STANDARD CONTRACT

1. ***Parties.*** This is a contract between the State of Vermont, Office of Purchasing and Contracting (hereinafter called "State"), and Viking-Cives USA, with a principal place of business in Williston VT, (hereinafter called "Contractor"). Contractor's form of business organization is corporation. It is Contractor's responsibility to contact the Vermont Department of Taxes to determine if, by law, Contractor is required to have a Vermont Department of Taxes Business Account Number.

2. ***Subject Matter.*** The subject matter of this contract is commodities generally on the subject of Snowplow and spreader bodies for 43,000 and 60,000 GVWR Trucks. Detailed requirements to be provided by Contractor are described in Attachment A.

3. ***Maximum Amount.*** In consideration of the commodities to be provided by Contractor, the State agrees to pay Contractor, in accordance with the payment provisions specified in Attachment B, a sum not to exceed $1,000,000.00.

4. ***Contract Term.*** The period of contractor's performance shall begin on January 25, 2023 and end on January 24, 2025 with two (2) twelve month extension options.

5. ***Prior Approvals.*** This Contract shall not be binding unless and until all requisite prior approvals have been obtained in accordance with current State law, bulletins, and interpretations.

6. ***Amendment.*** No changes, modifications, or amendments in the terms and conditions of this contract shall be effective unless reduced to writing, numbered and signed by the duly authorized representative of the State and Contractor.

7. ***Termination/Cancellation/Rejection.*** The State specifically reserves the right upon written notice to immediately terminate the contract or any portion thereof at no additional cost to the State, providing, in the opinion of its Commissioner of Buildings and General Services, the products supplied by Contractor are not satisfactory or are not consistent with the terms of this Contract. The State also specifically reserves the right upon written notice, and at no additional cost to the State, to immediately terminate the contract for convenience and/or to immediately reject or cancel any order for convenience at any time prior to shipping notification.

8. ***Attachments***. This contract consists of 2 pages including the following attachments which are incorporated herein:

Attachment A - Statement of Work

Exhibit A - Specifications

Attachment B - Payment Provisions

Attachment C – "Standard State Provisions for Contracts and Grants" a preprinted form (revision date 12/15/2017)

9. ***Order of Precedence***. Any ambiguity, conflict or inconsistency between the documents comprising this contract shall be resolved according to the following order of precedence:

(1) Standard Contract
(2) Attachment C (Standard Contract Provisions for Contracts and Grants)
(3) Attachment A
(4) Exhibit A - Specifications
(5) Attachment B

WE THE UNDERSIGNED PARTIES AGREE TO BE BOUND BY THIS CONTRACT

By the State of Vermont:

Date: _____

Signature: _____

Name: Jennifer M.V. Fitch

Title: Commissioner - Buildings and General Services

By the Contractor:

Date: _____

Signature: _____

Name: _____

Title: _____

ATTACHMENT A – STATEMENT OF WORK

The Contractor shall provide:

1. Snowplow and Spreader Bodies for 43,000 and 60,000 GVWR Trucks
    a. Snowplow body and spreader system for 43,000 GVWR cab and chassis base package – Viking PLST10' controls Rexroth
    b. Snowplow body and spreader system for 60,000 GVWR cab and chassis base package – Viking PLST10' controls Rexroth
2. Plows
    a. One-way full trip design plow Viking 265445
    b. One-way trip edge design plow Viking 3153TE
    c. Reversible plow flex design Viking PRR3151FL
    d. Reversible one-way barrel plow Viking PRR3153TE
3. Wings
    a. 10-foot mold board wing left hand right or dual hand Viking H1059V/1011W4D
    b. 11-foot mold board wing left hand right or dual hand Viking H1059V/1112W4D
4. Hitch
    a. Front plow hitch left-hand and right-hand Viking PT
5. Wing Tower
    a. Front wing tower left hand and right hand Viking FAH48
6. Options
    a. The underside of the body, and the inside of the rear corner posts, shall be undercoated with a Rino-Coat Truck bed liner or approved equivalent. All open seams under the body shall be sealed with seam sealant prior to priming to reduce corrosion. A five-year warranty on both materials and application shall be provided. Periodic touch-up may be required to maintain the warranty. A copy of the warranty shall be provided.
    b. Wing Tripod
    c. Dual Wing (Add to Base Hitch Post, and Wing Price)
    d. Cirus w/Danfoss PVG Valve in Lieu of Rexroth
    e. Cirus w/Danfoss PVG Hybrid Valve in Lieu of Rexroth
    f. Cirus w/Walvoil DPX Valve in Lieu of Rexroth
    g. Install VAOT Supplied AVL Unit
    h. Side Dump Body in Lieu of Tanker Body for 43,000 GVWR

i. Side Dump Body in Lieu of Tanker Body for 60,000 GVWR

j. Tanker Body in Lieu of Tanker Body for 60,000 GVWR

k. Dual Auger Conveyor in SA Bodies in Lieu of Chain Conveyor

l. Dual Auger Conveyor in TA Bodies in Lieu of Chain Conveyor

m. 300 Gallon Tank Only

n. 600 Gallon Tank Only

o. 1200 Gallon Tank Onlv

p. Pre-Wet Svstem (Less Tank)

q. Pre-Wet/Anti-Ice System (Less Tank)

r. Conspicuity Panel w/Deflector and Whelen TAC8

s. Coal Door

t. Coal Door Plug

u. Shoulder Chute

v. Air Pintle Plate w/30 Ton Hook Electrical Plugs Glad Hands

w. No Air Pintle Plate w/Receiver and Plug

x. Shoes for One-way trip edge design plow Viking 3153TE

y. Shoes for Reversible plow flex design Viking PRR3151FL

z. Shoes for Reversible one-way barrel plow Viking PRR3153TE

7. **TRAINING**:

a. Training shall be provided as part of a one- or two-day joint session, depending on the number of participants. It shall be conducted for operators and field maintenance personnel on the body/spreader combination. Contractor is responsible for organizing the training, providing knowledgeable instructors, and any training materials/aids.

i. Topics to be covered are:

ii. Safety features and safe and proper operation.

iii. Lubrication points and frequency. Include a diagram showing locations and frequency.

iv. What to look for when inspecting the unit.

v. How to properly calibrate the spreader unit.

vi. Adjustment points and proper adjustment. Include a diagram showing both adjustment points and proper adjustment range

vii. The above training shall be conducted at the AOT Central Garage complex in Berlin, or at vendors facility, after the Central Garage receives the first completed

vehicle, and before the trucks go into service. At least 30 days' notice shall be provided.

8. **PARTS:**
    a. Contractor shall provide manufacturer's full catalog of available repair and replacement parts, to include all parts sold by the contractor, whether they be for the equipment awarded under this contract or not.
    b. Contractor shall provide all component(s) of combined plow; body; wing; wing tower; or other replaceable components.
9. **SERVICE REQUIREMENTS**
    a. Non- Warranty Parts and Repair Services: Contractor shall provide shop labor, for repairs of equipment, that is not covered by the factory warranty. Any discount shall be honored by the contractor for the period of this contract and shall apply to all labor provided by the contractor, whether it be for the equipment awarded under this contract or not.
10. **WARRANT**Y: Each product purchased hereunder shall include a manufacturer's written warranty, which must be based on commercial use, and extend for a minimum term of one (1) year from the date a Product is available for use by the purchaser, or such longer period as set forth in the written warranty.
11. **REPORTING REQUIREMENTS:** Contractor will be required to submit quarterly product sales report to the Purchasing Agent pursuant to the schedule below detailing the purchasing of all items under this Contractor. Contractor's reporting shall state "no activity" for any month in which there is no activity during a quarterly reporting period.
    a. The reports shall be an excel spreadsheet transmitted electronically to the Purchasing Agent.
    b. Reports are due for each quarter as follows:

Reporting Period	Report Due
January 1 to March 31	April 30
April 1 to June 30	July 31
July 1 to September 30	October 31
October 1 to December 31	January 31

    c. Failure to meet these reporting requirements may result in suspension or termination of this Participating Addendum.
    d. Notwithstanding the fact that any payment obligation for sales by contractor to any political subdivision or college, pursuant to "Purchasing Entities," below, shall be solely between the political subdivision or college and the contractor, the contractor must include, in reporting to State, the figures on quantities sold by contractor to, and amounts paid to contractor by, any such political subdivisions or independent colleges.

12. **DELIVERY:** Responsibility for product delivery remains with Contractor until the product is properly delivered and signed for. Contractor shall securely and properly pack all shipments in accordance with accepted commercial practices. Upon delivery, all packaging and containers shall become the property of the State, unless otherwise stated. Delivered goods that do not conform to the specifications or are not in good condition upon receipt shall be replaced promptly by the Contractor.

13. **QUALITY:** All products will be new and unused. All products provided by the Contractor must meet all federal, state, and local standards for quality and safety requirements. Products not meeting the requirements of this section will be deemed unacceptable and returned to the Contractor for credit at no charge to the State.

14. **DEFAULT:** In case of default of the Contractor, the State may procure the materials or supplies from other sources and hold the Contractor responsible for any excess cost occasioned thereby, provided, that if public necessity requires the use of materials or supplies not conforming to the specifications they may be accepted, and payment therefore shall be made at a proper reduction in price.

15. ***Primary Contacts***. The Parties will keep and maintain current at all times a primary point of contact for this contract. The primary contacts for this this Contract are as follows:
    e. ***For the Contractor***:

Name:	Mike Murray
Phone:	802-760-9655
Email:	mmurray@vikingcives.com

    f. ***For the State***:

Name:	State of Vermont, Bill Vivian
Address:	133 State Street, Montpelier, VT 05633-8000
Phone:	802/261-0797
Fax:	802/828-2222
Email:	Bill.Vivian@Vermont.gov

16. **Purchasing Entities*:*** This Participating Addendum may be used by (a) all departments, offices, institutions, and other agencies of the State of Vermont and counties (each a "State Purchaser") according to the process for ordering and other restrictions applicable to State Purchasers set forth herein; and (b) political subdivisions of the State of Vermont and any institution of higher education chartered in Vermont and accredited or holding a certificate of approval from the State Board of Education as authorized under 29 V.S.A. § 902 (each an "Additional Purchaser"). Issues concerning interpretation and eligibility for participation are solely within the authority of the State of Vermont Chief Procurement Officer. The State of Vermont and its officers and employees shall have no responsibility or liability for Additional Purchasers. Each Additional Purchaser is to make its own determination whether this Participating Addendum and the Master Agreement are consistent with its procurement policies and regulations.

EXHIBIT A - Specifications

SNOWPLOW AND SPREADER BODY SPECIFICATIONS FOR 43,000# AND 60,000# GVWR TRUCKS

1. GENERAL:

1.1. These specifications are intended to describe the snowplow, wing, plow frame, body, liquid system (if applicable), controls, and hydraulic system mounted on State of Vermont 43,000# & 60,000# GVWR single & tandem axle truck chassis.

1.2. Chassis options will be a varied quantity of International HV513, HV507 and Freightliner 114SD or 108SD.

1.3. The State intends for these specifications to provide options for several different truck configurations, including combinations of single and tandem-axle chassis, left and right-hand plows, 10' or 11' wings, dual wings, trucks with and without tilting inner bodies, and with or without liquid pre-wet and anti-icing systems.

1.4. The single axle trucks will have a CA of 106" or 108" depending on manufacturer, and the tandem axle trucks will have a CT of 135". Both chassis shall be supplied with 24" front frame extensions.

1.5. The system and its components shall be constructed with identical parts for interchangeability between units and standardization for minimum parts inventories. The manufacturer's standard parts shall be used when possible. All components, accessories, and equipment advertised as standard equipment shall be provided unless superseded by these specifications.

1.6. These specifications apply to all size and manufacturer types of vehicles. Where there is a difference in specification for single and tandem-axle trucks, the tandem axle specifications are provided in ***(bold italic print and in parentheses)***.

1.7. The installation shall be performed at the contractors's place of business. The contractor shall have a facility that is located within 75 miles of the Central Garage in Berlin, VT, which can perform complete installations, repairs, and supply parts.

hydraulic controls, ground speed control system, and AVL system completely installed, tested, inspected, and ready for operation prior to delivery.

2. PLOW FRONT:

2.1. The front shall consist of all necessary cheek plates, push arms and frames required to properly mount, lift, carry, and operate both the plow and wing(s). The cheek plates shall be designed so that the installation will not require the removal of the steering boxes. Any hoses that might contact the cheek plates shall be protected with a section of double-braid hydraulic hose. The cheek plates shall be 5/8"

thick plate steel designed to maintain integrity under high-speed plowing yet bend on severe impact without causing the truck frame to bend. A minimum of four 5/8" bolts per side shall be used to fasten the cheek plate to the truck frame and a minimum of four 5/8" bolts per side to fasten the plow front to the check plates. Shock absorbers shall remain functional.

2.2. The front must be constructed in such a manner as to permit the head frame and wing post to be tilted hydraulically forward without any free-fall. A chain system for lowering the plow frame is required, verify chain length with Central Garage. The plow front shall tilt far enough forward so the hood will not make contact when it is fully opened. All pin locations shall have replaceable steel bushings. Head frame and front wing post shall be easily removed for summer operations and include a male & female dust covers for the headlight harness and front hydraulic couplers. Provide and install an adequately sized D ring for balanced lifting of the plow front

2.3. The distance from the end of the truck frame to the center of the plow pin hole shall not be more than 15".

2.4. Three (3) plow pin holes shall be spaced 4" on center with the bottom pin 16" from ground, providing two (2) position settings for the quick-connect couplings.

2.5. The left front bumperette shall have two 5/16" holes drilled for mounting the license plate.

2.6. The head frame shall have a bumper on the opposite side of the wing with enough length to protect that front fender. The bumper must be able to support at least 300 pounds.

2.7.The truck bumpers shall have brackets installed to permit mounting the bumper in place of the plow front when the front is removed for summer operations. Brackets shall be designed so that the bumpers may be interchanged between trucks and pinned into the plow frame.

2.8. The plow lift cylinder shall be at least 4"x10" with power up and down. Cylinder rod shall be Nitrided (alternate quotes for chrome cylinders may be considered).

2.9. The pin diameter for plow and head frame mount shall be 1-¼".

2.10. Welded on the front of the head frame uprights, (one each side) a 5/8" round steel or rebar "U-bolt" design bracket 6" wide by 6" high shall be installed for storage of tire chains.

2.11. The plow front shall be designed so that when the plow lights are added, they shall be as close to 65" (center of light) as possible from the ground but no higher than 75". Plow lights shall be LED.

2.12. All trucks shall be equipped with a heavy duty quick-lock, quick-disconnect for the front plow. Provide and install matching plow oscillating bar. See "WING" section for front wing tower requirements.

4. PLOWS:

4.1. ONE-WAY PLOW, FULL TRIP DESIGN:

4.1.1. Weld the Central Garage Truck Unit Number on each plow, location to be on the discharge end on the back side of the plow

4.1.2. Plow and drive frame shall be manufacturer's heaviest duty high-speed model and must meet the following minimum specifications. Include a heavy-duty quick coupling oscillating bar, to match that provided on the plow frame.

4.1.3. One-way discharging steel plow shall have an 11' cutting edge and provide a 9' foot clear cut either right or left as specified on the purchase order. The plow must cut a clear path a minimum of 3" beyond the outer wheel track of the outside rear dual tire, on the nose side of the plow.

4.1.4. Lifting device shall be a ¾" thick double chain design, with all elements adequately engineered to safely lift anticipated loads and certified by the contractor to meet all applicable safety standards. Chain size shall be 2x2 ½" grade 80 safety chain.

4.1.5. An adequately engineered safety chain shall be provided between the moldboard and the drive frame.

4.1.6. Provide 11/16" holes for the steel cutting edge, 12" on-center. Moldboard shall be constructed from minimum 8 gauge high-strength carbon steel and be reinforced with a minimum of eight ½" ribs.

4.1.7. Plow shall be adjustable to provide a working angle with the ground between 50 degrees and 80 degrees with a minimum of 3 intermediate settings achievable using a telescoping push-pole and quick coupling setting (see 2-D). Both 6" and 8" top punched blades shall be used with the plow.

4.1.8. When plow is set at 50 degrees the moldboard height at the nose shall not exceed 30" and the moldboard discharge end shall not exceed 55".

4.1.9. Plow shall have a full trip, slotted compression mechanism. The compression springs shall have 1-3/8" diameter threaded rods and safety restraint caps.

4.1.10. The discharge end of the moldboard shall not extend more than 20" beyond the end of the cutting edge.

4.1.11. The plow shall have a reinforced rubber snow deflector 15" wide, bolted 12" on-center to a reinforced frame on the top edge of the barrel.

4.1.12. Provide lifting lugs on the back of the plow which allow for balanced lifting.

4.1.13. The push frame shall be designed to keep the plow as close to the vehicle as possible while maintaining the proper plow angle and wing clearance. On the discharge side, the measurement from the center of the head frame mounting hole to the back side of the moldboard shall not exceed 55". Moldboard pin locations shall have replaceable steel bushings.

4.1.14. An oscillating bar shall be provided to allow the plow to follow road contours. The bar shall be a minimum of ¾" thick and pivot on a 1-1/2" bolt. Oscillation shall be limited to within reasonable limits. Construction shall allow the oscillating bar to be used in conjunction with "quick lock" jaws on plow frame.

4.1.15. The push frame shoe hangers shall be designed to provide a minimum of 6" of adjustment to allow the shoes to be adjusted throughout their wear life, with either 6" or 8" top punch blades. Adjusting bolts shall be easily accessible with an air impact wrench. The hangers shall be reinforced to eliminate damage from running off the edge of pavement or crossing railroad tracks. They shall be positioned such that the shoe shall run flat on the pavement to obtain maximum wear.

4.1.16. Provide a high-speed, heavy-duty push-frame shoe bracket suitable for VTrans' standard "boat" shoe, which will be available for inspection during the design process.

4.1.17. Plow and wing should not make contact at any angle, lift, or direction.

4.2. **ONE-WAY PLOW, TRIP EDGE DESIGN:**

4.2.1. Plow shall be trip edge design.

4.2.2. Plow and drive frame shall be manufacturer's heaviest duty high-speed model and must meet the following minimum specifications. Include a heavy-duty quick coupling oscillating bar, to match that provided on the plow frame.

4.2.3. One-way discharging steel plow shall have an 11' cutting edge and provide a 9' foot clear cut either right or left as specified on the purchase order. The plow must cut a clear path a minimum of 3" beyond the outer wheel track of the outside rear dual tire, on the nose side of the plow.

4.2.4. Lifting device shall be a double chain design, with all elements adequately engineered to safely lift anticipated loads and certified by the contractor to meet all applicable safety standards. Chain size shall be 2x2 ½" grade 80 safety chain.

4.2.5. An adequately engineered safety chain shall be provided between the moldboard and the drive frame.

4.2.6. Provide 11/16" holes for the steel cutting edge, 12" on-center. Moldboard shall be constructed from minimum 8 gauge high-strength carbon steel and be reinforced with a minimum of eight ½" ribs.

4.2.7. Plow shall be adjustable to provide a working angle with the ground between 50 degrees and 80 degrees with a minimum of 3 intermediate settings achievable using a telescoping push-pole and quick coupling setting (see 2-D). Both 6" and 8" top punched blades shall be used with the plow.

4.2.8. When plow is set at 50 degrees the moldboard height at the nose shall not exceed 30" and the moldboard discharge end shall not exceed 55".

4.2.9. The discharge end of the moldboard shall not extend more than 20" beyond the end of the cutting edge.

4.2.10. The plow shall have a reinforced rubber snow deflector 15" wide, bolted 12" on-center to a reinforced frame on the top edge of the barrel.

4.2.11. Provide lifting lugs on the back of the plow which allow for balanced lifting.

4.2.12. The push frame shall be designed to keep the plow as close to the vehicle as possible while maintaining the proper plow angle and wing clearance. On the discharge side, the measurement

from the center of the head frame mounting hole to the back side of the moldboard shall not exceed 55". Moldboard pin locations shall have replaceable steel bushings.

4.2.13. An oscillating bar shall be provided to allow the plow to follow road contours. The bar shall be a minimum of ¾" thick and pivot on a 1-1/2" bolt. Oscillation shall be limited to within reasonable limits. Construction shall allow the oscillating bar to be used in conjunction with "quick lock" jaws on plow frame.

4.2.14. The push frame shoe hangers shall be designed to provide a minimum of 6" of adjustment to allow the shoes to be adjusted throughout their wear life, with either 6" or 8" top punch blades. Adjusting bolts shall be easily accessible with an air impact wrench. The hangers shall be reinforced to eliminate damage from running off the edge of pavement or crossing railroad tracks. They shall be positioned such that the shoe shall run flat on the pavement to obtain maximum wear.

4.2.15. Provide a high-speed, heavy-duty push-frame shoe bracket suitable for VTrans' standard "boat" shoe, which will be available for inspection during the design process.

4.2.16. Plow and wing should not make contact at any angle, lift, or direction.

4.3. **REVERSIBLE "FLEX" PLOWS:**

4.3.1. Plow shall be trip edge design.

4.3.2. Plow and drive frame shall be manufacturer's heaviest duty model and must meet the following minimum specifications. Include a heavy-duty quick coupling to match that provided on the plow frame.

4.3.3. This shall be an 11' cutting edge power reversible plow: Tenco Twist & Shoot, Viking-Cives Flex plow 2000, Everest reverse-a-cast or pre-approved equal. The plow shall not exceed 3,100 lbs. (plow and plow frame should not exceed the weight capacity of the front axle) with push frame shoe hangers installed. The moldboard contouring (flexing) shall be controlled by hydraulic cylinder(s). Cylinder rods shall be Nitrided (alternate quotes for chrome cylinders may be considered).

4.3.4. All elements of the lifting device shall be adequately engineered to safely lift anticipated loads and certified by the contractor to meet all applicable safety standards. Provide and install "dead shiv" style lifting device. Chain size shall be ½" grade 80 safety chain.

4.3.5. 11/16" holes for the steel cutting edge shall be spaced 12" on center, or utilize the manufacturer's standard pattern

4.3.6. Provide lifting lugs on the back of the plow which allow for balanced lifting.

4.3.7. The power reversing and flexing shall be joystick controlled. The power reverse/flex cylinder(s) shall be connected to the hydraulic system by two-wire braided SAE 100R17-8 grade hose with quick disconnects. Quick disconnects shall be, 1/2" FNPT, Dixon Manufacture, 4 part #'s - 4CVVF4: female coupler side, CVV4F4: male coupler side, 4CVVDP: dust plug for female coupler, CVV4DC: dust cap for male coupler. Hoses shall be set up so that one has a male disconnect and the other a female to prevent errors when mounting the plow. There shall be a

hydraulic relief valve in the system to protect the cylinders. The moldboard shall be positioned not to contact the wing when in the full angled position.

4.3.8. An oscillating bar shall be provided to allow the plow to follow road contours. The bar shall be a minimum of ¾" thick and pivot on a 1-1/2" bolt. Oscillation shall be limited to within reasonable limits. Construction shall allow the oscillating bar to be used in conjunction with "quick lock" jaws on plow frame.

4.3.9. Moldboard pin locations shall have replaceable steel bushings.

4.3.10. The plow shall have push-frame shoe hangers designed to provide a minimum of 6" of adjustment to allow the shoes to be adjusted throughout their wear life with either 6" or 8" top punched blades. The hangers shall be reinforced to eliminate damage from running off the edge of the pavement or crossing railroad tracks. Provide a 3/8" grade 70 safety chain between the hangers and plow frame, to retain the hanger in the event it breaks away from the frame. Adjusting mechanisms shall be easily accessible. Hangers shall be designed so that the shoes automatically tilt down in the rear when plow is lifted and shall run flat on the pavement for maximum wear. Standard steel shoes shall be installed. A shoe design diagram shall be provided, to VTrans, on or before delivery.

4.3.11. The plow shall have a reinforced rubber snow deflector 15" wide, bolted 12" on-center to a reinforced frame on the top edge of the barrel.

4.4. **REVERSIBLE ONE-WAY BARREL PLOWS:**

4.4.1. Plow shall be trip edge design.

4.4.2. Plow and drive frame shall be manufacturer's heaviest duty model and must meet the following minimum specifications. Include a heavy-duty quick coupling to match that provided on the plow frame.

4.4.3. This shall be an 11' cutting edge power reversible, one-way barrel plow. Plow may be required to discharge to the left, or right, see PO for confirmation. The plow shall not exceed 3,100 lbs. (plow and plow frame should not exceed the weight capacity of the front axle) with push frame shoe hangers installed. The moldboard contouring (flexing) shall be controlled by hydraulic cylinder(s). Cylinder rods shall be Nitrided (alternate quotes for chrome cylinders may be considered).

4.4.4. All elements of the lifting device shall be adequately engineered to safely lift anticipated loads and certified by the contractor to meet all applicable safety standards. Provide and install "dead shiv" style lifting device. Chain size shall be ½" grade 80 safety chain.

4.4.5. 11/16" holes for the steel cutting edge shall be spaced 12" on center, or utilize the manufacturer's standard pattern

4.4.6. Provide lifting lugs on the back of the plow which allow for balanced lifting.

4.4.7. The power reversing shall be joystick controlled. The power reverse cylinder(s) shall be connected to the hydraulic system by two-wire braided SAE 100R17-8 grade hose with quick disconnects. Quick disconnects shall be, 1/2" FNPT, Dixon Manufacture, 4 part #'s - 4CVVF4:

female coupler side, CVV4F4: male coupler side, 4CVVDP: dust plug for female coupler, CVV4DC: dust cap for male coupler. Hoses shall be set up so that one has a male disconnect and the other a female to prevent errors when mounting the plow. There shall be a hydraulic relief valve in the system to protect the cylinders. The moldboard shall be positioned not to contact the wing when in the full angled position.

4.4.8. An oscillating bar shall be provided to allow the plow to follow road contours. The bar shall be a minimum of ¾" thick and pivot on a 1-1/2" bolt. Oscillation shall be limited to within reasonable limits. Construction shall allow the oscillating bar to be used in conjunction with "quick lock" jaws on plow frame.

4.4.9. Moldboard pin locations shall have replaceable steel bushings.

4.4.10. The plow shall have push-frame shoe hangers designed to provide a minimum of 6" of adjustment to allow the shoes to be adjusted throughout their wear life with either 6" or 8" top punched blades. The hangers shall be reinforced to eliminate damage from running off the edge of the pavement or crossing railroad tracks. Provide a 3/8" grade 70 safety chain between the hangers and plow frame, to retain the hanger in the event it breaks away from the frame. Adjusting mechanisms shall be easily accessible. Hangers shall be designed so that the shoes automatically tilt down in the rear when plow is lifted and shall run flat on the pavement for maximum wear. Standard steel shoes shall be installed. A shoe design diagram shall be provided, to VTrans, on or before delivery.

4.4.11. The plow shall have a steel, 12-inch extension, bolted 12" on-center to a reinforced frame on the top edge of the barrel.

5. WING: 10' and 11' wings; left or right-hand, or dual.

5.1. Weld the Central Garage Truck Unit Number on each wing, location to be on the discharge end on the back side of the wing

5.2. The wing system shall be the manufacturer's heaviest duty hydraulically operated wing.

5.3. Provide optional quotes for leveling wings with both 10' and eleven 11' cutting edges. Note: The 60,000# GVW trucks may have either a 10' or 11' wing.

5.4. Provide optional quote for dual wing system to match the specs as written.

5.5. The plow/wing combination shall provide a total clear cut of 14' ***(16' with 11' wing)*** with the ability to bring the wing into a minimum 12'-8" ***(13'-6" with 11' wing)*** clear cut. Manual adjustments, minimum 3, in the push poles shall be provided. The discharge end of the wing moldboard shall not extend more than 12" past the end of the cutting edge.

5.6. The wing shall be positioned such that the wing and plow will provide a clear path with no gaps. The wing, in both plowing operations, and carry positions, shall provide adequate tire clearance, and not rub against the body.

5.7. The wing shall be totally hydraulically operated. Cable is not acceptable. Cylinder rods shall be Nitrided (alternate quotes for chrome cylinders may be considered). The wing shall be designed in such a way that when it is raised into the carry position it shall not hit any part of the truck cab. The wing

shall be equipped with a 3/8" grade 70 safety chain, attached to rear wing tower, so that it cannot accidentally drop out of the carry position. In the carry position the wing shall not extend past the outside edge of the front plow. All mounting pins shall be a piloted design to aid alignment during installation of the wing.

5.8. The wing lift cylinder, attached to the push arms, shall be connected to the hydraulic system by two-wire braided SAE 100R17-8 grade hose with quick disconnects. Quick disconnects shall be, 1/2" FNPT, Dixon Manufacture. 4 part #'s - 4CVVF4: female coupler side, CVV4F4: male coupler side, 4CVVDP: dust plug for female coupler, CVV4DC: dust cap for male coupler.

5.9. 5/8" holes for the steel cutting edge shall be spaced 12" on-center.

5.10. The wing shall be set up to allow the discharge end to trip when impacted.

5.11. The wing shall be set up so that the angle between the cutting edge and the ground is 70-80 degrees when in the plowing position.

5.12. The wing shall have a 1" thick plate to support a 1-1/2" bolt joining the wing to the hinge.

5.13. Provide lifting lugs on the back of the wing which allow for balanced lifting.

5.14. The front wing post shall be bolted to the plow front and be hydraulically actuated by use of a direct lift 4' cylinder. The 4-foot lift cylinder shall be mounted behind a 66" I-beam and provide a shelving height of 36" with a 6" blade. The post shall have a reinforced webbing consisting of 1-1/2" flat bar set on end running the full vertical length of the wing slide and gusseted with horizontal pieces of the same material.

5.15. The rear wing tower shall use a manufacturer's standard cylinder with an internal stop or external slide stop. When the cylinder is fully extended it shall not exceed 65" above the frame.

5.16. The rear wing post shall be mounted so that the slide is parallel to the wing cutting edge when the wing is in the 12'-8" ***(13'-6")*** minimum clear cut plowing position.

5.17. The wing front trip block, 30-degree hinge, shall be mounted on the intake end of the wing. It shall be heavy duty, but manufacturer's standard design. The hinge shall have replaceable bushings for each of the pivot pins that hold the two halves together. Provide grease fittings for all pivot points. The trip mechanism shall allow the wing blade to rise upwards, and the top to rotate away from the wing post at the same time. The wing shall be attached to the front wing post slide with a pin that has a modified "D" ring on top and a lynch pin in the bottom. Safety chains shall be installed between the wing slide and top of the trip block, and the back half of the trip block and back of wing. The discharge end of the wing shall have a safety chain connected to the upper push pole. The rear wing push poles and lift cylinders shall be attached with properly sized bolts and self-locking nuts.

5.18. The wing push poles shall be heaviest duty available and the manufacturer's standard length, if possible, but must provide a minimum clear cut with a 10' wing of 12'-8" ***(11' wing of 13'-6").*** The inner rod of the push poles shall be 2-3/8" in diameter. The wall thickness of the outer tube shall be ½" minimum.

5.19. The wing shall be equipped with a float mechanism to provide a minimum of 6" of float. The truck driver must be able to easily see the float control to adjust the amount of float.

5.20. Make and install steps on the wing arms or wing lift cylinder for easy cab access. Step shall be made with stair-tread metal approximately 5" x 10". The step shall be as close to horizontal as possible when the push poles are all the way down. VTrans Central Garage shall approve design.

5.21. Provide and install grip tape (part #AST624) on top wing arm

5.22. Fabricate and install an iron pry-bar holder on the wing tower. VTrans must approve the design and location.

5.23. The wing and push pole assembly shall be easily removable for seasonal storage. Please refer to the truck options list for the number of requested wheeled wing carts

5.24. Install a Whelen flashing Amber LED (part #WPLOW2A) on the top, discharge end of the wing. VTrans shall specify flash sequence and approve the location during the design process. A cable shall be run through a hydraulic hose from the rear wing tower along and p-clamped to the lower wing arm. The cable shall have weather tight connectors at each end where it connects to the light and to the truck strobe light wiring system. The hydraulic hose and wiring shall have sufficient slack to permit full operation of the wing but not excessive slack that it will drag on the ground in any wing position.

5.25. The wing tower bracing shall be a drop mount to allow mounting of a 30" w X 18"h X 18" d toolbox without interfering with the body.

6. HYDRAULIC SYSTEM:

6.1. A closed center hydraulic system shall be used to operate the plow, wing, dump body, and material spreader. Set pressures should be at manufacturer's standard, but no lower than 2,250 main psi and 250 standby psi minimum.

6.2. Pump housings shall be cast iron. A pump case drain shall be ¾" in diameter and plumbed directly in between the return filter and tank. It shall not go through the return line filter.

6.2.1. On all trucks, the pump shall be a direct drive pressure/flow compensating pump mounted directly to the crankshaft, via a PTO shaft. Pump shall be Metaris, model # MPN105954, and have a minimum 71 CC displacement with a minimum capacity of 34 GPM at 1600 RPM. The universals shall be, Napa model UJ280 or approved equivalent, The grease fittings shall be lined up so that all the fittings can be greased from one point.

6.2.2. All yokes shall have two set screws with two safety wires in the pump driveline

6.3. All hydraulic cylinders used in the system shall be properly sized and of sufficient capacity so that they can perform their designated functions without any noticeable deflection of the cylinder rod when fully extended. Cylinder rod shall be Nitride; provide alternate quotes for Chrome cylinder rod installed on "X" number of units.

6.4. Hydraulic valve shall be Sauer-Danfoss PVG32 (as per attached Appendix 1), or pre-approved equal with similar performance. Valves shall be electrically operated.

6.5. A central hydraulic valve system with a rated capacity of at least 34 GPM shall be mounted behind the cab, built into the rear wing tower assembly, in an accessible location. The valve shall be designed to withstand exposure to de-icing chemicals and severe weather conditions, and be in an enclosed

housing, accessible without tools. Stackable section valves that allow for servicing without disassembly shall be used. Each section must allow simultaneous operation without impacting other operations. Valves operated by the ice control system for the spinner, conveyor and liquid pumps shall be installed as part of the above valve body. A 500 PSI port relief valve shall be provided for the inner body lift cylinders (if applicable) – downside. Main valve cabinet shall be fluid filmed pre-delivery.

6.6. No hydraulics will be permitted in the cab.

6.7. All hydraulic lines running under the truck, including the 1" pressure line, shall be stainless steel pipe of the proper size and rating for the function. Each end of the stainless piping shall have a double flare that will accept a 37-degree JIC male stainless-steel fitting(s). Ferrules on the end of the stainless lines shall be stainless steel. All hydraulic hoses shall be Gates Mega Tough. 1" pressure line and smaller hoses shall be at least SAE 100R17-8 with a working pressure of 4,000 PSI and a burst pressure rating of 9,000 PSI. 2" hose shall be SAE 100R1 with a working pressure of 600 PSI. Hose ends shall be JIC. The pump, cylinders, and valve shall have swivel female JIC fittings. All hoses and stainless-steel lines shall be adequately supported, not greater than 16" intervals, and routed so as not to interfere with maintenance and servicing of the truck components and its assemblies. All hoses/pipe shall be routed away from and protected from engine and exhaust heat. All hydraulic hoses wear points shall be protected with a plastic or rubber wrap. Heavy-duty vibration dampening clamps such as the 2,000 PSI series clamps from McMaster-Carr shall be used. The clamp anchor plate must have a standard bolt and nut attachment to the bracket. It cannot be a welded bolt and nut. The bolt shall be of sufficient length that 1/16" of thread is showing when securely fastened. VTrans must approve routing of all hoses.

6.8. The oil reservoir shall be mounted on the LH side (driver's) of the hydraulic valve cabinet mounted on the RH side (passenger), incorporated into the rear wing tower assembly, and have sufficient size to dissipate the system heat buildup. In no case shall it be less than 30 gallons. The top of the reservoir shall be angled to shed water and debris. The reservoir shall be equipped with a 10-micron filter, appropriate for an electric/hydraulic system, with a minimum flow capacity of 34 GPM. The pump supply line shall have a 2" ID, full flow ball valve, installed near the tank as for maintenance or emergency shut-off. Valve shall be readily accessible without removal of the access panel. The hydraulic oil return manifold shall have an adequate number of ports for: all body functions, materials conveyor and spinner, pre-wet pump, and anti-ice pump. The tank shall have an unbreakable sight gauge conveniently located for operator to check the fluid level. The system shall be filled with UTF hydraulic oil. The reservoir shall have a magnetic drain plug. All ball valves shall be in the open position when the handle is in line with the hose/pipe and positioned to provide easy access.

6.9. The truck shall be plumbed for the installation of materials spreader and body. This involves running five ½" ID feedlines for the body hoist, tilt cylinders (if required), and spreader (4 - ½' ID feed/return lines for tilt cylinders and spreader) to a point 16" short of the body hinge. Double flare the ends of the pipe to receive JIC fittings. Consult VTrans for location, type of mounting brackets, and length of stainless-steel pipes shall not be greater than 36" intervals and routed so as not to interfere with maintenance and servicing of the truck components and its assemblies.

6.10. All hydraulic lines running parallel to the truck frame shall be stainless steel pipe of the proper size and rating for the function. Each end of the stainless piping shall have a double flare that will accept a 37-degree JIC male stainless-steel fitting(s).

7. JOYSTICK CONTROLS:

7.1. Valves shall be operated by one or two proportional, two-axis joy sticks. Joysticks shall be momentary function, not latched. Lever(s) must be able to control two proportional valve functions simultaneously. The switch that operates the spinner reversing valve shall be in the arm rest.

7.2. Joysticks shall be in an arm rest style mount, connected to the floor. The arm rest controls and connections shall be reinforced and sufficiently strong to not break under load.

7.3. Any wire passage points into the cab shall be sealed, either by a bulkhead connector or silicone. Any outside connections shall be fully sealed from the weather and protected from corrosion with di-electric grease.

7.4. The joy sticks shall perform the same functions in each truck.

8. SPREADER CONTROL SYSTEM:

8.1. The spreader control system shall be a four-channel system: controlling spinner, bed chain, pre-wet, and single boom anti-ice function. Each function shall operate individually or simultaneously without additional controller hardware. The valves shall be electrically operated and mounted as part of the valve body for the other hydraulic functions.

8.2. Spreader control system shall be capable of ground speed orientated closed or open loop operation. Controller shall be capable of spreading in lbs/mile (linear spreading) or lbs/lane mile (area spreading). System shall display current liquid volume in tank while pre-wet and/or anti-ice system is active. The system controller shall be capable of managing a single anti-ice boom operation with individual boom selection in a single arrangement.

8.3. Provide and install a gate height sensor on the material discharge gate. Connect the sensor to the spreader control system. If possible, gate height information shall be output to the AVL.

8.4. Spreader control shall have “blast” and “pass” modes.

8.5. Spreader controller shall have a minimum 7” Color LCD display. Controls shall be operated by paddle or button style keypad (not a touch screen). Display shall be mounted on an adjustable swivel bracket. Display shall be capable of simultaneous display of granular, pre-wet, and anti-ice application rates. Display shall also show sensors (Temp, GPS, etc) as well as actual ground speed and all active alarms.

8.6. The ground speed control units shall be programmed with basic constants for speed, salt, sand, pre-wet and anti-ice (if applicable). The control head shall be mounted near the dash in a position easily accessible and visible to the driver. VTrans must approve the mounting location.

8.7. Spreader controller must provide on-screen help for all main operating functions as well as on screen diagnostics for system issues. On-screen help shall be sufficient to enable users to operate the system by following the on-screen instructions, without referring to the printed operations manual.

8.8. The spreader controller shall be capable of collecting and storing time, date, and location stamped events for all operating modes, errors, and alarms, and for all material dispensed. Also, the system shall be capable of recording digital or analog data that comes from up to 4 sensors (such as granular hopper level, gate height opening, granular material flow, plow position, hydraulic pressure, etc). The spreader control system shall be capable of collecting and storing position data directly from a compatible GPS

antenna without additional hardware as well as collecting and storing temperature from a vehicle mounted temperature sensors.

8.9. Provide an install AVL system available through Advanced Asset Tracking to include plow up switch which shall be mounted on the plow frame; location to be approved by VTRANS Central Garage. Spreader control system shall be able to output its data in a standard serial data stream format to supplied AVL system.

9. PRE-WET / ANTI-ICE, AND PRE-WET ONLY LIQUID SYSTEMS: Routing of plumbing and some design details may be addresses cooperatively during the prototype process.

9.1. **PRE-WET ONLY SYSTEM:**

9.1.1. Provide a 300-gallon stainless steel liquid tank, installed in the body, for pre-wet of the material at the spinner. See attached Appendix 2 for tanks dimensions and design details. The brine tanks shall be mounted in the truck body and move with the inner body.

9.1.2. The tank outlet shall be located on the bottom of the tank, close to the headboard of the body. A hole shall be provided in the floor of the body for the fitting in the bottom of the tank.

9.1.3. A plate shall be provided that will bolt in and cover the hole for summer operations.

9.1.4. A 3/4" inch flexible Tigerflex BW hose with Banjo brand connector and ball valve shall run from the tank, under the body to the hinge point, and return up the frame to the brine pump.

9.1.5. A sealed cabinet to house the strainer, hydraulic drive pump, liquid pump, and related hydraulic components, shall be provided. It must be easily opened for maintenance and repairs. Cabinet may be mounted to truck frame or wing armature and will stay on the truck. Location shall be approved by Central Garage. Hydraulic fittings exiting the cabinet shall be bulkhead connections; brine hoses can pass through holes with grommets.

9.1.6. A ¾" T strainer, 50 mesh with 16 GPM flow (Dultmeier PT# SS122-3/4PP) or equivalent shall be attached inside the stainless-steel cabinet before brine enters the pump.

9.1.7. An electric MP pump (part number MP34141) shall be provided. Electric pump output shall be controlled by the spreader control system. A Sea Metrics (part number SPX-075-267) flow meter will be incorporated into the system to feed input data to the sander control. Installation location shall be in the hydraulic enclosure near the hydraulic valve section with the orientation of the pump to have the motor portion above the pump. Installation shall include camlock fittings on both the pressure and supply side.

9.1.8. A manual ¾" ball valve shall be positioned in a convenient, easy access location outside the hydraulic valve enclosure to stop the flow before the filter strainer and high-pressure pump.

9.1.9. A ½" hose, soft PVC hose with polyester yarn reinforced (minimum) to a single (Delavan Type "F" flooding nozzle, PT# F30NY Green) shall be provided, mounted in a location TBD at time of build. Provide caps and plugs for all connections.

9.1.10. A ¾" transparent, flexible hose shall be plumbed into the two-inch supply line and be run up the front of and fastened to the headboard. Self-tapping are not acceptable. This shall be a sight gauge for the tank.

9.1.11. The tank shall have a 2" vent in the top and installed in the front of the tank closest to the headboard. The fill port for the brine tank shall be 2" male quick disconnects with a 2" ball valve, angled to the outside of the truck for easy access.

9.1.12. The application rates for salt, sand, and pre-wet will be controlled by the ground speed control unit.

9.1.13. A quick connect will be provided between the tank and chassis to allow the tank to be removed in the summer. A shut-off valve will be installed between the tank and the chassis quick connect to permit flushing the system without draining the tank.

9.1.14. All poly pipe fittings will be schedule 80 or better.

9.1.15. A 5lb check valve, non-adjustable, will be installed near the spinner to prevent the siphoning of the material hose. The discharge hose will have a quick connect, at or near the spinner, to accommodate spinner removal for summer use. A bleed valve shall be installed before the 5lb check valve for system bleeding.

9.2. **ANTI-ICE / PRE-WET SYSTEM:**

9.2.1. Provide a 600-gallon stainless steel liquid tank on single-axle trucks ***(1200 gallons on tandem-axle trucks)***. See attached Appendix 2 for tanks dimensions and design details. The brine tanks shall be mounted in the truck body and move with the body. This system will provide pre-wet of solid material at the spinner (as described above) **and** the application of liquids alone from a spray bar at the rear of the truck. All elements described above for the pre-wet only system shall be included, as well as the following features to allow the application of liquids from a rear spray bar.

9.2.2. In addition to the pump and plumbing required for the pre-wet function, provide a hydraulically driven anti-ice pump (Hypro model 9303C-HM1) mounted inside the frame rail. The hydraulic anti-ice motor will be operated by the ice control system through an electric/hydraulic valve located in the main valve section. Both the pre-wet and anti-ice pumps shall have dedicated hydraulic circuits, do not use waste oil to run these circuits. Location of motor/pump assembly will be approved by Central Garage.

9.2.3. The tank shall have a 2" vent in the top and installed in the front of the tank closest to the headboard. The fill port for the brine tank will be a 2" hose run down the outside of the body so to fill from ground level. There shall be a 2" gate valve with a 2" male quick-connect securely mounted to the body for easy fill access.

9.2.4. The tank outlet shall be located to the front of the body so not to get frozen with slush from the tires. A 1-1/2" supply to the ant-ice pump shall be run so that the body can be fully dumped without disconnecting any hoses.

9.2.5. Liquid supply for the pre-wet system shall be pulled from the 1-1/2" main line before the anti-ice pump.

9.2.6. A 1-1/2" inline strainer (Banjo PT # LST1530) with 30 mesh shall be supplied and secured in a accessible location before brine is run into the anti-ice pump.

9.2.7. Exiting the anti-ice pump, a 1-1/4" hose shall run to an electric ball valve (TeeJet 346BEC 1¼ shutoff ball valve), which shall be controlled by the spreader control system.

9.2.8. A 1-1/4" hose shall run to a quick disconnect fitting located at the rear hitch plate area to permit the removal of the spray bar.

9.2.9. The spray bar shall consist of 5 (Delavan Type "F" flooding nozzle, PT# F30NY Green)) plumbed with ¾" hose to a T or manifold to the 1-1/4" hose. The lightweight steel construction for the spray bar will be adjustable up and down within a 12" max height from ground level and in and out without cutting or welding. The spray bar will be frame mounted (not body mounted) and be flexible from truck frame outward to withstand reversing damage. A 5lb check valve shall be installed on the spray alongside the 3-way ball valve to relive air pressure for proper calibration. VTRANS to supply pictures for mounting and installation.

9.2.10. All hoses for the ant-ice system will be Tigerflex BW hose or better.

9.2.11. The control system must have the ability to turn off the solid salt application and just apply liquid for anti-icing applications metered in (gals/mile), as well as a pre-wetting application where solid salt is coated with brine at the material chute, metered in (gals/ton).

9.2.12. Provide a Micro Trax flow meter (part number 14829) for the anti-ice circuit. The system controller shall be capable of operating each of its functions in closed or open loop modes.

9.2.13. The system controller shall display current liquid volume in the tank while pre-wet and/or anti-ice system is active.

10. BODY:

10.1. Body floor, conveyor floor, and conveyor cover shall be 1/4" minimum AR 450 steel. The sides, headboard, and tailgate shall be 3/16" Corten, minimum 75,000 PSI steel. Cross members shall be "C" or "I" cross section, no tubular sections permitted. The conveyor cover shall be no less than two pieces for ease in raising and lowering**.** Provide latch to hold conveyer doors open.

10.2. Rear corner posts shall be open and accessible for cleaning and maintenance.

10.3. Shop drawings shall be provided to VTrans Central Garage within 60 days of award of order.

10.4. The top of the body sides, and the top of the tailgate, shall be manufactured to have a sloping surface. This is to prevent material from sitting on a flat surface and possibly coming off in traffic.

10.5. **TILTING INNER BODY:**

10.5.1. Adjustable high temperature body wipers shall be used to withstand damage when hauling hot mix with side dump bodies. Must withstand temperatures of 350 degrees F.

10.5.2. The tilting inner body shall be operated by two or more hydraulic cylinders that are connected in parallel. Series connection is NOT acceptable.

10.5.3. Inner body cross members shall be "C" or "I" cross section, no tubular sections permitted.

10.6. **"SUPER TANKER" STYLE BODY:**

10.6.1. With the addition of salt brine to the State's winter maintenance tools, there is a need for a different style body. VTrans typically refers to this new body as a "super tanker", as it has a large stainless-steel tank inside the body. The super tanker body shall be identical in construction to the all-season body (quality of materials & workmanship), but without the tilting inner body. The conveyor, adjustable gate, and the spinner shall remain as part of the installation. The conveyor shall be built into the stationary floor. The hinges and inner body lift cylinders can be eliminated.

11. BODY SIZE:

11.1. 5-7 CY: The inside body dimension shall be approximately 10' x 7' x 2' on 43,000# GVWR single axle trucks.

11.2. 11-15 CY: The inside dimension shall be approximately 14' x 7' x 3' on 60,000# GVWR tandem axle trucks.

12. BODY LIGHTING:

12.1. The rear corner posts shall incorporate the State of Vermont lighting system Whelen part number VTSYSLSR. The system requires two rear facing openings lined up vertically on the rear face of the post. A marker light shall be incorporated into the apron and set at a 45-degree angle to function as both a rear and side marker light.

12.2. Rear Amber strobes shall be programmed to turn off rear strobe associated with the same turn signal when engaged.

12.3. Cab protector Whelen strobes Micro 400 shall be mounted on the left and right hand outside corner so that the top of the strobe assembly is flush with the top of the cab protector. Wiring shall be run underneath the cab protector and in proper loom. Cab protector mounting bracket may need to be fabricated, provide, and install.

12.4. Holes shall be installed on the rear apron of the body for three flush mounted group identification lights. The three holes shall be 2-25/32" in diameter and spaced 6" on-center apart in the center of the apron. The grommets for the group identification and rear side marker lights shall have an enclosed back and shall be installed so the hole to pass the wires in and out is in the 6 o'clock position. Extra dielectric grease shall be added around the connector on each of the marker lights, after the light has been plugged in.

12.5. The front marker shall be an amber DOT approved light, with required, premade wire harness.

12.6. Each truck shall be equipped with a ¾" pintle plate. A license plate bracket consisting of a 1"x1"x1/8" angle shall be installed flush with the top of the pintle plate and positioned to fit and center the State of Vermont license plate between the frame rails. The license plate light and bracket shall be installed above and centered on the license plate.

12.7. An LED sanding light, conveyor discharge light, wing light and anti-ice spray bar light (if equipped with anti-ice) shall be installed in the locations designated during the design process. All LED white lights to be Maxxima MWL-19-A

12.8. The VTSYSLSR is a complete and comprehensive warning light system that contains front, rear and side facing warning lights, brake/taillights, back-up lights and all cabling, connectors, harnesses, and flashers to function as an SAE legal warning system, when properly installed and programmed.

12.9. The following requirements shall be met to ensure that the system is properly installed.

12.9.1. The front light assemblies, 3-light Micro 400's, shall installed to the correct sides of the cab shield. The attached 60' TPR oil resistant cable and waterproof connectors shall be used and routed in a method that prevents chaffing or cable breaks and terminates to its respective terminals in the cab behind the passenger side seat electronics area.

12.9.2. The rear light housings shall be welded vertically into the rear corner post of the dump body as vertical as possible for proper legal light output. The topmost light shall be the amber warning flasher. The middle position shall be the white back-up lamp. The bottom position shall be the brake/tail lamp. The 5/C 18 ga TPR cable and waterproof connectors for the brake/tail and back-up lamps shall be used and routed in a method that prevents chaffing or cable breaks and terminates to its respective terminals in the cab behind the passenger side seat electronics area. The 2/C 14 ga TPR cable and waterproof connectors for the rear warning lights shall be used and routed in a method that prevents chaffing or cable breaks and terminates to its respective terminals in the cab behind the passenger side seat electronics area. All components of the supplied cable installation kit, including flex tubing, strain reliefs, sealed fuse holder(s) and waterproof connectors shall be installed as designed by the system manufacturer.

12.9.3. All components of the rear heated lens system including the diagnostic indicator, thermostat and rear defroster shall be installed as designed by the system manufacturer.

12.9.4. The warning system ambient light sensor shall be installed on the inside of the cab toward the base of the passenger side 'A' pillar where it will have adequate sensing of outside ambient light. This shall be connected to an input on the Cencom Core control system. Dash mounted warning light activation switches shall be connected to inputs on the Cencom Core control system. Vehicle 'park' or 'parking brake' signal shall be connected to an input on the Cencom Core control system. Vehicle service brake input for the rear brake lights shall be connected to an input on the Cencom Core control system.

13. LADDER:

13.1. A folding steel ladder shall be installed on the body. Position to be cooperatively determined during the design process but shall be opposite the brine tank. The lower step shall not be more than 18" above the ground. The ladder shall not contact the rear tires. The second step shall be approximately ½ the distance to the lower edge of the body. A grab handle shall be added to the outside of the headboard (on the same side as the ladder) to assist the operator to safely enter and exit the bump body. One step, at least 4" deep, shall be built into the body just above the lower rub rail. It shall be made of expanded metal or other open grated metal to shed ice and snow. Grab handles shall be positioned for "three point" entry and exit.

13.2. Inside the body, on the ladder side, a step shall be installed. It shall be high enough as to not interfere with the conveyor doors when in the upright position. A grab handle shall be placed on the body for "three point" entry and exit, position to be determined during installation of prototype.

14. HOIST:

14.1. A front mounted telescopic double acting hoist ***(single acting on tandem-axle trucks)***, Mailhot model G4 90-4.25-3DA/ ***(G4 130-5-3 on tandem-axle trucks)*** with trunion on the base tube and trunion on the cover shall be connected into the hydraulic system. Hoist rods and tube shall be Nitrided. Allowable working pressure shall be approximately 3000 PSI. Hoist shall be rated at 24-Ton ***(30-Ton on tandem-axle trucks)*** minimum. It shall be capable of providing a dump angle of 50 degrees. Or current model Mailhot part number equivalent

14.2. One (1) spare hoist cylinder of each type shall be provided with the order of trucks. The spare cylinders shall be delivered to the Berlin location with the first truck.

14.3. All chassis mounted hydraulic lines shall be an appropriately sized stainless-steel pipe running the length of the body with female JIC to female JIC swivel fittings on both ends. The pipe will be mounted to the inside of the right longitudinal member.

14.4. Safety props shall be provided for working under the body when raised in either the normal dump position, or when the side tilt is raised. The prop shall be engineered to support a full body. The body prop shall be installed on the discharge side on all bodies. Body prop shall be armature mounted, and passively swing back to contact the long sill. The prop and the receiver shall be self-centering for one person operation. Pin style safety supports are an acceptable alternative to a prop, provided they are engineered to meet the same performance standards.

14.5. The trunion blocks shall have remote grease fittings to allow the operator to service them without raising the body.

15. CAB PROTECTOR:

15.1. The cab protector shall be fully reinforced and braced for severe service and shall extend a minimum of 24" from the headboard. The bottom of the cab protector shall be positioned at least 3" above the truck cab, but in no case be less than 70" from the truck frame.

16. CONSPICUITY PANEL:

16.1. Provide a separate quote to include installation of a highly reflective, checkboard red/white conspicuity panel sized to cover the back tailgate and not impede any safety lighting.

16.2. Provide conspicuity panel shop drawings, as soon as possible prior to assembly of bodies, that show how panel will be mounted to the tail gate. Any panel mounting brackets shall be installed on each tailgate prior to painting, regardless of how many conspicuity panels are ordered.

16.3. Panel shall be removable for summertime use.

16.4. Panel shall include an amber traffic advisor, (Whelen Part # - TAC8), mounted across the top center of the panel.

16.4.1. Lighting wiring shall be routed to protect the connectors and have a connector cover for summertime removal. Switch shall be in the dash or arm rest control panel, to provide separate functionality from the chassis safety lighting. Location of connectors and switch to be determined with VTrans Central Garage during prototype build.

16.5. Conspicuity panel shall be constructed of a lightweight durable, aluminum or stainless steel, material designed to withstand removal and reinstallation for the life of the truck. Provide and install an air foil that will direct air down across the reflective surface of the panel to help the surface free of snow build up.

17. TAILGATE:

17.1. Tailgate and tailgate hardware shall be designed so that when the gate is in the horizontal position it is level with the body floor. Hardware shall be designed and positioned so that the gate side-shift in the open position will not allow a pin to drop out of the latching mechanism. The pins for securing the top of the gate shall be machined for ease of installation/removal and the hinge shall have grease fittings and shall be lubed before delivery.

17.2. The tailgate shall be removable and have grade 70 spreader chains (3/8" minimum, larger if necessary to safely support the tailgate). The chain shall be removable and partially enclosed by a 3' long section of plastic "mesh type" chain guard. The chain shall be of sufficient length so that there will be at least six extra links when the gate is in the horizontal position. Hooks shall be provided on the inner edge of the intermediate tailgate posts to store the chain while it is installed. The manufacturer's standard spreader chain eye/hook shall be provided on the body corner posts.

17.3. The tailgate shall have a fully adjustable gate lock control linkage. A double-acting air cylinder mounted in the center of the frame rails shall operate the gate. The cylinder shall be mounted on an adjustable yoke so that the piston rod is fully retracted when the over center latching system is in the lock (closed) position. The air system will be provided by the truck contractor with sufficient hose to reach the cylinders, and an in-dash switch to operate the gate.

17.4. A 6" wide (horizontal width), and 15-degree minimum pitch body apron and mounting hardware shall be installed. The apron shall be bolted on with a minimum of (6) grade 8 bolts and shall be adequately sized.

17.5. Provide for one coal door in the center panel of the tailgate. The PO will indicate the number of trucks requiring a coal door. The handle for opening and closing the door shall be designed so that the end can be gripped by the operator's full hand when wearing gloves and be opened from the LH (drivers) side of the tailgate to provide the driver visual contact of the person operating the coal door. Provide coal door plug if required.

18. BODY COVER:

18.1. An electrically operated, materials covering system with Donovan Bullet series aluminum arms shall be installed on the cab protector. Provide tarp bearings with grease fittings. The controls shall be wired through the remote power module and operated by the designated rocker switch that is installed by the chassis provider. Locate the tarp relay so that it is protected from corrosive road spray. The tarp shall be made of a material suitable for use with hot mix asphalt, gravel, and salt, and shall have 30-degree tarp arms to keep the arms out of the loading area. A minimum of 3 ***(4 on tandem-axle trucks)***

tie down brackets shall be provided on the upper part of the body on each side. Allen bolts shall be installed flush in the ladder side tarp arm, so the operators do not catch their clothing on the bolts.

18.2. Air deflector shall be bolted to the front of the cab protector. Self-tappers not acceptable.

18.3. Provide a remote grease line and fitting, accessible at ground level on the right front of the body.

19. TOOL RACK:

19.1. Two tool racks shall be installed on the front of the body on the opposite side of the wing for two shovels. The position of the tool racks shall be cooperatively determined during the design process. Provide drawings of brackets with the shop drawings.

20. TOOLBOX:

20.1. A stainless-steel toolbox shall be mounted on the wing side of the body in front of the mud flap. Mount toolbox to armature bracing. May be truck frame mounted if there is room. Approximate size of the box will be 30" w X 18"h X 18" d. "T" handles or paddle type door latch. All boxes in this order must be keyed the same. Bawer Part #TU822505.

21. **CONVEYOR:**

21.1. The conveyor chain shall be a heavy-duty, 667K size, 53 links per 10-foot section with a minimum 3000-pound working capacity, self-cleaning pintle type (with flighting every link). Replacement chain supplied to VTRANS Central Garage shall be 667K size with flight every link. If it is standard production to have the internal chain links covered leaving only the flight exposed, it shall be provided.

21.2. One (1) spare complete bed chain of each type shall be provided with the order of trucks. The spare chains shall be delivered to the Berlin location with the first truck.

21.3. The conveyor door opening shall be a minimum of 10" high and have the controls positioned for safe easy operation from the side of the truck. A gauge and pointer shall be installed on the headboard showing the number of inches of door opening.

21.4. Remote lubrication points shall be provided for all conveyor carrier bearings and shall be located on the conveyor side of the body. Conveyor chain adjustments shall be by the lubrication method, grease fitting line on the bearing shall be long enough to support the full stroke of the cylinder adjustment, but do not require remotes.

21.5. The conveyor gearbox or drive motor shall have a rate sensor.

22. **SPINNER:**

22.1. A six vane 17" diameter minimum polyurethane spinner disk shall be provided opposite of the wing side. A spinner deflector shall be provided to control the spreading pattern. Mounting brackets shall allow for adjustment of the spinner height. The direction of spread off the spinner shall be to the outside side of the truck on the side the spinner is mounted**.** The spinner shall be tested after installation and painting to ensure that it is easily and fully adjustable.

22.2. A bracket shall be attached to the frame near the spinner location. Nipples shall be welded to the bracket and sized to feed and return the spinner oil. Female JIC swivels shall be attached on both sides. The spinner motor shall have female JIC swivels attached. Spinner hoses shall have male JIC fittings on both ends, long enough to allow them to be reconnected to the motor or bracket when the spinner is removed during summer.

22.3. Install an electrically actuated spinner reversing remote valve. The valve shall be installed in the feed and return lines to allow the operator to change spinner rotation, with a switch, from the armrest controls. The valve location shall be determined during the design process. Wiring shall be provided by chassis supplier. Valve shall be provided by contractor. Valve shall be mounted inside the hydraulic cabinet. Relays for operational control are not acceptable.

23. **CHUTE:**

23.1. **Provide an optional quote** for a heavy-duty pivoting and adjustable polyethylene-covered steel chute for shoulder work. It will be a minimum 6' in length and may be sectional.

24. MOUNTING:

24.1. The body hinge shall be a Lessard 24 ton or equal. Nitrided pins are preferred.

25. CENTRAL LUBRICATION SYSTEM:

25.1. All points on the body requiring lubrication, shall have remote lube points except for the conveyor chain adjusting cylinders. All grease fittings shall be fully greased prior to delivery, so that grease is visible at the termination point of the line. Three central lubrication points shall be used for the body: one on the conveyor discharge box for the cylinder, trunion (upper), body cylinder collar and conveyor bearing; one at the front; and one at the rear of the body. The lubrication points may be recess mounted in the body side rub rail or in a plate below the rail. These are to lubricate the body and conveyor grease points, which are not accessible without raising or tilting the body components. A fourth remote lubrication point shall be provided on the rear armature, near wing post, for lubricating the base of the body hoist cylinder. Grease lines from the central lube points to the grease point shall be the shortest run possible and shall be Gates ¼" diameter 4M2T Megaflex SAE100R16 hose. The hose shall have a working pressure of 5,000 PSI minimum and burst strength of 20,000 PSI. Hose ends shall be Gates male pipe thread with 30-degree cone seat, female swivel fittings at the pivot points and central lube block(s). The remote lubrication points shall be sequenced the same on all trucks. Contractor shall provide a diagram showing the lubrication points on the body and plow systems.

25.2. Tarp bearing shall have a remote grease line and fitting, accessible at ground level on the right front of the body.

26. MUD FLAPS/WHEEL COVER:

26.1. Four mud flaps, 24"x 30", shall be attached to the body in front of and to the rear of the truck tires. The front flaps shall have anti-sail brackets and the rear flaps will have tie-up chains or hooks to hold them up in paving operations. The flaps shall be plain black color, no advertising.

26.2. Two additional mud flaps shall be installed, extending 15" inward from the outside of the frame rails toward the driveshaft to deflect spreader material away from the rear axle and brakes. No anti-sail brackets required.

On tilting inner body trucks., a removable polyethylene wheel fender shall be installed on both sides of the body to cover the rear tires, single axle, or dual axle. Mount fenders to the bottom of the body.

27. TRAILER HITCH:

27.1. HITCH WITHOUT AIR-TO-REAR:

27.1.1. On trucks without air-to-rear, provide a ¾" steel plate welded to the truck frame. It shall be full frame width, below the body hinge, and extend 6" below the frame. A license plate bracket consisting of a 1"x1"x1/8" angle shall be installed flush with the top of the pintle plate and positioned to fit and center the license plate between the frame rails. A class IV "Reese" type receiver tube, 18,000 pound, 2-½" square, shall be installed 28" on-center, from the ground and centered between the frame rails. Receiver tube shall be welded to the hitch plate with the retainer pin hole no more than 1" from the rear face of the hitch plate (looking at the hitch plate). Gussets shall be installed top and bottom of receiver tube and rear of plate (rear being the surface of the plate between the frame rails). The license plate light and bracket shall be installed above and centered over the license plate. Contractor shall provide the RV style connector and required wiring. It shall be installed to the left (driver's side) near the top of the hitch plate.

27.1.2. Two "D" rings, 6130-pound capacity, Buyer's part number B40, shall be mounted on the hitch plate. They shall be at the height of the receiver tube, spaced 7" from the tube center to the "D" ring center, on either side of receiver tube.

27.1.3. Install and add protective coating/covering to the connections at both ends of the trailer plug.

27.2. HITCH WITH AIR-TO-REAR:

27.2.1. On trucks with air-to-rear, provide a ¾" steel plate welded to the truck frame. It shall be full frame width, below the body hinge, and extend 6" below the frame. It shall be sufficiently reinforced to the frame to handle pulling a 30-ton load. A license plate bracket consisting of a 1"x1"x1/8" angle shall be installed flush with the top of the pintle plate and positioned to fit and center the license plate between the frame rails. The license plate light and bracket shall be installed above and centered on the license plate.

27.2.2. A 30-ton capacity, pivoting, Wallace Forge, part number 2050107, pintle hook shall be centered between the truck frame rails and positioned at a height of 28" on center above the ground, taking into consideration spring deflection caused by full body weight. The lower part of the steel plate shall not extend any further below the pintle hook than is necessary to provide the required support.

27.2.3. Two "D" rings shall be mounted, one each side of the pintle hook, for the trailer safety chains. Buyers part number B48 with 15,000-pound drawbar pull capacity.

27.2.4. The trailer air lines, and glad hands, part number 12-308 & 12-306 or equivalent with shut off, shall be attached, one each side, to the outside edge of the frame rails. Emergency – red on the driver's side and supply – blue on the passenger's side. They are to be set back on the frame, with cover installed, so that they are easily accessible but will not interfere with the operation of the body and will not be damaged or broken when the truck is backed into asphalt pavers. Location shall be approved by VTrans Central Garage.

27.2.5. Provide a seven (7) RV connector and mount in the hitch plate. A standard seven (7) pole round connector (supplied with chassis), shall also be mounted in the hitch plate. The RV on the far left and the seven (7) pole connector to the right of the RV connector as designated by VTrans Central Garage.

27.2.6. Apply dielectric grease to the pins of both trailer plugs mounted in the hitch plate.

28. PAINT:

28.1. Bodies shall be media blasted, primed with a zinc primer, further primed with an epoxy primer, including interior of the rear corner posts, baked at the primer stage, and painted with DuPont Imron, orange to match cab, and baked again. Total thickness, primer, and paint shall be no less than 8 ML dry.

28.2. All processes to be completed in a temperature controlled, low humidity level contained inside booth.

28.3. There shall be no grinding or welding of the painted body --- only "bolt-on" components shall be added after the painting process is complete.

28.4. All other components shall be sand or shot blasted, primed with an epoxy primer, and painted with rust-resistant paint. Plow and wing moldboards shall be orange to match body color; all other components shall be black.

28.5. All paint shall be 100% lead free.

29. LIGHTS AND ACCESSORIES INSTALLATION:

29.1. The following lights and accessory equipment shall be installed by the contractor. Mounting locations shall be approved by VTrans during assembly of the prototype body. All materials shall be provided by the contractor unless specifically identified in the specifications as provided by VTrans. All make/model/part# descriptions are NO SUBSTITUTE. All special materials are identified in paragraph D. All connections shall be soldered and heat-shrunk unless otherwise stated. Rotanium adhesive filled 5-2-1 heat shrink tubing or acceptable equal. "Scotch Locs" are not acceptable.

29.2. Install all marker, stop/tail/directional, backup lights, rear corner, rear facing LED strobe, sander, conveyor discharge, wing lights, and spray bar lights in accordance with VTrans wiring instructions**.**

29.3. Install 2" wide red/white DOT-C2 reflective tape the length of the lower rail on both sides; upper and lower edges of the tailgate; and the vertical posts of the tailgate.

29.4. One conveyor discharge light, one sander light and one wing light with 4-way adjustment, Maxima MWL-19-A, and cable to run length of body to hinge point plus extra to make connection in a Truck-lite junction box.

29.5. One spray bar light, with 4-way adjustment, Maxima MWL-19-A, for trucks with anti-ice system.

29.6. The following Truck-Lite wire harnesses and lights shall be used for all body marker, stop/tail/directional, and backup lights:

29.6.1. Two DOT approved AMBER lights for front of rub rail (appropriate harness)

29.7. One 80990 Truck-Lite LED heated plow light set. Headlight connections shall be di-electric greased and enclosed in heat shrink material. Any slack wires shall be secured to the head frame. Install ¼" bolt to "pinch" metal framework around headlight to secure light from rotating in housing.

30. **MANUALS:**

30.1. One part manual on USB flash drive shall be provided covering all the bodies ordered under this contract. Ten paper parts manuals shall also be provided. The manuals are to be delivered to VTrans Central Garage prior to invoicing for the first completed vehicle.

31. INSPECTION AND DELIVERY:

31.1. Vehicles shall be available for inspection throughout the build process, arranged cooperatively by the Vtrans and the contractor. If out-of-state travel is required, the contractor shall cover any reasonable travel costs incurred for up to three VTrans staff.

31.2. All vehicles shall have the plow and wing installed to check for proper fit and be run through all functions with the plow and wing on. The systems shall be checked for leaks. The fluid levels of all trucks shall be adjusted to ½ to ¾ full on the sight gauge.

31.3. Provisions shall be made for a pre-delivery inspection of groups of five (5) vehicles, at the contractor's local site. The contractor shall supply an indoor, heated, and lighted bay for this inspection. Defects will be identified and corrected prior to delivery.

31.4. Trucks shall be delivered to the VTrans Central Garage in Berlin, VT, or to another VTrans facility.

31.5. It is expected that the first chassis will be available to the contractor within (60) sixty days after award and all subsequent chassis on a regular schedule to be determined at time of award. The complete plow and body upfit systems described herein are expected to be completed within a (30) thirty-day window after receipt at the upfit contractor.

32. OPTIONS:

32.1. **UNDERCOAT/ SEAM SEALANT:**

32.1.1. The underside of the body, and the inside of the rear corner posts, shall be undercoated with a Rino-Coat Truck bed liner or approved equivalent. All open seams under the body shall be sealed with seam sealant prior to priming to reduce corrosion. A five-year warranty on both materials and application shall be provided. Periodic touch-up may be required to maintain the warranty. A copy of the warranty shall be provided.

ATTACHMENT B – PAYMENT PROVISIONS

The maximum dollar amount payable under this contract is not intended as any form of a guaranteed amount. The Contractor will be paid for products actually delivered or performed, as specified in Attachment A, up to the maximum allowable amount specified on page 1 of this contract.

1. Prior to commencement of work and release of any payments, Contractor shall submit to the State:
    a. a certificate of insurance consistent with the requirements set forth in Attachment C, Section 8 (Insurance), and with any additional requirements for insurance as may be set forth elsewhere in this contract; and
2. Payment terms are **Net 30** days from the date the State receives an error-free invoice with all necessary and complete supporting documentation.
3. All invoices are to be rendered by the Contractor on the contractors standard billhead and forwarded directly to the institution or agency ordering materials and shall specify the address to which payments will be sent.

4. **PRICING:**
    a. <u>Snowplow and Spreader Bodies for 43,000 and 60,000 GVWR Trucks</u>
        i. Snowplow body and spreader system for 43,000 GVWR cab and chassis base package – Viking PLST10' controls Rexroth - **$65,586.00**
        ii. Snowplow body and spreader system for 60,000 GVWR cab and chassis base package – Viking PLST10' controls Rexroth - **$70,029.00**

    b. <u>Plows</u>
        i. One-way full trip design plow Viking 265445 -**$6,631.00**
        ii. One-way trip edge design plow Viking 3153TE - **$5,952.00**
        iii. Reversible plow flex design Viking PRR3151FL - **$10,388.00**
        iv. Reversible one-way barrel plow Viking PRR3153TE - **$12,376.00**

    c. <u>Wings</u>
        i. 10-foot mold board wing left hand right or dual hand Viking H1059V/1011W4D - **$9,437.00**
        ii. 11-foot mold board wing left hand right or dual hand Viking H1059V/1112W4D - **$9,558.00**

    d. <u>Hitch</u>
        i. Front plow hitch left-hand and right-hand Viking PT - **$7,173.00**

    e. <u>Wing Tower</u>
        i. Front wing tower left hand and right-hand Viking FAH48 - **$5,174.00**

f. Options

i. The underside of the body, and the inside of the rear corner posts, shall be undercoated with a Rino-Coat Truck bed liner or approved equivalent. All open seams under the body shall be sealed with seam sealant prior to priming to reduce corrosion. A five-year warranty on both materials and application shall be provided. Periodic touch-up may be required to maintain the warranty. A copy of the warranty shall be provided. -**$2,727.00**

ii. Wing Tripod - **$455.00**

iii. Dual Wing (Add to Base Hitch Post, and Wing Price) - **$11,612.00**

iv. Cirus w/Danfoss PVG Valve in Lieu of Rexroth - **$4,993.00**

v. Cirus w/Danfoss PVG Hybrid Valve in Lieu of Rexroth - **$4,393.00**

vi. Cirus w/Walvoil DPX Valve in Lieu of Rexroth - **$1,270.00**

vii. Install VAOT Supplied AVL Unit - **$207.00**

viii. Side Dump Body in Lieu of Tanker Body for 43,000 GVWR - **$8,655.00**

ix. Side Dump Body in Lieu of Tanker Body for 60,000 GVWR - **$13,790.00**

x. Tanker Body in Lieu of Tanker Body for 60,000 GVWR - **$4,443.00**

xi. Dual Auger Conveyor in SA Bodies in Lieu of Chain Conveyor - **$5,455.00**

xii. Dual Auger Conveyor in TA Bodies in Lieu of Chain Conveyor - **$6,061.00**

xiii. 300 Gallon Tank Only - **$4,291.00**

xiv. 600 Gallon Tank Only - **$6,619.00**

xv. 1200 Gallon Tank Onlv - **$9,176.00**

xvi. Pre-Wet Svstem (Less Tank) - **$2,958.00**

xvii. Pre-Wet/Anti-Ice System (Less Tank) - **$6,958.00**

xviii. Conspicuity Panel w/Deflector and Whelen TAC8 - **$2,437.00**

xix. Coal Door - **$485.00**

xx. Coal Door Plug - **$182.00**

xxi. Shoulder Chute - **$443.00**

xxii. Air Pintle Plate w/30 Ton Hook Electrical Plugs Glad Hands - **$970.00**

xxiii. No Air Pintle Plate w/Receiver and Plug - **$746.00**

xxiv. Shoes for One-way trip edge design plow Viking 3153TE - **$727.00**

xxv. Shoes for Reversible plow flex design Viking PRR3151FL - **$643.00**

xxvi. Shoes for Reversible one-way barrel plow Viking PRR3153TE - **$643.00**

g. **TRAINING**: - **No Charge for the following training categories:**

i. Training shall be provided as part of a one- or two-day joint session, depending on the number of participants. It shall be conducted for operators and field maintenance personnel on the body/spreader combination. Contractor is responsible for organizing the training, providing knowledgeable instructors, and any training materials/aids.

1. Topics to be covered are:
2. Safety features and safe and proper operation.
3. Lubrication points and frequency. Include a diagram showing locations and frequency.
4. What to look for when inspecting the unit.
5. How to properly calibrate the spreader unit.
6. Adjustment points and proper adjustment. Include a diagram showing both adjustment points and proper adjustment range
7. The above training shall be conducted at the AOT Central Garage complex in Berlin, or at vendors facility, after the Central Garage receives the first completed vehicle, and before the trucks go into service. At least 30 days' notice shall be provided.

h. **PARTS:**

i. Contractor shall provide manufacturer's full catalog of available repair and replacement parts, to include all parts sold by the contractor, whether they be for the equipment awarded under this contract or not. – **List less 10%**

ii. Contractor shall provide all component(s) of combined plow; body; wing; wing tower; or other replaceable components. – **List less 20%**

i. **SERVICE REQUIREMENTS:** Should a Purchasing Entity require parts and/or repair services that are not covered by a warranty, Contractor agrees to furnish such parts and services in accordance with the rate set forth below.

a. Non- Warranty Parts and Repair Services: Contractor shall provide shop labor, for repairs of equipment, that is not covered by the factory warranty. Any discount shall be honored by the contractor for the period of this contract and shall apply to all labor provided by the contractor, whether it be for the equipment awarded under this contract or not. - **$120.00 Per Hour**

5. **DELIVERY**: Contractor shall provide all products F.O.B. delivery to the ordering facility at no additional cost to the State. No request for extra delivery cost will be honored. All equipment shall be delivered assembled, serviced, and ready for immediate use, unless otherwise requested by the State. No charge for packing, shipping, or for any other purpose will be allowed over and above the price quoted.
6. Following complete delivery of the items, each as specified in Attachment A, and the State's written confirmation to the Contractor of the State's acceptance of those items and that training, Contractor will, within 30 business days, invoice the State in accordance with the rates specified in Attachment B.

7. Unless otherwise indicated in a manufacturer's return policy, unopened Products can be returned with no restocking fee up to 30 days from the date of receipt.

8. The State Purchasing Card may be used by State Purchasers for the payment of invoices. Use of the Purchasing Card requires all required documentation applicable to the purchase. The Purchasing Card is a payment mechanism, not a procurement approach and, therefore, does not relieve State Purchasers from adhering to all procurement laws, regulations, policies, procedures, and best practices.

{Remainder of page intentionally left blank}

**ATTACHMENT C: STANDARD STATE PROVISIONS
FOR CONTRACTS AND GRANTS
REVISED DECEMBER 15, 2017**

"Attachment C: Standard State Provisions for Contracts and Grants" (revision version dated December 15, 2017) constitutes part of this Agreement and is hereby incorporated by reference as if fully set forth herein and shall apply to the purchase of all goods and/or services by the State under this Agreement. A copy of this document is available online at: https://bgs.vermont.gov/purchasing-contracting/forms.