

**Department of Administration Purchasing Division** 2019 Washington Street East Post Office Box 50130 Charleston, WV 25305-0130

# State of West Virginia **Master Agreement**

Order Date: 08-01-2024

CORRECT ORDER NUMBER MUST APPEAR ON ALL PACKAGES, INVOICES, AND SHIPPING PAPERS. QUESTIONS CONCERNING THIS ORDER SHOULD BE DIRECTED TO THE DEPARTMENT CONTACT.

| Order Number:         | CMA 0803 0070 DOT2500000004 1                                | Procurement Folder:      | 1376145    |
|-----------------------|--|--------------------------|------------|
| Document Name:        | 66,000 GVWR Tandem Axie Dump Trucks w/plow/spreader/Hyd. sys | Reason for Modification: |            |
| Document Description: | 66,000 GVWR Tandem Axle Dump Trucks w/plow/spreader/Hyd. sys |                          |            |
| Procurement Type:     | Central Master Agreement                                     |                          |            |
| Buyer Name:           |  |                          |            |
| Telephone:            |  |                          |            |
| Email:                |  |                          |            |
| Shipping Method:      | Best Way   | Effective Start Date:    | 2024-08-15 |
| Free on Board:        | FOB Dest, Freight Prepaid                                    | Effective End Date:      | 2025-08-14 |

|       | *************************************** | VENDOR              |               |                  | DEPARTMENT CONTACT    |
|-------|---|---------------------|---------------|------------------|-----------------------|
| Vendo | or Customer Code:                       | 000000200051        |               | Requestor Name:  | Casey M Hamner        |
| MATH  | IENY MOTOR TRUCK                        | CO                  |               | Requestor Phone: | 304-471-0137          |
| 4125  | 1ST AVE                                 |                     |               | Requestor Email: | casey.m.hamner@wv.gov |
| NITRO |   | wv                  | 25143         |                  |                       |
| US    |   |                     |               | Į.               |                       |
| Vendo | or Contact Phone:                       | 999-999-9999 Extens | ion: ;        |                  | 2025                  |
| Disco | ount Details:                           |                     |               |                  | FILE LOCATION         |
|       | Discount Allowed                        | Discount Percentage | Discount Days | _                |                       |
| #1    | No                                      | 0.0000              | 0             |                  |                       |
| #2    | No                                      |                     |               | _                |                       |
| #3    | No                                      |                     |               |                  |                       |
| #4    | No                                      | ·                   |               | - }              |                       |

| INVOICE TO                          |          |                            | SHIP TO                    |  |
|-------------------------------------|----------|----------------------------|----------------------------|--|
| DIVISION OF HIGHWAYS                |          | DIVISION OF HIGHWAYS       |                            |  |
| EQUIPMENT DIVISION RT 33            |          | EQUIPMENT DIVISION         | EQUIPMENT DIVISION         |  |
| 83 BRUSHY ROAD CROSSING, PO BOX 610 |          | 83 BRUSHY FORK RD CROSSING | 83 BRUSHY FORK RD CROSSING |  |
| BUCKHANNON                          | WV 26201 | BUCKHANNON                 | WV 26201                   |  |
| us                                  |          | US                         |                            |  |

8-2-2466

Total Order Amount: Open End

Purchasing Division's File Copy

**PURCHASING DIVISION AUTHORIZATION** 

**ELECTRONIC SIGNATURE ON FILE** 

ATTORNEY GENERAL APPROVAL AS TO FORM

ELECTRONIC SIGNATURE ON

ELECTRONIC SIGNATURE ON FILE

**ENCUMBRANCE CERTIFICATION** 

Date Printed: Aug 1, 2024 Order Number: CMA 0803 0070 DOT2500000004 1

Page: 1

DATE

FORM ID: WV-PRC-CMA-002 2020/01

### **Extended Description:**

The Vendor, Matheny Motor Truck Co., agrees to enter with the West Virginia Department of Transportation (WVDOT), West Virginia Division of Highways (WVDOH), into an open-end contract to provide Tandem Axle Dump Trucks w/plow/spreader/Hyd. System per the Specifications, Terms and Conditions, Bid Requirements, Addendum\_1 dated 04/24/2024. Addendum\_2 dated 05/01/2024, Addendum\_3 05/02/2024, Addendum\_4 05/15/2024 and the Vendor's bid dated 05/23/2024, incorporated herein by reference and made apart hereof.

| Line | Commodity Code | Manufacturer | Model No | Unit         | Unit Price  |
|------|----------------|--------------|----------|--------------|-------------|
| 1    | 25101601       |              |          | EA           | 0.000000    |
|      | Service From   | Service To   |          | Service Cont | ract Amount |
|      |                |              |          | 0.00         |             |

Commodity Line Description:

66,000 GVWR Tandem Axle Dump Trucks w/plow/spreader/Hyd. sys

**Extended Description:** 

66,000 GVWR Tandem Axle Dump Trucks w/plow/spreader/Hyd. system

| Line | Commodity Code | Manufacturer | Model No | Unit        | Unit Price   |
|------|----------------|--------------|----------|-------------|--------------|
| 2    | 25101601       |              |          | EA          | 0.000000     |
|      | Service From   | Service To   |          | Service Con | tract Amount |
|      |                |              |          | 0.00        |              |

**Commodity Line Description:** 

66,000 GVWR Tandem Axle Dump Trucks w/plow/spreader/Hyd. sys

**Extended Description:** 

66,000 GVWR Tandem Axle Dump Trucks w/plow/spreader/Hyd. system and right front wing plow

| Line | Commodity Code | Manufacturer | Model No | Unit        | Unit Price   |
|------|----------------|--------------|----------|-------------|--------------|
| 3    | 25102001       |              |          | EA          | 0.000000     |
|      | Service From   | Service To   |          | Service Con | tract Amount |
|      |                |              |          | 0.00        |              |

**Commodity Line Description:** 

Anti-Icing Tanks

Extended Description: Anti-Icing Tanks

Date Printed: Aug 1, 2024 Order Number: CMA 0803 0070 DOT2500000004 1 Page: 2 FORM ID: WV-PRC-CMA-002 2020/01

### **GENERAL TERMS AND CONDITIONS:**

- 1. CONTRACTUAL AGREEMENT: Issuance of an Award Document signed by the Purchasing Division Director, or his designee, and approved as to form by the Attorney General's office constitutes acceptance by the State of this Contract made by and between the State of West Virginia and the Vendor. Vendor's signature on its bid, or on the Contract if the Contract is not the result of a bid solicitation, signifies Vendor's agreement to be bound by and accept the terms and conditions contained in this Contract.
- 2. **DEFINITIONS:** As used in this Solicitation/Contract, the following terms shall have the meanings attributed to them below. Additional definitions may be found in the specifications included with this Solicitation/Contract.
- 2.1. "Agency" or "Agencies" means the agency, board, commission, or other entity of the State of West Virginia that is identified on the first page of the Solicitation or any other public entity seeking to procure goods or services under this Contract.
- 2.2. "Bid" or "Proposal" means the vendors submitted response to this solicitation.
- 2.3. "Contract" means the binding agreement that is entered into between the State and the Vendor to provide the goods or services requested in the Solicitation.
- 2.4. "Director" means the Director of the West Virginia Department of Administration, Purchasing Division.
- 2.5. "Purchasing Division" means the West Virginia Department of Administration, Purchasing Division.
- 2.6. "Award Document" means the document signed by the Agency and the Purchasing Division, and approved as to form by the Attorney General, that identifies the Vendor as the contract holder.
- 2.7. "Solicitation" means the official notice of an opportunity to supply the State with goods or services that is published by the Purchasing Division.
- 2.8. "State" means the State of West Virginia and/or any of its agencies, commissions, boards, etc. as context requires.
- 2.9. "Vendor" or "Vendors" means any entity submitting a bid in response to the Solicitation, the entity that has been selected as the lowest responsible bidder, or the entity that has been awarded the Contract as context requires.

| 3. CONTRACT TERM; RENEWAL; EXTENSION: The term of this Contract shall be determined in accordance with the category that has been identified as applicable to this Contract below:  |
|---|
| ▼ Term Contract   |
| Initial Contract Term: The Initial Contract Term will be for a period of One (1) year  The Initial Contract Term becomes effective on the effective start date listed on the first page of this Contract, identified as the State of West Virginia contract cover page containing the signatures of the Purchasing Division, Attorney General, and Encumbrance clerk (or another page identified as), and the Initial Contract Term ends on the effective end date also shown on the first page of this Contract.   |
| Renewal Term: This Contract may be renewed upon the mutual written consent of the Agency, and the Vendor, with approval of the Purchasing Division and the Attorney General's office (Attorney General approval is as to form only). Any request for renewal should be delivered to the Agency and then submitted to the Purchasing Division thirty (30) days prior to the expiration date of the initial contract term or appropriate renewal term. A Contract renewal shall be in accordance with the terms and conditions of the original contract. Unless otherwise specified below, renewal of this Contract is limited to |
| Alternate Renewal Term – This contract may be renewed for successive year periods or shorter periods provided that they do not exceed the total number of months contained in all available renewals. Automatic renewal of this Contract is prohibited. Renewals must be approved by the Vendor, Agency, Purchasing Division and Attorney General's office (Attorney General approval is as to form only)   |
| Delivery Order Limitations: In the event that this contract permits delivery orders, a delivery order may only be issued during the time this Contract is in effect. Any delivery order issued within one year of the expiration of this Contract shall be effective for one year from the date the delivery order is issued. No delivery order may be extended beyond one year after this Contract has expired.  |
| Fixed Period Contract: This Contract becomes effective upon Vendor's receipt of the notice to proceed and must be completed withindays.   |

| Fixed Period Contract with Renewals: This Contract becomes effective upon Vendor's receipt of the notice to proceed and part of the Contract more fully described in the attached specifications must be completed within days. Upon completion of the work covered by the preceding sentence, the vendor agrees that:  |
|---|
| the contract will continue for years;   |
| the contract may be renewed for successive year periods or shorter periods provided that they do not exceed the total number of months contained in all available renewals. Automatic renewal of this Contract is prohibited. Renewals must be approved by the Vendor, Agency, Purchasing Division and Attorney General's Office (Attorney General approval is as to form only).  |
| One-Time Purchase: The term of this Contract shall run from the issuance of the Award Document until all of the goods contracted for have been delivered, but in no event will this Contract extend for more than one fiscal year.  |
| Construction/Project Oversight: This Contract becomes effective on the effective start date listed on the first page of this Contract, identified as the State of West Virginia contract cover page containing the signatures of the Purchasing Division, Attorney General, and Encumbrance clerk (or another page identified as), and continues until the project for which the vendor is providing oversight is complete.   |
| Other: Contract Term specified in   |
| 4. AUTHORITY TO PROCEED: Vendor is authorized to begin performance of this contract on the date of encumbrance listed on the front page of the Award Document unless either the box for "Fixed Period Contract" or "Fixed Period Contract with Renewals" has been checked in Section 3 above. If either "Fixed Period Contract" or "Fixed Period Contract with Renewals" has been checked, Vendor must not begin work until it receives a separate notice to proceed from the State. The notice to proceed will then be incorporated into the Contract via change order to memorialize the official date that work commenced. |
| 5. QUANTITIES: The quantities required under this Contract shall be determined in accordance with the category that has been identified as applicable to this Contract below.   |
| Open End Contract: Quantities listed in this Solicitation/Award Document are approximations only, based on estimates supplied by the Agency. It is understood and agreed that the Contract shall cover the quantities actually ordered for delivery during the term of the Contract, whether more or less than the quantities shown.  |
| Service: The scope of the service to be provided will be more clearly defined in the specifications included herewith.  |
| Combined Service and Goods: The scope of the service and deliverable goods to be provided will be more clearly defined in the specifications included herewith.   |
|   |

| One-Time Purchase: This Contract is for the purchase of a set quantity of goods that are identified in the specifications included herewith. Once those items have been delivered, no additional goods may be procured under this Contract without an appropriate change order approved by the Vendor, Agency, Purchasing Division, and Attorney General's office.   |
|--|
| Construction: This Contract is for construction activity more fully defined in the specifications.   |
| 6. EMERGENCY PURCHASES: The Purchasing Division Director may authorize the Agency to purchase goods or services in the open market that Vendor would otherwise provide under this Contract if those goods or services are for immediate or expedited delivery in an emergency. Emergencies shall include, but are not limited to, delays in transportation or an unanticipated increase in the volume of work. An emergency purchase in the open market, approved by the Purchasing Division Director, shall not constitute of breach of this Contract and shall not entitle the Vendor to any form of compensation or damages. This provision does not excuse the State from fulfilling its obligations under a One-Time Purchase contract. |
| 7. REQUIRED DOCUMENTS: All of the items checked in this section must be provided to the Purchasing Division by the Vendor as specified:  |
| LICENSE(S) / CERTIFICATIONS / PERMITS: In addition to anything required under the Section of the General Terms and Conditions entitled Licensing, the apparent successful Vendor shall furnish proof of the following licenses, certifications, and/or permits upon request and in a form acceptable to the State. The request may be prior to or after contract award at the State's sole discretion.   |
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| The apparent successful Vendor shall also furnish proof of any additional licenses or certifications contained in the specifications regardless of whether or not that requirement is listed above.  |

8. INSURANCE: The apparent successful Vendor shall furnish proof of the insurance identified by a checkmark below prior to Contract award. The insurance coverages identified below must be maintained throughout the life of this contract. Thirty (30) days prior to the expiration of the insurance policies, Vendor shall provide the Agency with proof that the insurance mandated herein has been continued. Vendor must also provide Agency with immediate notice of any changes in its insurance policies, including but not limited to, policy cancelation, policy reduction, or change in insurers. The apparent successful Vendor shall also furnish proof of any additional insurance requirements contained in the specifications prior to Contract award regardless of whether that insurance requirement is listed in this section.

| Vendor must maintain:  |   |
|--|---|
| Commercial General Liability Insurance in at least an a occurrence.  | mount of: \$1,000,000.00 per  |
| Automobile Liability Insurance in at least an amount of  | \$1,000,000.00 per occurrence.  |
| Professional/Malpractice/Errors and Omission Insurant per occurrence. Notwithstanding the list the State as an additional insured for this type of policy. | nce in at least an amount of:<br>forgoing, Vendor's are not required to |
| Commercial Crime and Third Party Fidelity Insurance per occurrence.  | e in an amount of:  |
| Cyber Liability Insurance in an amount of:   | per occurrence.   |
| ☐ Builders Risk Insurance in an amount equal to 100% of  | the amount of the Contract.   |
| Pollution Insurance in an amount of:   | per occurrence.   |
| Aircraft Liability in an amount of:  | per occurrence.   |
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- 9. WORKERS' COMPENSATION INSURANCE: Vendor shall comply with laws relating to workers compensation, shall maintain workers' compensation insurance when required, and shall furnish proof of workers' compensation insurance upon request.
- 10. VENUE: All legal actions for damages brought by Vendor against the State shall be brought in the West Virginia Claims Commission. Other causes of action must be brought in the West Virginia court authorized by statute to exercise jurisdiction over it.

11. LIQUIDATED DAMAGES: This clause shall in no way be considered exclusive and shall

| not limit the State or Ag<br>liquidated damages in the | ncy's right to pursue any other available remedy. Vendor shall amount specified below or as described in the specifications: | pay      |
|--|--|----------|
| D  | for  | <u> </u> |
| Liquidated Dar   | ages Contained in the Specifications.  |          |
| ☐ Liquidated Dar                                       | ages Are Not Included in this Contract.  |          |

- 12. ACCEPTANCE: Vendor's signature on its bid, or on the certification and signature page, constitutes an offer to the State that cannot be unilaterally withdrawn, signifies that the product or service proposed by vendor meets the mandatory requirements contained in the Solicitation for that product or service, unless otherwise indicated, and signifies acceptance of the terms and conditions contained in the Solicitation unless otherwise indicated.
- 13. PRICING: The pricing set forth herein is firm for the life of the Contract, unless specified elsewhere within this Solicitation/Contract by the State. A Vendor's inclusion of price adjustment provisions in its bid, without an express authorization from the State in the Solicitation to do so, may result in bid disqualification. Notwithstanding the foregoing, Vendor must extend any publicly advertised sale price to the State and invoice at the lower of the contract price or the publicly advertised sale price.
- 14. PAYMENT IN ARREARS: Payments for goods/services will be made in arrears only upon receipt of a proper invoice, detailing the goods/services provided or receipt of the goods/services, whichever is later. Notwithstanding the foregoing, payments for software maintenance, licenses, or subscriptions may be paid annually in advance.
- 15. PAYMENT METHODS: Vendor must accept payment by electronic funds transfer and P-Card. (The State of West Virginia's Purchasing Card program, administered under contract by a banking institution, processes payment for goods and services through state designated credit cards.)
- 16. TAXES: The Vendor shall pay any applicable sales, use, personal property or any other taxes arising out of this Contract and the transactions contemplated thereby. The State of West Virginia is exempt from federal and state taxes and will not pay or reimburse such taxes.

- 17. ADDITIONAL FEES: Vendor is not permitted to charge additional fees or assess additional charges that were not either expressly provided for in the solicitation published by the State of West Virginia, included in the Contract, or included in the unit price or lump sum bid amount that Vendor is required by the solicitation to provide. Including such fees or charges as notes to the solicitation may result in rejection of vendor's bid. Requesting such fees or charges be paid after the contract has been awarded may result in cancellation of the contract.
- 18. FUNDING: This Contract shall continue for the term stated herein, contingent upon funds being appropriated by the Legislature or otherwise being made available. In the event funds are not appropriated or otherwise made available, this Contract becomes void and of no effect beginning on July 1 of the fiscal year for which funding has not been appropriated or otherwise made available. If that occurs, the State may notify the Vendor that an alternative source of funding has been obtained and thereby avoid the automatic termination. Non-appropriation or non-funding shall not be considered an event of default.
- 19. CANCELLATION: The Purchasing Division Director reserves the right to cancel this Contract immediately upon written notice to the vendor if the materials or workmanship supplied do not conform to the specifications contained in the Contract. The Purchasing Division Director may also cancel any purchase or Contract upon 30 days written notice to the Vendor in accordance with West Virginia Code of State Rules § 148-1-5.2.b.
- 20. TIME: Time is of the essence regarding all matters of time and performance in this Contract.
- 21. APPLICABLE LAW: This Contract is governed by and interpreted under West Virginia law without giving effect to its choice of law principles. Any information provided in specification manuals, or any other source, verbal or written, which contradicts or violates the West Virginia Constitution, West Virginia Code, or West Virginia Code of State Rules is void and of no effect.
- 22. COMPLIANCE WITH LAWS: Vendor shall comply with all applicable federal, state, and local laws, regulations and ordinances. By submitting a bid, Vendor acknowledges that it has reviewed, understands, and will comply with all applicable laws, regulations, and ordinances.
  - SUBCONTRACTOR COMPLIANCE: Vendor shall notify all subcontractors providing commodities or services related to this Contract that as subcontractors, they too are required to comply with all applicable laws, regulations, and ordinances. Notification under this provision must occur prior to the performance of any work under the contract by the subcontractor.
- 23. ARBITRATION: Any references made to arbitration contained in this Contract, Vendor's bid, or in any American Institute of Architects documents pertaining to this Contract are hereby deleted, void, and of no effect.

- 24. MODIFICATIONS: This writing is the parties' final expression of intent. Notwithstanding anything contained in this Contract to the contrary no modification of this Contract shall be binding without mutual written consent of the Agency, and the Vendor, with approval of the Purchasing Division and the Attorney General's office (Attorney General approval is as to form only). Any change to existing contracts that adds work or changes contract cost, and were not included in the original contract, must be approved by the Purchasing Division and the Attorney General's Office (as to form) prior to the implementation of the change or commencement of work affected by the change.
- 25. WAIVER: The failure of either party to insist upon a strict performance of any of the terms or provision of this Contract, or to exercise any option, right, or remedy herein contained, shall not be construed as a waiver or a relinquishment for the future of such term, provision, option, right, or remedy, but the same shall continue in full force and effect. Any waiver must be expressly stated in writing and signed by the waiving party.
- 26. SUBSEQUENT FORMS: The terms and conditions contained in this Contract shall supersede any and all subsequent terms and conditions which may appear on any form documents submitted by Vendor to the Agency or Purchasing Division such as price lists, order forms, invoices, sales agreements, or maintenance agreements, and includes internet websites or other electronic documents. Acceptance or use of Vendor's forms does not constitute acceptance of the terms and conditions contained thereon.
- 27. ASSIGNMENT: Neither this Contract nor any monies due, or to become due hereunder, may be assigned by the Vendor without the express written consent of the Agency, the Purchasing Division, the Attorney General's office (as to form only), and any other government agency or office that may be required to approve such assignments.
- 28. WARRANTY: The Vendor expressly warrants that the goods and/or services covered by this Contract will: (a) conform to the specifications, drawings, samples, or other description furnished or specified by the Agency; (b) be merchantable and fit for the purpose intended; and (c) be free from defect in material and workmanship.
- 29. STATE EMPLOYEES: State employees are not permitted to utilize this Contract for personal use and the Vendor is prohibited from permitting or facilitating the same.
- 30. PRIVACY, SECURITY, AND CONFIDENTIALITY: The Vendor agrees that it will not disclose to anyone, directly or indirectly, any such personally identifiable information or other confidential information gained from the Agency, unless the individual who is the subject of the information consents to the disclosure in writing or the disclosure is made pursuant to the Agency's policies, procedures, and rules. Vendor further agrees to comply with the Confidentiality Policies and Information Security Accountability Requirements, set forth in <a href="https://www.state.wv.us/admin/purchase/privacy">www.state.wv.us/admin/purchase/privacy</a>.

31. YOUR SUBMISSION IS A PUBLIC DOCUMENT: Vendor's entire response to the Solicitation and the resulting Contract are public documents. As public documents, they will be disclosed to the public following the bid/proposal opening or award of the contract, as required by the competitive bidding laws of West Virginia Code §§ 5A-3-1 et seq., 5-22-1 et seq., and 5G-1-1 et seq. and the Freedom of Information Act West Virginia Code §§ 29B-1-1 et seq.

DO NOT SUBMIT MATERIAL YOU CONSIDER TO BE CONFIDENTIAL, A TRADE SECRET, OR OTHERWISE NOT SUBJECT TO PUBLIC DISCLOSURE.

Submission of any bid, proposal, or other document to the Purchasing Division constitutes your explicit consent to the subsequent public disclosure of the bid, proposal, or document. The Purchasing Division will disclose any document labeled "confidential," "proprietary," "trade secret," "private," or labeled with any other claim against public disclosure of the documents, to include any "trade secrets" as defined by West Virginia Code § 47-22-1 et seq. All submissions are subject to public disclosure without notice.

32. LICENSING: In accordance with West Virginia Code of State Rules § 148-1-6.1.e, Vendor must be licensed and in good standing in accordance with any and all state and local laws and requirements by any state or local agency of West Virginia, including, but not limited to, the West Virginia Secretary of State's Office, the West Virginia Tax Department, West Virginia Insurance Commission, or any other state agency or political subdivision. Obligations related to political subdivisions may include, but are not limited to, business licensing, business and occupation taxes, inspection compliance, permitting, etc. Upon request, the Vendor must provide all necessary releases to obtain information to enable the Purchasing Division Director or the Agency to verify that the Vendor is licensed and in good standing with the above entities.

SUBCONTRACTOR COMPLIANCE: Vendor shall notify all subcontractors providing commodities or services related to this Contract that as subcontractors, they too are required to be licensed, in good standing, and up-to-date on all state and local obligations as described in this section. Obligations related to political subdivisions may include, but are not limited to, business licensing, business and occupation taxes, inspection compliance, permitting, etc. Notification under this provision must occur prior to the performance of any work under the contract by the subcontractor.

- 33. ANTITRUST: In submitting a bid to, signing a contract with, or accepting a Award Document from any agency of the State of West Virginia, the Vendor agrees to convey, sell, assign, or transfer to the State of West Virginia all rights, title, and interest in and to all causes of action it may now or hereafter acquire under the antitrust laws of the United States and the State of West Virginia for price fixing and/or unreasonable restraints of trade relating to the particular commodities or services purchased or acquired by the State of West Virginia. Such assignment shall be made and become effective at the time the purchasing agency tenders the initial payment to Vendor.
- 34. VENDOR NON-CONFLICT: Neither Vendor nor its representatives are permitted to have any interest, nor shall they acquire any interest, direct or indirect, which would compromise the performance of its services hereunder. Any such interests shall be promptly presented in detail to the Agency.

35. VENDOR RELATIONSHIP: The relationship of the Vendor to the State shall be that of an independent contractor and no principal-agent relationship or employer-employee relationship is contemplated or created by this Contract. The Vendor as an independent contractor is solely liable for the acts and omissions of its employees and agents. Vendor shall be responsible for selecting, supervising, and compensating any and all individuals employed pursuant to the terms of this Solicitation and resulting contract. Neither the Vendor, nor any employees or subcontractors of the Vendor, shall be deemed to be employees of the State for any purpose whatsoever. Vendor shall be exclusively responsible for payment of employees and contractors for all wages and salaries, taxes, withholding payments, penalties, fees, fringe benefits, professional liability insurance premiums, contributions to insurance and pension, or other deferred compensation plans, including but not limited to, Workers' Compensation and Social Security obligations, licensing fees, etc. and the filing of all necessary documents, forms, and returns pertinent to all of the foregoing.

Vendor shall hold harmless the State, and shall provide the State and Agency with a defense against any and all claims including, but not limited to, the foregoing payments, withholdings, contributions, taxes, Social Security taxes, and employer income tax returns.

- 36. INDEMNIFICATION: The Vendor agrees to indemnify, defend, and hold harmless the State and the Agency, their officers, and employees from and against: (1) Any claims or losses for services rendered by any subcontractor, person, or firm performing or supplying services, materials, or supplies in connection with the performance of the Contract; (2) Any claims or losses resulting to any person or entity injured or damaged by the Vendor, its officers, employees, or subcontractors by the publication, translation, reproduction, delivery, performance, use, or disposition of any data used under the Contract in a manner not authorized by the Contract, or by Federal or State statutes or regulations; and (3) Any failure of the Vendor, its officers, employees, or subcontractors to observe State and Federal laws including, but not limited to, labor and wage and hour laws.
- 37. NO DEBT CERTIFICATION: In accordance with West Virginia Code §§ 5A-3-10a and 5-22-1(i), the State is prohibited from awarding a contract to any bidder that owes a debt to the State or a political subdivision of the State. By submitting a bid, or entering into a contract with the State, Vendor is affirming that (1) for construction contracts, the Vendor is not in default on any monetary obligation owed to the state or a political subdivision of the state, and (2) for all other contracts, neither the Vendor nor any related party owe a debt as defined above, and neither the Vendor nor any related party are in employer default as defined in the statute cited above unless the debt or employer default is permitted under the statute.
- 38. CONFLICT OF INTEREST: Vendor, its officers or members or employees, shall not presently have or acquire an interest, direct or indirect, which would conflict with or compromise the performance of its obligations hereunder. Vendor shall periodically inquire of its officers, members and employees to ensure that a conflict of interest does not arise. Any conflict of interest discovered shall be promptly presented in detail to the Agency.

- 39. REPORTS: Vendor shall provide the Agency and/or the Purchasing Division with the following reports identified by a checked box below:
- Such reports as the Agency and/or the Purchasing Division may request. Requested reports may include, but are not limited to, quantities purchased, agencies utilizing the contract, total contract expenditures by agency, etc.
- Quarterly reports detailing the total quantity of purchases in units and dollars, along with a listing of purchases by agency. Quarterly reports should be delivered to the Purchasing Division via email at <a href="mailto:purchasing.division@wv.gov">purchasing.division@wv.gov</a>.
- 40. BACKGROUND CHECK: In accordance with W. Va. Code § 15-2D-3, the State reserves the right to prohibit a service provider's employees from accessing sensitive or critical information or to be present at the Capitol complex based upon results addressed from a criminal background check. Service providers should contact the West Virginia Division of Protective Services by phone at (304) 558-9911 for more information.
- 41. PREFERENCE FOR USE OF DOMESTIC STEEL PRODUCTS: Except when authorized by the Director of the Purchasing Division pursuant to W. Va. Code § 5A-3-56, no contractor may use or supply steel products for a State Contract Project other than those steel products made in the United States. A contractor who uses steel products in violation of this section may be subject to civil penalties pursuant to W. Va. Code § 5A-3-56. As used in this section:
  - a. "State Contract Project" means any erection or construction of, or any addition to, alteration of or other improvement to any building or structure, including, but not limited to, roads or highways, or the installation of any heating or cooling or ventilating plants or other equipment, or the supply of and materials for such projects, pursuant to a contract with the State of West Virginia for which bids were solicited on or after June 6, 2001.
  - b. "Steel Products" means products rolled, formed, shaped, drawn, extruded, forged, cast, fabricated or otherwise similarly processed, or processed by a combination of two or more or such operations, from steel made by the open heath, basic oxygen, electric furnace, Bessemer or other steel making process.
  - c. The Purchasing Division Director may, in writing, authorize the use of foreign steel products if:
    - 1. The cost for each contract item used does not exceed one tenth of one percent (.1%) of the total contract cost or two thousand five hundred dollars (\$2,500.00), whichever is greater. For the purposes of this section, the cost is the value of the steel product as delivered to the project; or
    - 2. The Director of the Purchasing Division determines that specified steel materials are not produced in the United States in sufficient quantity or otherwise are not reasonably available to meet contract requirements.

42. PREFERENCE FOR USE OF DOMESTIC ALUMINUM, GLASS, AND STEEL: In Accordance with W. Va. Code § 5-19-1 et seq., and W. Va. CSR § 148-10-1 et seq., for every contract or subcontract, subject to the limitations contained herein, for the construction, reconstruction, alteration, repair, improvement or maintenance of public works or for the purchase of any item of machinery or equipment to be used at sites of public works, only domestic aluminum, glass or steel products shall be supplied unless the spending officer determines, in writing, after the receipt of offers or bids, (1) that the cost of domestic aluminum, glass or steel products is unreasonable or inconsistent with the public interest of the State of West Virginia, (2) that domestic aluminum, glass or steel products are not produced in sufficient quantities to meet the contract requirements, or (3) the available domestic aluminum, glass, or steel do not meet the contract specifications. This provision only applies to public works contracts awarded in an amount more than fifty thousand dollars (\$50,000) or public works contracts that require more than ten thousand pounds of steel products.

The cost of domestic aluminum, glass, or steel products may be unreasonable if the cost is more than twenty percent (20%) of the bid or offered price for foreign made aluminum, glass, or steel products. If the domestic aluminum, glass or steel products to be supplied or produced in a "substantial labor surplus area", as defined by the United States Department of Labor, the cost of domestic aluminum, glass, or steel products may be unreasonable if the cost is more than thirty percent (30%) of the bid or offered price for foreign made aluminum, glass, or steel products. This preference shall be applied to an item of machinery or equipment, as indicated above, when the item is a single unit of equipment or machinery manufactured primarily of aluminum, glass or steel, is part of a public works contract and has the sole purpose or of being a permanent part of a single public works project. This provision does not apply to equipment or machinery purchased by a spending unit for use by that spending unit and not as part of a single public works project.

All bids and offers including domestic aluminum, glass or steel products that exceed bid or offer prices including foreign aluminum, glass or steel products after application of the preferences provided in this provision may be reduced to a price equal to or lower than the lowest bid or offer price for foreign aluminum, glass or steel products plus the applicable preference. If the reduced bid or offer prices are made in writing and supersede the prior bid or offer prices, all bids or offers, including the reduced bid or offer prices, will be reevaluated in accordance with this rule.

43. INTERESTED PARTY SUPPLEMENTAL DISCLOSURE: W. Va. Code § 6D-1-2 requires that for contracts with an actual or estimated value of at least \$1 million, the Vendor must submit to the Agency a disclosure of interested parties prior to beginning work under this Contract. Additionally, the Vendor must submit a supplemental disclosure of interested parties reflecting any new or differing interested parties to the contract, which were not included in the original pre-work interested party disclosure, within 30 days following the completion or termination of the contract. A copy of that form is included with this solicitation or can be obtained from the WV Ethics Commission. This requirement does not apply to publicly traded companies listed on a national or international stock exchange. A more detailed definition of interested parties can be obtained from the form referenced above.

- 44. PROHIBITION AGAINST USED OR REFURBISHED: Unless expressly permitted in the solicitation published by the State, Vendor must provide new, unused commodities, and is prohibited from supplying used or refurbished commodities, in fulfilling its responsibilities under this Contract.
- 45. VOID CONTRACT CLAUSES: This Contract is subject to the provisions of West Virginia Code § 5A-3-62, which automatically voids certain contract clauses that violate State law.
- **46. ISRAEL BOYCOTT:** Bidder understands and agrees that, pursuant to W. Va. Code § 5A-3-63, it is prohibited from engaging in a boycott of Israel during the term of this contract.

DESIGNATED CONTACT: Vendor appoints the individual identified in this Section as the Contract Administrator and the initial point of contact for matters relating to this Contract.

| (Printed Name and Title) _ Jack | Cummings - Sales Con | sultant                               |
|---------------------------------|----------------------|---------------------------------------|
| (Address) 4125 1st Ave, Nitr    | o WV 25143           | e e e e e e e e e e e e e e e e e e e |
| (Phone Number) / (Fax Number)   | 304-769-5860 x 3601  | 304-769-5866                          |
| (email address) jcummings@i     | mathenymotors.com    | .1                                    |

CERTIFICATION AND SIGNATURE: By signing below, or submitting documentation through wvOASIS, I certify that: I have reviewed this Solicitation/Contract in its entirety; that I understand the requirements, terms and conditions, and other information contained herein; that this bid, offer or proposal constitutes an offer to the State that cannot be unilaterally withdrawn; that the product or service proposed meets the mandatory requirements contained in the Solicitation/Contract for that product or service, unless otherwise stated herein; that the Vendor accepts the terms and conditions contained in the Solicitation, unless otherwise stated herein; that I am submitting this bid, offer or proposal for review and consideration; that this bid or offer was made without prior understanding, agreement, or connection with any entity submitting a bid or offer for the same material, supplies, equipment or services; that this bid or offer is in all respects fair and without collusion or fraud; that this Contract is accepted or entered into without any prior understanding, agreement, or connection to any other entity that could be considered a violation of law; that I am authorized by the Vendor to execute and submit this bid, offer, or proposal, or any documents related thereto on Vendor's behalf; that I am authorized to bind the vendor in a contractual relationship; and that to the best of my knowledge, the vendor has properly registered with any State agency that may require registration,

By signing below, I further certify that I understand this Contract is subject to the provisions of West Virginia Code § 5A-3-62, which automatically voids certain contract clauses that violate State law; and that pursuant to W. Va. Code 5A-3-63, the entity entering into this contract is prohibited from engaging in a boycott against Israel.

| 22.00 the three difference is profit | <u>tottea from engaging in a boycott against l</u>                                  | rael.  |
|--------------------------------------|---|--|
| Matheny Motor Truck Compar           | inggapa sa mining kalabahan di sa kalabahan di sa kalabahan<br><b>ny</b> mbangia sa | State of the state |
| (Company) Tacker &                   | ( -   |  |
| (Signature of Authorized Represent   | tative) Jack Cummings - Sales Consu   | <br> tant - 5/23/2024  |
| (Printed Name and Title of Authori   | zed Representative) (Date)  |  |
|                                      | 304-769-5860 x 3601   | 304-769-5866   |
| (Phone Number) (Fax Number) jo       | cummings@mathenymotors.com  |  |
| (Email Address)                      |   |  |

## 66,000 GVWR Tandem Axle Dump Truck

w/Front Snow Plow, V-Box Spreader, with Optional Right Front Wing Plow and Anti-Icing Tank & Spray System

### **SPECIFICATIONS**

- 1. PURPOSE AND SCOPE: The West Virginia Purchasing Division is soliciting bids on behalf of the West Virginia Division of Highways, Department of Transportation to establish an open-end contract for a 66,000 GVWR Tandem Axle Dump Truck with Snow Plow, Spreader and Central Hydraulic System with Stainless Steel Bed Body, Right Side Wing Plow Option, Anti-Icing Tank option, and Spray System option.
- 2. **DEFINITIONS:** The terms listed below shall have the meanings assigned to them below. Additional definitions can be found in section 2 of the General Terms and Conditions.
  - 2.1 "Contract Item" or "Contract Items" means the list of items identified in Section 3.1, below and on the Pricing Pages.
  - 2.2 "Pricing Pages" means the schedule of prices, estimated order quantity, and totals contained in wvOASIS or attached hereto as Exhibit A, and used to evaluate the Solicitation response.
  - 2.3 "Solicitation" means the official notice of an opportunity to supply the State with goods or services that is published by the Purchasing Division.
  - 2.4 "G.V.W." means gross vehicle weight.
  - 2.5 "G.V.W.R" means gross vehicle weight rating.
  - 2.6 "Lbs." means pounds.
  - 2.7 "BBC" means Bumper to back of cab.
  - 2.8 "PSI" means pounds per square inch.
  - 2.9 "WVDOH" means West Virginia Division of Highways.
  - 2.10 "R.B.M." means Resisting Bending Moment.
  - 2.11 "PTO" means power take off.
  - 2.12 "RPM" means revolutions per minute.
  - 2.13 "APADS" means Air conditioning protection and diagnostic system.

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- 2.14 "HP" means horse power.
- 2.15 "F" means Fahrenheit.
- 2.16 "FMVSS" means Federal Motor Vehicle Safety Standards. www.fmvss.com
- 2.17 "CCA" means cold cranking amps.
- 2.18 "SAE" means Society of Automotive Engineers.
- 2.19 "ABS" means Antilock Braking System.
- 2.20 "ATC" means Automatic Traction Control
- 2.21 "MPH" means miles per hour.
- 2.22 "cu. ft." means cubic feet.
- 2.23 "mm" means millimeter.
- 2.24 "cu. yd." means cubic yard.
- 2.25 "I.D." means inner diameter.
- 2.26 "GPM" means gallons per minute.
- 2.27 "LED" means light emitting diode.
- 2.28 "UV" means ultra violet.
- 2.29 "C" means celsius.
- 2.30 "N.T.E.A" means National Truck Equipment Association. www.ntea.com
- 2.31 "ISO" means International Standards Organization.
- 2.32 "SO" means Standard Oil Resistant.
- 2.33 "NEMA" means National Electrical Manufacturer's Association.
- 2.34 "dba" means decibels.
- 2.35 "PWM" means pulse-width modulated.

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- 2.36 "NPT" means National Pipe Thread.
- 2.37 "TRT" means tamper resistant.
- 2.38 "cc" means close-coupled.
- 2.39 "CAN" means control area network.
- 2.40 "CIR" means Cubic Inches revolution.
- 2.41 "SS" means Stainless Steel
- 2.42 "OD" means Outside Diameter
- 2.43 "JIC" means Joint Industry Council
- 2.44 "mA" means milliamps
- 2.45 "AASHTO" means American Association of State Highway and Transportation. www.transportation.org
- 2.46 "CA" means cab to axle.
- 2.47 "CT" means cab to trunnion.
- 2.48 "12 VDC" means 12 volt direct current.
- 2.49 "OEM" means Original Equipment Manufacturer.
- 2.50 "BTU" means British Thermal Unit.
- 2.51 "USB" means Universal Serial Bus.
- 2.52 "WC" means tungsten carbide.

### 3. GENERAL REQUIREMENTS:

- 3.1 Contract Items and Mandatory Requirements: Vendor shall provide Agency with the Contract Items listed below on an open-end and continuing basis. Contract Items must meet or exceed the mandatory requirements as shown below.
  - 3.1.1 Cab and Chassis:

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- 3.1.1.1 The GVWR rating shall be 64,000 Lbs., minimum rating.
- 3.1.1.2 Cab to Axle Dimension: Shall be 116 inches minimum usable. (Back of cab to centerline of trunnion).
- 3.1.1.3 The after-frame length shall be 60 inches minimum. (Centerline of trunnion to back of frame).
- 3.1.1.4 The unit specified herein and offered shall be manufactured on or after January 1, 2024 and will be clearly identified and marked with date of manufacture.

### 3.1.2 Wheelbase:

- 3.1.2.1 Shall be 202 inches minimum and shall be set forward axle design for snowplow applications.
- 3.1.2.2 Wheelbase and Cab dimension shall be adjusted to provide legal weight distribution.
  - 3.1.2.2.1 Chassis OEM and body company are responsible for coordinating the correct CA/CT calculations.
    - **3.1.2.2.1.1** This will be discussed at Pre-Build Meeting.
- 3.1.2.3. BBC (Bumper to Back of Cab) shall be 110 inches minimum to 120 inches maximum dimension excluding frame extension.

### 3.1.3 Frame:

- 3.1.3.1 The manufacturer shall provide a frame that meets or exceeds all Federal requirements for G.V.W.R. specified that extends forward beyond the grille a minimum of 14 inches.
- 3.1.3.2 Frame material shall be single frame minimum 120,000 PSI yield strength. Frame extension shall be "parent rail" material. Bolt on extension not acceptable.
- 3.1.3.3 R.B.M: Minimum 2,820,000 Ins./Lb. per rail. An integral frame and frame extension is mandatory.
- 3.1.3.4 Frame shall have two (2) front frame mounted tow hooks.
- 3.1.3.5 Front bumper shall be provided by the body builder.

  Detailed in hitch section.
- 3.1.3.6 Bumper shall be painted black in color, paint type base coat clear urethane.

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- 3.1.3.7 Bumper shall not interfere with factory headlights.
- 3.1.3.8 Bumper shall have mesh type aluminum tread plate between bumper and fender.
- 3.1.3.9 Bumper shall have cutouts to access front tow hooks.

### 3.1.4 Cab:

- **3.1.4.1** The cab shall be manufacturers' galvanized steel, galvanneal steel or aluminum.
- 3.1.4.2 Hood shall be fiberglass, one piece tilting hood, fenders shall be part of tilting hood.
- 3.1.4.3 Hood shall have a minimum front slope of 20 degrees for snow plowing visibility.
- 3.1.4.4 Front fenders shall have extensions to cover the width of the front tires.
- 3.1.4.5 Hood shall not come in contact with plow frame or wing plow frames.
- 3.1.4.6 Must allow access to engine with hood open.
  - 3.1.4.6.1 Access to front-end hood tilt handle shall not be blocked.
- 3.1.4.7 Cab shall have rear air bag suspension, factory installed.
- 3.1.4.8 Cab shall have air ride high back seats with folding armrest, black cloth, with lumbar, with integrated cushion extensions, with forward and rear cushion tilt Driver and Passenger side. Driver side must be heated.
- 3.1.4.9 Cab Interior Floor Mat shall have rubber floor mat throughout cab area with non-absorbent backing under the mat.
- 3.1.4.10 Cab shall have highest output available by manufacturers, Air Conditioning with/integral heater and defroster and minimum of one (1) replaceable fresh air filter with APADS or equal.
- 3.1.4.11 Windshield Wipers shall be winter blade type with heaviest arms, linkages and motor available by manufacture.
- 3.1.4.12 Wipers shall be minimum of 2 speeds, electric with intermittent feature.
- **3.1.4.13** Washer system shall be electric with largest capacity reservoir available by manufacturer.

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# 3.1.5 Instruments: The following instruments shall be contained in the truck cab.

- 3.1.5.1 Coolant gauge and oil pressure gauge shall have both dial type readout and either an audible or visual alarm to warn operator when safe operating conditions are exceeded.
- 3.1.5.2 Voltmeter or Ammeter gauge.
- 3.1.5.3 Engine RPM Tachometer.
- 3.1.5.4 Speedometer with odometer and a dual speedometer lead to interface with the ground speed spreader control system.
- 3.1.5.5 Primary Air Pressure Gauge/Auxiliary Air Pressure Gauge.
- 3.1.5.6 If unit is equipped with front air intake, it shall be operated by a cable, air or electrical control valve to enable operator to divert air intake to engine compartment during plowing application shall be provided.
- 3.1.5.7 Air filter restriction indicator gauge.
- 3.1.5.8 Engine hour meter (Controlled by engine operation, not by key switch).
- 3.1.5.9 Must have Fuel level gauge and diesel exhaust fluid gauge.
- 3.1.5.10 Manufacturers best sound/weather insulation package for proposed cab.
- 3.1.5.11 Cab shall have transmission temperature gauge.

# 3.1.6 Accessories: The following accessories must be included with the truck cab & chassis:

- 3.1.6.1 Cab shall have minimum of one air horn cab mounted with snow shield.
- 3.1.6.2 Right side and left side cab mirrors: Cab mirrors shall be west coast type 7 inches wide minimum x 16 inches high minimum, power adjustable with fore and after breakaway arms. 8 inches minimum convex spot mirror. Both mirrors must be heated type with all arms, hardware and fasteners stainless steel.
- 3.1.6.3 Shall have down view mirror, right hand side only.
- 3.1.6.4 Grab handles shall be supplied on all cab entry locations.

  Three points of contact shall be achievable at all cab entry locations.
- 3.1.6.5 The cab shall have the manufacturer's standard tinted safety glass installed throughout the front, sides and rear.
- 3.1.6.6 The front windshield shall be heated.
- 3.1.6.7 The cab shall have dual power windows.

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- 3.1.6.8 The cab shall have manufacturer's standard AM/FM/Weather Band/Clock with wireless connectivity.
- 3.1.6.9 Mud flaps shall be provided and installed on the cab behind the left and right front tires.
- **3.1.6.10** Cab shall contain a DOT approved emergency triangle warning kit.
- 3.1.6.11 The cab shall have a mounted 2 1/2 lbs. maximum fire extinguisher with A, B and C rating.
- 3.1.6.12 Cab shall have six (6) additional upfitter switches.
- 3.1.6.13 Cab shall have OEM PTO switch.
- 3.1.6.14 Accessories not indicated above, but are included in the manufacturer's standard model bid must be provided.

### 3.1.7 Engine:

- 3.1.7.1 The engine shall be a diesel powered.
  - 3.1.7.1.1 12.8-liter minimum.
  - 3.1.7.1.2 6-cylinder minimum.
  - 3.1.7.1.3 peak HP, 500 @ 1500-1700 RPM minimum.
  - 3.1.7.1.4 torque 1800 LB/FT @ 1300 RPM minimum.
  - 3.1.7.1.5 Engine must meet US 24 emissions.
- 3.1.7.2 Engine Compression Brake: Must be full engine compression brake minimum 2 stages with selector switch and on/off power switch dash mounted.
- 3.1.7.3 Engine oil pan must be stainless steel or corrosion resistant composite installed with stainless steel hardware.
- 3.1.7.4 Air filter shall be largest volume available offered by manufacturer for severe duty conditions.

## 3.1.8 Exhaust System:

- 3.1.8.1 Manufacturers standard side of cab exhaust for model bid.
- 3.1.8.2 Exhaust system shall not interfere with the dump body or equipment.
- 3.1.8.3 Exhaust shall be stainless steel or aluminized pipe with all clamps and fasteners being stainless steel.
- 3.1.8.4 Muffler and tailpipe shall be shielded to protect personnel when entering and exiting the cab.

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3.1.8.5 The shield shall be 180 degrees to 360 degrees and shall be of non-rustable material such as stainless steel or aluminum.

### 3.1.9 Cooling System:

- 3.1.9.1 The largest available engine cooling capacity, factory compatible with engine and transmission referenced for continuous high engine output under extreme temperatures and/or operating conditions due to prolonged snow plowing operations in low gear.
- 3.1.9.2 Cooling system shall be fitted with provisions for visually monitoring coolant without necessitating removal of the cap from the radiator or expansion tank.
- 3.1.9.3 Antifreeze must be extended life with a minimum of -34 degrees and shall meet all applicable Environmental Protection Agency (EPA) requirements.
- **3.1.9.4** A non-charged spin-on coolant filter shall be installed if required by engine manufacturer.
- **3.1.9.5** Radiator shall have stainless steel or aluminum screen guard to protect radiator from foreign objects.
- 3.1.9.6 All coolant piping must be stainless steel, galvanized or aluminized.
- 3.1.9.7 All coolant hoses shall be silicone base hoses.
- 3.1.9.8 All hose clamps shall be stainless steel or gates powergrip.

### 3.1.10 Fuel Tanks:

- 3.1.10.1 Fuel Tanks must comply with FMVSS.
- 3.1.10.2 Single aluminum 110-gallon minimum fuel tank, shall be mounted left side, under cab, frame-mounted with stainless steel mounting straps.
- 3.1.10.3 Must have driver and passenger entrance steps, stainless steel or aluminum grated self-cleaning safety steps.
- 3.1.10.4 DEF tank shall be a minimum 11 gallons.

### 3.1.11 Transmission:

3.1.11.1 Transmission shall be fully automatic, wide ratio with torque converter, minimum of 6 forward gears and 1 reverse gear. Allison 4500 RDS or equal.

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- 3.1.11.2 Transmission shall have provision for PTO.
- 3.1.11.3 Shall have a transmission shift pad, with oil life monitor; filter life monitor and transmission health monitor, lighted and dash or console mounted in cab.
- 3.1.11.4 Transmission shall have the largest available approved transmission cooler for transmission provided.
  3.1.11.4.1 All cooler hard lines must be stainless steel or corrosion resistant.

### 3.1.12 Driveline:

3.1.12.1 Driveline must be compatible to engine, drivetrain, and transmission torque. If required by manufacturer, the driveline shall have center carrier bearing.

### 3.1.13 Rear Axle:

- 3.1.13.1 Shall be dual reduction with a power divider lockout, dashed controlled, minimum rating of 44,000 lbs.
- 3.1.13.2 Rear axle housing shall be steel with a minimum of .375 inch thick axle wall thickness.
- 3.1.13.3 All rear axles shall have an extended breather tube to prevent buildup from entering axle housing.
- 3.1.13.4 Axle ratio and top MPH parameters to be determined at pre-build meeting.

### 3.1.14 Rear Suspension:

- 3.1.14.1 Shall have Hendrickson HaulMaax HMX EX 460 rated for 46,000 lb. minimum capacity.
- **3.1.14.2** Shall have left and right shock absorbers matched to the suspension.

### **3.1.15** Front Axle:

- 3.1.15.1 Shall have minimum capacity of 20,000 lbs.
- **3.1.15.2** The front axle, drag links and tie rod ends shall be greasable with threaded grease zerks installed.

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3.1.15.3 Shall have right and left shock absorbers rated for 20,000 lb. minimum, axle.

### 3.1.16 Front Suspension:

- 3.1.16.1 Shall have 10,000 lb. minimum capacity at ground on each front spring, total spring capacity 20,000 lb. minimum.
- 3.1.16.2 The front spring pins or bearing/bushings shall be furnished with 360-degree grease grooves to insure adequate lubricant penetration or maintenance free rubber.
- 3.1.16.3 Spring hangers shall be the heaviest available by manufacturer.
- 3.1.16.4 Unit bid shall have a front-end alignment completed after the upfitting has been completed, with printout for every truck. Vehicles without printout will not be accepted.

#### 3.1.17 Steering:

- 3.1.17.1 Shall have right and left steering gear dual power which meets or exceeds a 20,000-lb. front axle.
- 3.1.17.2 Steering column shall be tilt and/telescopic.

### 3.1.18 Brakes and Air System:

- 3.1.18.1 Brakes shall be full air, heaviest duty available with manufacturer's ABS.
- **3.1.18.2** Compressor shall be the manufacturer's largest, for model bid.
  - 3.1.18.2.1 Shall have air dryer compatible with heater and spin on cartridge filter.
- 3.1.18.3 Rear parking brakes shall be spring loaded.
- 3.1.18.4 Rear service brake chambers and spring brake chambers shall be mounted to provide clearance for tire chains and backing into bituminous paving machines.
  - 3.1.18.4.1 Factory installation only.
- 3.1.18.5 Air tanks shall be frame mounted painted aluminum or stainless steel with pull cord drain valve.

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- 3.1.18.6 Unit shall be equipped with hand control valve, tractor protection valve, with swivel glad hands at rear of truck to enable unit to pull air operated equipment trailer.
- 3.1.18.7 Shall have low warning air pressure warning light and buzzer.
- **3.1.18.8** Front brakes: shall be full air powered disc brakes or drum.
- **3.1.18.9** Rear brakes shoes shall be full air self-adjusting cam brakes or full air powered disc brakes.
- 3.1.18.10 Rear brakes shall have corrosion resistant automatic slack adjuster with stainless steel yoke pins.

### 3.1.19 Trailer Tow Package shall include the following:

- 3.1.19.1 A 49,000 LB. minimum capacity swivel type pintle hook shall be installed at 32 inches maximum above ground on A ¾-inch thick steel rear hitch plate shall be securely welded and gusseted at the rear of frame rails. 1. Rear hitch plate shall be cut to fit the profile of the inside of the frame rails. 2. Rear hitch plate shall be recessed into the frame rails. a. The end of the frame rails shall: 1. Extend rearward a minimum of ½-inch from the rear face of the rear hitch plate. 2. Extend rearward no farther than 1-inch from the rear face of the rear hitch plate.

  3.1.19.1.1 Shall include two one inch D-rings.
- **3.1.19.2** The truck shall be equipped with a full trailer air brake package.
  - 3.1.19.2.1 The glad hand connections shall be located at the rear of truck and located with red (emergency) on driver's side and blue (service) on passenger side.
  - 3.1.19.2.2 Glad hands shall be swivel design.
- **3.1.19.3** Truck shall be equipped with air actuated electric trailer brake controller, mounted in cab.
- **3.1.19.4** There shall be two 7-poll female trailer connectors with brass inserts mounted in a corrosion resistant housing.
  - 3.1.19.4.1 One shall be 7-way traditional trailer with electric brakes and one shall be 7-way commercial style for trailer with air brakes and ABS.
  - 3.1.19.4.2 Both connectors shall be identified by weather resistant label.

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### 3.1.20 Tires and Wheels:

- **3.1.20.1** The truck shall be equipped with hub piloted aluminum disc wheels for tubeless tires.
- 3.1.20.2 Front Steer Tires: must be size 315/80/R22.5 load range L 20 ply tubeless minimum, and have a 10,000 lb. minimum weight rating per tire Goodyear or equal.
- 3.1.20.3 Front Wheels: must be 22.5 x 9.0, 10 hole, 15 degree, hub piloted, tubeless, aluminum wheel, rated at 10,000 lb. at maximum tire pressure of 130 PSI. Wheel shall be Accu-shield or Dura-bright for corrosion protection from chemicals used in de-icing road surface such as salt, calcium chloride and brine.
- 3.1.20.4 Rear Drive Tires: must be mud and snow tread, size 11R/22.5 minimum load range H, 14 ply tubeless.

  Minimum load limit dual 5840 lbs. per tire Goodyear or equal.
- 3.1.20.5 Rear Wheels: must be 22.5 x 8.25, 10 hole, tubeless, aluminum disc wheel rated at 7,500 lbs. at a maximum inflation pressure of 130 PSI. Wheel shall be Accushield or Dura-bright for corrosion protection from chemicals used in de-icing road surface such as salt, calcium chloride and brine.
- 3.1.20.6 The dual rear wheel/tire assembly shall have clearance between the tires, which permits the use of dual tire chain.
- 3.1.20.7 Wheel guard separators shall be installed between wheels and wheel hub front and rear.
- 3.1.20.8 All tires shall be radials.

### 3.1.21 Electrical System & Lighting:

- **3.1.21.1** Shall have manufacturer's 12 volt negative ground system with manufacturer's radio interference suppression.
- 3.1.21.2 Batteries:
  - A. Shall have minimum of two12 volt All Glass Mat (AGM) deep cycle batteries stainless steel stud type, with a battery reserve of 200 amp-hours minimum.

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- **B.** Shall have one minimum, ultra-capacitor engine module for class 8 trucks, shall be group 31 size, stainless steel stud type, minimum 1800 CCA.
- C. See No Idle Heat and Power System Section 3.1.23 for explanation of battery section.
- **3.1.21.3** Alternator capacity shall be 160 AMPS minimum with internal regulator.
- **3.1.21.4** Cab and chassis must have best available wiring shield available by manufacturer.
- 3.1.21.5 The cab and chassis shall have:
  - A. Day time running lights.
  - B. LED cab marker lights.
  - C. Halogen or LED head lamps.
  - D. LED Park and turn signals

### 3.1.21.6 Salt spreader lighting package:

Successful vendor shall supply in the left rear corner of the cab exterior for manufacturers approved wiring and weather proof disconnect 7-pole disconnect plug to operate the following lights on truck mounted chemical spreader:

- A. Two (2) LED flood lights.
- **B.** Left and right combination brake/turn and tail lights LED.
- C. Two LED strobe warning light.
- **D.** Two LED flood lights mounted under rear light bar wired to act as back up lights.
- 3.1.21.7 FF75 Hella fog/driving light or equal and Snowplow headlights with park and turn signal and driving lights for snowplowing application shall be shock mounted on fender of truck with stainless steel brackets.
- 3.1.21.8 Up fitter installed wire and cables shall pass through strain relief mounted in rear wall of cab. Floor mounted pass through is not acceptable.
- 3.1.21.9 Up fitter installed wire and cables exiting rear of cab pass through shall be secured to a frame mounted bracket in a manner to allow adequate slack to accommodate cab movement.
- 3.1.21.10 All up fitter wires, cables and airlines routed to rear

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under body shall be grouped together and secured to stainless steel ¼" x 1" flat strap secured by stainless steel hardware to top of chassis cross members.

3.1.21.11 Up fitter power relays and circuit brakers to be housed in one weather resistant enclosure.

### 3.1.22 Paint, Decals and Logos:

- 3.1.22.1 The cab exterior and interior paint shall be base coat clear coat urethane paint school bus yellow shade only.
- 3.1.22.2 The cab grille shall be manufacturer's standard stainless steel or impact resistant noncorrosive plastic grille.
- **3.1.22.3** The cab shall not be painted over top another finished color.
- 3.1.22.4 Chassis paint shall be urethane base, chassis color black.

## 3.1.23 No Idle Heat and Power System:

- **3.1.23.1** The No Idle heat and Power System shall do and include the following:
  - A. The system shall provide a digital display of battery voltage an audible alert when battery voltage needs to be replenished, and automatically disconnect the loads at a predetermined low voltage setting with use of a low voltage disconnect.
  - **B.** Shall power loads during no-idle conditions with deep cycle AGM batteries for a minimum of 6 hours.
  - C. Shall provide a minimum of 17,000 BTUs of heat for cab and engine without the use of the main engine.
  - D. Shall provide electrical power to heater blower motor and controls, parking lights, AM/FM radio weather band with wireless connectivity, WVDOH state 2way radio and emergency/ strobe lighting with key in auxiliary position.
  - E. Truck shall use electric start module for engine starting.
  - F. All AGM batteries and electronic start module shall be group 31 and fit in the OEM battery tray without modifications.

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### 3.2 Dump Body:

- 3.2.1 Stainless Steel Dump Body: Dump Body to be minimum 201 stainless steel cross memberless. Smooth under side type, suitable for use by WVDOH in severe duty street and highway maintenance including snow and ice control with external mounted cylinder.
  - 3.2.1.1 Dump Body inside minimum length 168 inches.
  - 3.2.1.2 Dump Body inside minimum width 86 inches, outside maximum width 100 inches.
  - 3.2.1.3 Dump Body side height (from bottom of floor to top of top rail) minimum 44 inches high.
  - 3.2.1.4 Tailgate to be 52" high minimum.
  - 3.2.1.5 Head sheet to be minimum 64" high.
  - 3.2.1.6 Sides, head sheet and tailgate to be 7 gauge minimum Type 201 Stain-less steel.
  - 3.2.1.7 Floor shall be minimum one-piece 1/4" thick abrasion resistant with a minimum tensile of 180,000, minimum yield 145,000 and minimum Brinell of 400, with both side radiuses built into the floor.
  - 3.2.1.8 Bed sides to be 7 gauge minimum, 201 stainless steel.
  - 3.2.1.9 Top rails are to be 4" x 5" minimum seamless, sloping (dirt/salt shedding) and boxed for added strength.
  - 3.2.1.10 Bottom rails are to be seamless and sloping (dirt/salt shedding).
  - 3.2.1.11 The long sills are of a one-piece trapezoid design, fabricated from 1/2" stainless steel. Long sills are to be 8-inches high, 4-inches wide at the bottom of the sill or to match top flange of truck frame, and 10-inches wide at the top of the sill. Full length 3/16-inch stainless stiffeners are to be welded to the inside of the sill 3 5/16-inch up from the bottom of the sill, as internal reinforcements.
  - 3.2.1.12 Driver and passenger side long sill is to be notched to provide a channel for hose routing from the center of the body to the L.H. body outer rub rail. The channel shall be approximately 13" wide and 3" deep. Channel (passageway) to be fabricated using 3/16" stainless steel plate. The channel (passageway) to be continuously welded to the long sills to prevent moisture and dirt from entering the long sill. Hoses running through the passageway to be enclosed and routed to the driver side rub rail where they end at hydraulic quick connects that mount into a removable plate. The

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driver's side long sill to allow for hose routing at rear to the rub rail and hoses must be run through a fully welded and enclose box and out to the side of the body at the rear.

- 3.2.1.13 Rear apron to be ¼" minimum 8" formed channel.
- 3.2.1.14 There are to be no cross members. Floor to be continuously welded to formed stainless steel sills.
- 3.2.1.15 Shall have dual flush mount rear view cameras mounted in the top of the rear corner posts and provide 120 degree field of view. Mounted housings outside of body not acceptable.
- 3.2.1.16 Cameras shall be color with a minimum 120 degree lens angle.
- 3.2.1.17 Cameras shall have a minimum of 10 infrared LED.
- 3.2.1.18 Camera shall a maximum size of 1.75 inches x 1.25 inches x 1.2 inches.
- 3.2.1.19 Shall have a minimum 7 inch LCD high resolution color monitor mounted in the cab interior so that driving visibility is not impaired.

## 3.2.2 Rear Corner Post, Cab Shield and Sides:

- 3.2.2.1 To be 1/4" minimum 201 Stainless Steel.
- 3.2.2.2 Top of corner post to be dirt shedding. A 14-1/2" one-piece 7gauge minimum stainless steel shall be break formed front to back at 5-1/2" and a downward slope remaining at 9".
- 3.2.2.3 The top of post shall house two (2) ½" minimum stainless steel plate brackets to house the top pivot point.
- 3.2.2.4 Tailgate reinforcement plate around the tailgate latch assembly must be ¼" minimum thick.
- 3.2.2.5 Reinforcement plate outside must be 16" tall minimum.
- 3.2.2.6 Reinforcement plate bottom must be 8-3/4" long minimum.
- 3.2.2.7 Reinforcement plate inside bottom height shall be 7-3/8" minimum to the floor.
- 3.2.2.8 Reinforcement plate top shall be 4-1/4" minimum from outside to top of floor sheet. 3.2.2.8.1 All to be continuously welded.
- 3.2.2.9 Three (3) oval factory cut outs for Stop, tail and turn signals, backup, and amber strobe.
- 3.2.2.10 No front corner posts. Head sheet to have mirrored image of three (3) weld on full length horizontal side brace each side and to be continuously welded to side brace, each side.
- 3.2.2.11 Two (2) Intermediate fully welded horizontal side brace, fulllength both sides. Four stainless steel winches shall be welded to the underside of the dump body intermediate side brace.

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- 1. Body Builder shall coordinate the placement of the winches to line up vertically with the spreader hold down brackets.
- 2. Winches shall not exceed the overall width of the body.
- 3. Four nylon webbing straps with flat hooks shall be included.
- a. Straps shall be 4-inches X 10-feet.
- 4. Body builder shall also provide a winch bar that is storable in the trucks toolbox.
- 3.2.2.12 30"x 90" wide cab shield to have Four (4) oval cut out with grommet mounts: Each side, each front corner.
- 3.2.2.13 All Back side of lights must be boxed in with stainless steel.
- **3.2.2.14** Stainless steel tubing shall be used to protect electrical wires between lights.
- 3.2.2.15 Cab shield must be 201 stainless steel minimum.
- 3.2.2.16 There are to be 3" x 8" minimum hard wood sideboards painted black.
- 3.2.2.17 The one-piece external side sheet must be break formed and wrap under the body floor no less than 10" extended under the body with a continuous welded seam to floor sheet.

# 3.2.3 Tailgate Design:

- 3.2.3.1 Shall be double-acting heavy-duty tailgate.
- 3.2.3.2 Bracing to be full perimeter box type, minimum 6" top and bottom and 4" sides.
- 3.2.3.3 There is to be four (4) horizontal brace, mid-section.
- **3.2.3.4** Top, bottom, and intermediate horizontal braces to be sloped (dirt/salt shedding).
- 3.2.3.5 Top and bottom tailgate pins to be 1-1/4" minimum diameter 303stainless steel.
- 3.2.3.6 Minimum 3/8" stainless steel coil chains to be long enough to hold tailgate in horizontal position if necessary.
- 3.2.3.7 Heavy nylon mesh sleeves to be installed over tailgate chains to protect body finish.
- 3.2.3.8 Lower latch hooks shall be flame cut from 3/4" minimum 201 stainless Steel minimum plate to secure against two (2) 3/8" minimum 201 stainless steel minimum, corner post mounted latch plates, one (1) set each side of the 3/4" minimum latch hook per side.
- 3.2.3.9 There is to be a full width 1" 201 minimum stainless steel diameter (minimum) tailgate release rod at rear of body.
- 3.2.3.10 Air tailgate release double acting air cylinder mounted center rear of body with dash control.
- 3.2.3.11 All tailgate hardware shall be 201 stainless steel minimum.

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- **3.2.3.12** One (1) Stainless Steel d-ring lift hook mounted on top of tailgate.
- 3.2.3.13 Continuous welded body shell, cab protector & tailgate.
- 3.2.3.14 Stationary 2-1/2" x 20"minimum long grip strut or sure step stainless steel steps (two steps) mounted to the front driver's side as far forward as possible on the horizontal side braces.
  - 3.2.3.14.1 Pull out stainless steel ladder to be mounted below.
- 3.2.3.15 Full length 2-1/2" minimum grip strut or sure step stainless steel walk rail to be mounted full length on bottom rub rails, both sides.
- 3.2.3.16 Full length ¼" x 1-1/2" minimum flat stock tarp stock mounted to top horizontal side brace, both sides.
- 3.2.3.17 One (1) one-piece stainless steel rod grab handles must be mounted on each side of the 20" step.
- 3.2.3.18 Front corner of bottom rub rail must be capped with 7GA minimum stainless steel and be on an approximate 60 degree angle.

## 3.2.4 Hoist and Rear Hinge Assembly:

- 3.2.4.1 Heavy duty front telescopic type hoist suitable for use with a Dump body on a road and highway maintenance truck used for snow and ice control, externally mounted of head-sheet.
- 3.2.4.2 Hoist shall be NTEA rated Class 90 No exceptions.
- 3.2.4.3 Forty three thousand pound (43,000 LB.) capacity minimum @ 2000 PSI.
- **3.2.4.4** Hoist shall be double-acting (power up and down full length of stroke).
- 3.2.4.5 Hoist largest diameter stage must be at bottom.
  3.2.4.5.1 Inverted cylinder is not acceptable.
- 3.2.4.6 5.5" inside diameter cylinder base tube (minimum).
- 3.2.4.7 140" stroke (minimum).
- **3.2.4.8** All cylinder stages to be nitrated for corrosion resistance and wear resistance.
- **3.2.4.9** Internal bore seal design so no packing adjustment or bleeding is required.
- **3.2.4.10** Hoist cylinder to be mounted inside pivoting, trunnion mounted cylinder cover tube.
- 3.2.4.11 Hoist Cradle to be frame mounted and made from 5" x 9 lbs./ft channel. Hoist mounting blocks (x2) are 2" thick x 5"

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tall. Cylinder block caps are 2" x 2-1/4" blocks with 1-1/2" wide x 1" thick x 5-1/2" long plate welded to block. Both block caps are bolted to cylinder blocks by (2) 3/4" x 7" bolts, washers, and toplock nuts. Cylinder block caps are to have grease zerks to allow greasing of cylinder pin. Cradle to accept cylinder. 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. Remote grease points for all of the hoist greaseable points shall be provided to all servicing to be done with the body in the down position.

- 3.2.4.12 Mounting height shall not exceed 8" from the top of chassis frame to dump body floor.
- 3.2.4.13 6" x 8" x ½" x 38" minimum long formed angle with 2" minimum stainless steel pins with greaseable pins.
  - 3.2.4.13.1 Each pin is secured by nut/bolt.
- 3.2.4.14 Each pin mounts into two (2) 1/2" minimum plates mounted on two sides to the 6" x 8" x ½" minimum formed angle.
  - 3.2.4.14.1 Outside plate for each set must be 1.125" minimum from end angle with pin centers at 32" minimum.
- 3.2.4.15 Each rear hinge block must be a 2-1/2" minimum wide and 3.25" minimum tall plate steel with 5.88" minimum length mounting surface of body to top of block.
  - 3.2.4.15.1 Each block must accept a 2" minimum dumping steel pivot pin, pivot pins to be drilled and cross drilled to allow lubrication of the entire pin surface.
- 3.2.4.16 Overhang from the center of the rear pivot is to be 18.5" minimum to the end of the floor plate.
- 3.2.4.17 A 4-gauge battery cable ground strap shall be installed from the dump body to the truck frame by means of a 5/16-inch stainless steel bolt

# 3.2.5 The following bed features shall be included:

- 3.2.5.1 Warning light (bed raised) dash or console mounted.
- 3.2.5.2 Mud guards, 10 gauge minimum, 201 stainless steel x 24 inches x 30 inches minimum, permanently attached in front of rear wheel and mounted by stainless steel bracket. Mud guard must include a

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- six(6) inch rubber flap mounted to the top. Flap must contact body floor when the body is down.
- 3.2.5.3 Rear mud flaps: Black, 24" x 36" x ½" thick minimum, tire cord reinforced construction with rubber nipples molded into the backside of the guard and mounted by stainless steel brackets with removable connecting rod.
- **3.2.5.4** Air operated tailgate shall be cylinder tailgate release valve or equal.
  - 3.2.5.4.1 A manual over-ride shall be provided on the outside of the dump body, allowing the operator to lock or unlock the tailgate using a simple adjustable wrench and without removing components. Grease zerks at each end of the tailgate cross-shaft shall be visible and accessible from the outside face of the dump body. Lubrication points on the tailgate latch cross-shaft shall facilitate easier greasing by means of grooved bushings and/or shaft
  - **3.2.5.4.2** Pivot points must include greasable stainless steel bushings to reduce seizing.
- 3.2.5.5 OSHA approved corrosion resistant backup alarm, electronic ambient, adjusts to background noise, 112 dba minimum, shock mounted at rear.
- 3.2.5.6 Shall have bed body support, both sides. Pivots for the body supports shall be greaseable. Body props shall be constructed to withstand the down-pressure of the hoist without damaging the dump body, chassis, or any related components.
- 3.2.5.7 Dump body shall have a stainless-steel bolt on full width asphalt plate minimum 12" long.

# 3.2.6 Bed Body Lighting:

- 3.2.6.1 All bed body wiring must be uninterrupted and complete with no splices.
- 3.2.6.2 All wire terminal ends (spade, ring, etc.) shall be: crimped soldered to the wires and heat shrink, or weatherproof connectors.
  - 3.2.6.2.1 Quick fasteners and/or crimp butt connectors are not acceptable for any connections.

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- 3.2.6.3 All electrical connections shall be protected with dielectric silicone grease.
- **3.2.6.4** All body lights shall be connected to chassis through a waterproof junction box located at rear of truck.
- 3.2.6.5 All body lighting stop, tail, turn, marker lights and reverse lights shall be LED type with sealed weatherproof wiring.
- 3.2.6.6 Rear lights shall be shock mounted, recessed oval stop, tail, turn, and recessed oval back up lights shall be mounted in back post.
- **3.2.6.7** Bed shall have center LED three (3) light cluster located in truck chassis.
- 3.2.6.8 Two (2) amber oval LED strobe lights shall be mounted at the front corners of the cab protector and two (2) amber oval LED strobe lights mounted at each outside corner of cab protector.
  - **3.2.6.8.1** Strobe lights shall be marked and switched at dash board location.
  - **3.2.6.8.2** Oval cutouts shall be precut by dump body manufacturer.
- 3.2.6.9 Two (2) oval amber LED strobe lights mounted at top of rear corner posts right and left sides and shall be switched in combination with cab protector strobe.
  - 3.2.6.9.1 Oval cutouts shall be precut by dump body manufacturer.
- 3.2.6.10 Lighted license plate bracket.
- 3.2.6.11 Bed shall have LED marker lights on bed corners.

### 3.2.7 Under Body Tool Box:

- **3.2.7.1** One (1) stainless steel tool box shall be mounted under body on right side frame rail.
- 3.2.7.2 Tool box shall be 18" H x 24" W x 18" D minimum cradled by a single piece brake formed stainless steel backets attached to the truck frame.
- 3.2.7.3 Tool box shall have a keyed latch of corrosion resistant hardware, automotive style weather stripping, and a drip rail over the door opening.

### 3.2.8 Load Covering System:

3.2.8.1 Shall be electrically controlled.

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- 3.2.8.2 Electric motor assembly shall include 12 volt sealed direct drive motor with forward and reverse action, cab mounted control switch, with resettable circuit breaker. Motor and roll tube bearing mounts to be incorporated into cab shield design. Aluminum wind deflector to be installed in front of roller on cab shield
- 3.2.8.3 Pivot arm assembly shall be constructed in a two (2) piece bent arm configuration of 1 1/4 inch minimum 14 gauge minimum stainless steel or aluminum tubing.
- 3.2.8.4 Bent arm extensions shall be constructed of minimum one (1) inch 14gauge, stainless steel or aluminum tubing.
- 3.2.8.5 Rear cross shall be constructed of minimum 1 ¼ inch 14 gauge stainless steel or aluminum tubing.
- 3.2.8.6 Stainless steel pivot armrests shall be included.
- 3.2.8.7 Underbody spring shall be extension spring minimum 12 inches in length attached to base of pivot arm and of body with articulating spring mounting bracket or equal.
- 3.2.8.8 Load covering system shall be provided with minimum of 18 oz. black asphalt rated tarp to fit dump body with brass or stainless steel eyelets every 2' foot.

### 3.3 FRONT SNOW PLOW:

- **3.3.1 Moldboard** The following are mandatory requirements for the moldboard.
  - 3.3.1.1 Moldboard Construction shall be 7 gauge minimum 304
    Stainless Steel and rolled to give the snow a free rolling action. Break formed will not be acceptable. Or minimum 3/16 weather resistant steel equivalent to corten and must meet the atmospheric corrosion resistance index of 6.0 or higher.
  - 3.3.1.2 Overall width shall be a minimum of 11 foot.
  - 3.3.1.3 Overall height shall be a maximum of 36 inches.
  - 3.3.1.4 Plow Weight shall be 1815 pounds minimum.
  - 3.3.1.5 Moldboard shall be reinforced at the top and bottom edges.
    - A. Top of moldboard shall be reinforced with an integrally structural angle 3-1/2 inch x 2-1/2 x 3/8 inch minimum.
    - B. Bottom angle shall be minimum of 4 inch x 4 inch x 3/4 inch angle tied into moldboard.

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- C. Removable blade attaching angle to be bolted to bottom angle shall be 4 inch x 4 inch x ¾ inch angle gusseted. Removable blade angle to be connected to bottom angle with bolts to be 5/8 inch diameter grade 8 plated with flat washers and all steel top looking nuts. (nylon lock nuts not acceptable)
- 3.3.1.6 Moldboard shall have a cutting-edge attack angle with minimum of three (3) different adjustments from 5 degree, 10 degree, and 20 degree vertical measurement from ground using ¾ inch plus.
- 3.3.1.7 Shall have a travel arc of thirty- five degrees (35°) minimum each way; total seventy degrees (70°).
- 3.3.1.8 Shall be minimum of eight (8) vertical ribs, ½ inch by 3-1/2 inch formed steel.
- 3.3.1.9 Shall be continuously welded ribs, moldboard, and angles.
- 3.3.1.10 An additional rubber snow shield shall be provided. It shall be minimum 5/16 inch x 12 inch belting and run the entire length of plow.
  - 3.3.1.10.1 It shall be mounted in a manner as not to add to overall plow height.
  - 3.3.1.10.2 Mounted with a stainless steel cover plate.
- **3.3.2 Cutting Edges** The following are mandatory requirements related to the cutting edges.
  - 3.3.2.1 Cutting edge shall be sectioned, standard AASHTO punched, in three (3) foot and four (4) foot lengths.

### 3.3.3 Blade Section:

- 3.3.3.1 The blade shall be flat hot-rolled finished steel to meet or exceed specifications for 1040 type steels.
- 3.3.3.2 Punching shall be 11/16" square holes with countersink to receive 5/8" diameter plow bolts. Location and spacing of the holes shall be as specified by the user.
- **3.3.3.3** The groove for the carbide inserts shall be milled in the center of the blade edge.
- 3.3.3.4 Center of holes shall be in line within 1/32" of established horizontal centerline and 1/16" of established vertical centerline.
- 3.3.3.5 Tungsten carbide inserts shall be a high shock WC grade of tungsten carbide with (11 to 12½) percent cobalt content.

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Density: 14.1 Minimum to 14.6 Maximum Hardness: 87.5 Minimum to 89.0 Maximum

Rc: "A" Scale

Transverse Rupture Strength (psi): 350,000 Minimum Porosity: (Based on testing in accordance with ASTM designation B276-79) A06, B02, C00

- 3.3.3.6 The carbide insert manufacturer to furnish certification to the State Highway Department that the inserts meet the specifications as set forth in 3.3.3.5
- 3.3.3.7 The inserts shall be a trapezoid design of the following dimensions: Height: .635" +/- .005 (long side) Width: .365" +/- .010 Length: 1" Nominal Bottom Angle: 25 degrees with a nose radius of 1/16" minimum 2.4 A metallurgical evaluation of the carbide insert shall show no evidence of cross grade contamination. Evaluation to be based on a photomicrograph of a polished and etched specimen at 500x magnification.
- 3.3.3.8 Inserts shall incorporate dome shaped protrusions on either end of the carbide inserts. The protrusion allows for proper spacing between each insert thus permitting braze material to flow uniformly between all inserts.
- 3.3.3.9 The brazing material shall be a high strength alloy type.
- 3.3.3.10The tungsten carbide inserts shall be positioned in the milled groove at approximately .010 between the inserts the entire length of each cutting edge section.
- 3.3.3.11 The inserts shall be brazed on all sides consistent with sound brazing practice with no evidence of voids or use of shims.
- 3.3.3.12 Each blade section to contain one insert, one inch nominal length for each inch of blade section length. Due to the thickness of the braze joints between inserts it may be necessary for several inserts to be slightly shorter or longer than the nominal 1" length to insure the carbide insert runs the entire length of the blade without protruding from the end of the steel body.
- 3.3.3.13 The difference between the highest and lowest tip point (on any two adjacent inserts) not to exceed 1/32" on any given blade assembly.
- 3.3.3.14 The finished blade section shall be free of warpage and longitudinal deviation not to exceed 1/8" in a four-foot blade section.
- 3.3.3.15 Each blade section shall be identified with manufacturer's identification stamp.

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- 3.3.3.16 The finished blade sections shall have marking showing the front edge of the blade to avoid improper mounting.
- 3.3.3.17 Front armored plate to be quench, tampered and thru hardened BHN of 450-514 hardness- 5/8" thick plate with wear indicator in bottom trough- Stitch welded near top with HD 710X Flux Core Wire to avoid risk of heating carbides and braze
- **3.3.4 Safety Trip Mechanism** The following are mandatory requirements related to the safety trip mechanism.
  - 3.3.4.1 Tripping mechanism shall be attached to semi-circle and moldboard ribs, and shall use minimum of two (2) compression springs.
  - 3.3.4.2 The trip mechanism shall hold the plow rigid in the plowing position and trip automatically when cutting edge comes in contact with obstruction then returns to normal plowing position.
- **3.3.5** Push Frame The following are mandatory requirements related to the push frame.
  - 3.3.5.1 Push frame shall be of all welded construction designed per manufacturer's heaviest rated specifications.
    - 3.3.5.1.1 Push frame shall be 132 inches in length for 11foot plow made of 4 inch x 4 inch x 3/8 inch
      minimum structural tube.
  - 3.3.5.2 Moldboard to push frame connection shall be by a minimum of seven (7) hinges with each hinge having a fully welded in bushing to house pin.
    - 3.3.5.2.1 Bushing shall be 1-1/4 inches mounted to two (2) 5/8 inch mounting ears for total bearing surface per bushing of  $2 \frac{1}{2}$  inches.
  - 3.3.5.3 The A- frame shall be equipped with an oscillating center pin of plow portion hitch of 2 inch with push plate being 1 inch x 33 inch x 5 inches feature to permit the plow to follow uneven road surfaces.
    - 3.3.5.3.1 Semi-Circle shall be 3-1/2 inches x 3-1/2 inches x ½ inch.

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### 3.3.6 Hydraulic Power Reversing Mechanism:

- 3.3.6.1 Shall be minimum of two (2) double acting 4 inch x 2 inch x10 inch stroke power reversing nitride hydraulic, cylinders fitted with the fixed base end near the center of the push frame.
  - 3.3.6.1.1 Cylinders shall be mounted above the semi-circle.
- 3.3.6.2 Hydraulic power reverse mechanism shall include a dual cross-over relief cushion valve rated at a minimum of 40 G.P.M. 30 GPM will not be accepted.
- 3.3.6.3 The "A" frame shall be minimum 4 inch channel with 2.5 inch flanges supporting a 2 inch center reversing pin mounted in a 3 inch, ½ inch wall tube and having a grease fitting.
  - 3.3.6.3.1 The push ends are welded to a 1inch x 33 inches x 5 inch base plate having a 2 inch pivot hole for the oscillator bar to attach to.

### 3.3.7 Skid Shoes:

- 3.3.7.1 Skid Shoes are not required but if used must be Caster mounted carbide mushroom type shoes, one (1) on each side shall be provided with manual hand crank assembly.
- **3.3.7.2** Manufacturer's standard adjusting mechanism shall be included.

### 3.3.8 Snow Plow Cushion Valve:

- 3.3.8.1 A double relief cushion valve must be installed for the plow angle and scraper left/right.
- 3.3.8.2 The valve shall be set at 2000 PSI maximum.
- 3.3.8.3 The valve shall be constructed of a high-tensile cast iron body with ball and spring style relief that has hardened seat.3.3.8.3.1 The valve shall be plumbed at the front of the truck for
  - snowplow angle and use X64 Range ISO 16028 flat-face pressure eliminator quick couplers.

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# **3.3.9 FRONT SNOW PLOW HITCH** – The following are mandatory requirements related to the hitch.

- 3.3.9.1 Shall be designed as a universal heaviest rating type unit to carry plows of weight specified.
- 3.3.9.2 The hitch shall be a frame type mount adaptable to any conventional truck and shall accommodate the tilt front end on the carrier.
- **3.3.9.3** The hitch shall be attached to truck's frame rails behind front bumper.
- 3.3.9.4 Hitch shall include a lift system designed at a rated capacity of 8,000 lbs. minimum.
  - 3.3.9.4.1 Lift cylinder must be same size as plows reversing cylinder for WVDOH's interchangeability.
- 3.3.9.5 Truck front plow hitch shall be a WVDOH plow quick hitch Design See attached: **EXHIBIT C**
- 3.3.9.6 Hitch frame height shall be approximately 33 inches and hitch width shall be approximately 26 inches.3.3.9.6.1 Will be determined at pre-build meeting.
- 3.3.9.7 Hitch frame members shall be ½ inches x 4 inches x 4 inches minimum structural angle or tubing.
  3.3.9.7.1 This hitch is low profile for access to the truck's engine compartment.
- 3.3.9.8 The lift arm and lift frame shall be designed to accept a 4 inch lift cylinder with nitride cylinder tube.3.3.9.8.1 Cylinder pins shall be 1 inch cold rolled steel.
- 3.3.9.9 Shall have a self-storing lift arm, accomplished by pulling one (1) 1 inch pin and folding the cylinder up, allows you to re-pin to store.
- 3.3.9.10 The telescopic lift arm shall be manufactured of 4 inch x 4 inch x 3/8 inch minimum square outer tubing and 3 inch x 3 inch x 3/8 inch minimum square inner tubing.
- 3.3.9.11 The lifting plate shall be 3/8 inch x 4 inch minimum flat material and have two (2) banjo-type chain eyes able to accept ½ inch minimum chain as well as the weight of the plow.
- 3.3.9.12 Shall also have two (2) stabilizer arms mounted to receiver tube of telescoping arm and outside pivot of hitch.
- 3.3.9.13 Shall provide custom ½ inch Grade 50 minimum cheek plates which shall be bolted welded or bolted to main hitch and to allow for bolting to truck's frame rail.

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- 3.3.9.14 Two bumper wings (right side and left side) are to be provided as an integral portion of the plow hitch. Each bumper wing is to be constructed using 10" H.D.Insert LB./ft. number structural channel. The wings are to be approximately the same height as the truck manufacturer's standard front bumper and are to be swept back to conform to the vehicle front hood and fenders. Swept back portion shall be a minimum of 6-inches long. The bumper wing sections are to be bolted to the vehicle thru the hitch cheek plates and the truck frame. Bumper must not interfere with tilting of cab hood or the operation of the snow plow.
- **3.3.10 Plow Hydraulic System** The following are mandatory requirements related to the hydraulic system.
  - 3.3.10.1 Hydraulic pressure shall be supplied from the truck central hydraulic system through a lift valve and reversing valve (main bank valve) to the plow lift and reversing cylinders.
  - **3.3.10.2** The vendor shall be required to supply the following hydraulic components:
    - a. One (1) 4 inch lift cylinder with 10 inch stroke doubleacting hydraulic lift cylinder (even if we only use one (1) line fitting in upper end with breather), clevis pinned top and bottom.
    - b. Two (2) 4 inch double acting nitride hydraulic reversing cylinders.
    - c. Plow reversing and plow truck portion lift cylinders must be the same size for interchangeability, standardization and one part number cylinder.
- 3.3.11 Paint The following are mandatory items related to the paint color.
  - 3.3.11.1 Unit shall be painted with urethane paint black or black powder coat paint code M6388G or equal shade only.3.3.11.1.1 Stainless plow face not to be painted.

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### 3.4 Plow Option: Right Front Wing Plow - Front Mounted Patrol Wing System:

This specification is to describe a full floating patrol wing with full tripping action and hydraulic telescoping action mechanism with the capability to lower the assembly to the travel position for visibility purpose. The plow shall be a current model under standard production by the manufacturer, with not less than two years of production and field use.

### 3.4.1 MOLDBOARD:

- **3.4.1.1** Moldboard height shall be 32 inch minimum at toe 39 inch maximum at discharge.
- 3.4.1.2 11ft x 5/8'' x 6'' minimum three piece carbide cutting edge.
- 3.4.1.3 Moldboard shall be 7GA minimum 3/16" weather resistant steel equivalent to Corten. it must meet the Atmospheric Corrosion Resistance Index of 6.0 or greater, with minimum 6 ribs ½" thick.
- 3.4.1.4 Continuous welded one-piece moldboard.
- 3.4.1 5 Reinforced 4" x 4" x 3/4" minimum bottom angle with 1/4" x 4" minimum plate braces.
- 3.4.1.6 3 1/2" x 4" x 3/8" minimum angle horizontal stiffeners for added rigidity.
- 3.4.1.7 2" x 2" x 3/8" minimum boxed top angle with ends capped.
- 3.4.1.8 Push arm mounting points shall be 1/2" minimum plate.
- 3.4.1.9 Full moldboard trip with trip dee block assembly.

### 3.4.2 Front Wing Post:

- **3.4.2.1** Wing post attaches to front mount plow hitch for ease of removal.
- 3.4.2.2 Post is fabricated from minimum 8" Tab & Slot ½" I-beam.
- **3.4.2.3** Toe cylinder is double acting 3" x 48" stroke with nitrided 2" rod minimum.
- 3.4.2.4 Slide plate shall be minimum of 3/4" thick steel and allow 8" of mechanical moldboard float.
- 3.4.2.5 The slide plate shall be retained by 1/2" x 1" minimum bar stock welded and gusseted to front post.
- 3.4.2.6 48" minimum moldboard ground clearance for benching purposes.
- 3.4.2.7 Moldboard attaches to slide plate through a hinge assembly.

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# 3.4.3 Rear Wing Support and Push Arm Assembly:

- 3.4.3.1Push arm frame is designed to mount under truck frame rails to allow minimum cab to body clearance.
- 3.4.3.2 Wing arm attachment face plate shall be removable with a two pin

### Design.

- 3.4.3.3 One (1) hydraulically adjustable length push arm assembly shall be required. Outer structure tube shall be 4" x 4" x ½" wall and inner shall be 3" x 3" x 3/8" wall square tube.
  - **3.4.3.3.1** Spring cushion to be mounted on end of arm closest to rear wing support assembly.
- 3.4.3.4 Heel lift cylinder to be a minimum 2" nitrided rod x 3" x 14 7/8" dual acting.
- 3.4.3.5 Extendable wing brace to be minimum 2" nitride rod x 3" x 21".

### 3.4.4 Miscellaneous items for wing plow:

- 3.4.4.1 Three (3) valve sections to be added to hydraulic stack section to operate wing functionally per manufacturer's recommendations. X64 Range ISO 16028 flat face pressure eliminator quick couplers must be supplied.
- **3.4.4.2** Wing function to be operated by two additional electric over hydraulic joysticks.
- 3.4.4.3 Two (2) LED work lights to be provided on one (1) rocker switch on chassis dash provided switch. One (1) mounted on rear wing support and mounted on front wing post.

# 3.5 V-BOX SPREADER 2-in-1 V-Box, Prewetting/Slurry system:

- 3.5.1 Heavy Duty 201 Stainless Steel V-Box Dual Auger Salt Spreader with Storage Stand.
  - 3.5.1.1 Capacity to be 9.5 yard minimum struck capacity.
  - 3.5.1.2 Inside length to be 14 feet maximum and maximum height of 56".
  - 3.5.1.3 Inside top width to be maximum 83-3/4".
  - 3.5.1.4 Side slope to be 45 degree minimum.
  - 3.5.1.5 Front & rear panels slope; minimum rear 9 degree, minimum front 18 degree.
  - 3.5.1.6 Hopper seams shall be continuous welded on inside.
  - 3.5.1.7 Sides, ends, & side supports to be 10 gauge minimum 201 SS.
  - 3.5.1.8 Top edge of hopper is formed "J" channel minimum 2" x 7/8".

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- 3.5.1.9 Dual auger trough is to be 7 gauge minimum 201 SS.
- **3.5.1.10** Long sills to be 7 gauge minimum 201 SS continuous welded to side sheet.
- 3.5.1.11 Cross sills to be formed 7 gauge minimum 201 SS welded to side supports.
- 3.5.1.12 Spreader shall have a 7 gauge minimum 201 SS inverted vee mounted over the dual augers with frame work for stability.
- 3.5.1.13 Lift hooks on each corner are 1/4" x 2"minimum formed 201 SS plate aligned with body mounted stainless steel winches. Must provide four (4) 4inch nylon straps 10 foot in length minimum working load limit of 5,000 lbs.
- 3.5.1.14 All hardware shall be 201 SS minimum.
- 3.5.1.15 Hydraulic inter-lock auger shut-off system to shut augers down when cover grates are opened—interlock plumbed at factory.
- 3.5.1.16 3/8" rod on 3/8" rod Stainless steel top grate screens with antifreeze hinges are required equipment with auger conveyor v-box units.
- 3.5.1.17 Full width 201SS minimum metal spill shield mounted at front of hopper on top rail with slope facing forward at 45 degree.3.5.4.17.1 Hopper shall have full spill shield rubber side skirts.
- 3.5.1.18 A full width rear 201 SS minimum light bar shall be mounted with nine (9) LED lights.
  - 3.5.1.18.1 Shall include stop, tail, turn, three (3) bar light, two (2) amber LED strobes, two (2) rear work lights and two rear facing LED flood lights as back up lights.
  - 3.5.1.18.2 Shall have weatherproof wiring harness without the use of junction boxes. Connections must be sonic welded and covered with adhesive lined shrink wrap include 7 wire corrosion resistant plug to reach rear of cab.
  - **3.5.1.18.3** Spreader light harness shall adhere to IPC-A-620 standards.
  - 3.5.1.18.4 Main trunk to be contained within the light bar of the spreader and supply all molded light connections for marker lights, stop tail turn lights, and strobe lights. Will also include connectors for reverse spotlights, spinner light and spill shield light and a main connector for trailer plug harness. Spinner light and spill shield light shall have a break away connector housed within light

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bar to allow for replacement of light harness in the event of damage.

- 3.5.1.18.5 All connectors used shall be Deutsch, FCI Apex or Molex 150
- 3.5.1.18.6 Entire harness with exemption of replaceable trailer plug harness shall be contained in a non-abrasive machine braided wire covering. The use of polyethylene or nylon split loom, expandable sleeving, or semi rigid split sleeve, not accepted?
- 3.5.1.19 One (1) stainless steel fold up ladder mounted at the rear of spreader on right side allowing access from ground to top of spreader.
  - 3.5.1.19.1 One (1) grip strut step mounted on top of rear spinner housing frame above rear baffle and full width of spinner housing.
- 3.5.1.20 The V-box spreader shall include a stainless steel leg stand assembly.
- 3.5.1.21 The stand shall be capable of sliding into an 84" wide dump body with a 9" radius between the sides and floor.
  - 3.5.1.21.1 The base in contact with the dump floor shall not exceed 65" width. The spreader stand/leg assembly shall be designed to support an empty spreader hopper.
- **3.5.1.22** The spreader frame assembly shall be constructed from 201 grade stainless steel minimum.
- 3.5.1.23 The spreader frame shall contain two formed members, full length of the spreader unit on each side.
- 3.5.1.24 The two main longitudinal frame members shall be fabricated hat channel design, manufactured from a minimum of 7 gauge 201 grade stainless steel.
  - 3.5.1.24.1 They shall measure 6" minimum on the inside width and 7.5" minimum in height.
  - 3.5.1.24.2 The frame shall be open on the bottom side and closed on the top side.
  - 3.5.1.24.3 The front end of the main longitudinal members shall each include a 6" minimum solid heavy duty poly nylatron wheel.
  - 3.5.1.24.4 The nylatron wheel shall be 4,000lb minimum rated without bearings.

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- 3.5.1.24.5 No steel bushings of bearing are permitted.
- 3.5.1.24.6 The rollers will allow the spreader to roll into the dump body of the truck. The through roller shaft hardware shall be stainless steel.
- 3.5.1.25 Located between the main longitudinal frame members shall be cross braces manufactured from minimum 7gauge 201 grade stainless steel fabricated channel.
  - 3.5.1.25.1 These channels shall be 5" minimum wide x 4" minimum deep, open to the bottom as to prevent material hold.
  - **3.5.1.25.2** These supports shall be located on 24" minimum centers.
  - 3.5.1.25.3 The clearance between the dump body bed and the underside of the cross bracing shall be minimum of 1-1/2".
- 3.5.1.26 The rear upper leg frame shall be an offset design located between the main frame rails and the rear lengths.
  - **3.5.1.26.1** The structure shall be fabricated boxed tube construction, minimum of 7 gauge 201 grade stainless steel.
  - 3.5.1.26.2 The frame members shall have a sloping angle of 30 degrees minimum down from the frame rail attachment point.
  - 3.5.1.26.3 The upper leg frame shall have a series of (5) holes to allow for height adjustment of the lower leg.
- 3.5.1.27 The rear legs shall be manufactured from fabricated ¼", minimum 201 grade stainless steel tube.
  - 3.5.1.27.1 The tubes shall be 5" minimum deep x 2" minimum wide.
  - 3.5.1.27.2 The legs shall be adjustable within the upper leg frame by means of (5) minimum available height adjustment holes.
  - 3.5.1.27.3 The rear legs shall be sloped a minimum of 15 degrees from vertical with the lower part of the leg angles away from the spreader body and towards the rear direction.

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- 3.5.1.27.4 The rear legs shall pin to the upper leg frame with a handle type 1" minimum zinc plated pin.
- 3.5.1.27.5 The rear leg shall have a pivoting foot which shall measure a minimum of 10" in length x 2" minimum in width.
- 3.5.1.27.6 The foot shall include an integrated handle.
- 3.5.1.27.7 The foot shall be fabricated from a minimum of 7gauge 201 grade stainless steel, and include a minimum of (5) 1/4" x 2" studs on the bottom side to reduce surface slippage.
- 3.5.1.28 The front legs shall be set back from the frames front roller wheels to allow the roller wheels to contact the dump body floor prior to contacting the front legs.
  - 3.5.1.28.1 The front legs shall be a tube in tube design, slanted forward at an angle of a minimum of 95 degrees.3.5.1.28.1.1 Also, the legs shall slant to the sides a minimum of 8 degrees.
  - 3.5.1.28.2 The upper portion of the front legs shall be constructed from a minimum of 4" x 4" x 7gauge 201 grade stainless steel fabricated square tube.
  - **3.5.1.28.3** The upper legs shall have a series of (3) holes to allow for height adjustment.
  - 3.5.1.28.4 The lower inner leg shall be fabricated from  $3.5'' \times 3.5'' \times 3/16''$  minimum structural stainless steel tube.
  - **3.5.1.28.5** The lower legs shall have a series of 6 holes to allow for height adjustment.
  - 3.5.1.28.6 The front leg bottom base shall have a pivoting foot pad, a minimum of 4" wide x 5" deep.
  - 3.5.1.28.7 The front legs shall manually actuate into the main frame members when the spreader is installed into a dump body.
  - 3.5.1.28.8 When the spreader is to be stored, the legs shall be pinned into the locked position with a 1.25" pin minimum.
- 3.5.1.29 The stand assembly shall include trunnion tailgate latches to allow the spreader/stand to be secured into the dump body latch fingers.

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The trunnion bar assembly shall consist of all stainless steel components/hardware and tailgate latch pins.

- 3.5.1.30 The stand shall include side guide wheels to assist in the loading/unloading of the spreader system. The guide wheels shall be adjustable and designed to ride along the side of the dump body.
- 3.5.1.31 The complete assembly shall be high pressure cleaned and SS etched to remove weld slag, splatter, and oils. All stainless steel shall remain in natural stainless steel finish.
- 3.5.1.32 All auger bearings must be tied to one centralized greasing point accessible from the ground while the spreader is loaded in the truck.

### 3.5.2 Minimum Auger Requirements:

- 3.5.2.1 Dual 7" minimum diameter variable pitch auger conveying system. The augers must be counter rotating to help prevent bridging of material. Dual augers extend a minimum 12 inches past end of hopper to allow discharge into spinner chute.
- 3.5.2.2 The augers shall consist of a 4-inch O.D. steel pipe. The auger shaft shall have nylon bushings inserted in each end. The front bushing shall have an inner diameter to accept a 2-inch O.D. round bar shaft that is to be used to attach the auger to the front bearings. The rear nylon bushing shall have an inner diameter to accept a 2 1/2-inch shaft attached to the rear reducer. Both ends of the augers shall be attached with a 7/8" X 5 1/2" stainless steel bolt and lock nut. The flitting shall be 3/8" X 2 1/2" wide AR400 Hardox material. The flitting shall have (5) five different pitches so the hopper will unload evenly from the front, middle and rear.
- 3.5.2.3 Each auger is driven at the rear by a 24.7 CIR hydraulic motor which is directly coupled to a 3.6:1 planetary gear case with 2.5 inch diameter shaft coupled to the end of the auger shaft with a 7/8" cross bolt
  - 3.5.2.3.1 The augers shall be driven by dual 14 H.P. hydraulic motors coupled to the augers thru speed reducing gear boxes having a 3.6:1 gear reduction ratio that will deliver 27,576 in. lbs. of torque to the augers. The motors shall be connected hydraulically in series with return oil out of the motor first in line directed to power the downstream motor.
- 3.5.2.4 Gear case is directly coupled to end of auger shaft and shall be filled with John Deere corn head grease or equal.

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- 3.5.2.5 The idler end of the auger shall be supported by a 4 bolt flange, heavy duty, sealed, self- aligning ball bearing. This bearing shall be able to be lubricated from the rear of the body.
- 3.5.2.6 Rear auger drive motors to have motor guards.

### 3.5.3 Reservoir Tanks:

- 3.5.3.1(2) 100-gallon minimum rotation molded medium density .375" polyethylene tank with 5" diameter cap. Includes sump for complete drainage.
- 3.5.3.2 Replaceable screen line strainer.
- 3.5.3.3 Corrosion resistant shut off valves.
- 3.5.3.4 Reservoir tank is angle formed to allow for mounting on the side of a slip-in v-box utilizing 201 stainless steel minimum mounting brackets and hardware.
- 3.5.3.5 Supplied with bulk tank fill quick couplings. Internal baffle.
- 3.5.3.6 Banjo brand fittings must be provided to allow for filling/unloading.

### 3.5.4 Spinner Assembly:

- 3.5.4.1 10 gauge 201 stainless steel minimum enclosed design.
- 3.5.4.2 Spinner assembly shall have a (4) position telescopic adjustment below mounting surface.
- 3.5.4.3 Two (2) baffles shall be positioned at the bottom of the spinner chute to direct flow of materials onto spinner disc for directional spread pattern adjustment.
- 3.5.4.4 The two (2) spread pattern adjustment baffles shall each have 5 (five) positions of adjustment without the use of tools.
  - 3.5.4.4.1 The baffle(s) shall utilize a 304SS notched bar that pins into position for a positive lock.
- 3.5.4.5 Four (4) bottom spinner deflectors shall be over-lapping to prevent loss of granular material when the deflectors are raised.3.5.4.5.1 Front deflector is fixed.
- 3.5.4.6 The bottom over-lapping spinner deflectors shall have four (4) positions of rod and pin adjustment without tools.
  - 3.5.4.6.1 Chain adjustable deflectors are not acceptable.
- 3.5.4.7 The bottom over-lapping spinner deflectors shall have the capability to be removed and/or replaced without tools.

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- 3.5.4.8 Poly 20" diameter spinner disc to have replaceable machined hub.
- 3.5.4.9 Poly spinner disc shall have minimum of six (6) built in spinner vanes.
- 3.5.4.10 Spinner hydraulic motor shall mount directly on top of spinner disc.
- 3.5.4.11 The top mounted spinner motor shall be enclosed in the spinner chute to maximize granular material flow to the spinner disc.
  - **3.5.4.11.1** For serviceability, the spinner chute shall have open access to the spinner motor.
- **3.5.4.12** A spinner bypass chute shall be provided that allows for the stationary unloading of granular material.
  - **3.5.4.12.1** When in the pivoted "down" position, the chute shall provide complete bypass of the spinner and bottom deflectors.
  - 3.5.4.12.2 When in the "up" position, the chute shall become part of the enclosed spinner chute providing granular material flow to the spinner.
  - 3.5.4.12.3 The bypass chute shall have a quick latch system pinning into position without the use of tools.

### 3.5.5 Metering Orifice and Slurry Tube:

- 3.5.5.1 Metering Orifice and Slurry Tube shall be bolt-on brackets, with all stainless steel hardware, and fittings supplied.
- 3.5.5.2 Variable displacement orifice provides an extended range of material outputs located in spinner chute.
- 3.5.5.3 Variable displacement orifice 22" wide minimum, vented internal at top of spinner chute.
- 3.5.5.4 Spreader shall have a stainless steel liquid injection tube 1" OD which shall be located on the underside of the inverted vee. The injection tube will provide liquid which will be agitated by the spreader augers to create a salt slurry mixture. The liquid for the slurry generation process shall come from the liquid pre-wet system. There shall be a manual ball valve to control flow from the pre-wet to either the slurry injection line or to the spinner pre-wet nozzles (variable displacement).

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### 3.5.6 Hydraulic Pre-Wet System:

- 3.5.6.1 Liquid pumping system shall come complete with all plumbing, pumps with an enclosure, and mounting hardware.
- **3.5.6.2** The spray system shall be completely controlled by the ground speed spreader control.
- 3.5.6.3 System shall run off a section in valve stack.
- 3.5.6.4 Pump housings and gears are made of top quality bronze and corrosion resistant.
- 3.5.6.5 Pump shall be self-priming, pulse free positive displacement design.
- **3.5.6.6** Unit shall come with a precision-machined minimum 303 stainless steel shaft.
- 3.5.6.7 Bearings are designed of high performance carbon graphite material selected for wear resistance and long service life, O-ring cover seal for maximum leak protection.
- 3.5.6.8 Pump shall come with a built in relief valve set at 45 PSI maximum to protect against over-pressurization.
- 3.5.6.9 Pump shall have a continuous duty rating of 125 PSI maximum.
- 3.5.6.10 Pump shall be plumbed through a minimum 0-15 maximum GPM flow meter, made of a non-corrosive material.
- 3.5.6.11 Pump shall be capable of 8 GPM minimum at 40 PSI maximum.
- 3.5.6.12 Hydraulic motor must be a 12.5cc minimum and mount directly to the pump and have a machined aluminum mounting bracket.
- **3.5.6.13** Hydraulic connections shall be bulkhead style mounted in bottom of enclosure.
- 3.5.6.14 All hydraulics inside enclosure shall be hard plumbed.
- 3.5.6.15 Pumps shall be mounted in a Nema 4x style weather tight enclosure.
- 3.5.6.16 All plumbing shall be included for a 4 nozzle system with check valves.
- 3.5.6.17 There shall be (4) 2 GPM brass nozzles with quick connect caps. Check valves 5 minimum and 20 maximum PSI for auto nozzle selection via pressure.
- 3.5.6.18 There shall be a ¾" strainer with stainless steel maximum 20 mesh screen, and a poly 3-way ball valve for flushing pump.
  3.5.6.18.1 Must be mounted on Vee-Box Spreader on passenger side rear.

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## 3.6 Tank Option - ANTI-ICING TANK AND SPRAY SYSTEM

### 3.6.1 Polyurethane Tank Spray System:

- 3.6.1.1 System shall be capable of dispensing liquid De-Icer on three lanes at a maximum rate of 60 gallons per lane mile at 60 mph.
- 3.6.1.2 The liquid Anti-Icing tank shall have a minimum capacity of 2000 gallons and to be constructed out of polyurethane.
- 3.6.1.3 Tank shall include maximum amount of baffle balls for tank capacity.
- 3.6.1.4 A 16" minimum manhole with lid shall be provided in the top of the tank.
- 3.6.1.5 The tanker rear bumper shall also provide for the mounting of the pump, valves, and spray bars.
- 3.6.1.6 Load and unload connection will be a part of the rear bumper assembly, an adjustable 304 stainless steel minimum center spray bar with a minimum of 8 solid stream non-adjustable nozzles shall be provided; the spray bar assembly must be adjustable from 14 minimum to 20 maximum inches off the road surface.
- 3.6.1.7 Mounting of unit to stainless steel adjustable leg stand kit for loading and unloading with tank empty and for empty storage.
  - 3.6.1.7.1 Overall width, not including rollers and spray booms, shall be 75.36 inches maximum. Overall length, not including rollers, shall be 172.25" maximum.
  - 3.6.1.7.2 Must have minimum four (4) stainless steel cross member supports. Rear frame height to be maximum of 40.37".
- 3.6.1.8 A spray bar for the left and right lane shall be provided, the bar shall have 4 adjustable solid stream nozzles, and shall be placed no higher than 14 inches minimum to 20 inches maximum off the road surface.
  - 3.6.1.8.1 1-½ inch stainless steel trunnion style ball with poly housing valve shall be provided for activation and deactivation of the selected spray bar.
- 3.6.1.9 Stainless steel nozzles to be rated at minimum 32 gallons per lane mile.
- 3.6.1.10 All mounting brackets and hardware to attach plumbing and spray bar assemblies shall be minimum of 304 stainless steel.
- 3.6.1.11 The liquid chemical pump must be a 190 GPM minimum centrifugal pump with a 2" suction and 1-1/2" pressure ports and be constructed

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of stainless steel.

- 3.6.1.12 The hydraulic motor shall be integral with the liquid pump.
  - 3.6.1.12.1 The hydraulic motor will require a maximum of 12 GPM @ 2100 psi, and must be capable of working on fixed gear pump systems or load sensing systems.
- 3.6.1.13 A filter will be installed after the pump to protect the flow meter, nozzles and valves.
- 3.6.1.14 Hydraulics for the pump/valves will be controlled electronically, definite in above hydraulics section.
- 3.6.1.15 All wiring and hydraulic hoses shall be routed away from pinch points, sharp corners and heat sources. 1 1/2" plumbing shall be provided for all liquid De-Icer pressure lines.
- 3.6.1.16 The system will be capable of self-loading liquids from a ground based tank or mobile nurse tank and have trunnion latch bars.
- 3.6.1.17 All fittings must be glass filled polypropylene, capable of adaptations.
- 3.6.1.18 Two (2) yellow clearance lights; four (4) red reflectors; one (1) 3-light cluster.
  - 3.6.1.18.1 All LED type.
- 3.6.1.19 Check valves shall be installed at boom to minimize run-on and improve start up response.
- 3.6.1.20 Tank shall have rear mounted stainless steel ladder.
- 3.6.1.21 System shall be capable of spraying Herbicide for weed control without the need of additional parts added.
- 3.7 CENTRAL HYDRAULIC SYSTEM- The Central Hydraulic System shall be completely adjusted to proper pressures. Spreader controls shall be calibrated and ready for use when delivered. Plow Balance system shall be adjusted and ready for use.

### 3.7.1 Power Take Off:

- 3.7.1.1 Power take off shall be made of cast iron.
- **3.7.1.2** Unit shall be capable of mounting to fully automatic style transmission.
- 3.7.1.3 PTO shall be of the Hot Shift design and have a rotatable direct mount cast iron flange for the hydraulic pump to mate to. Shall be of the Wet Spline design, PTO/pump shafts are bathed in oil.
- 3.7.1.4 PTO to engine speed shall be in the maximum range of 116% to 120%.
- 3.7.1.5 Unit shall have in internal solenoid shifting coil no external shifting is acceptable.

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- 3.7.1.6 PTO must have automatic shutdown with override switch for low oil and hot oil conditions.
- 3.7.1.7 PTO must have continuous torque rating of 390lb. ft. maximum.
- 3.7.1.8 Frame shall have proper clearance to ensure PTO cannot make contact with frame.

### 3.7.2 Hydraulic Pump:

- 3.7.2.1 The hydraulic pump shall have a minimum displacement of 75cc.
- 3.7.2.2 The hydraulic pump shall be direct flange mount to PTO.
- 3.7.2.3 The piston pump (load sensing type) must be capable of 48 GPM minimum and a minimum of 3000 PSI at 2500 RPM.
- 3.7.2.4 Pump must have rear ports to avoid multiple 90-degree bends in suction line.
- 3.7.2.5 The case drain must be positioned as high as possible and directed back to the reservoir without passing through the return line filter.
- 3.7.2.6 Pump must have #24 minimum size O-ring port with 2" minimum barb fitting, for suction port and 1" minimum O-ring pressure port.
- 3.7.2.7 Pump must be all cast iron design.
- 3.7.2.8 The pump must have internal bleed down compensator option.
- 3.7.2.9 Compensator shall have 2 ports to choose from for the load sense line for ease of installation.

### 3.7.3 Hydraulic Stack Valve:

- 3.7.3.1 The valve shall be of a mobile stackable design load sensing type.
- 3.7.3.2 The valve shall be all cast iron design and all sections must be of the same valve series.
- 3.7.3.3 The valve shall be capable of a nominal 48 GPM minimum with published flow curves to 50 GPM maximum.
- 3.7.3.4 The valve must be pressure and flow compensated.
- 3.7.3.5 Inlet and outlet ports to be 1" O-ring, all working ports shall be 5/8" O-ring minimum.
- 3.7.3.6 Valve to be arranged as follows:
  - A. Inlet cap with top ported pressure and tank, load sense and drain ports, must also have pressure core blocking to help coupler dis-connect.
  - **B.** Double acting cylinder spool for hoist 0 minimum-32 maximum GPM, proportional 12VDC operated, with spring return to neutral. Section shall have manual handle overrides with stroke limiters and 500 PSI minimum down side load sense relief.

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- C. Double acting cylinder spool for plow lift, proportional 12VDC operated with spring return to neutral. Pressure compensated 0 minimum-10 maximum GPM main spool. Section shall have manual handle overrides and stroke limiters.
- **D.** Double acting cylinder spool for plow angle, proportional 12VDC operated with spring return to neutral. Pressure compensated 0 minimum 15 maximum GPM main spool. Section shall have manual handle overrides and stroke limiters.
- E. Single acting 0 minimum 15 maximum GPM spool for feeder, proportional 12VDC spring to center with manual override.
- **F.** Single acting 0 minimum -7 maximum GPM spool for spinner, proportional 12VDC spring to center with manual override.
- G. Single acting 0 minimum -7 maximum GPM spool for pre-wet, proportional 12VDC spring to center with manual override.
- H. Single acting 0 minimum 15 maximum GPM spool for Anti-Ice, proportional 12VDC spring to center with manual override.
- 3.7.3.7 Spreader and pre-wet sections shall be part of a manifold assembly that has a bleed orifice and bolts to the valve sections.3.7.3.7.1 Aluminum single block manifold valves and sub-plate

mounted valves will not be accepted.

# 3.7.4. CONTROLS FOR DUMP BODY HOIST and SNOW PLOW and SPREADER:

- 3.7.4.1 Shall be a one piece modular control arm design for a variety of joystick controls, control and switch configurations.
- 3.7.4.2 Unit shall come with 2 fully proportional joysticks for hoist and plow.
- 3.7.4.3 Shall have a single axis control with dead man switch for hoist.
- 3.7.4.4 Shall have a dual axis "+" design for snowplow and wing up/down, and left/right control.
- 3.7.4.5 CAN based wiring for ease of installation.
- 3.7.4.6 Joysticks can be trimmed for minimum and maximum speed on screen
- 3.7.4.7 Armrest style console shall be fully adjustable to accommodate automatic transmissions, and mount close to driver's seat right hand side.

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- 3.7.4.8 Control unit shall be fully adjustable and swivel left to right.
- 3.7.4.9 Display messages for: Low Oil, Body Up, Change Filter, Plow Float and lane selection.
- **3.7.4.10** All messages shall be displayed on the display and show the actual name of the message.
- 3.7.4.11 Console shall have 3 on/off rocker switches in the arm for left, center, and right lane for anti-icing.
- 3.7.4.12 Console shall have a PTO switch for on/off, Plow balance switch for on/off and a momentary position for low oil override.
- **3.7.4.13** Shall be full closed loop operation for auger, pre-wet and anti-ice functions.
- 3.7.4.14 Closed loop on the auger shall be with the sensor built into the motor and shall be a M12 connection.
- 3.7.4.15 Unit shall have a surface patrol air/temp sensor and must be on display.
- 3.7.4.16 Unit shall come with full schematic documentation.

**3.8 SPREADER CONTROLLER-** The intent of this specification is to describe a complete control system that operates on a CAN-Bus. The system communicates over a CANOpen bus system using CANOpen protocol.

### 3.8.1 The System:

- 3.8.1.1 The system shall be Certified power solutions and consist of four primary modules that reside on the CAN bus and allow flexibility in mounting configurations. The system is completely expandable and allows for additional modules to be added to the CAN bus. All four primary components of the system are software upgradeable. The
  - configuration file of a calibrated system can be saved for transfer to other systems or as a backup providing the ability to use a specific configuration for varying vehicle use or operator skill level.
  - **3.8.1.1.1** The configuration file will be accessible by a USB port located in the display.
  - 3.8.1.1.2 The original configuration is maintained at the factory as a secondary backup and is traceable by part number.
- 3.8.1.2 The in-cab axis controls must be placed on the CAN Open bus by utilizing an encoder module which has (5) 0-5v analog inputs and (14) PnP Digital Inputs.
  - **3.8.1.2.1** The Encoder module will use a circuit board that has been conformal coated to provide moisture and shock resistance.
  - 3.8.1.2.2 The system will support up to (2) Joystick encoder modules and be able to support 10 physical joystick axes maximum and 10 virtual axes maximum.

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- 3.8.1.3 The display can be attached to the system panel or remote mounted.

  Joystick function will be clearly labeled on a graphic overlay providing basic operator instruction.
  - 3.8.1.3.1 The system panel can be positioned over a 360 degree rotation and 4 inches minimum of vertical travel on its mounting tube.
  - 3.8.1.3.2 The optional Touch-guard panel can be remote mounted, mounted in the system panel, or armrest.
  - 3.8.1.3.3 Up to (4) Touch-guard systems can be associated on the same CAN bus.
- 3.8.1.4 The system must boot in 35 seconds or less and must not consume power when the ignition key is turned off.
  - 3.8.1.4.1 Systems that draw power in the "off mode" to manage system boot time between ignition cycles are not acceptable.

### 3.8.2 The Display:

- 3.8.2.1 The Display will include a 7 inch minimum, color touchscreen enclosed within aluminum housing. (1) USB port and (4) Digital outputs capable to 400 mA minimum.
- 3.8.2.2 The display will include a well-designed User Interface (UI) that allows the user to navigate within the system software. The UI will include a self-guided tutorial for setup and calibration. Context appropriate help menus will also be available within individual setup screens.
  - **3.8.2.2.1** The display must use a panel layout design which can be customized by the end user by changing the location, size, and color of the panels.
  - 3.8.2.2.2 Display shall have a USB drive for firmware updates, configurations, and calibrations saving and uploading.
  - 3.8.2.2.3 The complete configuration and calibration values shall also be in a spread sheet format when downloaded.
  - **3.8.2.2.4** The operator shall be able to make changes to the rate, lane, pre-wet, and anti-ice functions using the operator panel or the touchscreen.
- 3.8.2.3 The screen layout will be user defined to optimize functions as well as to view and interact with the system within a 4x5 inch minimum grid layout.
  - 3.8.2.3.1 Users may combine or separate grid location boxes in order to view system information in the combination and shape of their choosing.
  - 3.8.2.3.2 Users will be able to reconfigure the system for rapid transition between winter and summer operations with unique layouts and system configurations.

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- 3.8.2.4 System information on the screen may include, but is not limited to:
  - 3.8.2.4.1 granular rates, pre-wet and anti-ice rates, lane indication, road/air temperature, hydraulic pressure, system status, error messages, plow float indication, auto/manual mode indication and material currently being used.
  - 3.8.2.4.2 Active functions that are not in use shall show "off" and the graphic be "grayed out" for ease of operator interpretation.
  - 3.8.2.4.3 Tile color assignments may be customized by the user.
- 3.8.2.5 The display will provide a built in diagnostic feature allowing technicians to view all input signals in real time.
  - 3.8.2.5.1 The display will also provide error logging and system status change logging for reviewing operator inputs.

#### 3.8.3 The Software:

- **3.8.3.1** The system shall incorporate three levels of security and access that is password protected and defined by the user.
  - 3.8.3.1.1 The three levels of access called "user", "technician" and "admin" shall give the user varying levels of access to the system setup, data, configuration fields and parameters based upon access given.
  - 3.8.3.1.2 The "administrator" shall have full access to all menus in the system and have the ability to make system configuration changes as well as system parameter changes.
- **3.8.3.2** Spreader and liquid functions must have the ability to be controlled utilizing closed loop feedback.
  - 3.8.3.2.1 The system will automatically default to open loop operation in the event of a sensor failure or loss of input.
  - 3.8.3.2.2 The system will alert the operator and log the error.
  - 3.8.3.2.3 The system shall have "over speed" protection for the liquid functions that will alert the operator and shut down the liquid function when the driver has exceeded a user defined speed.
- 3.8.3.3 Non-critical alerts such as sensor faults must not create alarms that distract the driver by requiring action to clear or stop the audible
  - 3.8.3.3.1 When a sensor fault is detected, materiel application will continue in open loop mode.
- 3.8.3.4 The software shall include as a baked in safety feature the ability to configure a "Panic mode" where momentary operation of a switch in the console starts a timed cycle which automatically retracts user specified functions at a predetermined trim value.
  - 3.8.3.4.1 After the cycle times out the system shall return to normal operation.

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- 3.8.3.5 The software shall incorporate a "test speed" mode for use in testing the system safely without requiring the truck to be moving or the drive axles engaged.
- 3.8.3.6 The system must be able to independently operate a second spreader (such as a tow plow) that includes liquid or granular application without the installation of multiple control systems.
  - 3.8.3.6.1 Rate information must be able to be displayed on a single display screen for both the main unit and the towed equipment.
  - 3.8.3.6.2 Both must be controlled from one operator panel.
  - 3.8.3.6.3 Application rates may run independently or be slaved to the main unit.
  - 3.8.3.6.4 The system will also be capable of dynamic variable gate control and cross conveyor support.

#### 3.8.4 The Valve driver module:

- 3.8.4.1 IP68 compliant (dust, submersible and water type) sealed assembly shall be mounted to the valve enclosure providing both interior and exterior electrical connections.
  - 3.8.4.1.1 The valve driver module drives maximum of (14) 6 amp PWM channels, accepts 4 20mA input, 4 closed loop feedback signals, and multiple digital inputs.
    - 3.8.4.1.1.1 All PWM outputs are software configurable and can be controlled by closed loop operation, proportional input devices, or digital input devices.
  - **3.8.4.1.2** The module includes: over temperature shutdown, over current shutdown, and low voltage shutdown.
  - 3.8.4.1.3 All electrical connections are IP68 sealed when mated, utilizing threaded connections for positive retention.

### 3.8.5 The Operator panel:

- **3.8.5.1** The operator panel shall be enclosed in an aluminum housing which includes crash bars to protect the buttons and rotary encoders.
  - 3.8.5.1.1 It will include a silicone keypad with conductive carbon contacts and (3) rotary encoders that are individually repairable.
    - 3.8.5.1.1.1 These encoders will have detent positions that will be user programmable as to the value of each increment in the setup menu.

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- 3.8.5.2 The operator panel provides input capabilities to support RS232, RS422, truck speed input, and multiple digital input/output.
- 3.8.5.3 The panel shall have surface patrol air temperature sending unit.
- 3.8.5.4 The panel has built in LED backlighting that dims with the display for night viewing.
- 3.8.5.5 The panel shall incorporate button labeled: Blast, Pause, Liquid, Spreader, Mode, Product, and Select.

# 3.8.6 "TPE" Thermoplastic Elastomer Wiring Specification:

- 3.8.6.1 The system must make heavy use of electrical connections and cables that resist corrosion and contaminant ingress in all areas exposed to the elements.
- 3.8.6.2 Wiring and harness system shall meet ISO rating IP68 and NEMA 6.
- 3.8.6.3 The connectors shall be stainless steel or nickel plated brass.
  3.8.6.3.1 Each shall have three sealing points: the lock ring itself, a raised portion of the molded plastic around each pin, and a Viton Oring that seals the entire connector.
- 3.8.6.4 The cable jacket shall be TPE- thermoplastic elastomer, and molded to the connectors.
- 3.8.6.5 Connectors and harness shall be rated and tested for a temperature range from 30C to + 70C.
- 3.8.6.6 Cabling shall be rated excellent in low temperature flexibility and in its resistance to oxidation, heat, oil, weather, sun, ozone, abrasion, electrical priorities, flame, water, acid, alkali, gasoline, benzol, toluol, degreaser solvents, alcohol, and weld slag.

### 3.8.7 Reservoir/Valve Compartment:

- 3.8.7.1 Shall have one (1) 30 gallon all-welded 7 gauge minimum 201 stainless steel hydraulic oil reservoir/valve compartment frame mounted.
  - 3.8.7.1.1 Shall be mounted in a manner not to transmit any truck torsional loads thru the tank.
  - 3.8.7.1.2 Valve component shall be accessible with bed body down.
- 3.8.7.2 Hydraulic Tank shall be internally baffled and must have oil level site glass with thermometer.
- 3.8.7.3 Valve enclosure shall be protected from both road and pressure washer spray and shall accommodate valve stack and plow balance valve.
- 3.8.7.4 A 2 inch full flow brass ball valve shall be plumbed at the suction port of the tank.
- 3.8.7.5 Hydraulic oil filter shall be mounted in the reservoir.

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- 3.8.7.5.1 Hydraulic filter shall be a 10-micron minimum with a bypass and replaceable cartridge.
- 3.8.7.5.2 Filter shall be capable of 80 GPM minimum flow capacity.
- 3.8.7.6 Tank shall be equipped with a 10 micron minimum filler/breather cap with removable 500 micron minimum stainless steel strainer.
- 3.8.7.7 Tank shall include low oil, filter and temperature sensors.

### 3.8.8 Hydraulic Lines and Fittings:

- 3.8.8.1 Stainless steel tubing to be used under body and cab in lieu of hosing.
  - 3.8.8.1.1 Only hosing to be used is at the ends of the stainless steel tubing to each function's quick couplers or connection.
  - **3.8.8.1.2** Tubing shall be seamless #201 minimum stainless steel construction with a minimum wall thickness of 0.065".
    - 3.8.8.1.2.1 The ends must be flared to accommodate a 37 degree JIC fitting.
    - 3.8.8.1.2.2 The use of compression fittings is not acceptable.
    - 3.8.8.1.2.3 Spacing of ½ inch minimum of each tube to allow for material to fall between each tube.
    - 3.8.8.1.2.4 Stainless steel tubing under the body routed to the rear shall terminate to 90-degree bulkhead mounted JIC elbows to be mounted in a plate welded to forward facing side of the rear dump body hinge angle.
    - 3.8.8.1.2.5 Hydraulic hoses run from the 90-degree bulkhead mounted JIC elbows going to the hydraulic couplers at the rear of the dump body shall pass through the dump body main long sills. The rear of each main long sill shall have formed passageways running from the inside of each main long sill to the lower rub rail. Formed passageways shall be fully welded around the main long sills, floor sheet, and lower rub rails to prevent moisture/contaminant entry into the main long sills and lower rub rails.
- **3.8.8.2** All stainless tubing must be mounted in polyurethane poly green tube clamps.
- 3.8.8.3 All hoses shall be wire braid reinforced with swaged on high pressure

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corrosion resistant JIC 37 degree tapered seat end fittings.

- 3.8.8.4 All fittings & adapters shall be forged steel (No tapered pipe fittings except on suction hose).
- 3.8.8.5 Spreader stainless steel hose couplers shall be mounted to the rear of the dump body lower rub rail and shall be attached to male NPT X male JIC bulkhead fittings. Bulkhead fittings shall be attached to a removable, bolt-on, 3/8-inch thick bulkhead plate.X64 Range ISO 16028 flat face pressure eliminator quick couplers must be used.
- **3.8.8.6** Shall have polymer dust plugs or caps on all couplers with retainer straps.
- **3.8.8.7** All hoses shall be routed away from chassis exhaust whenever possible to protect against heat deterioration.
- 3.8.8.8 All hoses shall be properly rated for pressure of hydraulic system.
- **3.8.8.9** All hose ends connecting to valve assembly shall be 90-degree female JIC swivel.
- 3.8.8.10 Suction Hose shall be 2" ID SAE 100R4 style or equal, connecting the pump and reservoir with a king nipples, with both ends being double clamped with T-bolt style stainless steel super clamps.
- 3.8.8.11 Pressure hose shall be 1" ID minimum 2000 PSI rated with female JIC swivels at both ends.
- 3.8.8.12 Return line shall be 1 ½" ID SAE 100R4 style or equal with female JIC swivels at both ends.
- 3.8.8.13 Hoist raise line shall be 3/4" ID, lower line ½", minimum 2250 PSI rated with female JIC swivels at both ends.
- 3.8.8.14 Plow and wing lines shall be 1/2" ID minimum 2250 PSI rated, ran to front of truck with female JIC swivels at both ends.
- 3.8.8.15 Auger and anti-ice line shall be ¾" ID minimum 2250 PSI rated and have female JIC swivels at both ends.
- 3.8.8.16 Spinner line shall be ½" ID minimum 2250 PSI rated and have female JIC swivels at both ends.
- 3.8.8.17 Spreader return line shall be 1" ID SAE 100R4 style or equal with female JIC swivels at both ends.
- 3.8.8.18 Pump case drain shall be 3/4" ID minimum 2250 PSI rated and have female JIC swivels at both ends.
- 3.8.8.19 Load sense line shall be 3/8" ID 2250 PSI minimum rated and have female JIC swivels at both ends.

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### 3.8.9 PLOW BALANCE VALVE

- 3.8.9.1 System to be supplied with a plow balance valve.
  - **3.8.9.1.1** Valve to be designed to offset a specific (adjustable) plow weight when activated.
  - **3.8.9.1.2** Valve to be of cartridge and manifold design, and electrically activated.
  - **3.8.9.1.3** In the case of a load sense hydraulic system, the valve shall be activated by a single solenoid.
  - 3.8.9.1.4 In the case of an open center system, the valve is to be activated by two solenoids- one for the plow offset and one for an integral unloader.
- 3.8.9.2 The plow balance system must not alter the operation of any other hydraulic function on the vehicle or effect the performance of other hydraulically operated equipment including wing plow, body hoist, and plow hoist or angle, or spreader functions.
  - 3.8.9.2.1 Operation of any electrical switches beyond the normal up/down command to raise or lower the plow is not acceptable.
- 3.8.9.3 The plow balance system will remain electrically activated when lifting the plow from the road surface.
  - 3.8.9.3.1 Plow lift must be immediate.
    - 3.8.9.3.1.1 It is not necessary to turn off the system for plow lift.
  - 3.8.9.3.2 Plow lowering and return to balance mode must be done by activating the plow lever or switch to the lower mode.
- 3.8.9.4 The plow balance system must be able to hold the plow in the up position indefinitely. Plow balance must be set at agreed weight before delivery.
- **3.8.9.5** The plow balance manifold shall be of cartridge style valve utilizing "floating" style cartridge valves.
- 3.8.9.6 The valve body must be constructed of aluminum and have minimum construction whole plugs.
- 3.8.9.7 All solenoid valve coils shall have manual override capabilities.
- **3.8.9.8** Manifold must include a pressure test point for use when checking balance pressures.
  - 3.8.9.8.1 The pressure test point must be capable of taping into the system at pressures of up to 5000 PSI.
- 3.8.9.9 The plow balance valve must be installed in the valve/tank combination housing.

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### 3.8.10 Hydraulic Test and Inspection:

- 3.8.10.1 Any items not specifically stated herein, but necessary for proper system operation, shall comply with recommended hydraulic industry standards. All hydraulic functions, spreader and pre wet application rates shall be calibrated before unit is delivered.
- 3.8.10.2 The vendor shall be responsible for pre-testing of hydraulic system which shall include the following:
  - 3.8.10.2.1 A startup and initial high pressure run of all hydraulic system components shall be done to check for leaks, heat buildup, system efficiency, pressure settings, etc.
- 3.8.10.3 Vendor will be responsible for initial test of spreader and all plow circuits including wing plow and wet tank if equipped.
- 3.8.10.4 After complete testing of hydraulic system, hydraulic filter must be changed.
- 3.8.10.5 Complete vehicle predelivery inspection to be completed and noted on WVDOH approved form. (form to be submitted for approval at prebuild meeting) Any vehicle delivered without check sheet will not be accepted.
- 3.8.10.6 Each unit shall have a front-end alignment after upfitting has been completed. Any unit delivered without alignment printout will not be accepted.

### 3.8.11 Miscellaneous Information:

3.8.11.1 The vendor is responsible to furnish a truck that is properly engineered and that confirms to all and any laws governing such equipment.

### 3.8.12 Unspecified Accessories & Features:

- 3.8.12.1 All parts, equipment, accessories, materials, design and performance characteristics not specified herein, but which are necessary to provide a complete unit, must be furnished with each unit and required to conform to strength, quality of material, and quality of workmanship to those which are advertised and provided to the market in general by the unit Industry.
- 3.8.12.2 All parts and accessories advertised and regularly supplied as standard shall be included, except those which would represent duplication of these specified and except those which, by specification, are not to be furnished.
- 3.8.12.3 All standard safety features, required by Federal and State Law, shall be included.

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### 3.8.13 Pre Build Meeting:

3.8.13.1 After award of contract there will be a mandatory pre-build meeting with successful vendor, manufacturer's and upfitters at:

The WVDOT/Equipment Division,
83 Brushy Fork Rd. Crossing,
Buckhannon WV.

- 3.8.14 Representative Unit for Test: The successful vendor must (if specified) provide the DOH one (1) completed represented unit to be observed and evaluated on each order to insure compliance with specification. If requested, the time period for testing and evaluation shall be seven (7) working days following receipt of the unit. DOH will incur no obligation for deterioration of surfaces, finishes, seals, and mechanical or electrical parts on the unit resulting from operation and testing within the limits of these specifications; nor will DOH incur obligation for damage to the unit resulting from failure to meet specifications when due care and attention is given by DOH and testing is done within the limits of these specifications. Failure of the pilot unit to satisfactorily meet specifications as bid may be cause for cancellation of the purchase order, and return of the delivered unit along with all associated equipment to the vendor at the vendor's expense.
- 3.8.15 Operating and Service Manuals and Parts Lists: An operator's manual must be included with each unit upon delivery. A "line sheet" (if applicable) and the "Equipment Preventative Maintenance Questionnaire", (Exhibit "B") must be with pilot unit upon delivery. Attn: JD Haller. There must be 12 service/shop/maintenance manuals and 14 parts manuals; USB is preferred in lieu of parts manuals. Manuals shall be delivered upon completion of delivery of total units. Failure to do so will delay payment.
- 3.8.16 Training: Manufacturers and/or dealers will be required to stage a thorough seminar on the subjects of Preventative Maintenance, Operator, and Mechanic Training. In order to keep operators and mechanics updated, the successful vendor shall conduct training sessions covering the operation, maintenance, troubleshooting with each purchase order against this open end contract.

  Manufacturers and/or dealers shall be required to furnish the WVDOH training academy

### **WVDOH**

Training Academy
P.O. Box 610
Buckhannon, West Virginia 26201

for training dates.

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3.8.17 Preventative Maintenance & Operator Procedures: Manufacturers and/or dealers will be required to submit to the Equipment Division, in addition to the operating and service manuals, booklets and pamphlets explaining the Preventative Maintenance and Operator Procedures to be used by the operators of this equipment, and must include such things as daily prestart inspection procedure, service schedule, and routine maintenance required, safety precautions, etc. The successful vendor shall furnish all training aids; i.e. videos, projectors as required in conducting the training.

### 3.8.18 Warranty

### 3.8.18.1 Bumper to Bumper:

3 year 300,000mile warranty including electrical components shall start on the final date of acceptance for the entire order.

### 3.8.18.2 Engine Warranty:

100% Parts and Labor for 60 months 150,000 Mile Engine Warranty, 5500 hours. Engine block shall be warranted against external perforation from corrosion for 60 months 100% parts and labor.

### 3.8.18.3 Emissions Warranty:

100% Parts and Labor for all emission related components to include the DPF for 60 Months 150,000 miles or 5500 engine hours. Shall be warranted against corrosion, rust, rust thru etc. regardless of atmospheric conditions.

### 3.8.18.4 Transmission Warranty:

100% Parts and Labor for 3 years unlimited mileage and hours. The transmission shall include all internal and external components related to the automatic transmission. This warranty shall also include, but not limited to, the transmission cooler, cooler hoses or lines, and all electrical transmission controls, harnesses, connections and modules regardless of atmospheric conditions.

### 3.8.18.5 Radiator Warranty:

100% for parts and labor for 2 years, regardless of atmospheric conditions.

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# 3.8.18.6 Differential/Axle Warranty:

Shall be 36 months/350,000 miles, Parts and Labor

### 3.8.18.7 Dump Body Warranty:

Constructability and durability shall be guaranteed for 5 years parts and labor. Body hoist assembly 3 years parts and labor. Air Tailgate latch system, 3 years parts and labor. All body wiring and lighting shall be warranted for 3 years 100% parts and labor.

### 3.8.18.8 Central Hydraulic System Warranty:

Complete Central Hydraulic System and components shall be warranted for 3 years 100% parts and labor. All wiring on system shall be warranted for 5 years 100% parts and labor. Hydraulic pump shall be 3 years 100% parts and labor.

### 3.8.18.9 Front Plow and Wing Plow Warranty:

Complete Plow warranty shall be 2 years 100% parts and labor.

### 3.8.18.10 V-Box Spreader and Wet Tank with Spraybar Warranty:

3 years, 100 % parts and labor.

# 3.8.18.11 Cab, Cab Structure, Frame Rails and Crossmembers Warranty:

Cab, Cab Structure, Frame Rails and Crossmembers shall be warranty for corrosion for 5 years unlimited mileage 100% parts and labor.

#### 4. CONTRACT AWARD:

- 4.1 Contract Award: The Contract is intended to provide Agencies with a purchase price on all Contract Items. The Contract shall be awarded to the Vendor that provides all the Contract Items meeting the required specifications for the lowest overall total cost as shown on the Pricing Pages.
- 4.2 Pricing Pages: Vendor <u>must complete and submit</u> the Pricing Pages (Exhibit A) by completing the Year, Make, Model and inserting quoted

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Unit Price. Vendor shall take estimated Quantity and multiply by unit price to get grand total. Vendor should complete the Exhibit A Pricing Pages in their entirety as failure to do so may result in Vendor's bids being disqualified.

The Pricing Pages contain a list of the Contract Items and estimated purchase volume. The estimated purchase volume for each item represents the approximate volume of anticipated purchases only. No future use of the Contract or any individual item is guaranteed or implied.

Vendor should electronically enter the information into the Pricing Pages through wvOASIS, if available, or as an electronic document. In most cases, the Vendor can request an electronic copy of the Pricing Pages for bid purposes by sending an email request to the following address: John.w.Estep@wv.gov

### 5. ORDERING AND PAYMENT:

- 5.1 Ordering: Vendor shall accept orders through Wv OASIS, regular mail, facsimile, email, or any other written forms of communication. Vendor may, but is not required to accept on-line orders through a secure internet ordering portal/website. If vendor has the ability to accept on-line orders, it should include in its response a brief description of how Agencies may utilize the on-line ordering system. Vendor shall ensure that its on-line ordering system is properly secured prior to processing Agency orders on-line.
- **5.2 Payment:** Vendor shall accept payment in accordance with the payment procedures of the State of West Virginia.

### 6. DELIVERY AND RETURN:

- 6.1 Delivery Time: Vendor shall deliver standard orders within 210 working days after orders are received. Vendor shall ship all orders in accordance with the above schedule and shall not hold orders until a minimum delivery quantity is met. A completed pilot model for inspection must be provided within 150 working day(s) after receipt of the purchase agreement by the successful vendor. Working day is defined as any week day, Monday thru Friday, excluding Federal and State Holidays.
- 6.2 Late Delivery: The Agency placing the order under this Contract must be notified in writing if orders will be delayed for any reason. Any delay in delivery that could

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# w/Front Snow Plow, V-Box Spreader, with Optional Right Front Wing Plow and Anti-Icing Tank & Spray System

cause harm to an Agency will be grounds for cancellation of the delayed order, and/or obtaining the items ordered from a third party.

Any Agency seeking to obtain items from a third party under this provision must first obtain approval of the Purchasing Division.

- 6.3 Delivery Payment/Risk of Loss: Standard order delivery shall be F.O.B. destination to the Agency's location. Vendor shall include the cost of standard order delivery charges in its bid pricing/discount and is not permitted to charge the Agency separately for such delivery.
- 6.4 Condition of Unit(s) Upon Delivery: All units must arrive at the prescribed delivery point having been completely pre-serviced with oil, lubricants, and coolant. All prescribed precautions pertaining to first operations and break-in of the unit are to be posted conspicuously on the unit for ready observance by the operator.
- 6.5 Delivery Point: Delivery point of the completed representative unit will be the WVDOH, Equipment Division, 83 Brushy Fork Crossing, Buckhannon, WV 26201.

### 7. VENDOR DEFAULT:

- 7.1The following shall be considered a vendor default under this Contract.
  - **7.1.1** Failure to provide Contract Items in accordance with the requirements contained herein.
  - **7.1.2** Failure to comply with other specifications and requirements contained herein.
  - **7.1.3** Failure to comply with any laws, rules, and ordinances applicable to the Contract Services provided under this Contract.
  - 7.1.4 Failure to remedy deficient performance upon request.

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- 7.2 The following remedies shall be available to Agency upon default.
  - 7.2.1 Immediate cancellation of the Contract.
  - 7.2.2 Immediate cancellation of one or more release orders issued under this Contract.
  - 7.2.3 Any other remedies available in law or equity.

# 8. MISCELLANEOUS:

- 8.1 No Substitutions: Vendor shall supply only Contract Items submitted in response to RFQ unless a contract modification is approved in accordance with the provisions contained in this contract.
- 8.2 Reports: Vendor shall provide quarterly reports and annual summaries to the Agency showing the Agency's items purchased, quantities of items purchased, and total dollar value of the items purchased. Vendor shall also provide reports, upon request, showing the items purchased during the term of this Contract, the quantity purchased for each of those items, and the total value of purchases for each of those items. Failure to supply such reports may be grounds for cancellation of this Contract.
- 8.3 Contract Manager: During its performance of this Contract, Vendor must designate and maintain a primary contract manager responsible for overseeing Vendor's responsibilities under this Contract. The Contract manager must be available during normal business hours to address any customer service or other issues related to this Contract. Vendor should list its Contract manager and his or her contact information below.

Centract Manager: Jack Cummings

Telephone Number: 304-769-5860 x 3601

Fax Number: 304-769-5866

Email Address: \_icummings@mathenymotors.com

# ADDENDUM ACKNOWLEDGEMENT FORM SOLICITATION NO.: CRFO DOT2400000084

Instructions: Please acknowledge receipt of all addenda issued with this solicitation by completing this addendum acknowledgment form. Check the box next to each addendum received and sign below. Failure to acknowledge addenda may result in bid disqualification.

Acknowledgment: I hereby acknowledge receipt of the following addenda and have made the necessary revisions to my proposal, plans and/or specification, etc.

| Adden | dum l | <u>Yumber</u> | s Rec | eived: |
|-------|-------|---------------|-------|--------|
|       |       |               |       |        |

(Check the box next to each addendum received)

| [X] | Addendum No. 1 | 1     | 1 | Addendum No. 6  |
|-----|----------------|-------|---|-----------------|
| [X] | Addendum No. 2 | 1     | J | Addendum No. 7  |
| [X] | Addendum No. 3 | Ţ     | 1 | Addendum No. 8  |
| [X] | Addendum No. 4 |       | J | Addendum No. 9  |
| []  | Addendum No. 5 | =<br> | ] | Addendum No. 10 |

I understand that failure to confirm the receipt of addenda may be cause for rejection of this bid. I further understand that that any verbal representation made or assumed to be made during any oral discussion held between Vendor's representatives and any state personnel is not binding. Only the information issued in writing and added to the specifications by an official addendum is binding.

Company

Jacka Samura

Authorized Signature

5/23/2024

Date

NOTE: This addendum acknowledgement should be submitted with the bid to expedite document processing.

# VENDOR: Matheny Motor Truck Company 000000200051 Class 377

| tem<br>No. | Description:   | Model & Part Number Being<br>Bid                                | Estimated Unit Quantity | Uı        | nit Price        | Item Total Cost              |
|------------|--|---|-------------------------|-----------|------------------|------------------------------|
| <b>1</b>   | Complete Unit: Cab<br>Chassis/Dump body<br>w/Hyd system. W/front<br>snow plow & 9.5 yard V-box<br>Spreader   | 2026 Freightliner 114 SD<br>with a Viking body                  | X.                      | \$30      | 98,240.00        |                              |
| 2          | Complete Unit: Cab Chassis/Dump body w/Hyd system. W/front snow plow & 9.5 yard V-box Spreader & Right front wing plow                                 | 2026 Freightliner 114 SD<br>with a Viking body and wing<br>plow | 41                      | \$        | 320,740.00       |                              |
| 3          | Anti-icing tank spray system   | Varitech anti-icing tank spray<br>system                        |                         | \$        | 29,500.00        |                              |
| П          | Total Bid Cost B   | id Will Be Awarded To T   | he Lowest Overall Bid   | Total For | All Items        | N-                           |
|            |  |   | Vendor Informatio       |           | · ·              | g I                          |
|            | Company Name: Matheny M<br>Contact Manager: Jack Cumn<br>Address: 4125 1st Avenue Ni<br>Fax: (304) 769-5866<br>E-mail: jcummings@matheny<br>Signature: | nings<br>tro WV 25143   |                         |           | 2024 MAY<br>W P( | DEIVED 23 AMII: 36 JRCHASING |