FOR

**TRUCK, CAB & CHASSIS, CLASS 8, DUMP BODY, WITH REMOVABLE PUSHER AXLE, PLOWS AND
SALT SPREADER W/ PREWET SYSTEM**

SERIES NO. 156-200

REV. 8/3/2026

EQUIPMENT SPECIFICATION 156-200D

GENERAL

This specification sets forth the minimum requirements for a class 8 single unit, tandem axle with a 12yd. dump body, removable pusher axle, 12' snowplow, 10' belly scraper and salt spreader with prewet system.

Equipment shall be new, a production model of current manufacture, and must meet all state and Federal safety and emission standards in effect at time of order.

REPRESENTATIVE SPECIFICATIONS

A Freightliner 114SD/International HX cab and chassis and a Viking Cives western style dump body, with appropriate options and standard features, was used to develop these specifications and establish equivalency evaluation criteria.

Equipment of similar style, type, character, quality, features, and purpose conforming to the following detailed requirements/specifications will be considered. For evaluation purposes, bidder's proposing an exception/equivalent option/feature to those specified herein, may be required to provide manufacturer/product information (catalogue sheets, detailed specifications, pictures, etc.). This information will be evaluated against the minimum requirements of this specification. Proposed submittals that are determined not to be equivalent to the established criteria will be rejected.

LOUISIANA AUTHORIZED DEALER(S)

Proposed item(s) must be from a manufacturer who has at least one (1) authorized dealer within the State of Louisiana where parts and service can be obtained. Authorized dealer(s) must have properly trained technicians plus all other resources necessary to perform warranty and repair services in complete accordance with the manufacturer's requirements. A letter certifying the ability to meet this requirement, inclusive of the company name(s) and address(es) of the Louisiana authorized dealer(s), should be supplied with the bid submittal and may be required prior to award.

DELIVERY & ACCEPTANCE

Vendor shall perform a test run of each unit to verify that all features and capabilities are operating properly at time of delivery. Documentation of testing may be required prior to acceptance by the Department.

Unit(s) must be delivered completely assembled (including all components, accessories, etc.) and ready for operation without any additional preparation including, but not limited to, ensuring all fluid levels are at their full mark, fuel tank(s) is full, all necessary lubrication has been performed, etc. A Louisiana safety

inspection shall be performed on each vehicle prior to delivery and a Louisiana safety inspection sticker properly affixed.

Any unit delivered under this specification is subject to rejection if there is evidence of poor workmanship, by either the vendor or the original manufacturer. Noted defects and/or nonconformance findings may be corrected by the vendor. Corrections must be completed and approved by the Equipment Engineer or his representative prior to final acceptance.

Unit(s) shall be delivered “**on the ground**,” DOTD will not unload nor provide any unloading equipment to the vendor/delivery driver in order to offload the unit(s).

NOTE: The Department will have space available for equipment to be unloaded.

EACH UNIT MUST BE SUPPLIED WITH THE FOLLOWING DOCUMENTATION:

1. Notarized Bill of Sale
2. Certificate of Origin (MSO)
3. Dealer's Service Policy
4. Owner's/Operator's Manual(s)
 - a. One (1) Hardcopy
 - b. One (1) Digital Copy
 - i. Acceptable Formats: PDF delivered via USB “Flash Drive”, or E-mail
5. Service Manual(s)
 - a. One (1) Hardcopy
 - b. One (1) Digital Copy
 - i. Acceptable Formats: PDF delivered via USB “Flash Drive”, or E-mail
6. Build Sheet(s) – as applicable
 - a. One (1) Hardcopy
 - b. Build sheets should be written in plain language (not company specific codes) and include, at a minimum, all standard & optional features of the delivered unit.

NOTE: Invoices will not be processed for payment until the unit(s) have been inspected by the Equipment Engineer or their representative and deemed in compliance with the specifications.

BID SUBMITTALS

Any additions, deletions, or variations from the specifications should be noted on the "Bidder's Exceptions" page of this specification. Exceptions that are noted to be less than a minimum requirement will not be accepted.

Any additions, deletions or variations from the manufacturer's standard published specifications should be noted on the "Bidder's Exceptions" page of this specification. Unless otherwise noted, any items appearing in the manufacturer's standard published specifications furnished by the Bidder are assumed to be included in the Bidder's submittal.

Bidder should note on their submittal any installation(s) to the equipment that will be performed by the vendor instead of the manufacturer.

Failure to note any specification exceptions, manufacturer specification alterations, and/or vendor installations prior to award may result in rejection of the equipment at the time of delivery.

EQUIPMENT SPECIFICATIONS

NOTICE TO BIDDERS

Bidder should review the detailed "Equipment Specification" completely and respond to the compliance question at the end of each section by marking "X", in the space provided, for "Yes" or "No". Mark "Yes" to indicate that the equipment bid meets the section exactly as specified. Mark "No" if there are exceptions to any part of that section. Exceptions/deviations to any part of the specification are to be detailed on the "Bidder's Exceptions" page of this specification.

IN ORDER TO BE CONSIDERED FOR AWARD, BIDDER SHOULD RETURN THIS SPECIFICATION, COMPLETED IN FULL, WITH THEIR BID SUBMITTAL.

Note: All Values listed below are minimums unless noted otherwise.

1. Cab & Chassis

1.1. GVWR: 78,000 lbs. with removable pusher axle/58,000 lbs. without

Comply: ____Yes ____No

1.2. Frame

1.2.1. 2,500,000 RBM (Resisting Bending Moment) - Bidder should list section modulus and yield strength below
Section Modulus: _____ Yield Strength: _____

1.2.2. 20" Front frame extension

Comply: ____Yes ____No

1.3. Cab & Axle Positions

1.3.1. Front axle: Set forward only, axle set-back not to exceed 32"

1.3.2. Cab to center of tandems (CA): 152" clear

1.3.3. Center of tandems to end of frame (AF): 56"

Comply: ____Yes ____No

1.4. Ground Clearance

1.4.1. Frame mounted components (fuel tanks and fuel tank brackets, steps, air tank, battery boxes, etc.) shall have a minimum of 13" ground clearance

1.4.2. Components located within the operational area of the belly mount scraper shall have a sufficient ground clearance to allow for mounting and operation of a scraper equipped with a 17" moldboard

Comply: ____Yes ____No

EQUIPMENT SPECIFICATIONS

1.5. Cab

- 1.5.1. Conventional day cab
- 1.5.2. Tinted safety glass
- 1.5.3. Full width exterior cab mounted sunshade with integral clearance lights
- 1.5.4. Cab entry handles, driver & passenger side
- 1.5.5. Outside mirrors, driver & passenger side
 - 1.5.5.1. Power adjustable
 - 1.5.5.2. 90 sq. in. minimum
 - 1.5.5.3. Heated
 - 1.5.5.4. Integrated turn signal
 - 1.5.5.5. Two (2) adjustable spot mirrors, one (1) per outside mirror
- 1.5.6. Two (2) roof mounted air horns & one (1) standard electric horn
- 1.5.7. Air ride: driver and passenger seat, cab suspension
- 1.5.8. Manufacturer's highest level sound insulation package
- 1.5.9. Wing dash, if available
- 1.5.10. Gauge package including the following gauges:
 - 1.5.10.1. Air cleaner restriction
 - 1.5.10.2. Coolant temperature
 - 1.5.10.3. DEF
 - 1.5.10.4. Fuel
 - 1.5.10.5. Oil pressure
 - 1.5.10.6. Primary and secondary air pressure
 - 1.5.10.7. Speedometer
 - 1.5.10.8. Tachometer
 - 1.5.10.9. Voltmeter
 - 1.5.10.10. Gear indicator
 - 1.5.10.11. Odometer
 - 1.5.10.12. Total engine hours
 - 1.5.10.13. Trip hours
 - 1.5.10.14. Trip odometer
 - 1.5.10.15. Rear axle oil temperature
 - 1.5.10.16. Engine oil temperature
- 1.5.11. Dual sun visors
- 1.5.12. Two (2) cup holders, integral to dash
- 1.5.13. 3-point seat belt for each seat. All seat belt webbing must be manufacturer's high visibility color (Orange, Red, Green, or Yellow).
- 1.5.14. Climate control, including air conditioning, heater, & defroster
- 1.5.15. Power windows & power door locks
- 1.5.16. Tilting and telescoping steering wheel

Comply: ____ Yes ____ No

EQUIPMENT SPECIFICATIONS

1.7. Engine

1.7.1. 15L, electronic diesel, turbocharged, liquid cooled, 6-cylinder inline configuration

1.7.2. 450 HP, 1550 FT-LBS

1.7.3. Engine must include turbo exhaust brake

1.7.4. Front Power Take-Off

1.7.4.1. Engine to be equipped with front crankshaft driven PTO drive

1.7.4.2. Shall include the necessary crankshaft adapter for attaching a shaft type drive along with any other items required for this provision

1.7.4.3. The PTO driveshaft shall not pass through the radiator, charge air cooler, and/or the air conditioning condenser

1.7.5. Emission system must include DEF

1.7.5.1. DEF tank to be located on driver's side next to fuel tank

1.7.5.2. DEF tank must have a minimum capacity of 7 gallons

1.7.5.3. The engine emission control system shall be programmed to allow regeneration to occur even if the truck is being used in urban or low speed highway applications (Vocational Settings)

1.7.6. Engine must be biodiesel compatible

Comply: ____Yes ____No

1.8. Fuel System

1.8.1. Fuel tank shall be metal with drain and a 100-gallon minimum capacity; mounted on the left side of the truck, under the cab

1.8.1.1. The bottom of the tank and tank mounting brackets shall have sufficient ground clearance to allow for mounting and operation of a belly mount snowplow with a 17-inch moldboard

1.8.2. Davco fuel processor or equal - mounted to outside of frame, providing a visual indication of fuel filter condition

1.8.3. Water-in-fuel sensor with indicator in cab

1.8.4. Entire fuel system must be biodiesel compatible

Comply: ____Yes ____No

1.9. Speed Control

1.9.1. Factory installed automatic cruise control

Comply: ____Yes ____No

1.10. Throttle Control

1.10.1. Engine shall be equipped with an in-cab throttle control for use with PTO

1.10.2. Shall be electronic control type

Comply: ____Yes ____No

EQUIPMENT SPECIFICATIONS

1.11. Transmission, Gearing, Speed Governing & Performance

- 1.11.1. Allison 4500 RDS series 6th generation controls: wide ratio, 5 Speed with overdrive, neutral at stop, or equal
- 1.11.2. Must include PTO aperture
- 1.11.3. Shall be equipped with transmission cooler
- 1.11.4. To be filled with manufacturer approved synthetic lubricants
- 1.11.5. Top gear road speed shall be electronically governed at 75 mph maximum
- 1.11.6. Cruise control speed shall be governed at 72 mph maximum
- 1.11.7. Speed shall be governed at 10 mph when the dump bed is in any raised position
- 1.11.8. Transmission and axle ratio shall be selected for performance to be optimized at 65 MPH while permitting truck to operate up to 75 MPH on highway without excessive engine speed. Bidder should list the RPM @ 65 MPH in the space below.

Comply: ____ Yes ____ No

RPM @ 65 MPH _____

1.12. Front Axle

- 1.12.1. 18,000 lbs. GAWR
- 1.12.2. I-Beam type
- 1.12.3. Shock absorbers
- 1.12.4. Integral power steering
- 1.12.5. Wet-type, visible cap axle seals, Stemco or approved equivalent
- 1.12.6. Axle should be filled with manufacturer approved synthetic lubricants

Comply: ____ Yes ____ No

1.13. Rear Axle

- 1.13.1. Tandem, 40,000 lbs. GAWR
- 1.13.2. Driver controlled differential lock for both axles
- 1.13.3. Hendrickson, Model RT-403 multi-leaf spring suspension or approved equivalent
- 1.13.4. Shock absorbers
- 1.13.5. Axle should be filled with manufacturer approved synthetic lubricants

Comply: ____ Yes ____ No

1.14. Pusher Axle

- 1.14.1. Watson and Chalin AL-2200 or approved equivalent
- 1.14.2. Rigid type to be mounted forward of the trucks tandem axles
- 1.14.3. 20,000 lbs. GAWR
- 1.14.4. Air ride suspension
- 1.14.5. Air operated 2 shoe type brakes with automatic slack adjusters and dust shields
- 1.14.6. Brakes to be controlled by the chassis for signal to brake only
- 1.14.7. Pusher axle shall include an auxiliary air tank mounted to the axle assembly
- 1.14.8. Unit shall be capable of lifting axle assembly a minimum of 8" when in travel position
- 1.14.9. Air control for pusher axle shall be mounted in the cab
- 1.14.10. Pusher axle tires to be capable of meeting rated weight and lift height of axle assembly

EQUIPMENT SPECIFICATIONS

- 1.14.11.** During the winter months, the pusher axle will be removed and an underbody scraper installed utilizing the pusher axle suspension
- 1.14.12.** Holes drilled in the frame for the mounting of the pusher axle shall be positioned, as much as possible, to allow for their use in mounting of the underbody scraper
- 1.14.13.** The airlines to the pusher axle from the chassis shall be attached by means of DOT approved quick couplers

Comply: ____ Yes ____ No

1.15. Braking System

- 1.15.1.** Full air disc brake system, ABS brake system with traction control
- 1.15.2.** 18 CFM air compressor
- 1.15.3.** Bendix AD-9 or AD/IS air dryer or approved equivalent
- 1.15.4.** Brake canisters must be rotated to avoid interference with asphalt paver
- 1.15.5.** Location of the air tanks and/or dryer shall not inhibit the installation of snow removal equipment underneath the truck between the cab and front tandem (clear frame)

Comply: ____ Yes ____ No

1.16. Wheels & Tires

1.16.1. Front

- 1.16.1.1.** First line, first quality on road tread, size 315/80R22.5
- 1.16.1.2.** Load range "L" minimum
- 1.16.1.3.** Tire shall be mounted on 22.5" diameter tubeless type hub piloted steel disc with 220mm center hole, 285.75mm ten (10) hole bolt circle diameter and not less than 8.25" rim section
- 1.16.1.4.** Load ratings must be compatible with GVWR

1.16.2. Rear

- 1.16.2.1.** First line, first quality dual on/off road tread, size 11Rx22.5
- 1.16.2.2.** Load range "H" minimum
- 1.16.2.3.** Tire shall be mounted on 22.5" diameter tubeless type, hub piloted steel disc with 220 mm center hole, 285.75 mm ten (10) hole bolt circle diameter and not less than 8.25" rim section
- 1.16.2.4.** Load ratings must be compatible with GVWR
- 1.16.3.** Spare tire, jack, & lug wrench are NOT required

Comply: ____ Yes ____ No

1.17. Trailer Controls

- 1.17.1.** Full trailer brake controls providing air brake and electrical hookup for straight truck with trailer applications
- 1.17.2.** Shall include hand control valve, tractor protection valve and trailer anti-lock provisions
- 1.17.3.** Air lines and 7-wire electric cable shall be routed to end of frame
- 1.17.4.** Airlines to be equipped with glad hands and tethered removable covers
- 1.17.5.** Electric cable shall be equipped with 7-wire receptacle

Comply: ____ Yes ____ No

EQUIPMENT SPECIFICATIONS

1.18. Electrical System & Lights

1.18.1. 12-volt system

1.18.2. 180-amp brushless alternator

1.18.3. Batteries with 2200 CCA combined

1.18.4. Remote jump start studs, with tethered protective caps, located outside of the battery box in easily accessible location

1.18.5. Battery disconnect switch, located inside cab, near driver's seat, similar to the below picture.



Figure 1: Battery disconnect switch location in accordance with spec.

1.18.6. Ground Speed Harness

1.18.6.1. Factory installed wiring harness to provide the bodybuilder a connection for ground speed signal

1.18.6.2. Bodybuilder connection point to be located inside the cab

1.18.7. Auxiliary Switches

1.18.7.1. Eight (8) dash mounted, rocker-style, factory installed, body circuit switches (upfitter switches) for use by the bodybuilder or end user to supply power to work lights, warning lights and other auxiliary electrical devices

1.18.8. All exterior lighting, except headlights, shall be LED

1.18.9. Headlights:

1.18.9.1. Automatic daytime running lights

1.18.9.2. Automatic on if windshield wipers are turned on

1.18.9.3. Automatic on with low ambient light levels

1.18.9.4. Warning buzzer/alarm when headlight switch is on and ignition switch is in off position

1.18.10. Plow Light Harness

1.18.10.1. Factory installed wiring harness with connector for installation of snowplow lights

1.18.10.2. Harness must provide circuits for high and low beam headlights, marker lights and turn signals with factory installed dash mounted switch

1.18.11. Auxiliary Snowplow Headlights (If factory installed snowplow lights or a suitable factory installed bracket is available, it may be submitted for approval)

1.18.11.1. Front auxiliary LED headlights shall be ABL3800 or approved equivalent

1.18.11.2. Auxiliary headlights shall not obstruct the driver's vision and be mounted approximately 64" from ground level and at approximately the same width apart as truck's headlamps

1.18.11.3. Light shall be secured to a fender mounted 3-point stainless steel assembly bracket

1.18.11.4. All fasteners attaching the bracket to the fender shall be stainless steel and be secured using locknuts

1.18.11.5. Reinforced rubber washers or grommets shall insulate the bracket from the hood. Fasteners attaching the bracket to the hood shall be insulated from the hood by a 2" minimum diameter rubber washer or grommet and 2" minimum diameter plated washer

EQUIPMENT SPECIFICATIONS

- 1.18.11.6. Auxiliary headlights shall be grounded back to chassis' ground using a minimum 14-gauge wire
- 1.18.12. Two-way Radio Harness
 - 1.18.12.1. Factory installed wiring and circuit protection for two-way radio shall be installed with wiring terminating in the overhead console
 - 1.18.12.2. Wire ends shall be factory sealed to prevent accidental grounding
 - 1.18.12.3. One circuit to be continuously hot with 20-amp protection, one circuit to be hot with ignition on, with 5-amp protection
- 1.18.13. Self-cancelling directional signals
- 1.18.14. Backup alarm, 97 dba
- 1.18.15. AM/FM/WB radio with auxiliary front input, Bluetooth/hands free function and steering wheel controls
- 1.18.16. Two (2) 12V accessory power outlets with covers, mounted in dash (for cell phone chargers, GPS devices, etc.)

Comply: ____Yes ____No

1.19. Hood

- 1.19.1. Tilting fiberglass or composite hood and fenders with stationary grille and tilt assist mechanism

Comply: ____Yes ____No

1.20. Front Bumper

- 1.20.1. Delete

Comply: ____Yes ____No

1.21. Paint

- 1.21.1. Cab: Manufacturer's standard, white
- 1.21.2. Chassis: Manufacturer's standard, black

Comply: ____Yes ____No

1.22. FMCSA/DOT Mandated Safety Items

- 1.22.1. One (1) UL listed, 5 B:C rated, or higher, fire extinguisher securely mounted in cab
- 1.22.2. One (1) set of three (3) bidirectional reflective triangles conforming to FMVSS No. 125
- 1.22.3. At least one (1) spare fuse for each type/size used in the truck

Comply: ____Yes ____No

Note: The truck vendor and attached equipment manufacturer/vendor must mutually resolve any unexpected truck/attached equipment component conflict with a sound and functional solution as a requirement of this specification.

EQUIPMENT SPECIFICATIONS

2. Attached Equipment – Dump Body and Warning Lights

2.1. Dump Body Description

- 2.1.1. Western Style, crossmemberless
- 2.1.2. Floor, sides and main long sill are to be full length with no cross splices
- 2.1.3. Hinge pins shall be removable
- 2.1.4. All grease points shall be plumbed to a remote grease manifold
 - 2.1.4.1. The remote grease manifold shall be mounted in a protected yet accessible location for the operator
 - 2.1.4.2. Each of the grease points on the remote grease manifold shall be appropriately labeled with an aluminum or stainless-steel tag, similar to the figure below:

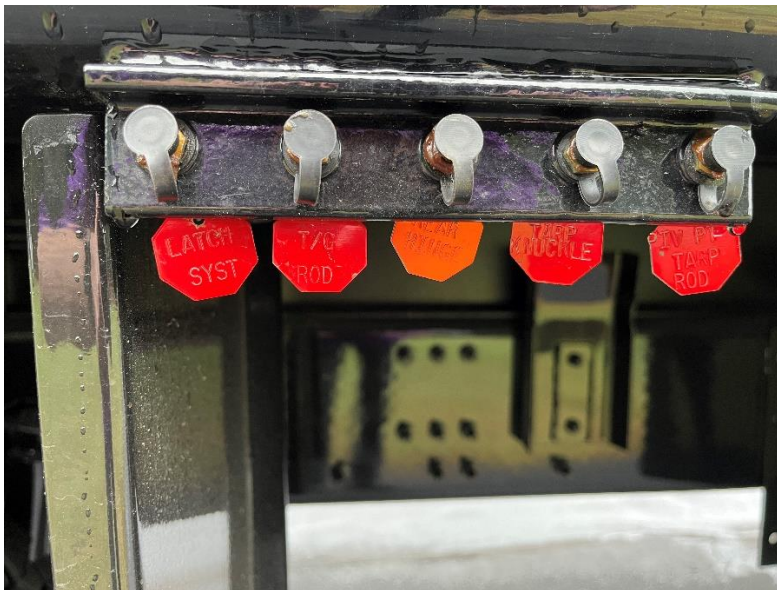


Figure 2: Image of labeled fittings on a remote grease manifold.

- 2.1.5. All welds shall be continuous
- 2.1.6. All welds, areas of slag deposits or torch cut areas shall be ground to produce a smooth surface
- 2.1.7. Metal that has been cut with a torch shall be ground to remove slag and other deficiencies
- 2.1.8. When welding on the truck, areas that could be damaged by splatter such as wiring harnesses, grills, and mirrors shall be covered for protection

Comply: ____ Yes ____ No

EQUIPMENT SPECIFICATIONS

2.3. Capacity & Dimensions

- 2.3.1. Capacity: Shall be a minimum 12 cubic yard struck measure
- 2.3.2. Inside length: 15'
- 2.3.3. Inside width: Minimum 86"
- 2.3.4. Outside width: 95"-100"
- 2.3.5. Side height: No less than 36" with raised ends

Comply: ____ Yes ____ No

2.4. Construction

- 2.4.1. All steel to be abrasion resistant AR-450 (min.) or approved equivalent
 - 2.4.1.1. Main long sills: ¼ inch
 - 2.4.1.2. Floor: ¼" inch, one-piece
 - 2.4.1.3. Sides: ¼ inch
 - 2.4.1.3.1. Shall have a formed, debris shedding top rail
 - 2.4.1.3.2. Shall have no provision for extension boards
 - 2.4.1.4. Tailgate: ¼ inch, single panel design
 - 2.4.1.5. Front: ¼ inch smooth steel
 - 2.4.1.6. Formed top rail: ¼"
 - 2.4.1.7. 2" side to floor radius. Welded inserts are acceptable if they are of the same material (thickness, yield strength and chemical composition) as the floor and 100 percent (100%) continuously welded in place.
 - 2.4.1.8. All boxed areas of dump body shall be sealed

Comply: ____ Yes ____ No

2.5. Tailgate

- 2.5.1. Hydraulic, high-lift style
- 2.5.2. Shall be double acting, and vertically straight with offset hinges for positive closure
- 2.5.3. Tailgate to have full perimeter box bracing
- 2.5.4. Upper gate hinges to be 1¼" in diameter
- 2.5.5. Hinge pin and bottom gate pin to be 1¼" in diameter
- 2.5.6. Bottom pins to be reinforced with angle inside tailgate
 - 2.5.6.1. The lower pins shall be a minimum of 1 1/8" diameter.
- 2.5.7. Tailgate shall, without assistance from the locking device, seal against the floor and side sheets of the dump body, with no more than a 1/16" gap at any point
- 2.5.8. With the tailgate closed and locking device open, tailgate lower pins shall have no less than 1/8" or more than ¼" gap between the forward edge of the pin and the forward edge of the cradle.
- 2.5.9. Spreader chain to be ¾"
- 2.5.10. Lower hardware backing plate shall be 2" and fully welded into rear corner post
- 2.5.11. Two (2) Hinged "D" rings shall be mounted top of the tailgate to provide a lifting point for removal
- 2.5.12. Tailgate latch
 - 2.5.12.1. An over-center locking device on each side of the dump body shall hold the tailgate securely closed
 - 2.5.12.2. Latching arms shall be forged steel

EQUIPMENT SPECIFICATIONS

- 2.5.12.3. The locking device shall be operated by a 3 1/2" diameter air cylinder, which shall be mounted between the long sills
- 2.5.12.4. Air cylinder shall be controlled by the chassis air accessory power supply
- 2.5.12.5. The tailgate latch cross shaft assembly shall be supported on each end by bushings
- 2.5.12.6. Lubrication points on the tailgate latch cross shaft shall facilitate easier greasing by means of grooved bushings and/or shafts
- 2.5.12.6.1. Grease points shall be plumbed to the remote grease manifold

Comply: ____ Yes ____ No

2.6. Mounting

2.6.1. Pivot Pin

- 2.6.1.1. Rear edge of pivot pin shall be no more than 1 inch forward from the rear face of the rear hitch plate

2.6.2. Dump Body Pivot

- 2.6.2.1. Shall be 12 inches from the centerline of the pivot pin to the rear face of the dump body not including the tailgate

- 2.6.2.2. Pivots shall facilitate thorough greasing

- 2.6.2.3. Bushings shall have an internal radial groove aligned with the grease fitting

- 2.6.2.3.1. Grease points shall be plumbed to the remote grease manifold

- 2.6.2.4. Pivot pins shall be drilled and cross-drilled

2.6.3. Dump Body

- 2.6.3.1. Shall be mounted a minimum of 3" from the hydraulic tank, excluding the sub frame of the tank and hoist

- 2.6.4. The distance from the rear face of the rear hitch plate to the center line of the rear drive axle shall be no less than 21" or no more than 22". Rear drive axle tires shall not extend past the rear face of the rear hitch plate.

2.6.5. Grounding Strap

- 2.6.5.1. A 4-gauge battery cable ground strap shall be installed from the dump body to the truck frame

- 2.6.5.2. The strap shall be attached to the truck frame by no less than a 5/16" cadmium plated bolt with star washers on both sides of the strap eye to insure a good ground

Comply: ____ Yes ____ No

2.7. Cab Protector

- 2.7.1. Shall not interfere with the cab mounted vertical exhaust pipe

- 2.7.2. Shall be mounted, welded, and gusseted to prevent flexing or vibration

- 2.7.3. The side plates shall be constructed using high strength steel with a minimum thickness of 7-gauge

- 2.7.4. The outer front corners shall be angled at 45 degrees to provide mounting spaces for the installation of 6" green & amber oval warning lights in each front corner

- 2.7.5. The lights shall be visible from both the front and the side of the cab protector

Comply: ____ Yes ____ No

EQUIPMENT SPECIFICATIONS

2.9. Hoist

2.9.1. Hoist shall be a forward set, trunnion mount, head lift, double-acting cylinder

2.9.2. The hoist should be designed to accept a Model CS 140-5.5-3DA MAILHOT cylinder or approved equivalent

2.9.3. The cylinder sleeves shall be nitride coated

2.9.4. Sub-frame or doghouse mounted hoists will not be accepted

2.9.5. A flared body bracket will be attached to either the hoist frame or body understructure to align body in position and keep from moving side to side

Comply: ____Yes ____No

2.10. Paver Lip

2.10.1. A paver or asphalt lip shall be bolted on the rear of the dump body apron using no less than ten (10), ½ inch, grade eight bolts

2.10.2. Shall be mounted at an angle no less than 24 degrees but no more than 28 degrees

2.10.3. Length shall be such as to provide approximately 20" of overhang, measured from the rear face of the rear hitch plate to the rear edge of the paver lip

Comply: ____Yes ____No

2.11. Body Props

2.11.1. A storable body prop shall be provided for each side of the dump body

2.11.2. Pivots for the body props shall be greaseable, and body props shall be designed to withstand the down-pressure of the hoist without damaging the dump body, chassis, or any related components

2.11.3. Body props shall be designed to hold the dump body at a minimum angle of 22 degrees when deployed

Comply: ____Yes ____No

2.12. Mudflaps

2.12.1. Friction type mud flap brackets to be attached to the underside of the dump body at the rear

2.12.2. Brackets shall allow replacement of the mud flap by removing only one fastener

2.12.3. Mud flaps shall be 24" wide and long enough to satisfy FMVSS

2.12.4. Front mud flap brackets to be attached to underside of bed

2.12.5. Front mud flaps shall be 24" wide, anti-sail and long enough to keep rear tires from throwing debris on the back of the cab

2.12.6. All mud flaps shall have no dealer or manufacturer advertisements

Comply: ____Yes ____No

EQUIPMENT SPECIFICATIONS

2.14. Hydraulic Couplers

2.14.1. The dump body shall have three (3) male couplers located at the rear, driver's side of the bed for the spreader similar to the figure below:



Figure 3: Image of hydraulic couplings mounted to dump bed.

2.14.2. The female half of each hydraulic quick coupler set shall be provided

2.14.3. Each coupler shall be appropriately labeled with an aluminum or stainless-steel tag, similar to the figure below:



Figure 4: Image of a labeled hydraulic fitting.

Comply: ____ Yes ____ No

EQUIPMENT SPECIFICATIONS

2.16. Hydraulic Tubing

- 2.16.1. The driver's side rear corner post of the dump body shall have an access plate, forward facing, with male bulkhead fittings
- 2.16.2. Appropriately sized hydraulic tubing shall extend from the bulkhead fitting down the inside of the corner post and exit at a point which allows connection with the spreader hydraulic hoses from the valve body
- 2.16.3. Hydraulic tubing shall be routed in a manner as to not interfere with or contact the tailgate latching mechanism

Comply: ____ Yes ____ No

2.17. Tarp System

- 2.17.1. Aero Series 575 or approved equivalent
- 2.17.2. 12-volt, direct drive motor, torsion arm design with in-cab controls
- 2.17.3. The arms and tarp protecting windshield shall be aluminum and form arches that provide maximum clearance and fit for loading material into body
- 2.17.4. Designed for hot asphalt
- 2.17.5. The width of the tarp shall be within 4" of the inside width of the dump body
- 2.17.6. The arm springs shall be adjustable and designed for side mounting on the dump body
- 2.17.7. The elbows of the tarp arms shall be bolted to the arms
- 2.17.8. The tarp arms shall have a 45-degree swept angle
- 2.17.9. The tarp shall be controlled by the chassis electric accessory power supply
- 2.17.10. All wiring to be inside metal conduit
- 2.17.11. Tarp must be resistant to punctures, abrasions and ultraviolet light

Comply: ____ Yes ____ No

2.18. Rear Hitch Plate and Pintle Hitch

- 2.18.1. A $\frac{3}{4}$ " thick steel rear hitch plate shall be securely welded and gusseted to rear of frame rails
- 2.18.2. Plate shall have service and emergency trailer glad hands positioned away from the center of the rear hitch plate to prevent interference with a trailer tongue when making tight turns
- 2.18.3. Glad hands shall be mounted to a bulkhead fitting installed in the plate and have tethered removable covers
- 2.18.4. The seven (7) pin trailer connection furnished with the chassis shall be mounted through the rear hitch plate in a suitable location
- 2.18.5. A four (4) pin female electric connector shall be mounted through the rear hitch plate in a suitable location. Connector shall be a Hopkins Model 52004 or approved equivalent
- 2.18.6. Two (2) Buyers Products B50 or approved equivalent DOT "D" rings, with 20-ton capacity each shall be securely welded to the rear hitch plate
- 2.18.7. All items mounted on the rear hitch plate (except the pintle hitch) shall be mounted as high as practical, leaving a smooth, clear area when the pintle hitch is removed
- 2.18.8. A Buyers Products PH30 rigid pintle hitch or approved equivalent shall be installed on the rear hitch plate using grade eight (8) hardware
 - 2.18.8.1. Hitch shall be adjustable in height

EQUIPMENT SPECIFICATIONS

2.18.8.3. Settings shall be 24", 26 ¼", 28 ½", 30 ¾" centerline height above the ground plus or minus 1"

Comply: ____ Yes ____ No

2.19. Additional Accessories & Features

2.19.1. Two (2) sets of shovel brackets (one set on each side)

2.19.2. Tool box

2.19.2.1. Approximately 18" x 18" x 24" shall be installed on the right hand outside frame rail

2.19.2.2. The toolbox and mount shall be installed in a manner which allows for removal in the event insufficient room exists to allow the toolbox to remain mounted to the chassis while the pusher axle is attached

2.19.3. Ladder

2.19.3.1. Each side of the body shall have a built-in ladder between the top and bottom rail

2.19.3.2. Ladder shall consist of two formed handrails constructed of at least 3/16" steel

2.19.3.3. Ladder shall have two anti-skid metal steps welded between the handrails

2.19.3.4. Aligned with each of these units shall be a pull-out style two-rung ladder, similar to the figure below:



Figure 5: Retractable ladder in extended and retracted positions.

2.19.3.5. Location of the ladders shall be such that operator does not have to climb over the tarp bow when the tarp is retracted

2.19.3.6. Ladders shall be a minimum of 14" wide

2.19.3.7. Ladder housing shall have a latch mechanism to secure ladder while stowed

Comply: ____ Yes ____ No

EQUIPMENT SPECIFICATIONS

2.21. Electrical & Lighting

- 2.21.1. Lighting shall meet all Federal and State DOT specifications, which requires an independent running light on the rear corners
- 2.21.2. All lights shall be LED and mounted in shockproof rubber grommets
- 2.21.3. Four (4) 6" oval grommet mount stop/turn/taillights mounted in rear posts, with plug-in connectors
- 2.21.4. Two (2) 6" oval grommet mount reverse lights mounted in rear posts, with plug-in connectors
- 2.21.5. Dump body lighting wiring shall be incorporated into one (1) harness with only two (2) leads connecting into truck chassis lighting system
- 2.21.6. Dump body wiring shall be run inside metal conduit for protection
- 2.21.7. Truck must be delivered with warning lights & high visibility, reflective conspicuity tape installed in accordance with these specifications and the illustrated layout below
- 2.21.8. Warning lights shall be installed by an upfitter who is experienced in and regularly engages in the installation of automotive electronics & warning lights. Installer shall use vehicle & lighting manufacturers' guidance along with industry best practices and techniques to ensure that lights are installed in a safe and neat manner
- 2.21.9. All wiring and cables should be logically routed, secured, and protected with convoluted loom where possible
- 2.21.10. Rubber grommets shall be used where wires and cables penetrate any cab panels, body panels, or chassis structure
- 2.21.11. All cab and body penetrations shall be adequately sealed to prevent water from entering
- 2.21.12. All warning lights must be controlled by a single in-cab, dash-mounted upfitter switch
 - 2.21.12.1. The switch must be labeled to read "Warning Lights"
- 2.21.13. Installer must contact the DOTD Equipment Section prior to programming to confirm intended flash pattern(s)
- 2.21.14. Mid-size Light Bars - Two (2) mid-size (24") light bars that satisfy the following requirements, mounted on the cab protector as shown below
 - 2.21.14.1. Whelen Mid-Size, or approved equivalent
 - 2.21.14.2. Length is nominal and +/- 1" is acceptable
 - 2.21.14.3. Dual color - 12 diodes per module (equal number of green & amber)
 - 2.21.14.4. All pods/modules must be capable of fully displaying both colors
 - 2.21.14.5. Flash pattern must be capable of alternating between an asymmetric, low frequency, "wig-wag" pattern and a low-frequency double or quad flash
 - 2.21.14.6. UV resistant clear polycarbonate lens
 - 2.21.14.7. 10-16 VDC
 - 2.21.14.8. Light bars shall meet all applicable federal/state laws and regulations
 - 2.21.14.9. Shall be SAE J845 360-degree Class 1 certified
- 2.21.15. Perimeter Lights
 - 2.21.15.1. Two (2) perimeter lights that satisfy the following requirements, mounted at grille level
 - 2.21.15.2. Brooking Industries M16 surface mount perimeter lighthouse or approved equivalent, satisfying the following requirements
 - 2.21.15.2.1. Size: Length: 4.5-5.5 in., Height: 1.0-2.0 in., Depth: 0.3-0.5 in.
 - 2.21.15.2.2. 12-24 VDC
 - 2.21.15.2.3. UV resistant clear polycarbonate lens, black bezel trim
 - 2.21.15.2.4. 16 diodes, dual color, equal number of green & amber (interleaved 8x8)

EQUIPMENT SPECIFICATIONS

- 2.21.15.2.5.** Lighthouse must be capable of displaying each color across full length
- 2.21.15.2.6.** Capable of alternating between an asymmetric, low-frequency, “wig-wag” pattern and a low-frequency double or quad flash
- 2.21.15.2.7.** Lighthouse shall meet all applicable federal/state laws and regulations
- 2.21.15.2.8.** Shall be SAE J595 Class 1 certified
- 2.21.16.** Oval Green/Amber Warning Lights
 - 2.21.16.1.** Four 6” oval warning lights that satisfy the following requirements, two (2) mounted in cab protector and two (2) mounted in rear posts, as shown below:



Figure 6: Images calling out location of flashing warning lights on front and rear of truck, and side view calling out red/white conspicuity tape.

- 2.21.16.1.** 6" L x 2¼" W , recessed, grommet, snap-in mount, LED
- 2.21.16.2.** Polycarbonate lens

EQUIPMENT SPECIFICATIONS

- 2.21.16.3.** Dual color – half amber, half green
- 2.21.16.4.** Must be capable of double or quad flash pattern
- 2.21.16.5.** 12-24 VDC, with plug-in connector
- 2.21.16.6.** Shall be SAE J595 Class 2 certified
- 2.21.17.** Raised Body Indicator
 - 2.21.17.1.** Flashing light to be mounted on the dash to notify the driver that the hoist is raised and the bed is in the up position
 - 2.21.17.2.** A sealed proximity switch shall be mounted near the hoist assembly to control a raised body indicator light and buzzer
 - 2.21.17.3.** The light and buzzer shall be powered by the chassis electric accessory power supply
 - 2.21.17.4.** The indicator light shall be red and flash when the dump body is raised
 - 2.21.17.5.** The buzzer shall be of sufficient decibel level to be plainly audible by the driver while in transit

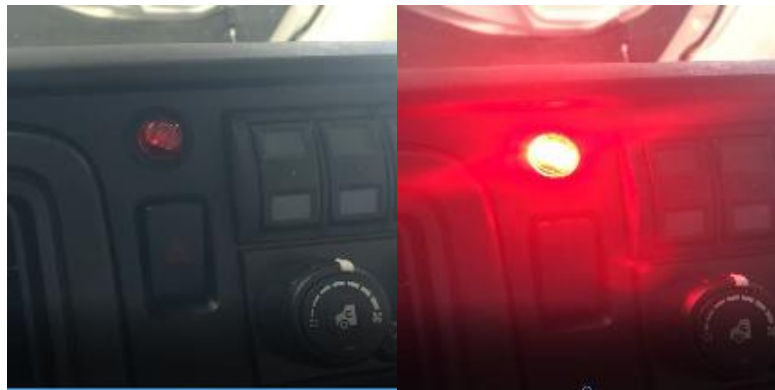


Figure 7: Positioning of flashing light with one image of the light on.

Comply: ____Yes ____No

2.22. Body Prep, Paint, and Finish

- 2.22.1.** Remove all weld spatter and slag, round sharp corners, grind sharp edges, and buff all surfaces.
- 2.22.2.** Prepare all metal surfaces (under structure and body) per paint manufacturer's requirements.
- 2.22.3.** Prime all metal surfaces with PPG EPX Series high solids epoxy primer compatible with finish coat or approved equivalent
- 2.22.4.** Primer to be 3-4 mils DFT
- 2.22.5.** Apply finish coat of PPG Concept (DCC) Acrylic Urethane or equal
- 2.22.6.** Color to be PPG No. 920247 gray or approved equivalent
- 2.22.7.** Finish coat to be 4 mils DFT
- 2.22.8.** Apply all coatings in strict accordance with manufacturer's recommendations
- 2.22.9.** Note: Paint will be tested with a 7-mil magnet when it arrives at DOTD; if the paint is not in compliance, it will be rejected.
- 2.22.10.** High Visibility Reflective Tape
 - 2.22.10.1.** DOT C2 approved high visibility reflective conspicuity tape, 2" wide, with alternating 6" segments of red and white, shall be placed along each side of the dump body as shown above.

EQUIPMENT SPECIFICATIONS

2.22.10.2. High visibility conspicuity tape, 2" wide, with alternating 6" segments of green and high visibility yellow, shall be placed on the rear of the dump body on the lower tailgate brace as shown above.

Comply: ____ Yes ____ No

3. Hydraulic System

3.1. Hydraulic Tank

- 3.1.1.** The hydraulic tank shall be of the upright design and mounted on top of the frame rails positioned between the cab and the dump body
- 3.1.2.** The tank shall be mounted to provide no less than 3" of clearance between the cab and tank
- 3.1.3.** Tank shall come complete with all mounting hardware including but not limited to, frame mounting angles, bolts with poly locknuts and springs
- 3.1.4.** Tank shall be a minimum 30-gallon capacity with full baffle to prevent sloshing
- 3.1.5.** Tank and baffle shall be constructed of 10-gauge stainless steel
- 3.1.6.** Tank shall have a screened filler neck with a breather cap
- 3.1.7.** A sight/temperature gauge shall be mounted on the outside of the tank and be easily visible
- 3.1.8.** Sight/temperature gauge housing shall be all aluminum
- 3.1.9.** Tank bottom shall have a 3" NPT port for suction
- 3.1.10.** Suction strainer shall be 2" NPT with a 3-5 psi built in bypass and have a full flow ball valve installed at the tank suction fitting
- 3.1.11.** A heavy plastic wire tie shall be installed to insure the ball valve remains in the open position unless it is intentionally closed
- 3.1.12.** Tank shall have 3/4" NPT port with a magnetic plug for draining the tank
- 3.1.13.** Tank shall have a 3/4" NPT port for the pump case drain
- 3.1.14.** Tank back shall have 3/8" NPT port for the solenoid drain
- 3.1.15.** Tank back shall have a 1/2" NPT port for the low oil sensor
- 3.1.16.** Tank top shall come with provision for a tank-mounted filter on the passenger side

Comply: ____ Yes ____ No

3.2. Hydraulic Return Filter Assembly

- 3.2.1.** Shall be mounted on the top of the hydraulic reservoir with a 10-micron replaceable cartridge element and a built-in bypass and a bypass condition indicator
- 3.2.2.** The bypass condition indicator shall be installed so its face can be seen from the driver's seat
- 3.2.3.** The assembly shall have a minimum capability of 80 GPM and contain one (1) 1 1/4" NPT port
- 3.2.4.** All return oil shall pass through a return filter

Comply: ____ Yes ____ No

3.3. Hydraulic Pump

- 3.3.1.** Pump shall be a crankshaft driven, Sauer-Danfoss Model JRL075, or approved equivalent
- 3.3.2.** The piston pump shall be load sensing type with a minimum capability of 48 GPM and 3000 PSI at 2500 RPM
- 3.3.3.** Pump shall have side ports to avoid multiple 90-degree bends in suction lines

EQUIPMENT SPECIFICATIONS

3.3.3.1. Rear ports are not acceptable

3.3.4. The case drain shall be positioned as high as possible and directed back to the reservoir without passing through the return line filter

3.3.5. The pump shall have an option for an internal bleed down compensator, a 1 ¼" keyed shaft drilled and tapped, a 1" split flange pressure port and a 2" split flange suction port

3.3.6. A normally closed 12VDC low oil shut down valve shall mount directly to the pump pressure port and be activated by the low oil level switch in the tank

3.3.1. The pump must have a pressure gauge port integral to the rear cover of the pump

Comply: ____ Yes ____ No

3.4. Hydraulic Pump Drive

3.4.1. The driveline shall be 1280/1310 series solid shaft type and be installed according to manufacturer's instructions to ensure proper alignment

3.4.2. Pump shall be driven off the engine crankshaft

3.4.3. Pump shaft shall have a companion flange that unbolts from the driveshaft for easy belt replacement and come complete with all crosses, pump end yoke and flange for engine

3.4.4. All hardware used for installation of pump driveshaft shall meet or exceed driveline manufacturer's specification

3.4.4.1. Manufacturer's torque specifications shall be adhered to on all driveshaft installation hardware

Comply: ____ Yes ____ No

3.5. Hydraulic Function Control Valves

3.5.1. The valves shall be load sensing type with a mobile stackable design

3.5.2. The valves shall be all cast iron design and all sections must be of the same valve series

3.5.3. The valves shall be capable of a nominal 35 GPM with published flow curves to 40 GPM

3.5.4. The valves shall be pressure and flow compensated

3.5.5. Inlet and outlet ports shall be ¾" O-ring, all working ports shall be minimum 5/8" O-ring.

3.5.6. The valves shall be equipped with a 0 -3000 psi gauge installed in inlet

3.5.7. Valves shall be arranged as follows:

3.5.7.1. Inlet cap with top ported pressure and tank, load sensing ports.

3.5.7.2. Double acting cylinder spool for hoist 0-32 GPM proportional 12VDC operated, with spring return to neutral

3.5.7.2.1. Section shall have manual handle overrides with stroke limiters and 500 PSI down side load sense relief

3.5.7.3. Single acting cylinder spool for plow lift, proportional 12VDC operated with spring return to neutral. Pressure compensated 0-15 GPM main spool

3.5.7.3.1. Section shall have manual handle overrides and stroke limiters

3.5.7.3.2. Plow float shall be incorporated and controlled by console.

3.5.7.4. Double acting cylinder spool for plow left/right, proportional 12VDC operated with spring return to neutral

3.5.7.4.1. Pressure compensated 0-17 GPM main spool

3.5.7.4.2. Section shall have manual handle overrides and stroke limiters.

EQUIPMENT SPECIFICATIONS

- 3.5.7.5.** Double acting cylinder spool for scraper up/down with 500 PSI load sense relief and shock valve for down, proportional 12VDC operated with spring return to neutral
 - 3.5.7.5.1.** Pressure compensated 0-17 GPM main spool
 - 3.5.7.5.2.** Section shall have manual handle overrides and stroke limiters
- 3.5.7.6.** Double acting cylinder spool for scraper left/right, proportional 12VDC operated with spring return to neutral
 - 3.5.7.6.1.** Pressure compensated 0-17 GPM main spool
 - 3.5.7.6.2.** Section shall have manual handle overrides and stroke limiters.
- 3.5.7.7.** Single acting 0-15 GPM spool for auger, proportional 12VDC spring to center with manual override
- 3.5.7.8.** Single acting 0-7 GPM spool for spinner, proportional 12VDC spring to center with manual override
- 3.5.7.9.** Single acting 0-7 GPM spool for pre-wet, proportional 12VDC spring to center with manual override
- 3.5.7.10.** Spreader and pre-wet sections shall be part of a manifold assembly that has a pressure reducing valve and solenoid drain and has the ability to have a cartridge added for ice control applications

Comply: ____ Yes ____ No

3.6. Hydraulic Function Control Valve Enclosure

- 3.6.1.** The hydraulic function control valve enclosure shall be of the upright design and mounted on top of the frame rails positioned between the cab and the dump body
- 3.6.2.** Hydraulic valve shall be mounted in a weather-tight enclosure
- 3.6.3.** Hydraulic valve enclosure shall consist of three (3) pieces, the enclosure body, valve mounting plate and the lid
- 3.6.4.** Enclosure body and valve plate shall be constructed of 3/16" stainless steel minimum
- 3.6.5.** The lid shall be constructed of 10-gauge stainless steel with a minimum 1" lip all around to help seal
- 3.6.6.** The sides of the body shall have formed mounting angles as an integral part
- 3.6.7.** Valve plate shall go to the inside of the enclosure for ease of mounting
- 3.6.8.** There shall be a formed Buna gasket to seal the valve plate to the enclosure
- 3.6.9.** The top and front of the enclosure shall be open with the lid off
- 3.6.10.** The valve shall be bulkhead fitting mounted to valve plate and ports will exit through the front of the enclosure
- 3.6.11.** Outside lip of enclosure shall have a gasket all the way around for weatherproofing when lid is installed
- 3.6.12.** Lid shall be held on with two (2) tension latches on each side
- 3.6.13.** Lid shall have two (2) lifting handles
- 3.6.14.** Shall have multiport electric board to connect to each valve coil that must be plug-and-play with an IP68 rating
 - 3.6.14.1.** Having to install connectors will not be acceptable
- 3.6.15.** The hydraulic valve enclosure shall be mounted parallel to the frame
 - 3.6.15.1.** If there is not enough room for parallel mounting of the enclosure, additional CT and WB may be added to truck

Comply: ____ Yes ____ No

3.7. Snowplow Cushion Valve

- 3.7.1.** A double relief cushion valve shall be installed for front snowplow

EQUIPMENT SPECIFICATIONS

- 3.7.2. The valve shall be set at 2000 PSI and have #8 SAE O-ring ports
- 3.7.3. The valve shall be constructed of a high-tensile cast iron body with ball and spring type relief with hardened seats
- 3.7.4. The valve shall be installed at the front bumper/snowplow hitch
- 3.7.5. Valve shall consist of O-ring thread ports

Comply: ____ Yes ____ No

3.8. Hydraulic Hoses

- 3.8.1. Suction hose from the reservoir to the pump shall be SAE 100R4 type of adequate size for the displacement of the pump
- 3.8.2. Hose shall be connected to the pump and reservoir ball valve with a king nipple, and double clamped with T-bolt type stainless steel super clamps
- 3.8.3. Hoses connecting to valve assembly shall have 90 degree female JIC swivel ends
- 3.8.4. Pressure hose shall be 1" ID and rated at a minimum 3000 PSI with female JIC swivels at both ends
- 3.8.5. Return hose shall be 1 1/4" SAE 100R4 type with female JIC swivels at both ends
- 3.8.6. Hoist hoses shall be 1" ID with female JIC swivels at both ends
- 3.8.7. Snowplow hoses shall be 3/8" ID with female JIC swivels at both ends
- 3.8.8. Auger hose to the left rear corner of the dump body shall be 3/4" ID with female JIC swivels at both ends
 - 3.8.8.1. The auger circuit shall have a capped "tee" installed at the valve enclosure, enabling later installation of another hose routed to the front of the truck
- 3.8.9. Spinner hose to the left rear corner of the dump body shall be 1/2" ID with female JIC swivels at both ends.
- 3.8.10. Spreader return hose to the left rear corner of the dump body shall be 1" ID with female JIC swivels at both ends
 - 3.8.10.1. The spreader return circuit shall have a capped "tee" installed at the return filter assembly, enabling later installation of another hose routed to the front of the truck
- 3.8.11. Pump case drain shall be 3/4" ID minimum with female JIC swivels at both ends, and have a 3/4" NPT ball valve installed at the reservoir
- 3.8.12. Load sense line shall be 3/8" ID with female JIC swivels at both ends

Comply: ____ Yes ____ No

3.9. Hydraulic Quick Disconnect Couplings (See Dump Body section for detailed layout and mounting of couplers)

- 3.9.1. All hydraulic couplers shall be full flow Aeroquip FD45, Parker 60 Series or approved equivalent.
 - 3.9.1.1. A dust cap or plug shall be furnished with every male and female quick coupler
- 3.9.2. The front snowplow lift circuit shall be equipped with a male 3/8" coupler installed in the front bumper
 - 3.9.2.1. A 34" x 3/8" ID hose with a female 3/8" coupler shall be installed on the hydraulic lift cylinder
- 3.9.3. The snowplow cushion valve shall be equipped with a male 3/8" coupler and a 34" x 3/8" ID hose with a female 3/8" coupler
- 3.9.4. The spinner circuit shall have a 1/2" male coupler at the left rear corner of the dump body
- 3.9.5. The auger circuit shall have a 3/4" male coupler at the left rear corner of the dump body
- 3.9.6. The spreader return circuit shall have a 1" male coupler at the left rear corner of the dump body
- 3.9.7. For each hydraulic quick disconnect installed on the truck, whether male or female, the mating end of the coupling shall be provided

EQUIPMENT SPECIFICATIONS

3.9.9. All couplings shall be appropriately labeled with an aluminum or stainless-steel tag, as noted in 2.11.3

Comply: ____ Yes ____ No

3.10. Hydraulic Pre-Wet System

- 3.10.1.** Liquid pumping system shall come complete with all plumbing, pumps, enclosure and mounting hardware
- 3.10.2.** The spray system shall be completely controlled by a Freedom 2.1 or approved equivalent ground speed spreader control system
- 3.10.3.** System shall run off a section in valve stack
- 3.10.4.** Liquid pump shall be a corrosion resistant bronze design
- 3.10.5.** Pump shall be self priming, pulse free, positive displacement design
- 3.10.6.** Unit shall come with a precision machined stainless steel shaft
- 3.10.7.** Pump shall have oil-less carbon graphite bushings oversized for increased durability and longevity
- 3.10.8.** Pump shall have flush port for pre-fill or flush of mechanical seal chamber
- 3.10.9.** Pump shall come with a long wearing, drip-less mechanical shaft seal
- 3.10.10.** Pump shall also come with bronze gears for good durability
- 3.10.11.** Pump shall come with a built in 45 PSI relief valve to protect against excessive pressurization
- 3.10.12.** Pump shall have a continuous duty rating of 125 PSI
- 3.10.13.** Pump shall be plumbed through a 0-15 GPM flow meter which is constructed of non-corrosive material
- 3.10.14.** Pump shall be capable of 9 GPM at 45 PSI

Comply: ____ Yes ____ No

3.11. "TPE" Wiring Specification

- 3.11.1.** The cable jacket shall be TPE thermoplastic elastomer and molded to the connectors
- 3.11.2.** Wiring and harness systems shall meet ISO rating IP68 and NEMA 6
- 3.11.3.** The connectors shall be zinc die cast E-coated (Similar to a MIL spec. connector)
- 3.11.4.** Each shall have three (3) sealing points, the lock ring itself, a raised portion of the molded plastic around each pin and a Viton O-ring that seals the whole connector
- 3.11.5.** Connectors and harness shall be rated and tested for a temperature range from -30C degrees to +70C degrees
- 3.11.6.** Connectors shall be tested to be watertight when submerged in 6' of water for 24 hours, in 275' of water for 1 hour and when subjected to a 1000 PSI pressure wash
- 3.11.7.** The connectors shall be designed to have no corrosion after 500 hours in a 35C degree salt spray
- 3.11.8.** Hydraulic and pre-wet cabling shall be rated excellent in low temperature flexibility and in its resistance to oxidation, heat, oil, weather, sun, ozone, abrasion, electrical properties, flame, water, acid, alkali, gasoline, benzol, toluol, degreaser solvents and weld slag

Comply: ____ Yes ____ No

3.12. Spreader Control

- 3.12.1.** Control shall have three (3) PWM output channels
- 3.12.2.** One (1) channel shall be ground speed-oriented conveyor/spreader, one (1) channel for spinner and one (1) channel for a liquid function

EQUIPMENT SPECIFICATIONS

- 3.12.3. Liquid function shall be programmable for either a pre-wet or ice control function
- 3.12.4. Control shall have a simple operator interface of 3 buttons, two knobs and an interactive touch screen
- 3.12.5. Knobs shall be rotary encoders with no maximum or minimum limit position
- 3.12.6. Programming of unit shall not require the use of an ancillary device
- 3.12.7. Touch screen shall be used for calibration of unit
- 3.12.8. There shall be a minimum 2.0 USB port on the unit for downloading data and upgrading software or capabilities of the system
- 3.12.9. There shall be a "night mode" for the touch screen
- 3.12.10. The front panel shall be backlit for night viewing
- 3.12.11. The unit shall be supplied with a minimum of 8MB of RAM and 4MB of memory
- 3.12.12. There shall be a field replaceable fuse which is easily accessible to protect the system
- 3.12.13. Help screens for trouble shooting and calibration shall be embedded in the on-board software
- 3.12.14. The system shall support remote blast and remote pause functions
- 3.12.15. Control shall be open loop with no feedback sensor
- 3.12.16. PWM circuits shall be current regulated to reduce hysteresis
- 3.12.17. There shall be an input to sense a stall of the spreader
- 3.12.18. A float input circuit shall be provided to automatically turn off liquid system at low level
- 3.12.19. Storm totals shall be available either on screen or via USB download
- 3.12.20. Spreader control shall be mounted in a factory-made control console that also controls the functions for body, plow and scraper

Comply: ____Yes ____No

- 3.13. Console Design (Certified Power SG07010*** or approved equivalent)
 - 3.13.1. Shall be totally modular control arm design for a variety of joystick controls, spreader controls and switch configurations
 - 3.13.2. Unit shall be provided with three (3) fully proportional joysticks, one (1) each for hoist, front mount snowplow and belly mounted snowplow control
 - 3.13.3. Shall have a single axis control with dead man switch for hoist
 - 3.13.4. Shall have a dual axis "+" design for snowplow up/down, and left/right control
 - 3.13.5. Shall have a dual axis "+" design with dead man switch for scraper up/down, and left/right control
 - 3.13.6. Scraper joystick shall be 12VDC dual axis fully proportional with dead man control
 - 3.13.7. Armrest style console shall be fully adjustable to accommodate automatic or manual transmissions and mount like it is part of the driver's seat
 - 3.13.8. Unit shall be fully adjustable left and right
 - 3.13.9. Auxiliary switches shall be the "Touch Guard" type.
 - 3.13.10. Switches shall be capable of being backlit in two colors
 - 3.13.10.1. One color when the system is powered on and an alternative color when activated
 - 3.13.11. Switches shall be programmable for either maintained or momentary without changing the switch itself
 - 3.13.12. Switches shall be capable of sensing a ground fault with the circuit running
 - 3.13.13. Unit shall come with full schematic documentation
 - 3.13.14. All indicators shall be on the in-cab display and show up in English stating the function

EQUIPMENT SPECIFICATIONS

3.13.16. Indicator lights will not be accepted.

Comply: ____ Yes ____ No

3.14. Electrical and Illumination Installation

- 3.14.1.** All installed wiring must be of adequate size to handle the anticipated loads of all electrical components
- 3.14.2.** All wiring must be uninterrupted and complete with no splices
- 3.14.3.** All wiring must be color coded
- 3.14.4.** All wire terminal ends (spade, ring, etc.) shall be crimped, soldered to the wires and heat shrink or weatherproof connectors
- 3.14.5.** Scotch-Loc fasteners and/or crimp butt-connectors are not acceptable for any connection
- 3.14.6.** All electrical connections shall be protected with dielectric silicone grease
- 3.14.7.** All wiring shall be enclosed in a protective wiring loom, conduit or wrapped harness
- 3.14.8.** The edges of all holes through which wiring must pass shall be protected with a grommet
- 3.14.9.** Low current circuits, such as the spreader light or relay activation circuits shall be controlled by the chassis electric accessory power supply
- 3.14.10.** High current circuits, such as the tarp motor circuit shall be powered directly from the battery and protected by a master resettable breaker or a fusible link
- 3.14.11.** Body Builder installed wiring going to the rear of the frame and dump body shall be grouped together and bound
 - 3.14.11.1.** The bound harness shall be secured to a painted metal strap, approximately 1 ¼" x ¼" in size.
 - 3.14.11.1.1.** The strap shall be secured to the top of the frame cross members away from the side rails
- 3.14.12.** All wiring to lamps shall be stress relieved within 6" of the lamp
- 3.14.13.** Wiring routed through the hydraulic enclosure sides shall be routed through a sealed compression type strain relief or a molded bulkhead fitting
- 3.14.14.** A four-wire electric cable shall be routed from the cab auxiliary switches to the four pin electrical connector mounted on the rear hitch plate
 - 3.14.14.1.** The electric cable shall contain one ground wire and three switch-controlled wires
 - 3.14.14.2.** One wire to control each of the following spreader functions: strobe light, work light and electric pump motor

Comply: ____ Yes ____ No

3.15. Air Powered Accessory Installation

- 3.15.1.** All lines shall be routed in a manner to minimize rub points and bends
 - 3.15.1.1.** Critical rub points shall be wrapped for protection
- 3.15.2.** All lines shall be routed or shielded to protect them from heat sources
- 3.15.3.** Air lines shall be colored, identifying individual circuits with each circuit being a different color
- 3.15.4.** Body Builder installed accessory air lines going to the rear of the frame and dump body shall be grouped together and bound with the Body Builder installed wiring
 - 3.15.4.1.** The bound harness shall then be secured to a painted metal strap, approximately 1 ¼" x ¼" in size
 - 3.15.4.1.1.** The strap shall be secured to the top of the frame cross members away from the side rails
- 3.15.5.** All air powered accessories shall be controlled by the chassis air accessory power supply

Comply: ____ Yes ____ No

EQUIPMENT SPECIFICATIONS

3.16. Hydraulic Installation

- 3.16.1. All hoses shall be routed in a manner to minimize rub points and bends
- 3.16.2. Critical rub points shall be wrapped for protection
- 3.16.3. All hoses shall be routed or shielded to protect them from heat sources
- 3.16.4. Teflon tape shall not be used in the hydraulic system
- 3.16.5. Hydraulic hoses shall not be secured to any factory installed chassis wiring, cables, hoses or lines
- 3.16.6. Hoses shall be adequately supported and securely fastened to withstand snow and icing conditions
- 3.16.7. Hydraulic hoses running to the rear of the truck shall be secured to a painted metal strap, approximately 1 ¼" x ¼" in size
 - 3.16.7.1. This strap shall be secured to the top of the frame cross members away from the side rails
- 3.16.8. Each hose going to the dump body shall have a 90-degree bulkhead mounted JIC elbow installed at the rear of the truck frame near the dump body hinge
- 3.16.9. These elbows shall split each hose going to the dump body into two (2) hoses allowing for easier routing and replacement
- 3.16.10. Hydraulic ports shall be O-ring type unless otherwise specified

Comply: ____ Yes ____ No

4. UnderBody Scraper

4.1. General

- 4.1.1. An underbody scraper with power reversing moldboard shall be mounted to the frame behind the cab and in front of the tandem axles
- 4.1.2. The underbody scraper requires a minimum of 92 inches of clearance, below the frame, to prevent contact with other chassis components, whether in stowed or work positions

Comply: ____ Yes ____ No

4.2. Moldboard

- 4.2.1. Curved moldboard constructed of no less than 1" thick steel plate, 10' in length and 17" in height
- 4.2.2. Shall have a minimum cutting angle adjustment of 35 degrees and be equipped with spring safety trip
- 4.2.3. Cutting edge shall be a minimum 7/8" x 6" high carbon steel with holes AASHTO spaced
- 4.2.4. Cutting edge shall have a WC Grade tungsten carbide insert
- 4.2.5. Cushioning of the moldboard shall be accomplished by two heavy duty steel spring canister assemblies
- 4.2.6. Moldboard pivot rod shall be knurled to allow grease to both sides of the bushing

Comply: ____ Yes ____ No

4.3. Scraper Hydraulics

- 4.3.1. Scraper functions are to be integrated into the hydraulic system of the truck and controlled from the operator's console in the cab
- 4.3.2. Scraper hydraulics shall consist of:
 - 4.3.2.1. Two double acting lift cylinders
 - 4.3.2.2. Two double acting angle cylinders which act as a locking mechanism to maintain the moldboard angle while in use
 - 4.3.2.3. All necessary hoses and fittings for complete installation

EQUIPMENT SPECIFICATIONS

4.3.2.4. Crossover relief valve for protection of the hydraulic system

4.3.2.5. Pressure relief valve preset to limit down pressure on the moldboard

Comply: ____ Yes ____ No

4.4. Scraper Lights

4.4.1. Truck-Lite model 81360 or approved equivalent

4.4.2. LED work lights shall be mounted on both sides of the chassis in such a manner as to illuminate the driver's and passenger's side of the underbody scraper, regardless of the angle of the blade

4.4.3. The light shall be controlled by an auxiliary rocker switch located in the instrument panel

Comply: ____ Yes ____ No

4.5. Removal

4.5.1. During the summer months the underbody scraper will be removed and a pusher axle installed

4.5.2. The underbody scraper shall be installed in a manner that allows removal of all components

4.5.3. Holes drilled in the frame for mounting of the underbody scraper shall be positioned, as much as possible, to allow for their use in mounting of the pusher axle

4.5.4. The hydraulic hoses supplying fluid to the scraper from the hydraulic function control valve shall be attached to a bulkhead located between the frame rails and behind the bed cylinder

4.5.5. The hydraulic supply hoses for the scraper shall attach to the bulkhead using quick couplers

4.5.6. All couplings shall be appropriately labeled with an aluminum or stainless-steel tag, as noted in 2.11.3

Comply: ____ Yes ____ No

5. Front Mount Snowplow

5.1. General

5.1.1. Power reversing moldboard for use on a truck equipped with central hydraulics

5.1.2. Shall be designed and approved by the manufacturer for installation on a truck which has a front gross axle weight rating of 18,000 pounds

5.1.3. All joints shall be continuously welded and reinforced

5.1.4. All couplings shall be appropriately labeled with an aluminum or stainless-steel tag, as noted in 2.11.3

Comply: ____ Yes ____ No

5.2. Reversing Frame & Front Push Tube

5.2.1. Shall be constructed using a minimum of 5" x 5" x 0.38" or 6" x 4" x 0.38 structural steel tubing properly reinforced to withstand severe snow plowing conditions

5.2.2. Minimum length: 116"

5.2.3. Minimum of ten welded ears to attach the moldboard assembly

5.2.3.1. Ears shall be made of minimum 5/8" thick steel

5.2.4. All joints shall be continuously welded and reinforced

5.2.5. Reversing frame shall be rolled angle iron

Comply: ____ Yes ____ No

EQUIPMENT SPECIFICATIONS

5.3. A-Frame

- 5.3.1. Engineered and constructed to be an integral component of the push frame
- 5.3.2. Shall contain two (2) double acting heavy duty power reversing hydraulic cylinders with a minimum 4" diameter bore
 - 5.3.2.1. Cylinders shall be equipped with a minimum 2" diameter rod
 - 5.3.2.2. Cylinder rod shall be nitride coated
- 5.3.3. The reversing cylinders shall maintain the angle of the moldboard once the desired plowing angle is reached
- 5.3.4. The unit shall be equipped with a hydraulic cushion valve to protect hydraulic cylinders in the event of an impact with a fixed object
- 5.3.5. Cylinders shall be equipped with hydraulic lines of sufficient length to connect to supply lines on the front bumper of the truck
- 5.3.6. The mounting plate that attaches the snowplow push frame to the truck hitch shall be equipped with mounting flanges made of 1" metal
 - 5.3.6.1. Mounting flanges shall be set on 30 1/2" centers with pin holes sized for 1 1/4" pins

Comply: ____ Yes ____ No

5.4. Moldboard

- 5.4.1. Curved moldboard no less than twelve (12) feet in length
- 5.4.2. Shall be constructed of no less than 3/16" steel with a minimum of eight (8) vertical ribs
- 5.4.3. Shall be equipped with full length horizontal ribs according to manufacturer's standard for plow size and type
- 5.4.4. Height shall be no less than 36" but shall not exceed 42"
- 5.4.5. Shall be extended curve design to prevent snow from coming over the top of moldboard at high speed
- 5.4.6. Shall have multi-position adjustment for lay-back to achieve optimal plowing angle
- 5.4.7. When set at the optimal plowing angle, the top of the moldboard curve shall extend forward of the cutting edge by no less than twelve (12) inches
- 5.4.8. Shall have mailbox ends equipped with sight markers at least 36" in height
- 5.4.9. Shall have cutting angle adjustment of no less than 35° left and right of center
- 5.4.10. Shall be equipped with two (2) compression type spring safety trips capable of at least three (3) attack angle settings ranging from 10 to 30 degrees
- 5.4.11. Shall include stops attached to the moldboard assembly which contact the reversing frame front push tube before the trip springs becomes fully compressed
- 5.4.12. The moldboard assembly shall be capable of tripping at least 15 degrees past vertical before contacting the stops, at any attack angle
- 5.4.13. Shall have a minimum of five (5) hinge points
- 5.4.14. There shall be a minimum of 116" between the outer most hinge points with a minimum of three more hinge points spaced between

Comply: ____ Yes ____ No

5.5. Snow shield

- 5.5.1. The moldboard shall be equipped with a full-length rubber snow shield mounted on the top forward edge
- 5.5.2. Shall be made of a minimum of two-ply rubber matting no less than 1/4" thick

EQUIPMENT SPECIFICATIONS

5.5.3. Snow shield shall be affixed to the moldboard using a minimum 0.25" x 2" metal strip and an adequate number of bolts to secure it in position

Comply: ____ Yes ____ No

5.6. Cutting Edge

5.6.1. Minimum 3/4" x 8" high carbon steel with holes AASHTO spaced

5.6.2. Equipped with a minimum of two (2) wear blocks behind the cutting edge

5.6.2.1. Each wear block shall have a minimum of 26 square inches of wear surface

5.6.2.2. Wear blocks shall be made of material with a minimum Brinell hardness of 181-240

Comply: ____ Yes ____ No

5.7. Level Lifting Device

5.7.1. Snowplow shall be equipped with a level lifting device that keeps the moldboard level when lifted or when being reversed

5.7.2. Device shall be complete with all chains, hooks, clevises and hardware necessary for proper operation

Comply: ____ Yes ____ No

5.8. Jack

5.8.1. The snowplow shall be equipped with a screw type adjustable jack to assist in the instillation and removal of the unit from the truck hitch

Comply: ____ Yes ____ No

5.9. Plow Hitch

5.9.1. Low profile, front frame mounted universal plow hitch with fold down and adjustable lift arm

5.9.2. Shall have a self-storing lift cylinder

5.9.3. The lift cylinder shall be a minimum 4" diameter bore and of sufficient length to properly lift snowplow

5.9.4. Hitch shall be capable of carrying plows from 10' to 14' in length

5.9.5. The lift arm mounting frame shall be constructed using a minimum of 1/2" x 3" angle welded to a 10" structural channel which forms the lift frame

5.9.6. Cheek plates shall be 1/2" x 12" tapered

5.9.7. Rocker angles and plates shall be utilized above and below the truck frame to keep the hitch from loosening and moving forward

5.9.8. The cheek plates and rocker plates will be welded to the truck hitch by the upfitter

5.9.9. Lift arm bracket and lower drop bar retaining/connecting lugs shall be fabricated from 3/4" thick plate

5.9.10. Mounting flanges shall be set on 30 1/2" centers with pin holes sized for 1 1/4" pins

5.9.11. Hitches using braces running from the lift frame to the front axle of the vehicle are not acceptable

Comply: ____ Yes ____ No

5.10. Bumper

5.10.1. Two (2) bumper wings (right side and left side) shall be provided as an integral portion of the plow hitch

EQUIPMENT SPECIFICATIONS

5.10.2. Each bumper wing shall be constructed using 10" HD structural channel

5.10.3. The wings shall be approximately the same height as the truck manufacturer's standard front bumper and shall be swept back to conform to the vehicle front hood and fenders

5.10.4. The bumper wings sections shall be bolted to the vehicle through the hitch cheek plate and the truck frame

Comply: ____ Yes ____ No

5.11. Weight

5.11.1. Snowplow assembly shall weigh a minimum of 2,000 pounds

Comply: ____ Yes ____ No

6. Chemical Spreader

6.1. Type

6.1.1. Shall be designed for mounting in dump body with spinner at the rear and below floor of dump body

6.1.2. The spreader shall be a self-contained unit with hopper type body, conveyor system, hydraulic drive, spinner and all necessary components integrally mounted as single unit

6.1.3. All couplings shall be appropriately labeled with an aluminum or stainless-steel tag, as noted in 2.11.3

6.1.4. Shall have the capacity to spread material to a maximum width of no less than 24'

Comply: ____ Yes ____ No

6.2. Hopper Body

6.2.1. Minimum struck capacity of 10.5 cubic yards

6.2.2. Shall be electrically welded construction, adequately reinforced, with no less than 10-gauge 304 stainless steel sides and ends

6.2.3. Body shall be 15' in length with sides to slope approximately 45 degrees to allow material to feed into conveyor by gravity

6.2.4. Bottom shall be constructed of no less than 7-gauge 304 stainless steel

6.2.5. All hopper hardware shall be stainless steel

6.2.6. Any long sills, crossmembers or side supports used in the design of the spreader shall be constructed of 304 stainless steel

Comply: ____ Yes ____ No

6.3. Top Screen

6.3.1. A top screen to keep oversize material from entering hopper shall be provided with the spreader

Comply: ____ Yes ____ No

6.4. Conveyor

6.4.1. Minimum overall width of 24"

6.4.2. Shall be designed to handle sand, cinders and de-icing chemicals discharging material to spinner at rear of spreader

EQUIPMENT SPECIFICATIONS

6.4.3. Shall be equipped with spring loaded idler adjusters to maintain proper conveyor tension

Comply: ____ Yes ____ No

6.5. Drive

6.5.1. Conveyor and spinner shall be driven by hydraulic motors

6.5.2. Shall be designed to operate on a closed center hydraulic system with a minimum output of 15 gpm at 1,500 psi

Comply: ____ Yes ____ No

6.6. Spinner Assembly

6.6.1. Spreader shall be equipped with a "Urethane Spinner" consisting of a one-piece polyurethane disc with a minimum of four (4) molded fins

6.6.2. Spinner disc shall have a minimum diameter of 18" and have a vertical adjustment of no less than 12"

6.6.3. Spinner shaft shall be mounted to the hydraulic spinner motor output shaft

6.6.4. The spinner chute shall be constructed of no less than 10-gauge 304 stainless steel

6.6.5. Unit shall have a minimum of three (3) adjustable material deflectors to help regulate spreading patterns

6.6.6. Spinner assembly shall be designed so that it may be hinged up for storage or to discharge material that may be left in the spreader

Comply: ____ Yes ____ No

6.7. Feed Gate

6.7.1. Material discharge to spinner chute to be controlled by an adjustable discharge gate with positive locking device

Comply: ____ Yes ____ No

6.8. Mounting

6.8.1. Spreader shall be designed for mounting in a dump body which is devoid of hydraulic cylinder hoist housing in the front of the body

6.8.2. Hold down equipment for dump body mounting shall be furnished

6.8.3. Spreader shall be equipped with lifting bails

Comply: ____ Yes ____ No

6.9. Front Bearing Grease Extensions

6.9.1. Shall have front bearing grease extension tubes to allow greasing of front bearings

6.9.2. The grease tubes shall either extend to the rear of the spreader and be flexible enough so greasing will not interfere with normal bearing adjustment

6.9.3. The tubes shall be attached to the sides of the spreader with straps made of nylon or a similar material

Comply: ____ Yes ____ No

EQUIPMENT SPECIFICATIONS

6.10. Storage Stand

- 6.10.1. Self-storing stand with 4 legs, two front and two in the rear
- 6.10.2. Constructed of Galvanized steel material
- 6.10.3. Spreader unit shall be removed from truck by dropping the rear legs into the storage position, raising the bed slightly, pulling forward until the front legs can be deployed
- 6.10.4. No equipment should be needed to remove the spreader from the truck
 - 6.10.4.1. Installation shall be reversed

Comply: ____Yes ____No

6.11. Liquid Spray System Components

- 6.11.1. Shall work in conjunction with a truck mounted, hydraulically driven chemical pump and control system
- 6.11.2. Shall include a hose kit with a minimum of two (2) spray nozzles and reservoirs
- 6.11.3. The kit shall also include all necessary hoses and fittings to connect the spray system to the truck mounted pumping system located at the rear of the truck's dump body on the driver's side
- 6.11.4. Spray system shall be capable of continuous spraying of calcium and magnesium chloride, glycol, liquid urea, or other liquid de-icing solutions directly onto the material as it leaves the conveyor and before it reaches the spinner
- 6.11.5. All wetted parts shall be corrosion resistant
- 6.11.6. All components shall be rated at no less than 150 psi working pressure

Comply: ____Yes ____No

6.11.7. Sprayer Reservoirs

- 6.11.7.1. A minimum of two (2) sprayer reservoirs with a capacity of no less than 225 gallons each shall be provided
- 6.11.7.2. Reservoirs shall be molded polyethylene construction and be complete with replaceable in-line screen strainer, shut-off valves and mounting hardware
- 6.11.7.3. Reservoirs shall be angle formed to allow for mounting to the sides of the chemical and material spreader specified above (Sides of spreader are to have an approximate 45° slope)
- 6.11.7.4. Designed so that one (1) reservoir is mounted on each side of the spreader with all fill openings, shut-off valves, etc. readily accessible
- 6.11.7.5. Reservoirs shall be plumbed together with a minimum 1-1/2" ID hose with a tee located on the left rear corner of the spreader

Comply: ____Yes ____No

6.11.8. Nozzles

- 6.11.8.1. Minimum of two (2) spray nozzles equipped with necessary cores, discs and mounting hardware

Comply: ____Yes ____No

EQUIPMENT SPECIFICATIONS

7. Warranty

- 7.1. Cab and chassis shall have truck manufacturer's regular warranty and service as regularly furnished on new vehicles sold to the public. Warranty data shall be furnished with each unit.
- 7.2. The dump body, hydraulic system, and all other incidental equipment furnished under this specification shall be warranted against defective material and workmanship for a minimum period of (12) months (365 days) from date unit is placed in operation by LADOTD.
- 7.3. Warranty should include all parts, labor and transportation costs to the location of equipment.
- 7.4. If equipment cannot be repaired on location, warranty shall include cost of transport to the facility where the repair work will be done.
- 7.5. Warranty repairs are to be performed by any authorized dealership of the manufacturer; however, the Successful Bidder will be ultimately responsible for coordinating repairs and ensuring that warranty repairs are completed in a timely manner.
- 7.6. If any warranty literature submitted with the bid conflicts with LADOTD warranty requirements, the conflict(s) shall be specifically noted, corrected and included with the bid or the conflict(s) will be considered an exception to warranty specifications and the bid rejected.
- 7.7. Recent prior failure to provide warranty-work, parts, replacement parts or service, in a timely manner, for equipment from the same manufacturer or dealer shall be grounds for the rejection of any submitted bid, or for the denial of any otherwise qualified low bidder, whether such failure is attributable to the manufacturer or the dealer of the equipment. For the purposes of this paragraph "timely manner" means a period not exceeding thirty (30) calendar days to provide requested warranty-work, parts, replacement parts, or service. For the purposes of this paragraph "manufacturer" means the original manufacturer of the equipment and its successor or successors, regardless of number, and whether acquired by sale, merger, or otherwise. For the purposes of this paragraph "replacement part" means a part redesigned by a manufacturer to correct a design or engineering defect and which replacement part is capable of providing dependable performance in normal operation conditions for its normal service life without failure. Such bid or bids may be rejected by the Department until such failure or failures have been remedied to the satisfaction of the Department and until such manufacturer or dealer is providing such warranty-work, parts, replacement parts, and service in a timely manner.

Comply: ____Yes ____No

BIDDER'S EXCEPTIONS

Instructions: Bidder should note all exceptions in space provided below. List the detail number from the aforementioned specification in the column to the left and the exception in the column to the right. Responses may be typed or hand-written. Handwritten responses must be legible. If additional space is needed, please print a duplicate copy of this sheet. "Bidder's Exceptions" page(s) should be returned with the bid submittal.

Examples:

1.6	Engine has 325 horsepower
1.18.3	Batteries have 2000 CCA combined.
2.2.8	Crossmembers are 4" channel on 12" centers.

**Spec./Detail
Reference**

Exception
