NEW

State of Maine

Master Agreement

Effective Date: 09/09/19 **Expiration Date:** 09/08/21

Master Agreement Description: MA for Snow Plow Gear Systems & Attachments and Dump Bodies

Buyer Information

Donny Crockett 207-624-7336 **ext.** Donny.Crockett@maine.gov

Issuer Information

Jessica Norton 207-624-8226 **ext.** Jessica.h.norton@MAINE.GOV

Requestor Information

Jessica Norton 207-624-8226 **ext.** Jessica.h.norton@MAINE.GOV

Authorized Departments

17D MOTOR TRANSPORT
17A TRANSPORTATION

Vendor Information

Vendor Line #: 1

Vendor ID
VS0000020390

Vendor Name
Tenco Industries

Alias/DBA

Vendor Address Information
5700 South Lima Road

Lakeville, NY 14480
US

Vendor Contact Information
Ken Brink
845-798-9528 **ext.**
kbrink@tencousa.com

Commodity Information

Vendor Line #: 1

Vendor Name: Tenco Industries

Commodity Line #: 1

Commodity Code: 76561

Commodity Description: MA for Snow Plow Gear Systems & Attachments and Dump Bodies

Commodity Specifications: As per the specifications attached made part of this Master Agreement
Commodity Extended Description: MA for Snow Plow Gear Systems & Attachments and Dump Bodies

Quantity 0.00000	**UOM**	**Unit Price** $0.00
Delivery Days 0	**Free on Board** FOB Dest, Freight Prepaid	
Contract Amount $0.00	**Service Start Date**	**Service End Date**
Catalog Name Tenco Snow	**Discount** 0.0000 **%**	
	Discount Start Date 09/09/19	**Discount End Date** 09/08/21

STATE OF MAINE
DEPARTMENT OF ADMINISTRATIVE AND FINANCIAL SERVICES
BUREAU OF BUSINESS MANAGEMENT
DIVISION OF PROCUREMENT SERVICES

RFQ # 17D19052100000000000352

Base Unit Snow Plow Gear System with Attachments & Dump Bodies

Revised Dates; See separate "Snow Plow Gear and Bodies Bidder Meeting Minutes" attachment

Quotations/Responses Due: **7/10/2019** not later than 4:00 p.m. local time

Note: All questions and responses must be provided via the State of Maine's e-Procurement system: AdvantageME / Vendor Self Service (VSS).

General Instructions on Bidder Questions

It is the responsibility of each Bidder to examine the entire RFQ and to seek clarification by submitting questions through the Q & A List tab on the Solicitation page (other than for the "Approved Equals Process" mentioned on page 2). Any answers to questions will appear there as well. It is the vendor's responsibility to log in to view all questions and answers posted. Additional information obtained any other way will not be valid.

In the event that you must contact us for any other reasons than the Q & A previously mentioned, only the Buyer listed on the Solicitation page may be contacted from the time this RFQ is issued until award notification is made. No other person/State employee is empowered to make binding statements regarding this RFQ. Violation of this provision may lead to disqualification from the bidding process, at the State's discretion.

Summary

For this competitive Request for Quotations (RFQ) process, the State of Maine Division of Procurement Services ("Division") is acting on behalf of the MaineDOT Fleet Services. The Division and the Requesting Department seek quotations (also referred to as "bids" or "responses" herein) to provide the goods/services listed above. This document provides instructions and descriptions of requirements for this competitive process.

KEY DATES

- **MANDATORY PRE-BIDDERS CONFERENCE:** The Department will hold a Mandatory Pre-Bidders' Conference **6/7/2019 at 9:00 am** in Augusta, Maine at the MaineDOT Fleet Services Conference Room 212, located at 66 Industrial Drive Augusta, Maine 04330. ***Proposals will only be accepted from Bidders represented as evidenced by the representative's signature on the attendance roster. No one will be admitted after 9:00 am.***

- **APPROVED EQUALS REQUEST:** Requests for "**approved equals"** to specifications, protests of specifications, and requests for clarification must be submitted in writing to, and received by the Division no later than **4:00 pm on 6/19/2019 by e-mail to** Donny.Crockett@maine.gov**.**

- **RESPONSE TO APPROVED EQUALS REQUESTS:** Department responses will be posted as a file attached to the quote on the Advantage ME electronic bid document **by 4:00 pm on 6/24/2019.**

- **QUOTATION DUE DATE**: Quotations must be received no later than 4:00 p.m. Eastern Standard Time (EST), on **7/10/2019. Quotations received after the 4:00 p.m. deadline will not be accepted.**

IT WILL BE THE BIDDER'S RESPONSIBILITY TO CHECK ADVANTAGEME FOR RESPONSES TO THE ABOVE AND ANY NEW AMENDMENTS TO THE RFQ.

It is the responsibility of each Bidder to examine the entire RFQ and to seek clarification by submitting questions through the Q & A List tab on the Solicitation page. Any answers to questions will appear there as well. It is the vendor's responsibility to log in to view all questions and answers posted. Additional information obtained any other way will not be valid.

RFQ REQUIREMENTS

1. Description of Requirements

The following is a description of the goods and/or services sought by the State of Maine under this RFQ.

- **Please see Appendix B on page 13**
- **Please see Appendix C on page 84 for cost response instructions**

2. Bid Contents Requirements

In addition to the cost, delivery, and other information required in VSS, all bids should contain the following information as attachments, in the Appendices listed below:

- **Appendix A:** Bid Cover Page and Debarment Form (Pages 11-12 of this document)
- **Appendix B:** Completed specifications responses (Pages 14-82 of this document)
- **Appendix C:** Cost Response Sheets (Pages 84-87 of this document)
- **Appendix D:** Municipality Political Subdivision and School District Participation Certification (Page 88 of this document)
- **Appendix E:** Certifications (Pages 89-91 of this document)
- **Appendix F:** MaineDOT Terms and Conditions
- **Product Data/Information Sheets**
- **Warranty Information**

3. Master Agreement Term

In addition to any mutually agreed upon delivery dates for purchases of goods, the contract resulting from this RFQ will have a term, or "Period of Performance", during which the contract is considered to be in effect. The anticipated contract term is defined in the table below. Please note that the dates below are estimated and may be adjusted as necessary in order to comply with all procedural requirements associated with this RFQ and the contracting process. The actual contract start date will be established by the completed and approved contract.

Contract Renewal: Following the initial term of the contract, the Division may opt to renew the contract for two renewal periods of two years and one year each, subject to continued availability of funding and satisfactory delivery/performance.

The term of the anticipated contract, resulting from this RFQ, is defined as follows:

Period	Start Date	End Date
Initial Period of Performance	**08/01/2019**	**07/31/2021**
Renewal Period #1	**08/01/2021**	**07/31/2023**
Renewal Period #2	**08/01/2023**	**07/31/2024**

4. Submitting a Quotation

a. **Quotations Due:** Quotations must be received no later than **4:00 p.m. Eastern Standard Time (EST)**, on the date listed in VSS. Quotations received after the 4:00 p.m. deadline will not be accepted.
b. **Submission Instructions:** Bidders must submit their bids in the State of Maine's electronic procurement system: Advantage "Vendor Self Service" (VSS). More information on this system can be found at the following internet link: http://www.maine.gov/purchases/venbid/rfq.shtml.
c. **Multiple Quotations:** Unless specifically prohibited in Section 1 of this RFQ, Bidders are permitted to submit multiple quotations for this RFQ, offering alternative items or pricing for the State of Maine to consider in its best value determination.
d. **Withdrawal of a Quotation:** Bidders are permitted to withdraw their own quotations up until the due date and time for receipt of quotations. To do so, a Bidder must enter the VSS system (as referenced above), identify and open their submitted quotation located in the Solicitation Responses tab, and click the "Withdraw" button found at the bottom of the screen. Quotations cannot be withdrawn after the due date and time for receipt of quotations.
e. **Attachments**: Any attachments provided with the Advantage VSS bid submission must be in MS Word, MS Excel, or Adobe (.pdf) format, unless otherwise specified in Section 1 of this RFQ. Vendors are encouraged to submit supporting documentation that aid the requesting department in understanding how the bid conforms to the requirements. **The VSS attachment file size limit is 2Mb**. Please contact the buyer for this RFQ if you must submit attachment files larger than this.
f. **Vendor specifications:** Unless otherwise stated in this RFQ document, limited specification information will be required upon submission of a bid in response to this RFQ. However, a Bidder's response should include an affirmative statement that their bid complies with all requirements of this RFQ, unless the Bidder specifically addresses how its bid differs from the specifications, and why the differences should be deemed acceptable by the State.

5. General Instructions

a. The Bidder must submit a cost quotation response that covers the goods and term of the contract, including any optional renewal.
b. The cost quotation shall include the costs necessary for the Bidder to fully comply with the contract terms and conditions and RFQ requirements.
c. Failure to provide the requested information may result in the exclusion of the quotation from consideration, at the discretion of the Division.
d. No costs related to the preparation of the quotation for this RFQ or to the negotiation of the contract with the Department may be included in the quotation.
e. The State is exempt from the payment of Federal, State and local Taxes on articles not for resale. Please provide quotations that do not include these taxes. Upon application, an exemption certificate can be furnished by the State at the point of contract finalization.

6. Quotation Evaluation and Selection

Evaluation of the submitted quotations shall be accomplished as detailed below:

a. State of Maine RFQ documents are evaluated on a **Best Value** basis. The term "Best Value" may take into consideration the qualities of the goods or services to be supplied, their conformity with the specifications listed in the RFQ, the purposes for which they are required, the date of delivery, and the best interest of the State. Once the goods or services have been determined to conform to the specifications then the Division will make its award decision based on the lowest price among the Bidders. Delivery days can be a factor in awarding.
b. The State reserves the right to not make an award to the lowest price bidder when that bidder has had documented poor performance and/or a contract terminated or not renewed within the last five years.
c. At the discretion of the Division, if a Bidder's submission is deemed to not conform to the specifications listed in the RFQ, or otherwise not conform to the requirements of the RFQ, then that Bidder's submission may not be considered for contract award.
d. In the event that no Bidder submission conforms to the specifications of this RFQ, then the Division may choose not to make any award. Alternatively, the Division may make an award to the Best Value Bidder whose specifications ***most closely meet*** the specifications of this RFQ. For example, if there are five specification requirements, and two responses are received with one Bidder meeting four requirements, and one bidder meeting three requirements, then the Division, at its discretion, may make a contract award to the Bidder meeting four requirements.
e. If the specifications provided with this RFQ are of a technical nature, then the Division's RFQ Coordinator, at his or her discretion, may seek to use an evaluation team comprised of subject matter experts, end-users from the Requesting Department, or other State Department representatives. In such a case, the evaluation team will judge the merits of the quotations received in accordance with the best value criteria defined in the RFQ.

7. Negotiations

a. No Best and Final Offers: The State of Maine will not seek a best and final offer (BAFO) from any Bidder in this procurement process. All Bidders are expected to provide their Best Value pricing with the submission of their quotation.
b. The Division reserves the right to negotiate with the successful Bidder to finalize a contract at the same rate or cost of goods and services as presented in the selected quotation. Such negotiations may not significantly vary the content, nature or requirements of the quotation or the RFQ to an extent that may affect the price of goods or services requested. The Division reserves the right to terminate contract negotiations with a selected Bidder who submits a proposed contract significantly different from the quotation submitted in response to the RFQ.
c. In the event that an acceptable contract cannot be negotiated with the highest ranked Bidder, the Division may withdraw its award and negotiate with the next-highest ranked Bidder, and so on, until an acceptable contract has been finalized. Alternatively, the Division may cancel the RFQ, at its sole discretion.

TERMS AND CONDITIONS FOR RFQ AND CONTRACT

PART I GENERAL INFORMATION ON RFQs

A. Purpose and Background

The State of Maine ("State") Department of Administrative and Financial Services ("Department"), Bureau of Business Management ("Bureau"), Division of Procurement Services ("Division") acts as the purchasing agent on behalf of all Executive Departments and other agencies within State Government. For this competitive Request for Quotations (RFQ) process, the Division is acting on behalf of the Requesting Department listed on the cover page. The Division and the Requesting Department seek quotations (also referred to as "bids" or "responses" herein) to provide the goods/services as defined above in Section 1 of this document. This document provides instructions for submitting quotations, the procedure and criteria by which the Bidder(s) will be selected, and the contractual terms which will govern the relationship between the State and the awarded Bidder(s). Following Bidder selection and upon reaching a mutual agreement, the State and the selected Bidder will enter into a contract – taking the form of a State of Maine Master Agreement or Buyer Purchase Order (all generally referred to as "contract" herein), as applicable.

B. General Provisions

1. Issuance of this RFQ does not commit the Division or the Requesting Department to issue an award or to pay expenses incurred by a Bidder in the preparation of a response to this RFQ. This includes attendance at personal interviews or other meetings and software or system demonstrations, where applicable.
2. All responses to this RFQ should adhere to the instructions and format requirements outlined in this RFQ and all written supplements and amendments (such as the Division's answers to the Bidders' questions submitted through the VSS), as issued by the Division. Responses are to follow the format and respond to all questions and instructions specified above in the "Submitting a Quotation" section of this RFQ.
3. Bidders shall take careful note that in evaluating a quotation submitted in response to this RFQ, the Department may consider materials provided in the quotation, information obtained through interviews/presentations (if any), and internal information of previous contract history between the Division and the Bidder (if any). The Division also reserves the right to consider other reliable references and publicly available information available in evaluating a Bidder's experience and capabilities, if needed. All responses to this RFQ shall be considered to be authorized to legally bind the Bidder, and if selected for award, shall contain or be considered to contain a statement that the quotation and the pricing contained therein will remain valid and binding for a period of at least 180 days from the date and time of the bid opening.
4. The RFQ and the selected Bidder's quotation, including all appendices or attachments, may be incorporated in the final contract.
5. Following announcement of an award decision, all submissions in response to this RFQ will be considered public records available for public inspection pursuant to the State of Maine Freedom of Access Act (FOAA) (1 M.R.S. §§ 401 et seq.). http://www.mainelegislature.org/legis/statutes/1/title1sec401.html
6. The Division, at its sole discretion, reserves the right to recognize and waive minor informalities and irregularities found in quotations received in response to this RFQ.

7. The Division reserves the right to authorize other State Departments to use the contract(s) resulting from this RFQ, if it is deemed to be beneficial for the State to do so.
8. All applicable laws, whether or not herein contained, shall be included by this reference. It shall be Bidder's responsibility to determine the applicability and requirements of any such laws and to abide by them.

C. Eligibility to Submit Bids

Public agencies, private for-profit companies, and non-profit companies and institutions are invited to submit bids in response to State of Maine Requests for Quotations.

D. Delivery Terms

For the purchase of goods, the Division and selected Bidder will decide upon a delivery date in accordance with the State's requirements and the terms offered in the Bidder's quotation. ***Unless stated otherwise in Section 1 of this RFQ, all deliveries are expected with shipping terms of "Free on Board (FOB) – Destination"***. The State intends for this to mean that all goods shall be priced in the bid response to include shipping charges, if any, to the State's desired location. The "FOB – Destination" shipping term is also intended to mean that the State shall not bear any responsibility for the goods in question until the State takes possession of them at the destination point of delivery.

E. Alternate Bids and Approved Equals

When, in bid forms and specifications, an article or material is identified by using a trade name and catalog number of a manufacturer or vendor, the term "or approved equal," if not inserted with the identification, is implied. Any Bidder that seeks to propose an alternate item from what is specified in this RFQ should refer to State of Maine Statute 5 MRSA §1825-B, for "Bids, awards and contracts", found here: http://www.mainelegislature.org/legis/statutes/5/title5sec1825-B.html

F. Appeal of Contract Awards

Any person aggrieved by the award decision that results from this RFQ may appeal the decision to the Director of the Bureau of General Services in the manner prescribed in 5 MRSA § 1825-E and 18-554 Code of Maine Rules, Chapter 120 (found here: http://www.maine.gov/purchases/policies/120.shtml). The appeal must be in writing and filed with the Director of the Bureau of General Services, 9 State House Station, Augusta, Maine, 04333-0009 within 15 calendar days of receipt of notification of contract award.

If this RFQ results in the creation of a pre-qualified or pre-approved list of vendors, then the appeal procedures mentioned above are available upon the original determination of that vendor list, but not during subsequent competitive procedures involving only the pre-qualified or pre-approved list participants.

PART II CONTRACT ADMINISTRATION AND CONDITIONS

A. Contract Document

The successful Bidder will be required to execute a contract in the form of a State of Maine Buyer Purchase Order, Contract Agreement to Purchase Services or State of Maine Master Agreement.

The Standard Terms and Conditions used with the aforementioned contract types may be found on the Division of Procurement Services' website at the following link:
http://www.maine.gov/purchases/info/forms/BPO_General_Terms.doc

In the event that the State of Maine's Standard Terms and Conditions or RFQ provisions do not otherwise cover contractual scenarios that are specific to the goods or services being purchased under this RFQ, then the State is willing to consider a Bidder's standard terms and conditions. Consideration or use of a Bidder's standard terms and conditions shall only occur under the general agreement that in the event of a conflict, the State of Maine's Standard Terms and Conditions and RFQ provisions shall take precedence.

Other forms and contract documents commonly used by the State can be found on the Division of Procurement Services' website at the following link:
http://www.maine.gov/purchases/info/forms.shtml

B. Independent Capacity

In providing services and performing under the contract, the successful Bidder shall act independently and not as an agent of the State of Maine.

C. Payments and Other Provisions

The State anticipates paying the selected Bidder for goods and services received, on the basis of net 30 payment terms, upon the receipt of an accurate and acceptable invoice. An invoice will be considered accurate and acceptable if it contains a reference to the State of Maine contract number, contains correct pricing information relative to the contract, and provides any required supporting documents, as applicable, and any other specific and agreed-upon requirements listed within the contract that results from this RFQ.

The State of Maine reserves the right to pay for goods purchased through this solicitation by any of several available means, which include but may not be limited to check, EFT, and/or procurement card. Bidders are advised that state statute precludes sellers from imposing a surcharge on credit or debit card purchases (text follows):

"9-A MRSA §8-509 (1): A seller in a sales transaction may not impose a surcharge on a cardholder who elects to use a credit card or debit card in lieu of payment by cash, check or similar means."

1.0 MaineDOT GENERAL REQUIREMENTS

The following requirements and conditions shall be considered an essential part of the specifications and proposal.

1. Purchase of the Base Unit Snow Plow Gear System and Attachments is subject to a Financial Assistance Agreement between the Department and the U.S. Department of Transportation.

2. All equipment bids must conform to the final approved specifications and all Federal and State laws, regulations and standards. Where these specifications and Federal and/or State laws conflict, the requirements of the Federal and/or State laws shall prevail.

   APPLICABLE REGULATIONS: SEE CERTIFICATIONS REQUIRED

3. Equipment and component parts must be of the highest quality and workmanship available in the various trades and of substantial, durable, and safe construction. In all cases materials and construction of the equipment must be furnished as specified but when brand names are used in the specifications, the term "approved equal" is implied and will be considered.

4. No advantage shall be taken by the equipment manufacturer or bidder in the omission of parts or details required to make the equipment complete and ready for service even though such parts or details may not be mentioned in these specifications. All units or parts not herein contained or specified shall be manufacturer's standard. All parts shall be new. In no case will used, reconditioned, or obsolete parts be accepted. Insofar as possible, parts and equipment in any equipment shall be a duplicate in manufacture, design and construction and shall be interchangeable with parts and equipment in any other equipment in the proposal.

5. The bidder shall furnish descriptive literature for the equipment being bid. This material shall be provided along with completed documents (certifications).

6. The price quoted in any proposal shall include all items of labor, material, tools, equipment, delivery and other costs necessary to fully complete the delivery of equipment pursuant to these specifications.

7. The Division of Procurement Services/MaineDOT reserves the right to accept any quote or reject any or all quotes for any reason, including, but not limited to, the following reasons:

   Quotes which take exception to the specifications without approval pursuant to (Section 3.0 Specification Compliance) of the Invitation to Quote.

   High lifecycle operating and maintenance costs based on evaluation of equipment performance, warranty data, and local availability of service and parts pursuant to (Section 2.0 Certification Equipment Performance & Warranty Data).

Quotes considered not responsive due to lack of required certificates and information required in Appendix E - Certification).

The Division of Procurement Services/MaineDOT reserves the right to award the Contract to the lowest responsible bidder, best value consideration, and however is in the best interest of the State of Maine.

The Division of Procurement Services and the Department reserve the right to evaluate specifications and alternates and determine equivalency.

8. Bidder shall submit the earliest possible delivery date with this Quote.
Earlier delivery dates will be given consideration during the quote selection process. In addition, penalties may be assessed for late delivery pursuant to Section F of Appendix F.

Appendix A

STATE OF MAINE
DEPARTMENT OF ADMINISTRATIVE AND FINANCIAL SERVICES
DIVISION OF PROCUREMENT SERVICES

BID COVER PAGE and DEBARMENT FORM

Bidder's Organization Name:		
Chief Executive - Name/Title:		
Tel:	Fax:	E-mail:
Headquarters Street Address:		
Headquarters City/State/Zip:		
(provide information requested below if different from above)		
Lead Point of Contact for Bid - Name/Title:		
Tel:	Fax:	E-mail:
Street Address:		
City/State/Zip:		

By signing below Bidder affirms:

- Their bid complies with all requirements of this RFQ;
- This bid and the pricing structure contained herein will remain firm for a period of 180 days from the date and time of the bid opening;
- That no personnel currently employed by the Department or any other State agency participated, either directly or indirectly, in any activities relating to the preparation of the Bidder's proposal;
- That no attempt has been made or will be made by the Bidder to induce any other person or firm to submit or not to submit a proposal; and
- The undersigned is authorized to enter into contractual obligations on behalf of the above-named organization.

Name:		Title:
Authorized Signature:		Date:

Debarment, Performance, and Non-Collusion Certification

By signing this document, I certify to the best of my knowledge and belief that the aforementioned organization, its principals, and any subcontractors named in this proposal:

a. *Are not presently debarred, suspended, proposed for debarment, and declared ineligible or voluntarily excluded from bidding or working on contracts issued by any governmental agency.*
b. *Have not within three years of submitting the proposal for this contract been convicted of or had a civil judgment rendered against them for:*
    i. *fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a federal, state or local government transaction or contract.*
    ii. *violating Federal or State antitrust statutes or committing embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;*
    iii. *are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or Local) with commission of any of the offenses enumerated in paragraph (b) of this certification; and*
    iv. *have not within a three (3) year period preceding this proposal had one or more federal, state or local government transactions terminated for cause or default.*
c. *Have not entered into a prior understanding, agreement, or connection with any corporation, firm, or person submitting a response for the same materials, supplies, equipment, or services and this proposal is in all respects fair and without collusion or fraud. The above mentioned entities understand and agree that collusive bidding is a violation of state and federal law and can result in fines, prison sentences, and civil damage awards.*

- **Failure to provide this certification may result in the disqualification of the Bidder's proposal, at the discretion of the Department.**

To the best of my knowledge all information provided in the enclosed proposal, both programmatic and financial, is complete and accurate at the time of submission.

Name:		Title:
Authorized Signature:		Date:

Base Unit Snow Plow Gear System with Attachments & Dump Bodies Evaluation Overview

May, 2019

The following provides an overview of the snow plow gear and attachment evaluation process.

After the deadline to submit bids, MaineDOT (The Department) will evaluate each bid to identify vendor(s) who meet the minimum specifications. Based on the evaluation results, multiple vendors may be awarded the contract. The award(s) will be made in the best interest of MaineDOT, as determined by the Department.

After the bid is awarded, the awarded vendor(s) will receive initial snow plow gear and attachment orders. There will not be a guaranteed amount of snow plow gear and attachments ordered from each vendor. The Department will be monitoring the new equipment and gathering data for an evaluation process that will be used to determine which vendor/manufacturer(s) is the best fit for MaineDOT's operation. The Department's snow plow gear and attachment evaluation results will determine additional/future orders.

Snow plow gear and attachments will be evaluated based on, but not limited to the following key requirements:

- Delivery time
- Performance
- Customer service through the buying process
- Customer service during maintenance
- Warranty support
- Technology support
- Overall cost of unit operation

Snow plow gear and attachments that do not perform to the satisfaction of the Department will not receive additional orders until the vendor corrects the issues of concern.

The evaluation process will not exceed a two-year time period. At the end of the evaluation, the vendors that continue to meet MaineDOT's expectations will be candidates for contract extension(s).

During the contract extension(s) period, if a vendor falls below the Department's expectations, the vendor will not receive additional snow plow gear and attachment orders until the Department's expectations are met as determined by the Department.

The goal is very simple: MaineDOT will have dependable snow plow gear and attachments with vendor and manufacturer support. All other vendors and manufacturers will not be accepted.

Appendix B

STATE OF MAINE
DEPARTMENT OF ADMINISTRATIVE AND FINANCIAL SERVICES
DIVISION OF PROCUREMENT SERVICES

DETAILED SPECIFICATIONS

RFQ # 17D19052100000000000352

Technical Specifications For
The Purchase and Installation of
Base Unit Snow Plow Gear System with Attachments & Dump Bodies

1. GENERAL

1.1. PURPOSE AND INTENT INDEX

a) The purpose and intent of this specification are to describe a Base Unit Snow Plow Gear System. Price Quote #1 for installation of a right-hand system set up with necessary hydraulics and controls to make it fully functional on tandem axle truck. Price Quote #2 for installation of a left-hand system set up with necessary hydraulics and controls to make it fully functional on tandem axle trucks. Price Quote #3 for installation of a double system set up with necessary hydraulics and controls to make it fully functional on tandem axle trucks. Detailed specifications in **Section A.**

b) The purpose and intent of this specification are to describe a One-Way Right or Left Plow with Plow Frame. Price Quote #1 for installation of a one-way right plow with necessary hydraulics and controls to make it fully functional on tandem axle trucks. Price Quote #2 for installation of a one-way left plow with necessary hydraulics and controls to make it fully functional on tandem axle trucks. Price Quote #3 for purchase of non-installed one-way right plow only. Price Quote #4 for purchase of non-installed one-way left plow only. Detailed specifications listed in **Section B**.

c) The purpose and intent of this specification are to describe a Reversible Plow with Contour Change. Price Quote #1 for installation with necessary hydraulics and controls to make it fully functional on tandem axle trucks. Price Quote #2 for purchase of non-installed equipment only. Detailed specifications in **Section C**.

d) The purpose and intent of this specification are to describe Left & Right Wing Plows. Price Quote #1 for installation of an 11'foot wing plow with necessary hydraulics and controls to make it fully functional on tandem axle trucks. Quote #2 for installation of a 12' wing plow with necessary hydraulics and controls to make it fully functional on tandem axle trucks. Quote #3 for installation of a 13' wing plow with necessary hydraulics and controls to make it fully functional on tandem axle trucks. Price Quote #4 for purchase of a non-installed 11' wing plow only. Price Quote #5 for purchase of a non-installed 12' wing plow only. Price Quote #6 for purchase of non-installed 13' wing plow only. Detailed specifications listed in **Section D**.

e) The purpose and intent of this specification are to describe a Power Reversing Underframe Road Scraper for tandem axle trucks. Price Quote #1 for installation with necessary hydraulics and controls to make it fully functional on tandem axle trucks and have a blade width of ten (10) feet. Price Quote #2 for purchase of non-installed equipment only. Detailed specifications in **Section E**.

f) The purpose and intent of this specification are to describe a Manually Reversing Underframe Road Scraper. Price Quote #1 for installation with necessary manual controls to make it fully functional on

single axle trucks and have a blade width of ten (10) feet. Price Quote #2 for purchase of non-installed equipment only. Detailed specification in **Section F**.

g) The purpose and intent of this specification are to describe a 10-12 Yard Heavy-Duty Construction Dump Body with a length of thirteen (13) feet and a CA of 132 inches. Price Quote #1 for installation of Construction Dump Body to make it fully functional. Price Quote #2 for purchase of non-installed equipment only. Detailed specifications in **Section G**.

h) The purpose and intent of this specification are to describe a 13' Multipurpose Center Conveyor Belt Over Chain Rear Spread Dump Body. Price Quote #1 for installation of Multipurpose Dump Body to make it fully functional. Price Quote #2 for purchase of non-installed equipment only. Detailed specifications in **Section H**.

i) The purpose and intent of this specification are to describe a 10' Side Dump Left Front Discharge Dump Body Spreader. Price Quote #1 for installation of Side Dump Body Spreader to make it fully functional. Price Quote #2 for purchase of non-installed equipment only. Detailed specifications in **Section I**.

j) The purpose and intent of this specification are to describe a 13' Side Dump Left Front Discharge Dump Body Spreader. Price Quote #1 for installation of Side Dump Body Spreader to make it fully functional. Price Quote #2 for purchase of non-installed equipment only. Detailed specifications in **Section J**.

COMPLETENESS

The price quoted in any proposal submitted shall include all items of labor, materials, tools, equipment, and other costs necessary to fully complete the manufacture and delivery of the equipment pursuant to these specifications. Any part or detail which makes the equipment complete and ready for service shall not be omitted, even though such part or detail is not mentioned in these specifications.

CONFORMITY

All parts not specified shall be manufacturer's best quality and shall conform in materials, design, or workmanship to the best practice known in the snow plow gear and attachments industry. All parts shall be new and in no case, will used, reconditioned or obsolete parts be accepted. The parts on all equipment provided by the manufacturer should be interchangeable.

INSTRUCTIONS FOR COMPLETING TECHNICAL SPECIFICATION SHEET

Please complete the checklist for technical specifications set forth below. **Electronically enter responses directly into the text-enabled fields next to each specification, including actual dimensions when applicable.** Each Bidder must indicate whether it can meet the technical specifications by inserting an "X" next to each specification. The "X" will demonstrate that the Bidder's offering meets the technical specification. If a Bidder cannot meet a technical specification, then the Bidder must give an explanation for each exception and for equipment that is not available or that will be dealer installed. All explanations must be provided in detail on separate pages along with the justification as to why the alternative equipment or deliverables will be as good as the equipment or deliverables described in the detailed specifications for desired items. A copy of the vendor specification proposal must be provided. Following these instructions is essential for proper bid evaluation.

If a Bidder fails to provide requested information or if information on a quote is found to be false or misleading, the quote will be rejected as unresponsive.

The award will be made on a best value basis to the vendor that either

meets or most closely meets the specifications, while taking price and delivery into consideration.

The following abbreviations must be used:		
	X	**Standard or as specified**
	N/A	**Not Available**
	DI	**Dealer Installed**
	AE	**Approved Equal**

Section A BASE UNIT SNOW PLOW GEAR SYSTEM

The purpose and intent of this specification are to describe a Base Unit snow plow gear system. Detailed specifications in Sections 2-15.

	2.0 FRONT HITCH ASSEMBLY	Abbreviation	Actual Dimension	Notes
2.1	Custom side plate model designed, constructed and installed for extreme service.			
2.2	Quick detachable and pivoting for access to engine compartment, utilizing plow ram and 1¼" pins. There shall be three (3) plow pinning heights located at 15.5", 18" and 20.5" heights on 31" centers. It shall be readily removable for summer storage leaving the hydraulic pump mounted to the chassis.			
2.3	Shall be minimum 5/8" steel construction.			
2.4	Integral heavy duty upper and lower horizontals for right and/or left wing tower of HSS 6" x 4" x 3/8" minimum steel tube.			
2.5	Shall be designed, constructed to accommodate interchangeability of various plows and plow frames in use by MaineDOT Fleet Services.			
2.6	Shall accommodate installation of engine crankshaft driven pump or PTO assembly.			
2.7	Shall be designed, constructed and installed to keep the effects of weight and leverage of			

	plow and plow frame to an absolute minimum and transmit plow forces directly to the truck frame side rails.			
2.8	Plow ram must be 4" diameter x 14” stroke with a 1¾” diameter double chrome piston, rod providing 20.75” lift minimum.			
2.9	The support frame shall be adjustable in height during installation to accommodate varying frame heights and chassis frames.			
2.10	The front mast shall be constructed of two 4” x 4” x ½” angle vertical members reinforced with a 4” x 4” x ½” horizontal top angle, a 4” x 4” x ½” cylinder base angle and a 3” x 2” x ¼” base tube.			
2.11	There shall be a ½” thick upper cheek/push plate bolted to the front frame ends to carry the vertical loading. There will also be a ½” x 24” frame rail reinforcement bolted to the frame above the front axle.			
2.12	The lift arm shall be fabricated from 1” flame cut plate, braced with two (2) ½” x 2” steel flat bar plates. The lift arm shall have a triple point chain hook allowing either single or double chaining			
2.13	The hitch shall be mounted at not more than 18” measured from truck grill to plow attach hole center.			
2.14	The base bracket and hitch frame mounting pin holes must be reinforced internally and externally by a HSS steel washer 3/8” thick welded as a boss to prevent elongation of the pin mounting holes due to vibration.			
2.15	A suitable rubber block must be installed between the base bracket and hitch frame to provide tension on the mounting pins which is intended to reduce or stop vibration.			
2.16	One (1) adjustable turn buckles must be provided to secure detached hitch portion to			

	the front plow, which will allow for standalone storage.			
2.17	Two (2) side winding screw adjustable parking legs (jacks) mounted on each end of hitch cross tube to allow for hitch assembly removal (minimum 1,000 lb. capacity).			
	3.0 FRONT TOWER ASSEMBLY RIGHT, LEFT AND DOUBLE	**Abbreviation**	**Actual Dimension**	**Notes**
3.1	The front tower shall be of open section design.			
3.2	It shall be constructed of 8" @ 18.4 lbs./ft. structural I-beam slide tray. The lift cylinder shall be located behind the tower, rod end down. Shelving shall be achieved by a single wire rope sheave on the cylinder rod end and a single sheave on the tower top.			
3.3	The slide travel shall be twice the cylinder stroke. The slider shall be retained by two (2) ¾" structural square bars. At no point, shall any part of the tower structure extend above the tower at any point of slider travel.			
3.4	The front tower shall have a lower skid shoe. It also shall have bolted connections to the support tubes.			
3.5	Wing shall have a lift capacity of 72" minimum. It will be achieved by a 3" bore by 36" stroke double chrome cylinder with a 1½" diameter double acting piston rod, minimum.			
3.6	Front tower cylinders shall be equipped with quick detachable hydraulic disconnecting fittings. (Fittings to be ½" diameter, Parker).			
3.7	Trip mechanism and wing to be approved by MaineDOT Fleet Services. The trip spring shall be a torsion type spring with a 1" diameter wire, minimum. Trip device shall be plumb.			

3.8	The front tower height shall be same as rear tower height.			
	4.0 TOWER WIRE CABLE	**Abbreviation**	**Actual Dimension**	**Notes**
4.1	All wire cable shall be ½" diameter 8 by 25 improved plow steel with triple clamps, loop thimbles and anchor shackles at each end.			
4.2	Three (3) ½' cable clamps must be used and spaced evenly (3) three inches apart from each other as required by OSHA standards. Any frayed cable ends need to be covered.			
	5.0 HYDRAULIC OIL TANK	**Abbreviation**	**Actual Dimension**	**Notes**
5.1	It shall have a "shed roof" design of approximately 35^{o} (and a floor of ¼" plate steel).			
5.2	Tank shall have sight gauge and electrical float switch to indicate proper oil level. (Float part #OMEGA LVK-171 or approved equal).			
5.3	The tank shall have a capacity of 40 US gallons with baffle, breather, Hycon sight gauge, magnetic drain plug and internal feed line screen with a bypass.			
5.4	Hydraulic tank shall be fabricated utilizing minimum 7-gauge steel.			
5.5	The Hycon sight gauge must be reversible from the left to right side of the tank.			
5.6	Fill port cap will have an integral screen pressurized with a three PSI vent. Unit will be installed in such a manner to prevent entry of contaminants including snow and rain while either open or closed.			
5.7	Suction outlet on the tank shall be protected by an internal screen of approximately 35 microns with an integral bypass in the tank.			

5.8	Suction strainer must be externally removable for ease of replacement and servicing. (Buyers #SW3002003) or approved equal.			
5.9	A full flow/2” shut off ball valve shall be mounted in the suction line. The return line will incorporate a full flow check valve mounted between the return line filter and Parker tank inlet or approved equal.			
5.10	The tank shall be bolted to the rear saddle for ease of cleaning.			
5.11	The tank must have a 2” threaded pipe opening located in such a position to easily install an electric oil heater. The internal oil baffle must not interfere with the heating element.			
5.12	A suitable step of steel grating, approximately 14” x 16” must be attached to the hydraulic tank shed roof.			
5.13	Step shall be designed with grating, in an area of the hydraulic tank to make easy access for driver to step up to grating on top of the hydraulic tank. An additional step may be required for safety.			

	6.0 HYDRAULICS	Abbreviation	Actual Dimension	Notes
6.1	Load sense pump- 80 CID, front mount and cast-iron construction. The pump case drain must be plumbed directly to tank not through return filter. The load sense stand-by pressure should be set at 325 PSI and be internally drained to allow a dynamic flow for the sense signal. Eaton 420 Pump Code 421AK00891B or approved equal.			
6.2	Additional hydraulically powered equipment may require more that the Eaton 420 mobile piston pump and can be substituted for hook lift system.			
6.3	Spicer end yokes 2-4-533 and engine flange 2-2-479 series 1310.			
6.4	Spicer series 1310 PTO shaft slip joint non-grease-able tubular driveline with non-greaseable u-joints # C9533-SF-NG with proper angle of installation.			
6.5	Low oil safety circuit, consists of direct mount block valve, tank mounted float switch and system override. System shall automatically shut down at low oil level and be capable of also being manually shut off or locked out.			
6.6	Directional Control Valve: Sauer Danfoss PVG32 with bleed off compensator or approved equal. The valve must be compensated, proportional and load independent.			
6.7	Pressure and Flow: each valve must be settable with pressures up to 5,000 psi and the flow rating up to 35 gpm. Valve must be of laminar flow design for minimum pressure drop. Valve must have adjustable flow control on both sides of the spool.			
6.8	Relief valves must include settable reliefs.			

6.9	Electrically Activated Coils: all coils shall have actuation valve and must be able to be manually or electrically controlled. Electrical actuation must be controllable with a PWM signal for fully proportional or on/off operation from one coil. Separate coils not acceptable. Coil shall have Deutush female plugs located on the end of coil. Spools must have a heavier centering springs. Valve assembly must accommodate up to 13 work sections, valve must be available in either open or close center configurations.			
6.10	System will also utilize a full flow return line filter. This filter will have ten-micron filtration and a 23 PSI bypass. Installation will allow for ease of servicing. Hycon model #MFBN160G10M1.0/12.2B3.1 filter or approved equal.			
6.11	All hydraulic valving for body, plows and spreader shall be in one central assembly. Multiple valve assemblies are unacceptable. All plow sections shall have field adjustable low (speed) controls. Installation will be done to state requirements and approved at prototype inspection.			
6.12	Valves are to be mounted in a vertical position in an eleven-gauge stainless steel weatherproof enclosure outside the frame rails. Enclosure will be designed and constructed by MaineDOT Fleet Services and installed by vendor for easy, quick, complete accessibility and repair.			
6.13	An in-line high pressure filter will be mounted between the pump and main valve. A Hycon model #DFBN3HC160G10B1.1/12-B6YP shall be supplied.			
6.14	Spreader control system must be electrical and be easily and readily convertible to closed loop ground speed orientation by changing control head only.			

6.15	Electrically controlled in cab with desired control system.			
6.16	Parker ½" disconnect couplers shall be used on hydraulic lines to all quick detachable parts, including front hitch and wing posts. Parker hoses and fittings preferred.			
6.17	PTO shaft and universals must be guarded and must be able to be easily serviced.			
6.18	The application control system will be supplied by MaineDOT Fleet Services.			
	7.0 REAR TOWER AND SADDLE RIGHT, LEFT AND DOUBLE	**Abbreviation**	**Actual Dimension**	**Notes**
7.1	The rear towers shall be of open section design.			
7.2	The slide tray shall be fabricated from a 12" structural channel @ 25lbs./ft.			
7.3	Tower shall have a top mounted self-aligning wire cable exit pulley with rope guide and top mounted lift lug included.			
7.4	Shall be 12"-inch minimum channel is supported by 2 vertical angles of 4" x 3" x ½".			
7.5	The tower structure includes intercostal braces at strategic locations.			
7.6	The slide retainer tracks of ¾" square bar and extend the full length of travel.			
7.7	The wing lift cylinders shall be located on the rear of the tower and shall incorporate a guide on the rod end of the cylinder.			
7.8	The rear tower shall have bolted connections to the rear saddle to allow for various frame heights and off-season removal without disturbing the hydraulic system.			

7.9	Wing arm brackets shall be angled at 15 degrees towards the front of the chassis to align push arms to the wing.			
7.10	All fasteners must have a minimum of grade (5) five rating.			
	8.0 REAR SHELFING SLIDE CONTROL CYLINDER	**Abbreviation**	**Actual Dimension**	**Notes**
8.1	The arm slide control cylinder shall be a minimum 3½" diameter bore x 54" stroke designed as a double acting unit.			
8.2	This shall be located on the exterior of the tower slide tray.			
	9.0 REAR SHELFING SLIDER	**Abbreviation**	**Actual Dimension**	**Notes**
9.1	The slider base plate shall be fabricated from a ¾" thick plate with tapped edges to prevent the slider plate from binding in the tower.			
9.2	Slider plate shall provide 54" of vertical travel.			
	10.0 WING CONTROL CYLINDER	**Abbreviation**	**Actual Dimension**	**Notes**
10.1	The wing control cylinder shall be a minimum 3" diameter bore x 36" stroke double acting "RAM" type double chrome treated cylinder rods.			
10.2	There shall be a triple sheave box bolted to base and rod end of the cylinder.			
10.3	The wire cable travel is three times the cylinder stroke.			
	11.0 WING ARMS	**Abbreviation**	**Actual Dimension**	**Notes**
11.1	Two (2) arms shall run parallel to each other on 17" centers.			
11.2	They shall be non-telescopic and designed for proper length wing.			

	12.0 REAR SHEAVES	Abbreviation	Actual Dimension	Notes
12.1	The sheaves shall be 6” nominal size with an extra deep rope groove.			
12.2	The sheaves shall have 1¼” diameter axles with greaseable bronze bushings.			
12.3	The axle shall incorporate a positive location head to ensure non-rotation of axle.			
12.4	The sheaves shall be machined from solid steel.			
	13.0 REAR WING CABLE	**Abbreviation**	**Actual Dimension**	**Notes**
13.1	The wire cable shall be 1/2" diameter 8 by 25 improved plow steel with triple clamps, loop thimbles and anchor shackles at each end.			
13.2	There shall be 36" of ½” chain on free end to attach to wing lifting lug. (Wing Safety chain).			
13.3	Three (3) ½’ cable clamps must be used and spaced three inches evenly apart from each other as required by OSHA stands. Any frayed cable ends need to be covered.			
	14.0 REAR SADDLE	**Abbreviation**	**Actual Dimension**	**Notes**
14.1	The rear saddle shall be laterally mounted section of minimum 6” x 4” x ½” wall thickness. There shall be ½” “L” shaped cheek plates with the tower end gusseted to form a box with the tower attach bracket. There shall be a minimum of two (2) 3” x 3” x 3/8” angle braces to stabilize the tower base. (Must be detachable if located below frame rail).			
14.2	Designed to be quick detachable including wing posts (and hydraulics) by the use of quick disconnecting fittings. (Fittings to be ½” diameter, Parker).			

14.3	Trip mechanism and wing plow to be approved by MaineDOT Fleet Services. The trip spring shall be a torsion type spring with a 1” diameter wire, minimum. Trip device shall be plumb.			
14.4	The rear tower height shall be same as front tower height.			
14.5	Cables that operate over sheaves must be adjusted so that at maximum stroke, cable clamps, etc., will not be pulled into the sheaves.			
14.6	Push arms for 10’ wing plows must be 5’ minimum.			
14.7	All cables must be minimum ½” diameter 8 by 25 construction, improved plow steel.			
14.8	When possible, the rear tower must be angled to provide a straighter alignment for push arms and push arm joints.			
14.9	There shall be pipe struts supplied to diffuse impact loads through wider frame area.			
	15.0 TOOL BOX	**Abbreviation**	**Actual Dimension**	**Notes**
15.1	The box shall be a minimum of 10-gauge mild steel all welded construction.			
15.2	The box must be minimum 18” high x 7-3/8” wide x 72” long (interior dimensions) with a hinged door located on the driver’s side.			
15.3	This box must be installed next to the hydraulic oil tank and extend lengthwise across the truck chassis. The tool box must be securely mounting but must also be designed for easy removal. Must be securely fastened to truck chassis.			

15.4	The design, construction and installation of this box may act as a catwalk with a nonskid top surface but must not interfere with the proper operations and/or necessary front dump angle of the front dump body.			
15.5	Box must meet MaineDOT paint requirements (See Paint Section) with a 3.5 Imron High Gloss Plow Yellow top coat.			

ATTACHMENTS SECTION

Section B ONE-WAY RIGHT OR LEFT PLOW WITH PLOW FRAME

The purpose and intent of this specification are to describe a One-Way Right or Left Plow with Plow Frame installed with necessary hydraulics and controls to make it fully functional on tandem axle trucks. Detailed specifications listed in Section 16.

	16.0 GENERAL	Abbreviation	Actual Dimension	Notes
16.1	Plow intake height 26" minimum; discharge height 54" minimum measured at top of curvature. Minimum circumference excluding moldboard backer angle must be 54¼” on the intake end and 89½” on the discharge end.			
16.2	Length of cutting edge shall be 11’, cleared path 9' minimum at a 65^{o} plowing angle. The overall length shall be 164”.			
16.3	Designed and constructed for extreme plowing service.			
16.4	The moldboard shall be a one-piece ten-gauge construction, brake formed for additional rigidity. It shall be high speed curvature to eliminate blow-back.			
16.5	There shall be 29” of overhang, at a 65^{o} attack angle, measured at the discharge end of the curvature plow.			
16.6	The top edge of the moldboard shall be reinforced with a HSS section of 3”x 2½”x ¼” angle iron. The moldboard backer angle shall be 6”x4”x¾” angle. The moldboard shall have eight (8) ½” flame cut vertical support ribs.			
16.7	AASHTO standard punching with carbide cutting edges.			
16.8	Intake shall have an end plate of 3/8" minimum.			

16.9	Attack angle of cutting edge must be easily adjustable from 45^{o} through and including 70^{o} by means of a tubular telescoping bar.			
16.10	There shall be two moldboard shoes and one nose shoe.			
16.11	Trip mechanism shall be of the trip moldboard buffer style.			
16.12	The trip mechanism shall be a buffer type incorporating two radially mounted compression springs. The springs shall be wound from .703" wire to a 4.07 ID" diameter with a spring rating of 422 and shall have a minimum of nine (9) active coils. These springs shall be retained by adjustable Nylok nut and plate washer. The retaining rod shall be C-1045 steel rod of 1½" diameter. The rod shall have a safety retainer pin located at the end of the thread which prohibits the nut from backing off from the rod.			
16.13	The main drive tubes of the push frame shall be a minimum of 5" 5"x¼" tubing. The lateral drive angle must be a minimum of 6"x6"x¾" angle which is boxed with ½" steel plate.			
16.14	The drive angle shall have two connecting places to attach moldboard assembly with a center roller included.			
16.15	The oscillating push bar shall be flame cut from 1" steel and have a pivot bolt of 1¼" diameter grade five bolt with self-locking nut.			
16.16	Due to the buffer trip design, the push frame shall be supplied with adjustable frame shoes with 96" of bearing surface and a minimum Brinnell hardness of 37 each.			
16.17	Side winding screw adjustable leg (jack) positioned to support and balance plow			

	when removed (minimum 1,000 lb. capacity).			
16.18	All metal shall be free of rust and mill scale and prepared (blasted) for primer and finish coat.			
16.19	A two (2) part epoxy primer shall be applied to prepared metal surfaces to the minimum thickness of 3-5 mils dry.			
16.20	Paint shall be applied to a thickness of 5-7 mils dry and shall be Imron 3.5 HG Cat Highway Yellow color (paint code #42-3133). Axalta shall be the preferred brand of paint.			
16.21	Plow shall come with carbide plow cutting blades.			

Section C REVERSIBLE PLOW WITH CONTOUR CHANGE				
The purpose and intent of this specification are to describe a Reversible Plow with Contour Change installed with necessary hydraulics and controls to make it fully functional on tandem axle trucks. Detailed specifications in Section 17.				
	17.0 GENERAL	**Abbreviation**	**Actual Dimension**	**Notes**
17.1	Hydraulically reversible. Reverse action provided by two (2) 3½" diameter nitrate treated cylinders designed with 2,000 PSI pressure relief.			
17.2	Designed and constructed for extreme service.			
17.3	Length of cutting edge shall be 11', cleared path 9' at 35° of swing.			
17.4	Adjustable height of 33" minimum and 51" maximum with sufficient overhang and curvature for high speed plowing.			
17.5	Cutting edge, with trip edge mechanism fully exposed for convenient servicing.			
17.6	Lower moldboard reinforcement shall be 4"x4"x½" steel angle minimum.			
17.7	Minimum of six (6) torsion-type springs not less than 7/8" wire x 3"x¾" O.D. with not less than sixteen (16) active coils each. Springs to be mounted horizontally and must be preloaded to require an initial tripping force of approximately 1,900 foot-pounds at full compression.			
17.8	Trip edge attachment supports shall be ½" plate steel minimum on both the trip edge backer angle and moldboard rib structure.			
17.9	AASHTO standard punching with carbide steel cutting edge.			
17.10	Retainer plate secured below center pin to prevent pin from falling out.			

17.11	Attack angle of cutting edge must be easily adjustable from 60° through 85°.			
17.12	Control switch or lever for hydraulically reversing must be attached with other plow functions.			
17.13	Plow must be capable of automatically changing contour through the uses of hydraulics to act as a left or right hand one-way tapered plow and as a straight, non-tapered reversible plow.			
17.14	The flared or discharge end of the plow shall coincide with the direction to which the moldboard has been angled.			
17.15	The tapered moldboard shall assume an inside height of 33” at the low side and 51” at the discharge side whenever angled to the extreme right or left positions from center.			
17.16	Hydraulic contour changing must be activated by and in conjunction with plow reversing.			
17.17	Moldboard material shall be one piece non-spliced 3/8” thick ultra-high molecular weight yellow polyethylene with a minimum tensile strength of 7000 PSI (in accordance with ASTMD638).			
17.18	The polyethylene materials shall be made from new resin (recycled material not acceptable), and shall be color impregnated and ultra violet stabilized safety yellow pigmentation.			
17.19	Plow weight approximately 2400 lbs. minimum.			
17.20	Side winding screw adjustable leg (jack) positioned to support and balance plow when removed (minimum 1,000 lb. capacity).			

17.21	All metal shall be free of rust and mill scale and prepared (blasted) for primer and finish coat.			
17.22	A two (2) part epoxy primer shall be applied to prepared metal surfaces to the minimum thickness of 3-5 mils dry.			
17.23	Paint shall be applied to a thickness of 5-7 mils dry and shall be Imron 17.5 HG Cat Highway Yellow color (paint code #42-3133). Axalta shall be the preferred brand of paint.			
17.24	Plow shall come with carbide plow cutting blades.			

Section D LEFT & RIGHT WING PLOWS				
The purpose and intent of this specification are to describe Left & Right Wing Plows installed with necessary hydraulics and controls to make it fully functional on tandem axle trucks. Detailed specifications in Sections 18-19.				
	18.0 WING PLOWS (LEFT & RIGHT)	**Abbreviation**	**Actual Dimension**	**Notes**
18.1	Appropriate model for either 54,000 GVW or 32,000 GVW vehicle, whichever is required			
18.2	Heavy-duty model			
18.3	• Overall blade length 10' overall wing length shall be 11'to fit 32,000 GVW vehicle • Overall blade length 11' overall wing length shall be 12' to fit 54,000 GVW vehicle • Overall blade length 12' overall wing length shall be 13' to fit 54,000 GVW vehicle			
18.4	Minimum ten-gauge moldboard. The moldboard shall be fabricated with a 1" nose plate. The moldboard shall be supported by four 1/2" flame cut ribs. The top of the moldboard shall be supported by a 3" x 3"x ¼" HSS tube with intermediate support moldboard shall be supported by a 3" x 3"x ¼" HSS tube with intermediate support			
18.5	The backer angle will be 6" x 4"x ¾" angle minimum gusseted with 3/8" triangular plate, AASHTO standard punching			
18.6	The wing shall include two mounting positions for a 1½" pivot bolt. The pivot bolts shall be reinforced with a ½" plate washer welded to the skin plate			
18.7	The wing arm attachment bracket shall be bolted in place and adjustable in position. The arms shall be pinned with a 1" diameter grade eight plated hex cap screw secured with a Nylok hex nut.			

18.8	The blade shall be ½" x 8" C-1085 steel reversible cutting edge with coped corners on the intake end. There shall be two cast iron wear shoes bolted behind and through the base angle. The blade and shoes shall be secured with 5/8" grade five plated carriage bolts.			
18.9	Attack angle of 85°			
18.10	A removable safety chain attached to the nose of the plow must be provided			
	19.0 GENERAL	**Abbreviation**	**Actual Dimension**	**Notes**
19.1	All parts and components must be compatible with equipment currently in use by MaineDOT Fleet Services.			
19.2	Ten (10) parts and repair manuals as necessary.			
19.3	A two (2) part epoxy primer shall be applied to prepared metal surfaces to the minimum thickness of 3-5 mils dry.			
19.4	Paint shall be applied to a thickness of 5-7 mils dry and shall be Imron 3.5 HG Cat Highway Yellow color (paint code #42-3133). Axalta shall be the preferred brand of paint.			
19.5	All equipment must be thoroughly inspected, serviced and be ready for use upon delivery.			
19.6	Plow lights must be of halogen type, low profile, professionally mounted and wired with a weather pack type plug-in device for quick disconnect mounted in the engine compartment using OEM plow light socket.			
19.7	All wiring must be protected by wire loom and be weatherproof, soldered connections and heat shrink wrap must be used on all wiring.			

19.8	All wiring and hoses shall be mounted, routed and fastened in a professional manner to prevent chafing, rubbing, etc.			
19.9	All hardware installed shall not obstruct any vehicle or equipment lubrication points.			
19.10	All hardware installed shall not obstruct or interfere with any vehicle component or system.			
19.11	Vehicle bumper must be quick attachable for summer use and attached to plow hitch with pins.			
19.12	Main plow and plow wings must be capable of installation and/or removal easily by one person.			
19.13	All plow hydraulic cylinders must be easily rebuildable.			
19.14	Electrically controlled solenoids shall be equipped with manual overrides.			
19.15	All hydraulic fittings to be NPT thread with Teflon tape, JIC not acceptable.			
19.16	All cylinders must be double Chrome plated.			
19.17	Solenoid operated plow valves must be capable of conversion to cable operation if necessary.			
19.18	All feed and return lines must have shut off valves to isolate the hydraulic tank.			
19.19	An emergency light mast of heavy wall steel pipe must be provided and securely fastened to the hydraulic tank. The mast must extend past the cab roof.			
19.20	Stainless Steel ½" tubing and ¾" tubing under the cab and toward the rear if required. Minimizing the rubber hydraulic hoses			

	lengths. Tubing shall be a minimum 304 SS welded seam tubing with the ½" tubing size has a side wall minimum of .049", the ¾" tubing has a side wall minimum of .065". Tubing flares shall be matched up with a JIC to hose end and shall have a Stainless Steel sleeves behind the flare as well as and Stainless Steel nuts. All Stainless tubing shall be run such manner that will not interfere with the accessibility of any filters or starter. Tubing holders shall be professionally designed and shall not allow the tubing to contact with each other. **(No wrapping of tubing will be accepted)** All brackets holding the tubing shall be easily removed to allow easy excess to components like transmission and engine.			

Section E POWER REVERSING UNDERFRAME ROAD SCRAPER FOR WHEELER/TANDEM AXLE PLOW TRUCKS				
The purpose and intent of this specification are to describe an Underframe Road Scraper for tandem axle trucks. The road scraper shall be hydraulically operated and have a blade width of ten (10) feet. Detailed specifications in Sections 20-22.				
	20.0 SCRAPER	**Abbreviation**	**Actual Dimension**	**Notes**
20.1	Road Scraper shall be of heavy-duty construction and design for extreme use.			
20.2	Hydraulically operated. Wausau or approved equal.			
20.3	10' moldboard length approximately.			
20.4	20” overall height moldboard with blade.			
20.5	Nine (9') cleared swath at approximately 35^{o}.			
20.6	Moldboard approximately 20" high x 1" corten steel.			
20.7	Moldboard shall be tiltable for road travel with a minimum travel distance of nine (9”) inches above the ground.			
20.8	Integral shock absorbing safety trip device.			
20.9	Hydraulically operated raising and lowering.			
20.10	Moldboard will be HYDRAULICALLY operated reversing for left and right swing to an angle of 45°.			
20.11	Hydraulic relief valve set at 500 PSI. (Preferably in main valve section)			
20.12	Operated from cab either electrically or manually in commonality with the other plow, wing or sander controls.			
20.13	Scraper valves shall be stacked with plow valves.			
20.14	¾”x6” carbide cutting edge with standard AASHTO punching.			

20.15	Punching shall be 11/16” square holes with countersink 1 1/16” diameter 45° to receive 5/8” diameter plow bolts.			
20.16	Cutting edges/moldboard shall be AASHTO punched for two (2) 3' and one (1) 4’ sections as requested.			
20.17	Quick detachable for summer operation to include the hydraulics.			
20.18	One (1) parts and repair manuals per unit.			
20.19	One (1) operator’s manual per unit.			
20.20	All components and controls must be compatible with equipment currently in use by Fleet Services/MaineDOT.			
20.21	All metal shall be free of rust and mill scale and prepared (blasted) for primer and finish coat.			
20.22	A two (2) part epoxy primer shall be applied to prepared metal surfaces to the minimum thickness of 3-5 mils dry.			
20.23	Paint shall be applied to a thickness of 5-7 mils dry and shall be Imron 3.5 HG Cat Highway Yellow color (paint code #42-3133). Axalta shall be the preferred brand of paint.			
20.24	All paint and primers shall be lead free.			
	21.0 GENERAL	**Abbreviation**	**Actual Dimension**	**Notes**
21.1	Must be installed in accordance with manufacturer’s specifications.			
21.2	If modifications to vehicle need to be made to meet scraper manufacturer's specifications and to permit proper operation of scraper, the modifications must be approved by both the vehicle manufacturer and Fleet Services,			

	MaineDOT and is required of the vendor/installer.			
21.3	All hydraulic cylinder rams must be nitrate coated and easily rebuildable.			
21.4	Mounting side plate must allow for multiple height variation from side to side.			
21.5	Multiple holes will allow for truck lean or severely crowned roads, thus allowing height adjustment to scraper.			
	22.0 WARRANTY	**Abbreviation**	**Actual Dimension**	**Notes**
22.1	Manufacturer's standard warranty will apply.			
22.2	Terms and conditions of warranty must be provided with bid proposal.			
22.3	Manufacturer's warranty will start with MaineDOT in-service date.			
22.4	Terms and conditions of warranty must be provided with bid proposal (Warranty must be clearly defined and all components covered must be clearly listed and identified).			
22.5	In-Service Date: Warranty on under frame road scraper (not placed in service immediately because of time lag due to installation of components, special equipment, seasonal usage or other delays) shall be warranted from the date the equipment is actually placed in service. MaineDOT Fleet Services Augusta shall notify the vendor in writing of "in service" date.			
22.6	Vendor shall be 100% responsible for all repair costs to include parts, labor during the warranty period.			

Section F MANUALLY REVERSING UNDERFRAME ROAD SCRAPER FOR PATROL/SINGLE AXLE PLOW TRUCKS

The purpose and intent of this specification are to describe an Underframe Road Scraper for single axle trucks. The road scraper shall be manually operated and have a blade width of ten (10) feet. Detailed specifications in Sections 23-25.

	23.0 SCRAPER	Abbreviation	Actual Dimension	Notes
23.1	Road Scraper shall be of heavy-duty construction and design for extreme use.			
23.2	Manually operated. Wausau or approved equal.			
23.3	10' moldboard length approximately.			
23.4	20” overall height moldboard with blade.			
23.5	Nine (9') cleared swath at approximately 35^{o}.			
23.6	Moldboard approximately 20" high x 1" corten steel.			
23.7	Moldboard shall be tiltable for road travel with a minimum travel distance of nine (9”) inches above the ground.			
23.8	Integral shock absorbing safety trip device.			
23.9	Hydraulically operated raising and lowering.			
23.10	Moldboard will be MANUALLY operated reversing for left and right swing to an angle of 45°.			
23.11	Hydraulic relief valve set at 500 PSI. (Preferably in main valve section)			
23.12	Operated from cab either electrically or manually in commonality with the other plow, wing or sander controls.			
23.13	Scraper valves shall be stacked with plow valves.			
23.14	¾”x6” carbide cutting edge with standard AASHTO punching.			

23.15	Punching shall be 11/16” square holes with countersink 1 1/16” diameter 45° to receive 5/8” diameter plow bolts.			
23.16	Cutting edges/moldboard shall be AASHTO punched for two (2) 3' and one (1) 4’ sections as requested.			
23.17	Quick detachable for summer operation to include the hydraulics.			
23.18	One (1) parts and repair manuals per unit.			
23.19	One (1) operator’s manual per unit.			
23.20	All components and controls must be compatible with equipment currently in use by Fleet Services/MaineDOT.			
23.21	All metal shall be free of rust and mill scale and prepared (blasted) for primer and finish coat.			
23.22	A two (2) part epoxy primer shall be applied to prepared metal surfaces to the minimum thickness of 3-5 mils dry.			
23.23	Paint shall be applied to a thickness of 5-7 mils dry and shall be Imron 3.5 HG Cat Highway Yellow color (paint code #42-3133). Axalta shall be the preferred brand of paint.			
23.24	All paint and primers shall be lead free.			
	24.0 GENERAL	**Abbreviation**	**Actual Dimension**	**Notes**
24.1	Must be installed in accordance with manufacturer’s specifications.			
24.2	If modifications to vehicle need to be made to meet scraper manufacturer's specifications and to permit proper operation of scraper, the modifications must be approved by both the vehicle manufacturer and Fleet Services,			

	MaineDOT and is required of the vendor/installer.			
24.3	All hydraulic cylinder rams must be nitrate coated and easily rebuildable.			
24.4	Mounting side plate must allow for multiple height variation from side to side.			
24.5	Multiple holes will allow for truck lean or severely crowned roads, thus allowing height adjustment to scraper.			
	25.0 WARRANTY	**Abbreviation**	**Actual Dimension**	**Notes**
25.1	Manufacturer's standard warranty will apply.			
25.2	Terms and conditions of warranty must be provided with bid proposal.			
25.3	Manufacturer's warranty will start with MaineDOT in-service date.			
25.4	Terms and conditions of warranty must be provided with bid proposal (Warranty must be clearly defined and all components covered must be clearly listed and identified).			
25.5	In-Service Date: Warranty on under frame road scraper (not placed in service immediately because of time lag due to installation of components, special equipment, seasonal usage or other delays) shall be warranted from the date the equipment is actually placed in service. MaineDOT Fleet Services Augusta shall notify the vendor in writing of "in service" date.			
25.6	Vendor shall be 100% responsible for all repair costs to include parts, labor during the warranty period.			

Section G 10-12 YARD HEAVY-DUTY CONSTRUCTION DUMP BODY				
The purpose and intent of this specification are to describe a 10-12 Yard Heavy-Duty Construction Dump Body with a length of 13’ and CA of 132”. Detailed specifications in Sections 26-31.				
	26.0 BODY	**Abbreviation**	**Actual Dimension**	**Notes**
26.1	Designed and constructed for extreme service.			
26.2	Unibody construction with no exposed or structural or longitudinal cross members.			
26.3	Length 13' with 12" overhang past body pivot.			
26.4	Body pivot point should align with the most rearward vertical point of rear tandem tires.			
26.5	Approximately 42” tailgate.			
26.6	Approximately 36" sides.			
26.7	10-yard water level capacity without side boards.			
26.8	Longitudinal shall be 3/16” AR400 steel minimum.			
26.9	Body bracing shall be fabricated of 3/16” AR400 steel minimum.			
26.10	Sides to be braced with 4 -7" (minimum) vertical box braces in addition to a boxed frame for tailgate.			
26.11	3/16" AR400 boxed top rail.			
26.12	Tailgate and tailgate frame box braced.			
26.13	Sloping tailgate braces and body sills.			
26.14	Full width rear apron under tailgate 6" wide bolted on and easily removable.			

26.15	When tailgate is closed, tailgate must be even with body floor with no gap between tailgate and body floor.			
26.16	One piece floor of 1/4" AR400 steel.			
26.17	Hardware shall be extra heavy duty with 1¼” minimum upper and lower tailgate hinge pins.			
26.18	Two (2) 3/8 grade 70 rated tailgate chains with upper and lower eyes.			
26.19	Body hinge pins shall be designed for positive lubrication, grease fittings shall be located on the inner side of the body hinge pin with grease fitting and grease groove.			
26.20	Continuous welding inside and out. No stitch welding			
26.21	Driver controlled dual air operated tailgate cylinders.			
26.22	Body must be equipped with adequately braced ladder mounted on the right side, whose first step is 21" above the ground and extends to the top of the sideboards. The right side of the ladder must terminate in a grab handle 8” above the side board.			
26.23	Mud flaps positioned fore and aft of rear wheels and/or tandem.			
26.24	Headwall will be 54” high fabricated from 3/16” AR400 steel. All full weld, no stitch welding acceptable.			
26.25	One gusseted non-slip step must be provided on the inside of the body adjacent to ladder on the ditch side of the vehicle.			
26.26	Permanently attached body support capable of holding body in raised position for servicing.			

26.27	Cab protector not required.			
26.28	Driver controlled air operated tailgate.			
	27.0 LOAD COVER FABRIC	**Abbreviation**	**Actual Dimension**	**Notes**
27.1	Load cover shall be designed and treated for hot asphalt temperatures.			
27.2	Cover material shall be constructed of RFL (Resorcinol Formaldehyde Latex) and be capable of withstanding temperatures of 350 degrees.			
27.3	Load cover material shall be latex-coated woven Polyester Yarn fabric.			
27.4	Load covers must be compatible with all existing MaineDOT load cover systems.			
27.5	Load cover shall have no tail or additional fabric beyond the tailgate.			
	28.0 LOAD COVER ROLL-UP SYSTEM	**Abbreviation**	**Actual Dimension**	**Notes**
28.1	Shall have roll-up type mechanism.			
28.2	Aluminum windscreen provided.			
28.3	Must be capable of mounting to body headboard.			
28.4	Electric motor shall be covered.			
28.5	Donovan Bullet Model #2858 electric drive motor or approved equal.			
28.6	Minimum three-year warranty on electric motor.			

	29.0 LOAD COVER GENERAL REQUIREMENTS	Abbreviation	Actual Dimension	Notes
29.1	Control switch must be integrated into truck dash and professionally labeled.			
29.2	The cover shall accommodate a 10-13 yard body or larger and must accommodate not only the body and load, but in winter must accommodate a hopper sander and load.			
29.3	Cover arms must be anodized aluminum and the length adjustable.			
29.4	Cover arms will be bent such that arms are not above sides of body when cover is retracted.			
29.5	Extra spring tension must be provided for cover arms to prevent the cover from “sailing” while the truck is in motion.			
29.6	Load cover arms shall not, in any way, hinder a person form climbing the ladder safely.			
29.7	If load cover sailing occurs after installation and delivery to Fleet Services, it will be required to be corrected by the cover manufacturer at no cost to MaineDOT.			
29.8	Load cover arms pivot point shall be positioned in such manner that would not allow equipment loading material to damage that area.			
	30.0 HOIST AND SUBFRAME	**Abbreviation**	**Actual Dimension**	**Notes**
30.1	Single piston front telescopic hoist incorporated into the body which shall be designed and will not extend beyond the face of the body.			
30.2	Class 80 hoist NTEA rated.			
30.3	Dump angle approximately 50° minimum to rear.			

30.4	Body hydraulics to be compatible with systems currently in use by Fleet Services/MaineDOT.			
30.5	All hoist wear points capable of being lubricated with grease fitting placed in a safe, convenient location for servicing and the ability to except auto grease system fitting.			
30.6	All fastening hardware to be of highest quality material available.			
30.7	There shall be minimum of 2¼" diameter grease-able rear hinge pins. (Grease fitting must be located at the end of the pin, facing inward)			
	31.0 GENERAL REQUIREMENTS	**Abbreviation**	**Actual Dimension**	**Notes**
31.1	Steel surface preparation shall be a minimum SSPC #6, Commercial Blast.			
31.2	Epoxy primer, two-part system. The dry film thickness shall be between 6-8 mils.			
31.3	Finish coat will be 3.5 Imron Aluminum.			
31.4	Any controls to be compatible with those currently in use by MaineDOT Fleet Services.			
31.5	Parts and repair manuals as needed.			
31.6	Body up light to be installed in cab.			
31.7	NOTE: CA dimension will accommodate not only body but wing tower and hydraulic assembly for plows approximately 20".			
31.8	All wiring must be protected by wire loom or conduit.			
31.9	Soldered connections and heat shrink wrap must be used on all wire connections.			

31.10	Hardwood sideboards 10" x 2" minimum, wood, painted black must be supplied and installed by vendor.			
31.11	Marker, I.D., clearance lights must be LED			
31.12	Two stainless steel aerodynamic triple light box housing will be supplied by MaineDOT to be recessed in both the right and left rear post and fully welded around housing. The box will be mounted in the center of each post. Adequate holes must be provided through the frame and box to facilitate the installation of wires and connectors for the lights. The box will contain a rectangular Whelen strobe/halogen flashed which Fleet Services will install in the top position. The remaining two lights, which will be supplied by Fleet Services, will consist of a Whelen back-up lamp for the bottom position and a Whelen stop/tail/turn LED for the center position that will be installed by the body supplier. Dentsch waterproof connectors must be used on all Whelen lamps.			
31.13	Method or means to secure auto-greaser lines to the body that will be adjacent to the long sill.			

Section H 13’ MULTIPURPOSE DUMP BODY				
The purpose and intent of this specification are to describe a 13’ Multipurpose Center Conveyor Belt Over Chain Rear Spread Dump Body. Detailed specifications in Sections 32-42.				
	32.0 BODY	**Abbreviation**	**Actual Dimension**	**Notes**
32.1	Length 13’ with 12” overhang past body pivot.			
32.2	10-yard water level capacity without side boards.			
32.3	Approximately 42” tailgate.			
32.4	Approximately 36” sides.			
32.5	Ten (10)” pockets for side boards, accepts two (2)” boards.			
32.6	Headwall to be 54” high fabricated from 3/16” Hardox 450 steel. All full weld, no stitch welding acceptable.			
32.7	Side material 3/16” Hardox 450 steel			
32.8	Front corner post 10-gauge core-ten 80 carbon steel, 7” wide by 3.38” deep.			
32.9	Formed box top section, dirt shedding lower rub rail, with side board support midway.			
32.10	Rear corner post 10-gauge core-ten 80 carbon steel, 15” wide by 5” deep.			
32.11	Rear corner post full bolster. Lower sill to be cut through post and welded forming an integral sill.			
32.12	Rear posts butt welded to lower sill not acceptable.			
32.13	Vertical extrusions supports on sides 10-gauge core-ten carbon steel. Supports fully welded, stitch welding of supports not acceptable.			

32.14	Three vertical side extrusions 7” wide by 3.38” deep.			
32.15	Grab handle shall be provided on the driver side of the body’s headboard.			
32.16	Body must be equipped with adequately braced ladder mounted on the right side, whose first step is 21" above the ground and extends to the top of the sideboards. The right side of the ladder must terminate in a grab handle 8” above the side board.			
32.17	Mud flaps positioned fore and aft of rear wheels and/or tandem.			
32.18	One gusseted non-slip step must be provided on the inside of the body adjacent to ladder on the ditch side of the vehicle.			
32.19	Approximately exterior width of 99” and inside width of 88”.			
32.20	Two (2) Lift lugs per side.			
	33.0 FLOOR	**Abbreviation**	**Actual Dimension**	**Notes**
33.1	Floor material Hardox 450 steel.			
33.2	Interior width 88”			
33.3	Angle floor with ramp at outer edges to sidewalls. Tub shape or radius body designs are not preferred.			
33.4	Long sills formed monocoque design incorporating the center conveyor, 11” deep section.			
33.5	Long sill material 3/16” plate.			
33.6	Long sills joined in center by two (2) cross tubes to provide ample support for conveyor floor welded to body long sills, cross tubes 3½” OD. Wall thickness .30”			

33.7	Floor includes bent plate stiffeners of 3/16” steel.			
33.8	Underbody pan required			
	34.0 TAILGATE	**Abbreviation**	**Actual Dimension**	**Notes**
34.1	Tailgate 3/16” Hardox 450 steel			
34.2	Bracing shall be 10-gauge core-ten steel			
34.3	Horizontal stiffeners and lower rub rail shall be dirt-shedding type.			
34.4	Driver controlled dual air operated tailgate cylinders.			
34.5	Double ½” flame cut plate with ⅝” latch fingers and 1¼” diameter lower latch rods.			
34.6	Upper hinge pins 1¼” with ⅜” outside ears and ¾” tailgate ears.			
34.7	Two (2) ⅜” grade 70 rated tailgate chains with upper and lower eyes.			
34.8	No stitch welding, all seams fully welded.			
34.9	Discharge door adjustable for multiple positions to allow for material metering when using spinner assembly for spreading material in snow and ice operations.			
34.10	Discharge door shall be design such that when completely shut it has no material leakage.			
34.11	Overhang of body with apron to be suitable for paver operation.			
34.12	Maximum 6” wide spreader apron.			
34.13	When tailgate is closed, tailgate must be even with body floor with no gap between tailgate and body floor.			

	35.0 CONVEYOR	Abbreviation	Actual Dimension	Notes
35.1	Center mounted conveyor set up for rear discharge, 24” preferred.			
35.2	Discharge door to include screw-jack for infinite metering of material and shall not interfere with tailgate safety chains and be easy access from ground level.			
35.3	Conveyor floor 3/16” Hardox 450 steel.			
35.4	Poly conveyor return tray (easily removed) under body to prevent material spillage on chassis and components.			
35.5	Hydraulic motor drive, one (1) planetary 25:1 gear box at rear of conveyor assembly with removeable covers to protect motors from asphalt. Hydraulic fitting and sensor on motor shall also be positioned in such a manner that they are protected during paving application.			
35.6	Conveyor shall be chain type with a cross bar welded to every chain link			
35.7	Shall have 667-X drive chain			
35.8	Mechanical belt/chain take up			
35.9	Removable center conveyor cover plate 3/16” Hardox 450 steel.			
35.10	Sprockets to be cast steel only.			
35.11	Shaft and sprocket assembly to be designed and placed in conveyor to eliminate undue wear on conveyor floor assembly at either end.			
35.12	Body floor to overlap edge of conveyor chain to prevent chain “ride-up”.			
35.13	Conveyor to end beyond tailgate such that tailgate and any center discharge or coal			

	doors close positively on conveyor tray to prevent leakage of material. Units with conveyor designs that end before the tailgate are neither desired nor acceptable.			
	36.0 SPINNER	**Abbreviation**	**Actual Dimension**	**Notes**
36.1	Spinner diameter 20” Poly			
36.2	Hydraulic spinner motor 3.0 CID			
36.3	Quick disconnects on hydraulic lines for ease of removal.			
36.4	Spinner assembly mounted beneath rear discharge door opening.			
36.5	Mount to be manual swing-away style such that complete assembly can be manually swung in towards chassis so that body can be raised to complete height in dump position without removal of spinner assembly.			
36.6	Spinner adjustable fore-aft, left-right and up-down.			
36.7	Spinner shall be braced and/or supported to prevent vibration and cracking.			
	37.0 LIQUID SYSTEM	**Abbreviation**	**Actual Dimension**	**Notes**
37.1	Liquid system designed to supply liquid to rear spinner assembly.			
37.2	Liquid capacity minimum of 200 gallons.			
37.3	Tanks shall have 2” fill ports.			
37.4	Tanks shall be mounted to the dump body, and designed for easy full excess as well as easily replaced and not be directly in contact of the against the side of the body.			

	38.0 LOAD COVER FABRIC	Abbreviation	Actual Dimension	Notes
38.1	Load cover shall be designed and treated for hot asphalt temperatures.			
38.2	Cover material shall be constructed of RFL (Resorcinol Formaldehyde Latex) and be capable of withstanding temperatures of 350 degrees.			
38.3	Load cover material shall be latex-coated woven Polyester Yarn fabric.			
38.4	Load covers must be compatible with all existing MaineDOT load cover systems.			
38.5	Load cover shall have no tail or additional fabric beyond the tailgate.			
	39.0 LOAD COVER ROLL-UP SYSTEM	**Abbreviation**	**Actual Dimension**	**Notes**
39.1	Shall have roll-up type mechanism.			
39.2	Aluminum windscreen provided.			
39.3	Must be capable of mounting to body headboard.			
39.4	Electric motor shall be covered.			
39.5	Donovan Bullet Model #2858 electric drive motor or approved equal.			
39.6	Minimum three-year warranty on electric motor.			

	40.0 LOAD COVER GENERAL REQUIREMENTS	Abbreviation	Actual Dimension	Notes
40.1	Control switch must be integrated into truck dash and professionally labeled.			
40.2	The cover shall accommodate a 10-13 yard body or larger and must accommodate not only the body and load, but in winter must accommodate a hopper sander and load.			
40.3	Cover arms must be anodized aluminum and the length adjustable.			
40.4	Cover arms will be bent such that arms are not above sides of body when cover is retracted.			
40.5	Extra spring tension must be provided for cover arms to prevent the cover from "sailing" while the truck is in motion.			
40.6	Load cover arms shall not, in any way, hinder a person form climbing the ladder safely.			
40.7	If load cover sailing occurs after installation and delivery to Fleet Services, it will be required to be corrected by the cover manufacturer at no cost to MaineDOT.			
40.8	Load cover arms pivot point shall be positioned in such manner that would not allow equipment loading material to damage that area.			
	41.0 HOIST AND SUBFRAME	**Abbreviation**	**Actual Dimension**	**Notes**
41.1	Single piston front telescopic hoist incorporated into the body which shall be designed and will not extend beyond the face of the body.			
41.2	Class 80 hoist NTEA rated.			

41.3	Dump angle approximately 50° minimum to rear.			
41.4	Body hydraulics to be compatible with systems currently in use by Fleet Services/MaineDOT.			
41.5	All hoist wear points capable of being lubricated with grease fitting placed in a safe, convenient location for servicing and the ability to except auto grease system fitting.			
41.6	All fastening hardware to be of highest quality material available.			
41.7	There shall be minimum of 2¼" diameter grease-able rear hinge pins. (Grease fitting must be located at the end of the pin, facing inward)			
	42.0 GENERAL REQUIREMENTS	**Abbreviation**	**Actual Dimension**	**Notes**
42.1	Steel surface preparation shall be a minimum SSPC #6, Commercial Blast.			
42.2	Epoxy primer, two-part system. The dry film thickness shall be between 6-8 mils.			
42.3	Finish coat will be 3.5 Imron Aluminum.			
42.4	Any controls to be compatible with those currently in use by MaineDOT Fleet Services.			
42.5	Parts and repair manuals as needed.			
42.6	Body up light to be installed in cab.			
42.7	NOTE: CA dimension will accommodate not only body but wing tower and hydraulic assembly for plows approximately 20".			
42.8	All wiring must be protected by wire loom or conduit.			

42.9	Soldered connections and heat shrink wrap must be used on all wire connections.			
42.10	Hardwood sideboards 10" x 2" minimum, wood, painted black must be supplied and installed by vendor.			
42.11	Marker, I.D., clearance lights must be LED			
42.12	Two stainless steel aerodynamic quad light housings will be supplied by MDOT to be fully welded to the exterior of both the right and left rear post. The box will be mounted in the center of the frame. Adequate holes must be provided through the frame and box to facilitate the installation of wires and connectors for the lights. The box will contain a rectangular Whelen strobe/halogen flasher which Fleet Services will install in the top position. The remaining two lights, which will be supplied by Fleet Services, will consist of a Whelen back up lamp for the lower position and a Whelen stop/tail/turn LED for the center position that will be installed by the body supplier. Dentsch waterproof connectors must be used on all Whelen lamps.			
42.13	Method or means to secure auto-greaser lines to the body that will be adjacent to the long sill.			

Section I 10’ SIDE DUMP BODY

The purpose and intent of this specification are to describe a 10’ side dump left front discharge dump body spreader which can be used as a conventional dump body. All construction to utilize continuous welding. Detailed specifications in **Sections 43-54**.				
	43.0 BODY	**Abbreviation**	**Actual Dimension**	**Notes**
43.1	Length: 10’ (6.8/8.8 yds)			
43.2	Interior width: 86”			
43.3	Exterior width: 102”			
43.4	Side height: 30”			
43.5	Tailgate Height: 39”			
	44.0 HEADBOARD AND CAB SHIELD	**Abbreviation**	**Actual Dimension**	**Notes**
44.1	Flat one piece 3/16” Hardox AR450			
44.2	Two (2) external vertical braces of 3/8” x 4” section			
44.3	10 Ga Corten break formed “C” section brace full width			
44.4	24” cab shield shall be 10 Ga 44W steel, continuously welded to headboard			
44.5	Cab shield side bracing shall be integral with front side board pockets			
	45.0 HOIST BASKET	**Abbreviation**	**Actual Dimension**	**Notes**
45.1	Floating trunnion cylinder pivot with removable greaseable bearing blocks, sized to match selected cylinder			
45.2	Basket back plate shall be 3/8” steel plate			
45.3	Basket side plates shall be ¾” steel plate			
45.4	Two (2) ¼” gussets welded between each side plate and the back plate			

45.5	Bearing blocks shall include zerk grease fittings			
	46.0 LIVE FLOOR AND WALL	**Abbreviation**	**Actual Dimension**	**Notes**
46.1	One-piece live action type 3/16” Hardox AR450 steel floor			
46.2	Live floor vertical wall section shall be 3/16” Hardox AR450			
46.3	Live wall section shall break to 90 degrees over the top of the full outer wall to prevent material from flowing between the live wall and outer wall			
46.4	Top section shall include 6” high board pockets at front and rear to accept 1¾” thick side board planks and shall include a third pocket midway on the body			
46.5	Floor and wall sections shall be longitudinally break formed at their intersection and continuously welded together to form a full length 30 degree gusset			
46.6	Head sheet of tilt section shall be 3/16” Hardox material			
46.7	Shall have an adjustable polymer wiper of 3/8” material at the body headboard			
46.8	Floor and right inner side wall shall move as one unit and shall be hinged to left side conveyor tray at the long sill and shall be capable of 36 degrees of floor lift by two (2) 4” minimum diameter by 20” stroke cylinders			
46.9	Cylinder rods shall be nitrided			
46.10	Cylinders in retracted position shall be at 22 degree angle			

46.11	Rod end bosses shall be designed and mounted for maximum serviceability			
46.12	Cylinder rod end bosses shall include greaseable bushed pinning, with pin designed with grease grooves			
46.13	Base trunnion mount shall be 1” steel plate			
46.14	Cylinder pins shall be of 1¼” stress-proof steel and greaseable			
46.15	There shall be six (6) channel cross members of 3” steel, 4.1lbs/ft and shall be spaced with two (2) at each of the live floor hinge assemblies and two (2) intermediate spacing			
46.16	The two (2) outer sets of horizontal cross members shall be joined to vertical live wall supports with 14” x 9” x ½” plate sections to form lifting cylinder end bosses and shall include additional ½” plate steel shims for the rod ends			
46.17	There shall be three (3) independent hinges of 1¼” diameter 304 stainless steel rods with grease groove and zerk fitting			
46.18	Hinge sections shall be bolted to both the left hand body long sill and floor section for maximum serviceability			
46.19	Hinge tube shall be of 2” OD mechanical tubing with 3/8” thickness			
46.20	Hinge plates shall be of 3/8” steel with vertical gussets of ½” plate			
46.21	Right side of body shall have a fixed outer wall of 3/16” Hardox AR450 to provide required rigidity for dump body use mode and restriction of personnel entry under tilting floor body			

46.22	There shall be safety props supplied to support the tilt floor during maintenance operations			
	47.0 SUB-FRAME	**Abbreviation**	**Actual Dimension**	**Notes**
47.1	Body long sills shall be 10” structural channel at 15.3lbs/ft			
47.2	Channel shall be tied together with four (4) ¼” steel plate supports, placed two (2) each at the base of the live floor lifting cylinders			
47.3	Shall include full-width, 14” height rear bumper of ¼” steel plate continuously welded to the long sills and vertical rear corner posts at either end to offer a fully integral bumper and increase the integrity of the body			
47.4	To maintain integrity of the body bumper shall be of solid design with no cut-out access doors			
47.5	Live floor, floor hinges, conveyor tray, chain return tray and life cylinders shall be removable for maintenance			
	48.0 SIDE	**Abbreviation**	**Actual Dimension**	**Notes**
48.1	Left hand body wall shall be one-piece Hardox AR450 3/16” with formed box section, top and bottom			
48.2	Vertical rear post shall have 11” x 4” base section			
48.3	Rear post shall be of full bolster design for additional rigidity with formed box section bottom rail extending through rear post and welded in place with rear post extending below bottom rail. Designs with rear post butt welded to bottom rail not acceptable.			
48.4	6” high front and rear board pockets to accept 1¾” planks			

48.5	Inner front board pocket shall be at top of headboard			
48.6	Shall have material shedding 45 degree lower rub rail standard			
48.7	Body shall be smooth side with no intermediate posts			
	49.0 TAILGATE AND LOCKING MECHANISM	**Abbreviation**	**Actual Dimension**	**Notes**
49.1	One-piece skin plate of 3/16” Hardox AR450			
49.2	Perimeter box reinforcement plus lower rub rail material shedding design			
49.3	Tailgate shall have two-way action standard			
49.4	Tailgate shall have 3/8” adjustment chains standard			
49.5	Tailgate shall have ¾” flame cut hinge ears with 1¼” diameter galvanized handle pins			
49.6	Tailgate shall have 1¼” diameter lower latch rod			
49.7	Two (2) chain hooks per side standard (attached to rear post)			
49.8	Air tailgate locking mechanism attached to a 1” diameter full-width traverse rod with four bearing points			
49.9	Positive lock cam action latches to give a “double” lock action			
49.10	Rear latches shall be independently adjustable			
49.11	½” plate latch ears with ½” flame cut lock finger			
49.12	Shall have air gate kit included as standard			

	50.0 CONVEYOR, DISCHARGE BOX & SPINNER	**Abbreviation**	**Actual Dimension**	**Notes**
50.1	Left side longitudinal conveyor shall empty to the front.			
50.2	The conveyor floor (upper tray) shall be bolted in for maximum serviceability			
50.3	Full-length conveyor cover (two-section) of 3/16” Hardox AR450 shall be steel hinged to fold and latch to the side			
50.4	Hinges on conveyor cover shall include zerk grease fittings			
50.5	Conveyor floor (upper tray) shall be formed from ¼” Hardox AR450 plate and shall be bolted in. Conveyor floor and return trays that are welded in are neither desired nor acceptable			
50.6	Conveyor chain shall be 667x pintle type chain 16” wide on center with 3/8” x 1¼” flights every second link (double bar type) providing no more than 4½” between flights			
50.7	Each end of flights bars shall be welded to chain link, both top and bottom of flight			
50.8	Flight bars shall be ramped up to chain link to reduce abrasive wear by weld point on conveyer floor			
50.9	Conveyor chains links shall be covered to prevent ride-up			
50.10	Conveyor chain shall be driven by a 5.9 cubic inch hydraulic motor through a 25:1 worm gear reducer			
50.11	Gear box assembly shall include cast iron drive box with bronze gear assemblies			
50.12	There shall be a 1¾” diameter front drive axle shaft carrying eight tooth steel			

	sprockets and a 1¼" rear idler shaft with cut steel sprockets. Units utilizing return roller assemblies in lieu of shaft and sprocket assemblies are neither desired nor acceptable.			
50.13	Motor and gear box assembly shall be mounted to drive shaft at side of discharge box with a coupler assembly such that this assembly can be removed for service without removal of shaft and sprocket assembly. Units that require removal of shaft and sprocket assembly with gear box are neither desired nor acceptable.			
50.14	Discharge box shall form front of conveyor frame and shall be an integral part of conveyor frame			
50.15	Mount shall be slotted to allow gear box/motor/drive shaft to be removed as a unit also if desired			
50.16	Clean-out cover on discharge box shall include positive tab and pin locking system and shall be removable without the use of tools by opening the cover and sliding to the free side of the pin and tube steel hinge assembly			
50.17	Discharge box cover shall include slots cut for visibility into the box with cover in place to observe material flow			
50.18	Conveyor chain adjustment shall be through the use of dual grease tensioners at the return end of the body			
50.19	There shall be a guillotine-type flow control door, minimum of 18" wide			
50.20	Door in full open position shall be 12" high, offering a 216 square inch total opening			
50.21	Floor control door shall include screw-style jack mounted to headboard above door for infinite material flow control			

50.22	Control rod and handle of flow control door shall be accessible from ground level			
50.23	There shall be a chassis mounted polymer chute feeding to a 6-flight 18” diameter poly spinner driven by an independent 3.0 cubic inch sealed hydraulic motor			
50.24	Polymer chute shall be capable of windrowing spread material to the road center by rotating 90 degrees.			
50.25	Spinner drive shall be chassis mounted and adjustable through three (3) axes: lateral, longitudinal and vertical			
	51.0 HYDRAULICS	**Abbreviation**	**Actual Dimension**	**Notes**
51.1	Body will be fully plumbed for both conveyor drive and side lift cylinders			
51.2	Stainless steel hydraulic feed			
51.3	Return lines mounted on body shall be stainless steel for durability on longitudinal lines			
	52.0 HOIST AND REAR HINGE	**Abbreviation**	**Actual Dimension**	**Notes**
52.1	Main dump body telescopic cylinder shall have nitride wear surfaces, multiple stages, self-bleeding and sized appropriately for the length of box desired			
52.2	Standard cylinder shall be single acting on all stages.			
52.3	Hoist shall be of “CS” design for use in high salt environments			
52.4	Cylinder rods to be nitrided			
52.5	Cylinder trunnion to include zerk grease fittings			

52.6	Rear hinge shall be fabricated with a base angle of 4” x 4” x 3/8” structural angle			
52.7	Two (2) 3” thick hinge ears pivoting on 2” diameter pins shall in turn be welded to the body.			
52.8	Safety prop included			
	53.0 CENTRAL GREASE LINE KIT	**Abbreviation**	**Actual Dimension**	**Notes**
53.1	Central grease block system for wear points on body as standard equipment			
53.2	Central greasing to include: a. Bearing blocks at base basket for main lift cylinder b. Main lift cylinder trunnion c. Front drive shaft bearings at conveyor d. Drive shaft bearings at gear box e. Rear idler return shaft bearings at conveyor f. Rod end side lift cylinders g. Base end side lift cylinders h. Front live floor hinge i. Mid live floor hinge j. Rear live floor hinge k. Conveyor cover hinges			
	54.0 OPTIONS	**Abbreviation**	**Actual Dimension**	**Notes**
54.1	Additional summer chute to move material 90 degrees to truck			
54.2	Hydraulically actuated door with in-cab control			
54.3	Folding ladder with three (3) rungs above, handhold			
54.4	Double acting main hoist cylinder			
54.5	Tailgate coal door			
54.6	Spreader apron			

54.7	SDS two (2) section hinged screen package			
54.8	Poly discharge chute body mounted			
54.9	Summer discharge chute (windrow)			
54.10	Ladder, fold up style			
54.11	Tarp rods at body sides			
54.12	Shovel holder			
54.13	High temp tilt floor wiper at headboard			
54.14	Conveyor automatic spring roller chain tensioner in lieu of grease tensioners			

Section J 13’ SIDE DUMP BODY				
The purpose and intent of this specification are to describe a 13’ Side Dump Left Front Discharge Dump Body Spreader which can be used as a conventional dump body. All construction to utilize continuous welding. Detailed specifications in **Sections 55-66**.				
	55.0 BODY	**Abbreviation**	**Actual Dimension**	**Notes**
55.1	Length: 10’ (10/13 yds)			
55.2	Interior width: 86”			
55.3	Exterior width: 102”			
55.4	Side height: 38”			
55.5	Tailgate Height: 42”			
	56.0 HEADBOARD AND CAB SHIELD	**Abbreviation**	**Actual Dimension**	**Notes**
56.1	Flat one piece 3/16” Hardox steel			
56.2	Two (2) external vertical braces of 3/8” x 4” section			
56.3	10 Ga Corten break formed “C” section brace full width			
56.4	24” cab shield shall be 10 Ga 44W steel, continuously welded to headboard			
56.5	Cab shield side bracing shall be integral with front side board pockets			
	57.0 HOIST BASKET	**Abbreviation**	**Actual Dimension**	**Notes**
57.1	Floating trunnion cylinder pivot with removable greaseable bearing blocks, sized to match selected cylinder			
57.2	Basket back plate shall be 3/8” steel plate			
57.3	Basket side plates shall be ¾” steel plate			

57.4	Two (2) ¼” gussets welded between each side plate and the back plate			
57.5	Bearing blocks shall include zerk grease fittings			
	58.0 LIVE FLOOR AND WALL	**Abbreviation**	**Actual Dimension**	**Notes**
58.1	One-piece live action type ¼” Hardox 205,000 psi steel floor			
58.2	Live floor vertical wall section shall be 3/16” Hardox			
58.3	Live wall section shall break to 90 degrees over the top of the full outer wall to prevent material from flowing between the live wall and outer wall			
58.4	Top section shall include 6” high board pockets at front and rear to accept 1¾” thick side board planks and shall include a third pocket midway on the body			
58.5	Floor and wall sections shall be longitudinally break formed at their intersection and continuously welded together to form a full length 30 degree gusset			
58.6	Head sheet of tilt section shall be 3/16” Hardox material			
58.7	Shall have an adjustable polymer wiper of 3/8” material at the body headboard			
58.8	Floor and right inner side wall shall move as one unit and shall be hinged to left side conveyor tray at the long sill and shall be capable of 36 degrees of floor lift by three (3) 4” minimum diameter by 20” stroke cylinders			
58.9	Cylinders in retracted position shall be at 22 degree angle			

58.10	Live cylinder rod ends shall mount to heavy-duty gusset between live floor and live wall c-channel and shall include heavy-duty bosses			
58.11	Rod end bosses shall be designed and mounted for maximum serviceability			
58.12	Cylinder rod end bosses shall include greaseable bushed pinning, with pin designed with grease grooves			
58.13	Base trunnion mount shall be 1” steel plate			
58.14	Cylinder pins shall be of 1¼” stress-proof steel and greaseable			
58.15	There shall be eight (8) channel cross members of 3” steel, 4.1lbs/ft and shall be spaced with two (2) at each of the live floor hinge assemblies and two (2) intermediate spacing			
58.16	The two (2) outer sets of horizontal cross members shall be joined to vertical live wall supports with 14” x 9” x ½” plate sections to form lifting cylinder end bosses and shall include additional ½” plate steel shims for the rod ends			
58.17	There shall be three (3) independent hinges of 1¼” diameter 304 stainless steel rods with grease groove and zerk fitting			
58.18	Hinge sections shall be bolted to both the left hand body long sill and floor section for maximum serviceability			
58.19	Hinge tube shall be of 2” OD mechanical tubing with 3/8” thickness			
58.20	Right side of body shall have a fixed outer wall of 3/16” Hardox steel to provide required rigidity for dump body use mode and restriction of personnel entry under tilting floor body			

58.21	There shall be safety props supplied to support the tilt floor during maintenance operations			
	59.0 SUBFRAME	**Abbreviation**	**Actual Dimension**	**Notes**
59.1	Body long sills shall be 10” structural channel at 15.3lbs/ft			
59.2	Channel shall be tied together with four (4) ¼” steel plate supports, placed two (2) each at the base of the live floor lifting cylinders			
59.3	Shall include full-width, 14” height rear bumper of ¼” steel plate continuously welded to the long sills and vertical rear corner posts at either end to offer a fully integral bumper and increase the integrity of the body			
59.4	To maintain integrity of the body bumper shall be of solid design with no cut-out access doors			
59.5	Live floor, floor hinges, conveyor tray, chain return tray and life cylinders shall be removable for maintenance			
	60.0 SIDE	**Abbreviation**	**Actual Dimension**	**Notes**
60.1	Left hand body wall shall be one-piece Hardox 3/16” with formed box section, top and bottom			
60.2	Vertical rear post shall have 11” x 4” base section			
60.3	Rear post shall be of full bolster design for additional rigidity with formed box section bottom rail extending through rear post and welded in place with rear post extending below bottom rail. Designs with rear post butt welded to bottom rail not acceptable.			

60.4	6” high front and rear board pockets to accept 1¾” planks			
60.5	Inner front board pocket shall be at top of headboard			
60.6	Shall have material shedding 45 degree lower rub rail standard			
	61.0 TAILGATE AND LOCKING MECHANISM	**Abbreviation**	**Actual Dimension**	**Notes**
61.1	One-piece skin plate of 3/16” Hardox			
61.2	Perimeter box reinforcement plus lower rub rail material shedding design			
61.3	Tailgate shall have two-way action standard			
61.4	Tailgate shall have 3/8” adjustment chains standard			
61.5	Tailgate shall have ¾” flame cut hinge ears with 1¼” diameter galvanized handle pins			
61.6	Tailgate shall have 1¼” diameter lower latch rod			
61.7	Two (2) chain hooks per side standard (attached to rear post)			
61.8	Air tailgate locking mechanism attached to a 1” diameter full-width traverse rod with four bearing points			
61.9	Positive lock cam action latches to give a “double” lock action			
61.10	Rear latches shall be independently adjustable			
61.11	½” plate latch ears with ½” flame cut lock finger			
61.12	Shall have air gate kit included as standard			

	62.0 CONVEYOR, DISCHARGE BOX & SPINNER	Abbreviation	Actual Dimension	Notes
62.1	Left side longitudinal conveyor shall empty to the front.			
62.2	The conveyor floor (upper tray) shall be bolted in for maximum serviceability			
62.3	Full-length conveyor cover (three-section) of 3/16” Hardox steel shall be steel hinged to fold and latch to the side			
62.4	Hinges on conveyor cover shall include zerk grease fittings			
62.5	Conveyor floor (upper tray) shall be formed from ¼” Hardox plate and shall be bolted in. Conveyor floor and return trays that are welded in are neither desired nor acceptable			
62.6	Conveyor chain shall be 667x pintle type chain 16” wide on center with 3/8” x 1¼” flights every second link (double bar type) providing no more than 4½” between flights			
62.7	Each end of flights bars shall be welded to chain link, both top and bottom of flight			
62.8	Flight bars shall be ramped up to chain link to reduce abrasive wear by weld point on conveyer floor			
62.9	Conveyor chains links shall be covered to prevent ride-up			
62.10	Conveyor chain shall be driven by a 10 cubic inch hydraulic motor through a 25:1 worm gear reducer			
62.11	Gear box assembly shall include cast iron drive box with bronze gear assemblies			
62.12	There shall be a 1¾” diameter front drive axle shaft carrying eight tooth steel sprockets and a 1¼” rear idler shaft with cut steel sprockets. Units utilizing return roller			

	assemblies in lieu of shaft and sprocket assemblies are neither desired nor acceptable.			
62.13	Motor and gear box assembly shall be mounted to drive shaft at side of discharge box with a coupler assembly such that this assembly can be removed for service without removal of shaft and sprocket assembly. Units that require removal of shaft and sprocket assembly with gear box are neither desired nor acceptable.			
62.14	Discharge box shall form front of conveyor frame and shall be an integral part of conveyor frame			
62.15	Mount shall be slotted to allow gear box/motor/drive shaft to be removed as a unit also if desired			
62.16	Clean-out cover on discharge box shall include positive tab and pin locking system and shall be removable without the use of tools by opening the cover and sliding to the free side of the pin and tube steel hinge assembly			
62.17	Discharge box cover shall include slots cut for visibility into the box with cover in place to observe material flow			
62.18	Conveyor chain adjustment shall be through the use of dual grease tensioners at the return end of the body			
62.19	There shall be a guillotine-type flow control door, minimum of 18” wide			
62.20	Door in full open position shall be 12” high, offering a 216 square inch total opening			
62.21	Floor control door shall include screw-style jack mounted to headboard above door for infinite material flow control			

62.22	Control rod and handle of flow control door shall be accessible from ground level			
62.23	There shall be a chassis mounted polymer chute feeding to a 6-flight 18” diameter poly spinner driven by an independent 3.0 cubic inch sealed hydraulic motor			
62.24	Polymer chute shall be capable of windrowing spread material to the road center by rotating 90 degrees.			
62.25	Spinner drive shall be chassis mounted and adjustable through three (3) axes: lateral, longitudinal and vertical			
	63.0 HYDRAULICS	**Abbreviation**	**Actual Dimension**	**Notes**
63.1	Body will be fully plumbed for both conveyor drive and side lift cylinders			
63.2	Return lines mounted on body shall be stainless steel for durability on longitudinal lines			
	64.0 HOIST AND REAR HINGE	**Abbreviation**	**Actual Dimension**	**Notes**
64.1	Main dump body telescopic cylinder shall have nitride wear surfaces, multiple stages, self-bleeding and sized appropriately for the length of box desired			
64.2	Standard cylinder shall be single acting on all stages.			
64.3	Hoist shall be of “CS” design for use in high salt environments			
64.4	Cylinder trunnion to include zerk grease fittings			
64.5	Rear hinge shall be fabricated with a base angle of 4” x 4” x 3/8” structural angle			

64.6	Two (2) 3” thick hinge ears pivoting on 2” diameter pins shall in turn be welded to the body.			
64.7	Safety prop included			
	65.0 CENTRAL GREASE LINE KIT	**Abbreviation**	**Actual Dimension**	**Notes**
65.1	Central grease block system for wear points on body as standard equipment			
65.2	Central greasing to include: a. Bearing blocks at base basket for main lift cylinder b. Main lift cylinder trunnion c. Front drive shaft bearings at conveyor d. Drive shaft bearings at gear box e. Rear idler return shaft bearings at conveyor f. Rod end side lift cylinders g. Base end side lift cylinders h. Front live floor hinge i. Mid live floor hinge j. Rear live floor hinge k. Conveyor cover hinges			
	66.0 OPTIONS	**Abbreviation**	**Actual Dimension**	**Notes**
66.1	Additional summer chute to move material 90 degrees to truck			
66.2	Hydraulically actuated door with in-cab control			
66.3	Folding ladder with three (3) rungs above, handhold			
66.4	Double acting main hoist cylinder			
66.5	Tailgate coal door			
66.6	Spreader apron			
66.7	SDS two (2) section hinged screen package			

66.8	Poly discharge chute body mounted			
66.9	Summer discharge chute (windrow)			
66.10	Ladder, fold up style			
66.11	Tarp rods at body sides			
66.12	Shovel holder			
66.13	High temp tilt floor wiper at headboard			
66.14	Conveyor automatic spring roller chain tensioner in lieu of grease tensioners			

	Section K REQUIREMENTS SECTIONS			
	67.0 WARRANTY	**Abbreviation**	**Actual Dimension**	**Notes**
67.1	Manufacturer's standard warranty will apply.			
67.2	Terms and conditions of warranty to be provided with bid proposal (Warranty must be clearly defined and all components covered must be clearly listed and identified).			
67.3	Manufacturer's warranty will start with MaineDOT in-service date.			
67.4	Vendor shall be 100% responsible for all repair costs to include parts, labor during the warranty period.			
	68.0 MANUALS AND SOFTWARE REQUIREMENT	**Abbreviation**	**Actual Dimension**	**Notes**
68.1	There shall be two (2) operator's manuals per unit.			
68.2	There shall be two (2) shop repair manuals or CDs per unit.			
68.3	There shall be two (2) parts manuals or CDs per unit.			
	69.0 GENERAL REQUIREMENTS	**Abbreviation**	**Actual Dimension**	**Notes**
69.1	All pinch points shall be clearly marked.			
69.2	Equipment must be fully inspected, serviced, fully assembled, and ready to work upon delivery.			
69.3	All hardware installed shall not obstruct any lubrication points, or interfere with proper operation.			
69.4	All safety, warning and instructional decals must be properly displayed and appropriate for application.			

69.5	MaineDOT Fleet Services reserves the right to pre-inspect before delivery.			
69.6	Upon delivery of unit or units all necessary paper work such as Certificate of Origin, dealer's certificate and invoices shall accompany unit(s).			
69.7	All awarded proposals will include shipping and delivery to: MaineDOT Fleet Services, 66 Industrial Drive, Augusta, ME 04330.			

	70.0 BID SUBMISSION REQUIREMENT	**Abbreviation**	**Actual Dimension**	**Notes**
70.1	In addition to required information as exhibited in the specifications, the Bidder shall also provide: • Warranty and extended warranty data and all sub-components. • Detailed Specifications required on the proposed. Failure to supply the required documentation may render the bid non-responsive.			

Appendix C

STATE OF MAINE
DEPARTMENT OF ADMINISTRATIVE AND FINANCIAL SERVICES
DIVISION OF PROCUREMENT SERVICES

COST RESPONSE

RFQ # 17D19052100000000000352

Base Unit Snow Plow Gear System with Attachments & Dump Bodies

All responses to this RFQ will require a cost quotation response, in a format selected by the State of Maine. That format is described below.

Prices are to be net including transportation charges fully pre-paid by the contractor, FOB destination and include all installation costs (unless asking for item(s) only).

Please download this document to your desktop, fill out required sections, and attach to your response in VSS along with requested documents. *For your electronic response in VSS, please put "0" in the unit price field.* (Attachment maximum size is 2mb each!)

REQUESTED RETURNED DOCUMENTS:

- **Appendix A:** Bid Cover Page and Debarment Form (Pages 11-12 of this document)
- **Appendix B:** Completed specifications responses (Pages 14-82 of this document)
- **Appendix C:** Cost Response Sheets (Pages 84-87 of this document)
- **Appendix D:** Municipality Political Subdivision and School District Participation Certification (Page 88 of this document)
- **Appendix E:** Certifications (Pages 89-91 of this document)
- **Appendix F:** MaineDOT Terms and Conditions
- **Product Data/Information Sheets**
- **Warranty Information**

Section A BASE UNIT SNOW PLOW GEAR SYSTEM

PRICE QUOTE #1: **DELIVERY DAYS:**
INSTALLATION OF BASE UNIT PLOW GEAR SYSTEM TO INCLUDE: HYDRAULIC CONTROL VALVE AND CAB CONTROLS FULLY FUNCTIONAL FOR RIGHT-HAND SYSTEM SET UP
PRICE QUOTE #2: $ **DELIVERY DAYS:**
INSTALLATION OF BASE UNIT PLOW GEAR SYSTEM TO INCLUDE: HYDRAULIC CONTROL VALVE AND CAB CONTROLS FULLY FUNCTIONAL FOR LEFT-HAND SYSTEM SET UP
PRICE QUOTE #3: $ **DELIVERY DAYS:**
INSTALLATION OF BASE UNIT PLOW GEAR SYSTEM TO INCLUDE: HYDRAULIC CONTROL VALVE AND CAB CONTROLS FULLY FUNCTIONAL FOR DOUBLE SYSTEM SET UP

ATTACHMENTS SECTION	
Section B	**ONE-WAY RIGHT OR LEFT PLOW WITH PLOW FRAME**
PRICE QUOTE #1: **DELIVERY DAYS:**	
INSTALLATION OF ONE-WAY PLOW TO INCLUDE: HYDRAULIC CONTROL VALVE AND CAB CONTROLS FULLY FUNCTIONAL FOR RIGHT PLOW	
PRICE QUOTE #2: $ **DELIVERY DAYS:**	
INSTALLATION OF ONE-WAY PLOW TO INCLUDE: HYDRAULIC CONTROL VALVE AND CAB CONTROLS FULLY FUNCTIONAL FOR LEFT PLOW	
PRICE QUOTE #3: $ **DELIVERY DAYS:**	
PURCHASE OF THE ONE-WAY PLOW ONLY - RIGHT	
PRICE QUOTE #4: $ **DELIVERY DAYS:**	
PURCHASE OF THE ONE-WAY PLOW ONLY -LEFT	

Section C REVERSIBLE PLOW WITH CONTOUR CHANGE
PRICE QUOTE #1: **DELIVERY DAYS:**
INSTALLATION OF REVERSIBLE PLOW WITH CONTOUR CHANGE TO INCLUDE: HYDRAULIC CONTROL VALVE AND CAB CONTROLS FULLY FUNCTIONAL
PRICE QUOTE #2: $ **DELIVERY DAYS:**
PURCHASE OF THE REVERSIBLE PLOW WITH CONTOUR CHANGE ONLY

Section D LEFT & RIGHT WING PLOWS
PRICE QUOTE #1: $ **DELIVERY DAYS:**
FOR PURPOSE OF INSTALLATION OF 11' WING PLOW SYSTEM TO INCLUDE: HYDRAULIC CONTROL VALVE AND CONTROLS FULLY FUNCTIONAL
PRICE QUOTE #2: $ **DELIVERY DAYS:**
FOR PURPOSE OF INSTALLATION OF 12' WING PLOW SYSTEM TO INCLUDE: HYDRAULIC CONTROL VALVE AND CONTROLS FULLY FUNCTIONAL
PRICE QUOTE #3: $ **DELIVERY DAYS:**
FOR PURPOSE OF INSTALLATION OF 13' WING PLOW SYSTEM TO INCLUDE: HYDRAULIC CONTROL VALVE AND CONTROLS FULLY FUNCTIONAL
PRICE QUOTE #4: $ **DELIVERY DAYS:**
FOR THE PURPOSE OF PURCHASE OF 11' WING PLOW SYSTEM ONLY
PRICE QUOTE #5: $ **DELIVERY DAYS:**
FOR THE PURPOSE OF PURCHASE OF 12' WING PLOW SYSTEM ONLY
PRICE QUOTE #6: $ **DELIVERY DAYS:**
FOR THE PURPOSE OF PURCHASE OF 13' WING PLOW SYSTEM ONLY

Section E	POWER REVERSING UNDERFRAME ROAD SCRAPER FOR WHEELER/TANDEM AXLE PLOW TRUCKS
PRICE QUOTE #1: $ **DELIVERY DAYS:**	
INSTALLATION OF POWER REVERSING UNDERFRAME ROAD SCRAPER CHANGE TO INCLUDE: HYDRAULIC CONTROL VALVE AND CAB CONTROLS FULLY FUNCTIONAL	
PRICE QUOTE #2: $ **DELIVERY DAYS:**	
PURCHASE OF POWER REVERSING UNDERFRAME ROAD SCRAPER ONLY	

Section F	MANUALLY REVERSING UNDERFRAME ROAD SCRAPER FOR PATROL/SINGLE AXLE PLOW TRUCKS
PRICE QUOTE #1: $ **DELIVERY DAYS:**	
INSTALLATION OF MANUALLY REVERSING UNDERFRAME ROAD SCRAPER CHANGE TO INCLUDE: HYDRAULIC CONTROL VALVE AND CAB CONTROLS FULLY FUNCTIONAL	
PRICE QUOTE #2: $ **DELIVERY DAYS:**	
FOR THE PURPOSE OF PURCHASE OF MANUALLY REVERSING UNDERFRAME ROAD SCRAPER ONLY	

Section G	10-12 YARD HEAVY-DUTY CONSTRUCTION DUMP BODY
PRICE QUOTE #1: $ **DELIVERY DAYS:**	
FOR PURPOSE OF INSTALLATION OF 10-12 YARD HEAVY-DUTY CONSTRUCTION DUMP BODY TO INCLUDE: HYDRAULIC CONTROL VALVE AND CAB CONTROLS FULLY FUNCTIONAL	
PRICE QUOTE #2: $ **DELIVERY DAYS:**	
FOR THE PURPOSE OF PURCHASE OF 10-12 YARD HEAVY-DUTY CONSTRUCTION DUMP BODY ONLY	

Section H 13’ MULTIPURPOSE DUMP BODY
PRICE QUOTE #1: $ **DELIVERY DAYS:**
FOR PURPOSE OF INSTALLATION OF 13’ MULTIPURPOSE DUMP BODY TO INCLUDE: HYDRAULIC CONTROL VALVE AND CONTROLS FULLY FUNCTIONAL
PRICE QUOTE #2: $ **DELIVERY DAYS:**
FOR THE PURPOSE OF PURCHASE OF 13’ MULTIPURPOSE DUMP BODY ONLY

Section I 10’ SIDE DUMP BODY
PRICE QUOTE #1: $ **DELIVERY DAYS:**
FOR PURPOSE OF INSTALLATION OF 10’ SIDE DUMP BODY TO INCLUDE: HYDRAULIC CONTROL VALVE AND CONTROLS FULLY FUNCTIONAL
PRICE QUOTE #2: $ **DELIVERY DAYS:**
FOR THE PURPOSE OF PURCHASE OF 10’ SIDE DUMP BODY ONLY

Section J 13’ SIDE DUMP BODY
PRICE QUOTE #1: $ **DELIVERY DAYS:**
FOR PURPOSE OF INSTALLATION OF 13’ SIDE DUMP BODY TO INCLUDE: HYDRAULIC CONTROL VALVE AND CONTROLS FULLY FUNCTIONAL
PRICE QUOTE #2: $ **DELIVERY DAYS:**
FOR THE PURPOSE OF PURCHASE OF 13’ SIDE DUMP BODY ONLY

Appendix D

STATE OF MAINE
DEPARTMENT OF ADMINISTRATIVE AND FINANCIAL SERVICES
DIVISION OF PROCUREMENT SERVICES

MUNICIPALITY POLITICAL SUBDIVISION and SCHOOL DISTRICT PARTICIPATION CERTIFICATION

RFQ # 17D19052100000000000352

Base Unit Snow Plow Gear System with Attachments & Dump Bodies

The Division of Procurement Services is committed to providing purchasing opportunities for **municipalities, political subdivisions and school districts** in Maine by allowing them access, through our vendors, to our contract pricing. A bidder's willingness to extend contract pricing to these entities will be taken into consideration in making awards.

Will you accept orders from political subdivisions and school districts in Maine at the prices quoted?

Yes

Yes, with conditions as follows:

No

Name of Company:

Address:

Signature: _____

Date:

Appendix E

RFQ # 17D19052100000000000352

Base Unit Snow Plow Gear System with Attachments & Dump Bodies

CERTIFICATIONS

1.0 NONCOLLUSION BIDDING CERTIFICATION

By submission of this Bid, each Bidder and each person signing on behalf of any Bidder certifies, and in the case of a joint bid, each party certifies as to its own organization, under penalty of perjury, that to the best of its knowledge and belief:

1. The prices in this Bid have been arrived at independently without collusion, consultation, communication or agreement, for the purpose of restricting competition as to any other matter relating to such prices with any other Bidder or with any other competitor;

2. Unless otherwise required by law, the prices which have been quoted in this Bid have not been knowingly disclosed by the Bidder and will not knowingly be disclosed by the Bidder prior to opening, directly or indirectly, to any other Bidder or to any competitor; and,

3. No attempt has been made or will be made by the Bidder to induce any other person, partnership or corporation to submit or not to submit a Bid for the purpose of restricting competition.

Dated

Printed name of Person Bidding

_____

Authorized Signature

Title

2.0 EQUIPMENT PERFORMANCE AND WARRANTY DATA

The information provided on this form will be used in determining operating costs of the equipment. Bidder must complete this form and submitted with bid. Bids received without this information will be considered non-responsive to the bid.

1. **EQUIPMENT**:

2. **DESCRIBE THE PROCESS FOR THE SUBMISSION OF WARRANTY CLAIMS FOR REIMBURSEMENT OUTLINED AND SUBMITTED WITH THE BID. (written process to follow for reimbursement of warranty claims)**

3. **EQUIPMENT INFORMATION:**

YEAR: EQUIPMENT MAKE:

EQUIPMENT MODEL:

4. **MANUFACTURER'S RECOMMENDED PREVENTATIVE MAINTENANCE SCHEDULE MUST BE PROVIDED**

5. **BASIC EQUIPMENT WARRANTY DESCRIPTION**

6. **NAME/LOCATION OF REPAIR FACILITY(S)** (BOTH AUTHORIZED WARRANTY, PARTS & SERVICE PER REQUESTED LOCATION)**.** It is desired that at least one facility is located within 75-mile radius each region headquarters: Scarborough, Augusta, Dixfield, Bangor and Presque Isle.

WARRANTY AND SERVICE FACILITIES

ADDRESS 1:
ADDRESS 2:
ADDRESS 3:
ADDRESS 4:
ADDRESS 5:

CONTACT NAME: TELEPHONE:

EQUIPMENT PARTS PROVIDER:

ADDRESS:

CONTACT NAME: TELEPHONE:

Attach written explanation describing the locations of the facilities, the contact name and number at each facility, the times the facilities will be available for use, the qualifications of the staff at the facilities and how the vendor will provide warranty and service at these service facilities.

Bidder certifies that they have service facilities in Maine, staffed with trained service technicians and stocked with repair parts for the equipment which is bid.

This form must be reproduced and completed for any additional equipment warranty/facility information.

Dated

_____
Signature

Print Name

Company Name

3.0 SPECIFICATION COMPLIANCE

The bidder hereby certifies that the equipment(s) being bid in response to this invitation meet or exceed these specifications and that where a deviation from the specifications exists, the bidder has obtained written approval of those exceptions prior to submitting this bid.

If a conflict exists between these specifications and Federal and/or State laws, the Federal and/or State laws shall prevail and the bidder must alert the purchaser to any such conflicts.

Dated

Printed name of Person Bidding

_____
Authorized Signature

Title

Appendix F

RFQ # 17D19052100000000000352

Base Unit Snow Plow Gear System with Attachments & Dump Bodies

MaineDOT TERMS AND CONDITIONS

A. AGREEMENT

The Vendor shall deliver the equipment ordered in accordance with this Agreement and governed by these Terms and Conditions.

B. INDEPENDENT CAPACITY

In providing the equipment under the Agreement, the Vendor shall act independently and not as an agent of the State of Maine.

C. STATUS REPORTS

Prior to the start of work, the Vendor shall furnish MaineDOT with a proposed progress schedule in MaineDOT's standard format. The Vendor will outline the various phases of work that will need to be completed in order to meet the schedule set forth by MaineDOT.

During equipment assembly, the successful bidder shall submit to MaineDOT's Fleet Representative, a Monthly Status Report of accomplishments from the preceding month. The progress report shall be used to keep team members and MaineDOT's Fleet Representative informed about project status and issues. Information will include:

a. A written statement describing the work accomplished during the period and to date.

b. An estimate of the percentage of work completed within the specified services.

c. Any information needed from MaineDOT to complete the project and avoid delays.

d. The successful bidder's action plan to remedy and address any non-conforming or unacceptable work submitted to Department.

e. Document anticipated problems and possible solutions.

These progress reports shall be submitted to MaineDOT on a **monthly basis**. Failure to submit could result in non-payment of the invoice, or be considered as a default, and shall be recorded in the Vendor's Performance Evaluation. If work is temporarily delayed, the Vendor may suspend submittal of the monthly progress reports with written approval from MaineDOT. The Vendor shall be responsible for addressing any action that may be required to keep the project on schedule.

MaineDOT shall have a period of 15 business days after receipt of the submissions to complete the review and make any necessary comments. Following the review, the Vendor will make any revisions and corrections requested by MaineDOT.

D. PAYMENT AND OTHER PROVISIONS

MaineDOT anticipates paying the selected Vendor for goods and services received, on the basis of net 30 payment terms following acceptance of the equipment, the receipt of an acceptable title and required documents, and an accurate and acceptable invoice. An invoice will be considered accurate and acceptable if it contains the State of Maine Agreement number, correct pricing information relative to the Agreement, and provides any required supporting documents, as applicable, and any other specific and agreed-upon requirements listed within the Agreement.

MaineDOT reserves the right to pay for the equipment purchased by any of several available means, which include but may not be limited to check, EFT, and/or procurement card. Vendors are advised that state statute precludes sellers from imposing a surcharge on credit or debit card purchases (text follows):

"9-A MRSA §8-303 (2): A seller in a sales transaction may not impose a surcharge on a cardholder who elects to use a credit card or debit card in lieu of payment by cash, check or similar means."

E. WARRANTY

For a period of one (1) year following equipment delivery and acceptance (the "Warranty period"), Vendor unconditionally warrants and guarantees that the equipment shall be free from defects in parts and workmanship. If MaineDOT discovers any defects during the Warranty period, the Vendor's obligation will be to repair or replace the equipment or refund the purchase price, at MaineDOT's sole option subject to the following requirements as applicable:

- Replacement will be with new equipment matching the specifications within this Agreement.
- Reimbursement will be for the total purchase price of the equipment including the cost of returning the equipment.
- All Repairs including the cost of transporting the equipment will be borne by the Vendor. All repairs will be warranted free from defects in parts and workmanship for a one year period following the repair.

The Vendor hereby assigns to MaineDOT the right to enforce all manufacturer's warranties or guarantees on the equipment.

The Vendor agrees that the warranty obligations provided by this Agreement shall be reported as an outstanding obligation in the event of bankruptcy, dissolution, or the sale, merger, or cessations of operations of the Vendor.

In the event of a breach of Vendor's warranty obligations, MaineDOT shall notify Vendor in writing of the breach and grant Vendor 30 days to cure the breach. Should Vendor fail to cure the breach, MaineDOT may pursue whatever remedies may be available.

F. DAMAGES

Time is of the essence in the delivery of the equipment specified herein, and in event of delay(s) in the delivery of the equipment beyond the date set forth in the Agreement, or beyond authorized extensions thereof MaineDOT may impose liquidated damages. Because it is difficult to determine the actual amount of the damage by reason of such delay it is therefore agreed that the Vendor will pay the sum

of **five hundred twenty-five dollars ($525.00)** per unit for each calendar day(s) delay in delivery as liquidated damages and not as a penalty.

These damages shall be deducted from any monies due, or which may thereafter become due to the Vendor or may be recovered by through any lawful means.

G. SET-OFF RIGHTS

MaineDOT shall have all of its common law, equitable and statutory rights of set-off.

H. FORCE MAJEURE

Either party may be excused from performance under this Agreement to the extent the failure to perform is caused by acts of God or of the public enemy, fire, floods, epidemics, quarantine, restrictions, strikes, labor disputes, and freight embargos, or other causes beyond the party's reasonable control. In the event of such event of force majeure, the affected party shall provide the other party written notice of the cause of delay within fifteen (15) days from the beginning of any such delay. The time of performance shall be excused to extent of the duration of any such event of force majeure, or such period of time as may be mutually agreed upon by the parties.

I. INDEMNIFICATION

The Vendor shall indemnify and hold harmless MaineDOT and its officers, agents, and employees from and against any and all claims, liabilities, and costs, including reasonable attorney fees, for any or all injuries to persons or property or claims for money damages, including claims for violation of intellectual property rights, arising from the negligent acts or omissions of the Vendor, its employees or agents, officers or Subcontractors in the performance of work under this Agreement; provided, however, the Vendor shall not be liable for claims arising out of the negligent acts or omissions of MaineDOT, or for actions taken in reasonable reliance on written instructions of MaineDOT.

This indemnification provision shall survive any termination or expiration of the Agreement.

J. DEFAULT, TERMINATION

i. MaineDOT reserves the right to terminate this Agreement or any part hereof, for its sole convenience. Thirty (30) days advance written notice shall be provided in the case of a termination for convenience. In the event of such termination, Vendor shall immediately stop all work hereunder and shall immediately cause any and all of its suppliers and subcontractors to cease work. Vendor shall be paid for all work on a percentage completed basis, as mutually agreed upon by the parties, up to the date of termination under this Paragraph 14.A.

ii. MaineDOT shall have the right to terminate this Agreement in the event of a material breach or default by Vendor of its obligations hereunder that is not cured within thirty (30) days from the date of receipt by Vendor of written notice of such breach from MaineDOT. If the breach or default, by its nature, cannot be cured within such thirty (30) day period, then Vendor shall have such additional time (not to exceed thirty (30) additional days) as may be necessary to cure the breach or default, provided Vendor has exercised reasonable commercial efforts and taken

appropriate action to begin cure of the breach or default within the initial thirty (30) day cure period.

iii. MaineDOT shall have the right to terminate this Agreement immediately upon written notice to Vendor in the event (i) Vendor, or any director, officer or employee of Vendor assigned to this Project is convicted of a criminal offense directly related to information technology services; or (ii) proceedings in bankruptcy are commenced against Vendor or if a receiver is appointed and such case or proceeding shall continue undismissed, or unstayed and in effect, for a period of one hundred twenty (120) days. Notwithstanding the foregoing, if a conviction of an employee assigned to this Project, officer or director, relates to individual and/or personal actions of such employee, officer or director and not the policy or directive of Vendor and, upon such conviction, Vendor shall terminate or otherwise remove such employee, officer or director and take such other steps to reasonably ensure the propriety of Vendor' delivery of information technology services, then MaineDOT shall not have a right to terminate this Agreement pursuant to the foregoing clause (i) of this Section 14 (C).

iv. Vendor shall have the right to terminate this Agreement in the event of a material breach or default by MaineDOT of its obligations hereunder that is not cured within thirty (30) days from the date of receipt by MaineDOT of written notice of such breach from Vendor. If the breach or default, by its nature, cannot be cured within such thirty (30) day period, then MaineDOT shall have such additional time (not to exceed thirty (30) additional days) as may be necessary to cure the breach or default, provided MaineDOT has exercised reasonable commercial efforts and taken appropriate actions to begin cure of the breach or default within the initial thirty (30) day cure period.

v. Vendor shall cause the foregoing provisions to be inserted in any subcontract for any work covered by this Agreement so that such provisions shall be binding upon each subcontractor, provided that the foregoing provisions shall not apply to contracts or subcontracts for standard commercial supplies or raw materials.

K. DELIVERY AND ACCEPTANCE

Time is of the essence in the delivery of the equipment. The Vendor shall execute the work continuously and diligently. Delivery of the units shall occur in accordance with the terms and conditions outlined in the resulting Agreement.

i. Production of the units shall be conducted as a continuous production with no breaks or inserts of other orders or types of equipment.

ii. Delivery shall be restricted to Monday through Friday, between the hours of 8 AM and 4 PM.

iii. The Vendor will contact MaineDOT Fleet Services 24 hrs. prior to delivery with an estimated time of arrival.

iv. Units furnished under this Agreement shall be delivered in first class condition, complete and ready for operation, and the Vendor shall assume all costs, responsibilities, and risk of loss related to damage that may have occurred in the delivery of the units.

v. When units are delivered, certificates or releases signed by representatives of MaineDOT Fleet Services are understood to be a simple acknowledgment of receipt of the units only, and will NOT constitute an acceptance of the condition of the units or their conformance with the terms and conditions of the Agreement specifications.

vi. Upon delivery, MaineDOT may conduct such tests as may be required to determine to its own satisfaction that the units appear to be in conformance with the terms, conditions, and requirements of the Agreement specifications.

Acceptance shall occur following final inspection by authorized employees of MaineDOT Fleet Service, receipt of the titles and all requested documentation. The Vendor will be notified, in writing, of acceptance/non-acceptance within fifteen calendar (15) days of delivery to the location specified in this Agreement.

L. RIGHT TO SUSPEND WORK

MaineDOT has the right to suspend any or all work at any time for any reason as it deems necessary. Consultant may receive payment for the portion of services completed through the date of suspension.

M. COPYRIGHT AND LICENSES - PATENTS AND COPYRIGHTS

Data and publication rights to any documents, produced under the terms of Agreement are the property of MaineDOT. The Vendor shall not copyright the material produced under the terms of the Agreement without written approval of MaineDOT, except to the extent necessary to protect its rights pursuant to the following paragraph.

The Parties to this Agreement mutually agree that, if patentable discoveries, intellectual property and software, or inventions should result from work described therein, all rights accruing from such discoveries or inventions shall be the sole property of MaineDOT.

N. CLAIMS AND DISPUTES

General

To preserve any claim arising out of the Agreement, the Parties shall comply with and exhaust all provisions of this Section. Unless otherwise agreed to in writing, the Vendor shall continue to perform its services during any dispute resolution process. If the Vendor continues to perform, MaineDOT shall continue to make payments in accordance with the Agreement of amounts not in dispute.

Negotiation with MaineDOT's Fleet Representative

The Vendor shall promptly notify MaineDOT's Fleet Representative, or their designee, in writing, of disputes that could significantly affect scope, schedule or compensation. After such notice, the Vendor and MaineDOT's Fleet Representative shall promptly negotiate in good faith to resolve the dispute. MaineDOT's Fleet Representative will promptly issue a decision.

Review by Director
If the Vendor desires a review of MaineDOT's Fleet Representative's decision, then the Vendor shall promptly request in writing that MaineDOT's Director of the applicable Bureau or Office review the Fleet Representative's decision. The Director or its designee(s) shall promptly notify the Vendor in writing of the result of the review.

Dispute Resolution
If the dispute remains unresolved after negotiation and review as set forth above, the Parties may proceed to mediation by selecting a mediator acceptable to both.

If the Parties are unable to resolve the dispute through mediation, either party may seek judicial review through a civil action commenced in the Superior Court of Maine, Kennebec County.

O. CONTROLLING LAWS

The Agreement referred to in these Terms and Conditions is governed by the applicable laws of the Federal Government and the State of Maine.

Laws to Be Observed
The Vendor shall comply with all applicable Federal. State and local laws, rules, regulations, orders, and ordinances affecting the work including, without limitation all environmental, wage, labor, equal opportunity, safety, patent, copyright, or trademark laws. The Vendor shall indemnify MaineDOT and hold MaineDOT harmless against any and all claims or liabilities arising from or based upon the violation or alleged violation of any such Law caused directly or indirectly by or through the Vendor.

P. ENTIRE AGREEMENT/BINDING EFFECT/MODIFICATION/ASSIGNMENT

This Agreement sets forth the entire agreement of the parties with regard to the subject herein. This Agreement may not be modified except by a written amendment executed by both parties.

Neither MaineDOT nor the Vendor may assign, sublet, or transfer any rights under or interest (including, but without limitation, monies that are due or may become due) in the Agreement without the written consent of the other, except to the extent that any assignment, subletting, or transfer is mandated or restricted by law. Unless specifically stated to the contrary in any written Consent To Assignment, no assignment shall release or discharge the assignor from any duty or responsibility under the Agreement.

Q. SEVERABILITY

The invalidity or unenforceability of any particular provision or part thereof of this Agreement shall not affect the remainder of said provision or any other provisions, and this Agreement shall be construed in all respects as if such invalid or unenforceable provision or part thereof had been omitted.

R. NON-WAIVER

If MaineDOT fails or refuses to enforce any provision in the Agreement that shall not constitute a waiver of that provision, nor shall it affect the enforceability of that provision or of the remainder of the Agreement.

Name of Company:

Address:

Signature: _____

Date:

STATE OF MAINE
DEPARTMENT OF ADMINISTRATIVE AND FINANCIAL SERVICES
BUREAU OF BUSINESS MANAGEMENT
DIVISION OF PROCUREMENT SERVICES

RFQ # 17D19052100000000000352

Base Unit Snow Plow Gear System with Attachments & Dump Bodies

(Note: Mandatory Pre-Bidder's Conference!)

Quotations/Responses Due: 7/3/2019 not later than 4:00 p.m. local time

Note: All questions and responses must be provided via the State of Maine's e-Procurement system: AdvantageME / Vendor Self Service (VSS).

General Instructions on Bidder Questions

It is the responsibility of each Bidder to examine the entire RFQ and to seek clarification by submitting questions through the Q & A List tab on the Solicitation page (other than for the "Approved Equals Process" mentioned on page 2). Any answers to questions will appear there as well. It is the vendor's responsibility to log in to view all questions and answers posted. Additional information obtained any other way will not be valid.

In the event that you must contact us for any other reasons than the Q & A previously mentioned, only the Buyer listed on the Solicitation page may be contacted from the time this RFQ is issued until award notification is made. No other person/State employee is empowered to make binding statements regarding this RFQ. Violation of this provision may lead to disqualification from the bidding process, at the State's discretion.

Summary

For this competitive Request for Quotations (RFQ) process, the State of Maine Division of Procurement Services ("Division") is acting on behalf of the MaineDOT Fleet Services. The Division and the Requesting Department seek quotations (also referred to as "bids" or "responses" herein) to provide the goods/services listed above. This document provides instructions and descriptions of requirements for this competitive process.

KEY DATES

- **MANDATORY PRE-BIDDERS CONFERENCE:** The Department will hold a Mandatory Pre-Bidders' Conference **6/7/2019 at 9:00 am** in Augusta, Maine at the MaineDOT Fleet Services Conference Room 212, located at 66 Industrial Drive Augusta, Maine 04330. ***Proposals will only be accepted from Bidders represented as evidenced by the representative's signature on the attendance roster. No one will be admitted after 9:00 am.***

- **APPROVED EQUALS REQUEST:** Requests for "**approved equals**" to specifications, protests of specifications, and requests for clarification must be submitted in writing to, and received by the Division no later than **4:00 pm on 6/12/2019 by e-mail to** Donny.Crockett@maine.gov.

- **RESPONSE TO APPROVED EQUALS REQUESTS:** Department responses will be posted as a file attached to the quote on the Advantage ME electronic bid document **by 4:00 pm on 6/17/2019.**

- **QUOTATION DUE DATE**: Quotations must be received no later than 4:00 p.m. Eastern Standard Time (EST), on **7/3/2019. Quotations received after the 4:00 p.m. deadline will not be accepted.**

IT WILL BE THE BIDDER'S RESPONSIBILITY TO CHECK ADVANTAGEME FOR RESPONSES TO THE ABOVE AND ANY NEW AMENDMENTS TO THE RFQ.

It is the responsibility of each Bidder to examine the entire RFQ and to seek clarification by submitting questions through the Q & A List tab on the Solicitation page. Any answers to questions will appear there as well. It is the vendor's responsibility to log in to view all questions and answers posted. Additional information obtained any other way will not be valid.

Appendix A

STATE OF MAINE
DEPARTMENT OF ADMINISTRATIVE AND FINANCIAL SERVICES
DIVISION OF PROCUREMENT SERVICES

BID COVER PAGE and DEBARMENT FORM

Bidder's Organization Name: **Alamo Group DBA Tenco Industries**		
Chief Executive - Name/Title:		
Tel: **800-451-5014**	Fax: **802-476-1003**	E-mail: keithw@tenconewengland.com
Headquarters Street Address: 29 Pitman Road		
Headquarters City/State/Zip: **Barre VT 05641**		
(provide information requested below if different from above)		
Lead Point of Contact for Bid - Name/Title: **Ken Brink Sales Manager**		
Tel: **845-798-9528**	Fax: **845-791-8822**	E-mail: **kbrink@tencousa.com**
Street Address: **5700 South Lima Rd**		
City/State/Zip: **Lakeville NY 14480**		

By signing below Bidder affirms:

- Their bid complies with all requirements of this RFQ;
- This bid and the pricing structure contained herein will remain firm for a period of 180 days from the date and time of the bid opening;
- That no personnel currently employed by the Department or any other State agency participated, either directly or indirectly, in any activities relating to the preparation of the Bidder's proposal;
- That no attempt has been made or will be made by the Bidder to induce any other person or firm to submit or not to submit a proposal; and
- The undersigned is authorized to enter into contractual obligations on behalf of the above-named organization.

Name: Ken Brink		Title: **Salesman**
Authorized Signature: Ken Brink		Date: **7/9/2019**

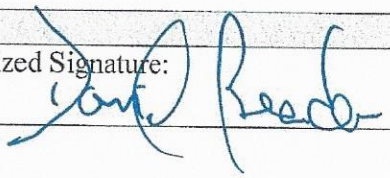
Debarment, Performance, and Non-Collusion Certification

By signing this document, I certify to the best of my knowledge and belief that the aforementioned organization, its principals, and any subcontractors named in this proposal:

a. *Are not presently debarred, suspended, proposed for debarment, and declared ineligible or voluntarily excluded from bidding or working on contracts issued by any governmental agency.*
b. *Have not within three years of submitting the proposal for this contract been convicted of or had a civil judgment rendered against them for:*
    i. *fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a federal, state or local government transaction or contract.*
    ii. *violating Federal or State antitrust statutes or committing embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;*
    iii. *are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or Local) with commission of any of the offenses enumerated in paragraph (b) of this certification; and*
    iv. *have not within a three (3) year period preceding this proposal had one or more federal, state or local government transactions terminated for cause or default.*
c. *Have not entered into a prior understanding, agreement, or connection with any corporation, firm, or person submitting a response for the same materials, supplies, equipment, or services and this proposal is in all respects fair and without collusion or fraud. The above mentioned entities understand and agree that collusive bidding is a violation of state and federal law and can result in fines, prison sentences, and civil damage awards.*

- **Failure to provide this certification may result in the disqualification of the Bidder's proposal, at the discretion of the Department.**

To the best of my knowledge all information provided in the enclosed proposal, both programmatic and financial, is complete and accurate at the time of submission.

Name: **Daniel Beaudoin**		Title: President
Authorized Signature: 		Date: **7/9/19**

PRICE QUOTE #1: $25,252.00 **DELIVERY DAYS: 210 Days from ARO** **INSTALLATION OF BASE UNIT PLOW GEAR SYSTEM TO INCLUDE: HYDRAULIC CONTROL VALVE AND CAB CONTROLS FULLY FUNCTIONAL FOR RIGHT-HAND SYSTEM SET UP**
PRICE QUOTE #2: $ 25,875.00 **DELIVERY DAYS: 210 Days from ARO** **INSTALLATION OF BASE UNIT PLOW GEAR SYSTEM TO INCLUDE: HYDRAULIC CONTROL VALVE AND CAB CONTROLS FULLY FUNCTIONAL FOR LEFT-HAND SYSTEM SET UP**
PRICE QUOTE #3: $ 31,225.00 **DELIVERY DAYS: 210 Days from ARO** **INSTALLATION OF BASE UNIT PLOW GEAR SYSTEM TO INCLUDE: HYDRAULIC CONTROL VALVE AND CAB CONTROLS FULLY FUNCTIONAL FOR DOUBLE SYSTEM SET UP**

ATTACHMENTS SECTION	
Section B	**ONE-WAY RIGHT OR LEFT PLOW WITH PLOW FRAME**
PRICE QUOTE #1: $ 33,715.00 **DELIVERY DAYS: 210 Days from ARO** **INSTALLATION OF ONE-WAY PLOW TO INCLUDE: HYDRAULIC CONTROL VALVE AND CAB CONTROLS FULLY FUNCTIONAL FOR RIGHT PLOW**	
PRICE QUOTE #2: $ 33,807.00 **DELIVERY DAYS: 210 Days from ARO** **INSTALLATION OF ONE-WAY PLOW TO INCLUDE: HYDRAULIC CONTROL VALVE AND CAB CONTROLS FULLY FUNCTIONAL FOR LEFT PLOW**	
PRICE QUOTE #3: $ 9,925.00 **DELIVERY DAYS: 150 Days from ARO** **PURCHASE OF THE ONE-WAY PLOW ONLY - RIGHT**	
PRICE QUOTE #4: $ 9,925.00 **DELIVERY DAYS: 150 Days from ARO** **PURCHASE OF THE ONE-WAY PLOW ONLY -LEFT**	

Section C REVERSIBLE PLOW WITH CONTOUR CHANGE
PRICE QUOTE #1: 35,705.00 DELIVERY DAYS: 210 Days from
INSTALLATION OF REVERSIBLE PLOW WITH CONTOUR CHANGE TO INCLUDE: HYDRAULIC CONTROL VALVE AND CAB CONTROLS FULLY FUNCTIONAL
PRICE QUOTE #2: $ 12,585.00 DELIVERY DAYS: 180 Days from ARO
PURCHASE OF THE REVERSIBLE PLOW WITH CONTOUR CHANGE ONLY

Section D LEFT & RIGHT WING PLOWS
PRICE QUOTE #1: $ 39,114.00 DELIVERY DAYS: 210 Days from ARO
FOR PURPOSE OF INSTALLATION OF 11' WING PLOW SYSTEM TO INCLUDE: HYDRAULIC CONTROL VALVE AND CONTROLS FULLY FUNCTIONAL
PRICE QUOTE #2: $ 39,393.00 DELIVERY DAYS: 210 Days from ARO
FOR PURPOSE OF INSTALLATION OF 12' WING PLOW SYSTEM TO INCLUDE: HYDRAULIC CONTROL VALVE AND CONTROLS FULLY FUNCTIONAL
PRICE QUOTE #3: $ 39,594.00 DELIVERY DAYS: 210 Days from ARO
FOR PURPOSE OF INSTALLATION OF 13' WING PLOW SYSTEM TO INCLUDE: HYDRAULIC CONTROL VALVE AND CONTROLS FULLY FUNCTIONAL
PRICE QUOTE #4: $ 14,170.00 DELIVERY DAYS: 150 Days from ARO
FOR THE PURPOSE OF PURCHASE OF 11' WING PLOW SYSTEM ONLY
PRICE QUOTE #5: $ 14,785.00 DELIVERY DAYS: 150 Days from ARO
FOR THE PURPOSE OF PURCHASE OF 12' WING PLOW SYSTEM ONLY
PRICE QUOTE #6: $ 15,315.00 DELIVERY DAYS: 150 Days from ARO
FOR THE PURPOSE OF PURCHASE OF 13' WING PLOW SYSTEM ONLY

Section E	POWER REVERSING UNDERFRAME ROAD SCRAPER FOR WHEELER/TANDEM AXLE PLOW TRUCKS
PRICE QUOTE #1: $ NO BID DELIVERY DAYS: 0	
INSTALLATION OF POWER REVERSING UNDERFRAME ROAD SCRAPER CHANGE TO INCLUDE: HYDRAULIC CONTROL VALVE AND CAB CONTROLS FULLY FUNCTIONAL	
PRICE QUOTE #2: $ NO BID DELIVERY DAYS: 0	
PURCHASE OF POWER REVERSING UNDERFRAME ROAD SCRAPER ONLY	

Section F	MANUALLY REVERSING UNDERFRAME ROAD SCRAPER FOR PATROL/SINGLE AXLE PLOW TRUCKS
PRICE QUOTE #1: $ NO BID DELIVERY DAYS: 0	
INSTALLATION OF MANUALLY REVERSING UNDERFRAME ROAD SCRAPER CHANGE TO INCLUDE: HYDRAULIC CONTROL VALVE AND CAB CONTROLS FULLY FUNCTIONAL	
PRICE QUOTE #2: $ NO BID DELIVERY DAYS: 0	
FOR THE PURPOSE OF PURCHASE OF MANUALLY REVERSING UNDERFRAME ROAD SCRAPER ONLY	

Section G	10-12 YARD HEAVY-DUTY CONSTRUCTION DUMP BODY
PRICE QUOTE #1: $ 37,945.00 DELIVERY DAYS: 210 Days from ARO	
FOR PURPOSE OF INSTALLATION OF 10-12 YARD HEAVY-DUTY CONSTRUCTION DUMP BODY TO INCLUDE: HYDRAULIC CONTROL VALVE AND CAB CONTROLS FULLY FUNCTIONAL	
PRICE QUOTE #2: $ 16,375.00 DELIVERY DAYS: 120 Days from ARO	
FOR THE PURPOSE OF PURCHASE OF 10-12 YARD HEAVY-DUTY CONSTRUCTION DUMP BODY ONLY	

Section H 13' MULTIPURPOSE DUMP BODY
PRICE QUOTE #1: $ 63,690.00 DELIVERY DAYS: 210 Days from ARO
FOR PURPOSE OF INSTALLATION OF 13' MULTIPURPOSE DUMP BODY TO INCLUDE: HYDRAULIC CONTROL VALVE AND CONTROLS FULLY FUNCTIONAL
PRICE QUOTE #2: $ 35,750.00 DELIVERY DAYS: 210 Days from ARO
FOR THE PURPOSE OF PURCHASE OF 13' MULTIPURPOSE DUMP BODY ONLY

Section I 10' SIDE DUMP BODY
PRICE QUOTE #1: $ 51,500.00 DELIVERY DAYS: 210 Days from ARO
FOR PURPOSE OF INSTALLATION OF 10' SIDE DUMP BODY TO INCLUDE: HYDRAULIC CONTROL VALVE AND CONTROLS FULLY FUNCTIONAL
PRICE QUOTE #2: $ 27,555.00 DELIVERY DAYS: 150 Days from ARO
FOR THE PURPOSE OF PURCHASE OF 10' SIDE DUMP BODY ONLY

Section J 13' SIDE DUMP BODY
PRICE QUOTE #1: $ 54,490.00 DELIVERY DAYS: 210 Days from ARO
FOR PURPOSE OF INSTALLATION OF 13' SIDE DUMP BODY TO INCLUDE: HYDRAULIC CONTROL VALVE AND CONTROLS FULLY FUNCTIONAL
PRICE QUOTE #2: $ 31,331.00 DELIVERY DAYS: 150 Days from ARO
FOR THE PURPOSE OF PURCHASE OF 13' SIDE DUMP BODY ONLY

Appendix D

STATE OF MAINE
DEPARTMENT OF ADMINISTRATIVE AND FINANCIAL SERVICES
DIVISION OF PROCUREMENT SERVICES

MUNICIPALITY POLITICAL SUBDIVISION and SCHOOL DISTRICT PARTICIPATION CERTIFICATION

RFQ # 17D19052100000000000352

Base Unit Snow Plow Gear System with Attachments & Dump Bodies

The Division of Procurement Services is committed to providing purchasing opportunities for **municipalities, political subdivisions and school districts** in Maine by allowing them access, through our vendors, to our contract pricing. A bidder's willingness to extend contract pricing to these entities will be taken into consideration in making awards.

Will you accept orders from political subdivisions and school districts in Maine at the prices quoted?

X Yes

Yes, with conditions as follows:

No

Name of Company: Tenco Industries

Address: 29 Pitman Road Barre VT. 05641

Signature: _____

Date: 7/9/2019

Appendix E

RFQ # 17D19052100000000000352

Base Unit Snow Plow Gear System with Attachments & Dump Bodies

CERTIFICATIONS

1.0 NONCOLLUSION BIDDING CERTIFICATION

By submission of this Bid, each Bidder and each person signing on behalf of any Bidder certifies, and in the case of a joint bid, each party certifies as to its own organization, under penalty of perjury, that to the best of its knowledge and belief:

1. The prices in this Bid have been arrived at independently without collusion, consultation, communication or agreement, for the purpose of restricting competition as to any other matter relating to such prices with any other Bidder or with any other competitor;

2. Unless otherwise required by law, the prices which have been quoted in this Bid have not been knowingly disclosed by the Bidder and will not knowingly be disclosed by the Bidder prior to opening, directly or indirectly, to any other Bidder or to any competitor; and,

3. No attempt has been made or will be made by the Bidder to induce any other person, partnership or corporation to submit or not to submit a Bid for the purpose of restricting competition.

7/9/2019
Dated

Ken Brink
Printed name of Person Bidding

Ken Brink
Authorized Signature

Salesman
Title

2.0 EQUIPMENT PERFORMANCE AND WARRANTY DATA

The information provided on this form will be used in determining operating costs of the equipment. Bidder must complete this form and submitted with bid. Bids received without this information will be considered non-responsive to the bid.

1. **EQUIPMENT**: Tenco

2. **DESCRIBE THE PROCESS FOR THE SUBMISSION OF WARRANTY CLAIMS FOR REIMBURSEMENT OUTLINED AND SUBMITTED WITH THE BID. (written process to follow for reimbursement of warranty claims)**

All Warranties will handled by Tenco with the service being done at our Pittsfield ME lacation.

3. **EQUIPMENT INFORMATION:**

YEAR: 2020 EQUIPMENT MAKE: Tenco

EQUIPMENT MODEL: Snow removal

4. **MANUFACTURER'S RECOMMENDED PREVENTATIVE MAINTENANCE SCHEDULE MUST BE PROVIDED**

Will be in service manuals

5. **BASIC EQUIPMENT WARRANTY DESCRIPTION**

1 Year on all manufacture's defects and installation

6. **NAME/LOCATION OF REPAIR FACILITY(S)** (BOTH AUTHORIZED WARRANTY, PARTS & SERVICE PER REQUESTED LOCATION). It is desired that at least one facility is located within 75-mile radius each region headquarters: Scarborough, Augusta, Dixfield, Bangor and Presque Isle.

WARRANTY AND SERVICE FACILITIES

ADDRESS 1: 164 Central Street Pittsfield ME 04967
ADDRESS 2:
ADDRESS 3:
ADDRESS 4:
ADDRESS 5:

CONTACT NAME: Stewart Sevey TELEPHONE: 603-892-8535

EQUIPMENT PARTS PROVIDER: Allied Equipment

ADDRESS: 164 Central Street Pittsfield ME 04967

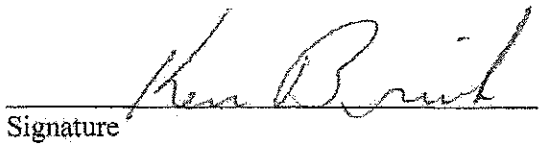
CONTACT NAME: Stewart Sevey TELEPHONE: 603-892-8535

Attach written explanation describing the locations of the facilities, the contact name and number at each facility, the times the facilities will be available for use, the qualifications of the staff at the facilities and how the vendor will provide warranty and service at these service facilities.

Bidder certifies that they have service facilities in Maine, staffed with trained service technicians and stocked with repair parts for the equipment which is bid.

This form must be reproduced and completed for any additional equipment warranty/facility information.

7/9/2019
Dated


Signature

Ken Brink
Print Name

Tenco Industries
Company Name

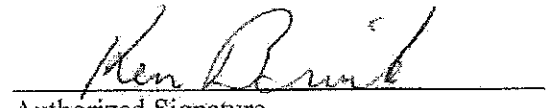
3.0 SPECIFICATION COMPLIANCE

The bidder hereby certifies that the equipment(s) being bid in response to this invitation meet or exceed these specifications and that where a deviation from the specifications exists, the bidder has obtained written approval of those exceptions prior to submitting this bid.

If a conflict exists between these specifications and Federal and/or State laws, the Federal and/or State laws shall prevail and the bidder must alert the purchaser to any such conflicts.

7/9/2019
Dated

Ken Brink
Printed name of Person Bidding


Authorized Signature

Salesman
Title

Appendix F

RFQ # 17D19052100000000000352

Base Unit Snow Plow Gear System with Attachments & Dump Bodies

MaineDOT TERMS AND CONDITIONS

A. AGREEMENT

The Vendor shall deliver the equipment ordered in accordance with this Agreement and governed by these Terms and Conditions.

B. INDEPENDENT CAPACITY

In providing the equipment under the Agreement, the Vendor shall act independently and not as an agent of the State of Maine.

C. STATUS REPORTS

Prior to the start of work, the Vendor shall furnish MaineDOT with a proposed progress schedule in MaineDOT's standard format. The Vendor will outline the various phases of work that will need to be completed in order to meet the schedule set forth by MaineDOT.

During equipment assembly, the successful bidder shall submit to MaineDOT's Fleet Representative, a Monthly Status Report of accomplishments from the preceding month. The progress report shall be used to keep team members and MaineDOT's Fleet Representative informed about project status and issues. Information will include:

a. A written statement describing the work accomplished during the period and to date.

b. An estimate of the percentage of work completed within the specified services.

c. Any information needed from MaineDOT to complete the project and avoid delays.

d. The successful bidder's action plan to remedy and address any non-conforming or unacceptable work submitted to Department.

e. Document anticipated problems and possible solutions.

These progress reports shall be submitted to MaineDOT on a **monthly basis**. Failure to submit could result in non-payment of the invoice, or be considered as a default, and shall be recorded in the Vendor's Performance Evaluation. If work is temporarily delayed, the Vendor may suspend submittal of the monthly progress reports with written approval from MaineDOT. The Vendor shall be responsible for addressing any action that may be required to keep the project on schedule.

MaineDOT shall have a period of 15 business days after receipt of the submissions to complete the review and make any necessary comments. Following the review, the Vendor will make any revisions and corrections requested by MaineDOT.

D. PAYMENT AND OTHER PROVISIONS

MaineDOT anticipates paying the selected Vendor for goods and services received, on the basis of net 30 payment terms following acceptance of the equipment, the receipt of an acceptable title and required documents, and an accurate and acceptable invoice. An invoice will be considered accurate and acceptable if it contains the State of Maine Agreement number, correct pricing information relative to the Agreement, and provides any required supporting documents, as applicable, and any other specific and agreed-upon requirements listed within the Agreement.

MaineDOT reserves the right to pay for the equipment purchased by any of several available means, which include but may not be limited to check, EFT, and/or procurement card. Vendors are advised that state statute precludes sellers from imposing a surcharge on credit or debit card purchases (text follows):

"9-A MRSA §8-303 (2): A seller in a sales transaction may not impose a surcharge on a cardholder who elects to use a credit card or debit card in lieu of payment by cash, check or similar means."

E. WARRANTY

For a period of one (1) year following equipment delivery and acceptance (the "Warranty period"), Vendor unconditionally warrants and guarantees that the equipment shall be free from defects in parts and workmanship. If MaineDOT discovers any defects during the Warranty period, the Vendor's obligation will be to repair or replace the equipment or refund the purchase price, at MaineDOT's sole option subject to the following requirements as applicable:

- Replacement will be with new equipment matching the specifications within this Agreement.
- Reimbursement will be for the total purchase price of the equipment including the cost of returning the equipment.
- All Repairs including the cost of transporting the equipment will be borne by the Vendor. All repairs will be warranted free from defects in parts and workmanship for a one year period following the repair.

The Vendor hereby assigns to MaineDOT the right to enforce all manufacturer's warranties or guarantees on the equipment.

The Vendor agrees that the warranty obligations provided by this Agreement shall be reported as an outstanding obligation in the event of bankruptcy, dissolution, or the sale, merger, or cessations of operations of the Vendor.

In the event of a breach of Vendor's warranty obligations, MaineDOT shall notify Vendor in writing of the breach and grant Vendor 30 days to cure the breach. Should Vendor fail to cure the breach, MaineDOT may pursue whatever remedies may be available.

F. DAMAGES

Time is of the essence in the delivery of the equipment specified herein, and in event of delay(s) in the delivery of the equipment beyond the date set forth in the Agreement, or beyond authorized extensions thereof MaineDOT may impose liquidated damages. Because it is difficult to determine the actual amount of the damage by reason of such delay it is therefore agreed that the Vendor will pay the sum

of **five hundred twenty-five dollars ($525.00)** per unit for each calendar day(s) delay in delivery as liquidated damages and not as a penalty.

These damages shall be deducted from any monies due, or which may thereafter become due to the Vendor or may be recovered by through any lawful means.

G. SET-OFF RIGHTS

MaineDOT shall have all of its common law, equitable and statutory rights of set-off.

H. FORCE MAJEURE

Either party may be excused from performance under this Agreement to the extent the failure to perform is caused by acts of God or of the public enemy, fire, floods, epidemics, quarantine, restrictions, strikes, labor disputes, and freight embargos, or other causes beyond the party's reasonable control. In the event of such event of force majeure, the affected party shall provide the other party written notice of the cause of delay within fifteen (15) days from the beginning of any such delay. The time of performance shall be excused to extent of the duration of any such event of force majeure, or such period of time as may be mutually agreed upon by the parties.

I. INDEMNIFICATION

The Vendor shall indemnify and hold harmless MaineDOT and its officers, agents, and employees from and against any and all claims, liabilities, and costs, including reasonable attorney fees, for any or all injuries to persons or property or claims for money damages, including claims for violation of intellectual property rights, arising from the negligent acts or omissions of the Vendor, its employees or agents, officers or Subcontractors in the performance of work under this Agreement; provided, however, the Vendor shall not be liable for claims arising out of the negligent acts or omissions of MaineDOT, or for actions taken in reasonable reliance on written instructions of MaineDOT.

This indemnification provision shall survive any termination or expiration of the Agreement.

J. DEFAULT, TERMINATION

i. MaineDOT reserves the right to terminate this Agreement or any part hereof, for its sole convenience. Thirty (30) days advance written notice shall be provided in the case of a termination for convenience. In the event of such termination, Vendor shall immediately stop all work hereunder and shall immediately cause any and all of its suppliers and subcontractors to cease work. Vendor shall be paid for all work on a percentage completed basis, as mutually agreed upon by the parties, up to the date of termination under this Paragraph 14.A.

ii. MaineDOT shall have the right to terminate this Agreement in the event of a material breach or default by Vendor of its obligations hereunder that is not cured within thirty (30) days from the date of receipt by Vendor of written notice of such breach from MaineDOT. If the breach or default, by its nature, cannot be cured within such thirty (30) day period, then Vendor shall have such additional time (not to exceed thirty (30) additional days) as may be necessary to cure the breach or default, provided Vendor has exercised reasonable commercial efforts and taken

appropriate action to begin cure of the breach or default within the initial thirty (30) day cure period.

iii. MaineDOT shall have the right to terminate this Agreement immediately upon written notice to Vendor in the event (i) Vendor, or any director, officer or employee of Vendor assigned to this Project is convicted of a criminal offense directly related to information technology services; or (ii) proceedings in bankruptcy are commenced against Vendor or if a receiver is appointed and such case or proceeding shall continue undismissed, or unstayed and in effect, for a period of one hundred twenty (120) days. Notwithstanding the foregoing, if a conviction of an employee assigned to this Project, officer or director, relates to individual and/or personal actions of such employee, officer or director and not the policy or directive of Vendor and, upon such conviction, Vendor shall terminate or otherwise remove such employee, officer or director and take such other steps to reasonably ensure the propriety of Vendor' delivery of information technology services, then MaineDOT shall not have a right to terminate this Agreement pursuant to the foregoing clause (i) of this Section 14 (C).

iv. Vendor shall have the right to terminate this Agreement in the event of a material breach or default by MaineDOT of its obligations hereunder that is not cured within thirty (30) days from the date of receipt by MaineDOT of written notice of such breach from Vendor. If the breach or default, by its nature, cannot be cured within such thirty (30) day period, then MaineDOT shall have such additional time (not to exceed thirty (30) additional days) as may be necessary to cure the breach or default, provided MaineDOT has exercised reasonable commercial efforts and taken appropriate actions to begin cure of the breach or default within the initial thirty (30) day cure period.

v. Vendor shall cause the foregoing provisions to be inserted in any subcontract for any work covered by this Agreement so that such provisions shall be binding upon each subcontractor, provided that the foregoing provisions shall not apply to contracts or subcontracts for standard commercial supplies or raw materials.

K. DELIVERY AND ACCEPTANCE

Time is of the essence in the delivery of the equipment. The Vendor shall execute the work continuously and diligently. Delivery of the units shall occur in accordance with the terms and conditions outlined in the resulting Agreement.

i. Production of the units shall be conducted as a continuous production with no breaks or inserts of other orders or types of equipment.

ii. Delivery shall be restricted to Monday through Friday, between the hours of 8 AM and 4 PM.

iii. The Vendor will contact MaineDOT Fleet Services 24 hrs. prior to delivery with an estimated time of arrival.

iv. Units furnished under this Agreement shall be delivered in first class condition, complete and ready for operation, and the Vendor shall assume all costs, responsibilities, and risk of loss related to damage that may have occurred in the delivery of the units.

v. When units are delivered, certificates or releases signed by representatives of MaineDOT Fleet Services are understood to be a simple acknowledgment of receipt of the units only, and will NOT constitute an acceptance of the condition of the units or their conformance with the terms and conditions of the Agreement specifications.

vi. Upon delivery, MaineDOT may conduct such tests as may be required to determine to its own satisfaction that the units appear to be in conformance with the terms, conditions, and requirements of the Agreement specifications.

Acceptance shall occur following final inspection by authorized employees of MaineDOT Fleet Service, receipt of the titles and all requested documentation. The Vendor will be notified, in writing, of acceptance/non-acceptance within fifteen calendar (15) days of delivery to the location specified in this Agreement.

L. RIGHT TO SUSPEND WORK

MaineDOT has the right to suspend any or all work at any time for any reason as it deems necessary. Consultant may receive payment for the portion of services completed through the date of suspension.

M. COPYRIGHT AND LICENSES - PATENTS AND COPYRIGHTS

Data and publication rights to any documents, produced under the terms of Agreement are the property of MaineDOT. The Vendor shall not copyright the material produced under the terms of the Agreement without written approval of MaineDOT, except to the extent necessary to protect its rights pursuant to the following paragraph.

The Parties to this Agreement mutually agree that, if patentable discoveries, intellectual property and software, or inventions should result from work described therein, all rights accruing from such discoveries or inventions shall be the sole property of MaineDOT.

N. CLAIMS AND DISPUTES

General

To preserve any claim arising out of the Agreement, the Parties shall comply with and exhaust all provisions of this Section. Unless otherwise agreed to in writing, the Vendor shall continue to perform its services during any dispute resolution process. If the Vendor continues to perform, MaineDOT shall continue to make payments in accordance with the Agreement of amounts not in dispute.

Negotiation with MaineDOT's Fleet Representative

The Vendor shall promptly notify MaineDOT's Fleet Representative, or their designee, in writing, of disputes that could significantly affect scope, schedule or compensation. After such notice, the Vendor and MaineDOT's Fleet Representative shall promptly negotiate in good faith to resolve the dispute. MaineDOT's Fleet Representative will promptly issue a decision.

Review by Director
If the Vendor desires a review of MaineDOT's Fleet Representative's decision, then the Vendor shall promptly request in writing that MaineDOT's Director of the applicable Bureau or Office review the Fleet Representative's decision. The Director or its designee(s) shall promptly notify the Vendor in writing of the result of the review.

Dispute Resolution
If the dispute remains unresolved after negotiation and review as set forth above, the Parties may proceed to mediation by selecting a mediator acceptable to both.

If the Parties are unable to resolve the dispute through mediation, either party may seek judicial review through a civil action commenced in the Superior Court of Maine, Kennebec County.

O. CONTROLLING LAWS

The Agreement referred to in these Terms and Conditions is governed by the applicable laws of the Federal Government and the State of Maine.

Laws to Be Observed
The Vendor shall comply with all applicable Federal. State and local laws, rules, regulations, orders, and ordinances affecting the work including, without limitation all environmental, wage, labor, equal opportunity, safety, patent, copyright, or trademark laws. The Vendor shall indemnify MaineDOT and hold MaineDOT harmless against any and all claims or liabilities arising from or based upon the violation or alleged violation of any such Law caused directly or indirectly by or through the Vendor.

P. ENTIRE AGREEMENT/BINDING EFFECT/MODIFICATION/ASSIGNMENT

This Agreement sets forth the entire agreement of the parties with regard to the subject herein. This Agreement may not be modified except by a written amendment executed by both parties.

Neither MaineDOT nor the Vendor may assign, sublet, or transfer any rights under or interest (including, but without limitation, monies that are due or may become due) in the Agreement without the written consent of the other, except to the extent that any assignment, subletting, or transfer is mandated or restricted by law. Unless specifically stated to the contrary in any written Consent To Assignment, no assignment shall release or discharge the assignor from any duty or responsibility under the Agreement.

Q. SEVERABILITY

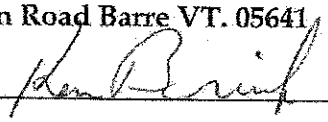
The invalidity or unenforceability of any particular provision or part thereof of this Agreement shall not affect the remainder of said provision or any other provisions, and this Agreement shall be construed in all respects as if such invalid or unenforceable provision or part thereof had been omitted.

R. NON-WAIVER

If MaineDOT fails or refuses to enforce any provision in the Agreement that shall not constitute a waiver of that provision, nor shall it affect the enforceability of that provision or of the remainder of the Agreement.

Name of Company: Tenco Industries

Address: 29 Pitman Road Barre VT. 05641

Signature: 

Date: 7/9/2019

Appendix B

STATE OF MAINE
DEPARTMENT OF ADMINISTRATIVE AND FINANCIAL SERVICES
DIVISION OF PROCUREMENT SERVICES

DETAILED SPECIFICATIONS

RFQ # 17D19052100000000000352

Technical Specifications For
The Purchase and Installation of
Base Unit Snow Plow Gear System with Attachments & Dump Bodies

1. GENERAL

1.1. PURPOSE AND INTENT INDEX

a) The purpose and intent of this specification are to describe a Base Unit Snow Plow Gear System. Price Quote #1 for installation of a right-hand system set up with necessary hydraulics and controls to make it fully functional on tandem axle truck. Price Quote #2 for installation of a left-hand system set up with necessary hydraulics and controls to make it fully functional on tandem axle trucks. Price Quote #3 for installation of a double system set up with necessary hydraulics and controls to make it fully functional on tandem axle trucks. Detailed specifications in **Section A.**

b) The purpose and intent of this specification are to describe a One-Way Right or Left Plow with Plow Frame. Price Quote #1 for installation of a one-way right plow with necessary hydraulics and controls to make it fully functional on tandem axle trucks. Price Quote #2 for installation of a one-way left plow with necessary hydraulics and controls to make it fully functional on tandem axle trucks. Price Quote #3 for purchase of non-installed one-way right plow only. Price Quote #4 for purchase of non-installed one-way left plow only. Detailed specifications listed in **Section B.**

c) The purpose and intent of this specification are to describe a Reversible Plow with Contour Change. Price Quote #1 for installation with necessary hydraulics and controls to make it fully functional on tandem axle trucks. Price Quote #2 for purchase of non-installed equipment only. Detailed specifications in **Section C.**

d) The purpose and intent of this specification are to describe Left & Right Wing Plows. Price Quote #1 for installation of an 11'foot wing plow with necessary hydraulics and controls to make it fully functional on tandem axle trucks. Quote #2 for installation of a 12' wing plow with necessary hydraulics and controls to make it fully functional on tandem axle trucks. Quote #3 for installation of a 13' wing plow with necessary hydraulics and controls to make it fully functional on tandem axle trucks. Price Quote #4 for purchase of a non-installed 11' wing plow only. Price Quote #5 for purchase of a non-installed 12' wing plow only. Price Quote #6 for purchase of non-installed 13' wing plow only. Detailed specifications listed in **Section D.**

e) The purpose and intent of this specification are to describe a Power Reversing Underframe Road Scraper for tandem axle trucks. Price Quote #1 for installation with necessary hydraulics and controls to make it fully functional on tandem axle trucks and have a blade width of ten (10) feet. Price Quote #2 for purchase of non-installed equipment only. Detailed specifications in **Section E.**

f) The purpose and intent of this specification are to describe a Manually Reversing Underframe Road Scraper. Price Quote #1 for installation with necessary manual controls to make it fully functional on

single axle trucks and have a blade width of ten (10) feet. Price Quote #2 for purchase of non-installed equipment only. Detailed specification in **Section F**.

g) The purpose and intent of this specification are to describe a 10-12 Yard Heavy-Duty Construction Dump Body with a length of thirteen (13) feet and a CA of 132 inches. Price Quote #1 for installation of Construction Dump Body to make it fully functional. Price Quote #2 for purchase of non-installed equipment only. Detailed specifications in **Section G.**

h) The purpose and intent of this specification are to describe a 13' Multipurpose Center Conveyor Belt Over Chain Rear Spread Dump Body. Price Quote #1 for installation of Multipurpose Dump Body to make it fully functional. Price Quote #2 for purchase of non-installed equipment only. Detailed specifications in **Section H.**

i) The purpose and intent of this specification are to describe a 10' Side Dump Left Front Discharge Dump Body Spreader. Price Quote #1 for installation of Side Dump Body Spreader to make it fully functional. Price Quote #2 for purchase of non-installed equipment only. Detailed specifications in **Section I.**

j) The purpose and intent of this specification are to describe a 13' Side Dump Left Front Discharge Dump Body Spreader. Price Quote #1 for installation of Side Dump Body Spreader to make it fully functional. Price Quote #2 for purchase of non-installed equipment only. Detailed specifications in **Section J.**

COMPLETENESS

The price quoted in any proposal submitted shall include all items of labor, materials, tools, equipment, and other costs necessary to fully complete the manufacture and delivery of the equipment pursuant to these specifications. Any part or detail which makes the equipment complete and ready for service shall not be omitted, even though such part or detail is not mentioned in these specifications.

CONFORMITY

All parts not specified shall be manufacturer's best quality and shall conform in materials, design, or workmanship to the best practice known in the snow plow gear and attachments industry. All parts shall be new and in no case, will used, reconditioned or obsolete parts be accepted. The parts on all equipment provided by the manufacturer should be interchangeable.

INSTRUCTIONS FOR COMPLETING TECHNICAL SPECIFICATION SHEET

Please complete the checklist for technical specifications set forth below. **Electronically enter responses directly into the text-enabled fields next to each specification, including actual dimensions when applicable.** Each Bidder must indicate whether it can meet the technical specifications by inserting an "X" next to each specification. The "X" will demonstrate that the Bidder's offering meets the technical specification. If a Bidder cannot meet a technical specification, then the Bidder must give an explanation for each exception and for equipment that is not available or that will be dealer installed. All explanations must be provided in detail on separate pages along with the justification as to why the alternative equipment or deliverables will be as good as the equipment or deliverables described in the detailed specifications for desired items. A copy of the vendor specification proposal must be provided. Following these instructions is essential for proper bid evaluation.

If a Bidder fails to provide requested information or if information on a quote is found to be false or misleading, the quote will be rejected as unresponsive.

The award will be made on a best value basis to the vendor that either

meets or most closely meets the specifications, while taking price and delivery into consideration.

The following abbreviations must be used:		
	X	**Standard or as specified**
	N/A	**Not Available**
	DI	**Dealer Installed**
	AE	**Approved Equal**

Section A BASE UNIT SNOW PLOW GEAR SYSTEM

The purpose and intent of this specification are to describe a Base Unit snow plow gear system. Detailed specifications in Sections 2-15.

	2.0 FRONT HITCH ASSEMBLY	Abbreviation	Actual Dimension	Notes
2.1	Custom side plate model designed, constructed and installed for extreme service.	**X**		
2.2	Quick detachable and pivoting for access to engine compartment, utilizing plow ram and 1¼" pins. There shall be three (3) plow pinning heights located at 15.5", 18" and 20.5" heights on 31" centers. It shall be readily removable for summer storage leaving the hydraulic pump mounted to the chassis.	**X**		
2.3	Shall be minimum 5/8" steel construction.	**X**		
2.4	Integral heavy duty upper and lower horizontals for right and/or left wing tower of HSS 6" x 4" x 3/8" minimum steel tube.	**X**		
2.5	Shall be designed, constructed to accommodate interchangeability of various plows and plow frames in use by MaineDOT Fleet Services.	**X**		
2.6	Shall accommodate installation of engine crankshaft driven pump or PTO assembly.	**X**		
2.7	Shall be designed, constructed and installed to keep the effects of weight and leverage of	**X**		

	plow and plow frame to an absolute minimum and transmit plow forces directly to the truck frame side rails.			
2.8	Plow ram must be 4" diameter x 14" stroke with a 1¾" diameter double chrome piston, rod providing 20.75" lift minimum.	**AE**	**12"**	
2.9	The support frame shall be adjustable in height during installation to accommodate varying frame heights and chassis frames.	**X**		
2.10	The front mast shall be constructed of two 4" x 4" x ½" angle vertical members reinforced with a 4" x 4" x ½" horizontal top angle, a 4" x 4" x ½" cylinder base angle and a 3" x 2" x ¼" base tube.	**X**		
2.11	There shall be a ½" thick upper cheek/push plate bolted to the front frame ends to carry the vertical loading. There will also be a ½" x 24" frame rail reinforcement bolted to the frame above the front axle.	**X**		
2.12	The lift arm shall be fabricated from 1" flame cut plate, braced with two (2) ½" x 2" steel flat bar plates. The lift arm shall have a triple point chain hook allowing either single or double chaining	**AE**	**¾"**	
2.13	The hitch shall be mounted at not more than 18" measured from truck grill to plow attach hole center.	**X**		
2.14	The base bracket and hitch frame mounting pin holes must be reinforced internally and externally by a HSS steel washer 3/8" thick welded as a boss to prevent elongation of the pin mounting holes due to vibration.	**X**		
2.15	A suitable rubber block must be installed between the base bracket and hitch frame to provide tension on the mounting pins which is intended to reduce or stop vibration.	**AE**	**N/A**	
2.16	One (1) adjustable turn buckles must be provided to secure detached hitch portion to	**X**		

	the front plow, which will allow for standalone storage.			
2.17	Two (2) side winding screw adjustable parking legs (jacks) mounted on each end of hitch cross tube to allow for hitch assembly removal (minimum 1,000 lb. capacity).	**X**		
	3.0 FRONT TOWER ASSEMBLY RIGHT, LEFT AND DOUBLE	**Abbreviation**	**Actual Dimension**	**Notes**
3.1	The front tower shall be of open section design.	**X**		
3.2	It shall be constructed of 8" @ 18.4 lbs./ft. structural I-beam slide tray. The lift cylinder shall be located behind the tower, rod end down. Shelving shall be achieved by a single wire rope sheave on the cylinder rod end and a single sheave on the tower top.	**X**		
3.3	The slide travel shall be twice the cylinder stroke. The slider shall be retained by two (2) ¾" structural square bars. At no point, shall any part of the tower structure extend above the tower at any point of slider travel.	**X**		
3.4	The front tower shall have a lower skid shoe. It also shall have bolted connections to the support tubes.	**X**		
3.5	Wing shall have a lift capacity of 72" minimum. It will be achieved by a 3" bore by 36" stroke double chrome cylinder with a 1½" diameter double acting piston rod, minimum.	**N/A**	**52" Post**	
3.6	Front tower cylinders shall be equipped with quick detachable hydraulic disconnecting fittings. (Fittings to be ½" diameter, Parker).	**X**		
3.7	Trip mechanism and wing to be approved by MaineDOT Fleet Services. The trip spring shall be a torsion type spring with a 1" diameter wire, minimum. Trip device shall be plumb.	**AE**	**¾"**	

3.8	The front tower height shall be same as rear tower height.	**X**		
	4.0 TOWER WIRE CABLE	**Abbreviation**	**Actual Dimension**	**Notes**
4.1	All wire cable shall be ½" diameter 8 by 25 improved plow steel with triple clamps, loop thimbles and anchor shackles at each end.	**X**		
4.2	Three (3) ½' cable clamps must be used and spaced evenly (3) three inches apart from each other as required by OSHA standards. Any frayed cable ends need to be covered.	**X**		
	5.0 HYDRAULIC OIL TANK	**Abbreviation**	**Actual Dimension**	**Notes**
5.1	It shall have a "shed roof" design of approximately 35° (and a floor of ¼" plate steel).	**ME DOT**		
5.2	Tank shall have sight gauge and electrical float switch to indicate proper oil level. (Float part #OMEGA LVK-171 or approved equal).	**ME DOT**		
5.3	The tank shall have a capacity of 40 US gallons with baffle, breather, Hycon sight gauge, magnetic drain plug and internal feed line screen with a bypass.	**ME DOT**		
5.4	Hydraulic tank shall be fabricated utilizing minimum 7-gauge steel.	**ME DOT**		
5.5	The Hycon sight gauge must be reversible from the left to right side of the tank.	**ME DOT**		
5.6	Fill port cap will have an integral screen pressurized with a three PSI vent. Unit will be installed in such a manner to prevent entry of contaminants including snow and rain while either open or closed.	**ME DOT**		
5.7	Suction outlet on the tank shall be protected by an internal screen of approximately 35 microns with an integral bypass in the tank.	**ME DOT**		

5.8	Suction strainer must be externally removable for ease of replacement and servicing. (Buyers #SW3002003) or approved equal.	**ME DOT**		
5.9	A full flow/2" shut off ball valve shall be mounted in the suction line. The return line will incorporate a full flow check valve mounted between the return line filter and Parker tank inlet or approved equal.	**ME DOT**		
5.10	The tank shall be bolted to the rear saddle for ease of cleaning.	**X**		
5.11	The tank must have a 2" threaded pipe opening located in such a position to easily install an electric oil heater. The internal oil baffle must not interfere with the heating element.	**ME DOT**		
5.12	A suitable step of steel grating, approximately 14" x 16" must be attached to the hydraulic tank shed roof.	**ME DOT**		
5.13	Step shall be designed with grating, in an area of the hydraulic tank to make easy access for driver to step up to grating on top of the hydraulic tank. An additional step may be required for safety.	**X**		

	6.0 HYDRAULICS	Abbreviation	Actual Dimension	Notes
6.1	Load sense pump- 80 CID, front mount and cast-iron construction. The pump case drain must be plumbed directly to tank not through return filter. The load sense stand-by pressure should be set at 325 PSI and be internally drained to allow a dynamic flow for the sense signal. Eaton 420 Pump Code 421AK00891B or approved equal.	**ME DOT**		
6.2	Additional hydraulically powered equipment may require more that the Eaton 420 mobile piston pump and can be substituted for hook lift system.	**ME DOT**		
6.3	Spicer end yokes 2-4-533 and engine flange 2-2-479 series 1310.	**ME DOT**		
6.4	Spicer series 1310 PTO shaft slip joint non-grease-able tubular driveline with non-greaseable u-joints # C9533-SF-NG with proper angle of installation.	**ME DOT**		
6.5	Low oil safety circuit, consists of direct mount block valve, tank mounted float switch and system override. System shall automatically shut down at low oil level and be capable of also being manually shut off or locked out.	**ME DOT**		
6.6	Directional Control Valve: Sauer Danfoss PVG32 with bleed off compensator or approved equal. The valve must be compensated, proportional and load independent.	**ME DOT**		
6.7	Pressure and Flow: each valve must be settable with pressures up to 5,000 psi and the flow rating up to 35 gpm. Valve must be of laminar flow design for minimum pressure drop. Valve must have adjustable flow control on both sides of the spool.	**ME DOT**		
6.8	Relief valves must include settable reliefs.	**ME DOT**		

6.9	Electrically Activated Coils: all coils shall have actuation valve and must be able to be manually or electrically controlled. Electrical actuation must be controllable with a PWM signal for fully proportional or on/off operation from one coil. Separate coils not acceptable. Coil shall have Deutush female plugs located on the end of coil. Spools must have a heavier centering springs. Valve assembly must accommodate up to 13 work sections, valve must be available in either open or close center configurations.	**ME DOT**		
6.10	System will also utilize a full flow return line filter. This filter will have ten-micron filtration and a 23 PSI bypass. Installation will allow for ease of servicing. Hycon model #MFBN160G10M1.0/12.2B3.1 filter or approved equal.	**ME DOT**		
6.11	All hydraulic valving for body, plows and spreader shall be in one central assembly. Multiple valve assemblies are unacceptable. All plow sections shall have field adjustable low (speed) controls. Installation will be done to state requirements and approved at prototype inspection.	**ME DOT**		
6.12	Valves are to be mounted in a vertical position in an eleven-gauge stainless steel weatherproof enclosure outside the frame rails. Enclosure will be designed and constructed by MaineDOT Fleet Services and installed by vendor for easy, quick, complete accessibility and repair.	**ME DOT**		
6.13	An in-line high pressure filter will be mounted between the pump and main valve. A Hycon model #DFBN3HC160G10B1.1/12-B6YP shall be supplied.	**ME DOT**		
6.14	Spreader control system must be electrical and be easily and readily convertible to closed loop ground speed orientation by changing control head only.	**ME DOT**		

6.15	Electrically controlled in cab with desired control system.	**ME DOT**		
6.16	Parker ½" disconnect couplers shall be used on hydraulic lines to all quick detachable parts, including front hitch and wing posts. Parker hoses and fittings preferred.	**ME DOT**		
6.17	PTO shaft and universals must be guarded and must be able to be easily serviced.	**ME DOT**		
6.18	The application control system will be supplied by MaineDOT Fleet Services.	**ME DOT**		
	7.0 REAR TOWER AND SADDLE RIGHT, LEFT AND DOUBLE	**Abbreviation**	**Actual Dimension**	**Notes**
7.1	The rear towers shall be of open section design.	**X**		
7.2	The slide tray shall be fabricated from a 12" structural channel @ 25lbs./ft.	**AE**		
7.3	Tower shall have a top mounted self-aligning wire cable exit pulley with rope guide and top mounted lift lug included.	**X**		
7.4	Shall be 12"-inch minimum channel is supported by 2 vertical angles of 4" x 3" x ½".	**X**		
7.5	The tower structure includes intercostal braces at strategic locations.	**X**		
7.6	The slide retainer tracks of ¾" square bar and extend the full length of travel.	**X**		
7.7	The wing lift cylinders shall be located on the rear of the tower and shall incorporate a guide on the rod end of the cylinder.	**X**		
7.8	The rear tower shall have bolted connections to the rear saddle to allow for various frame heights and off-season removal without disturbing the hydraulic system.	**X**		

7.9	Wing arm brackets shall be angled at 15 degrees towards the front of the chassis to align push arms to the wing.	**X**		
7.10	All fasteners must have a minimum of grade (5) five rating.	**X**		
	8.0 REAR SHELFING SLIDE CONTROL CYLINDER	**Abbreviation**	**Actual Dimension**	**Notes**
8.1	The arm slide control cylinder shall be a minimum 3½" diameter bore x 54" stroke designed as a double acting unit.	**X**		
8.2	This shall be located on the exterior of the tower slide tray.	**X**		
	9.0 REAR SHELFING SLIDER	**Abbreviation**	**Actual Dimension**	**Notes**
9.1	The slider base plate shall be fabricated from a ¾" thick plate with tapped edges to prevent the slider plate from binding in the tower.	**X**		
9.2	Slider plate shall provide 54" of vertical travel.	**X**		
	10.0 WING CONTROL CYLINDER	**Abbreviation**	**Actual Dimension**	**Notes**
10.1	The wing control cylinder shall be a minimum 3" diameter bore x 36" stroke double acting "RAM" type double chrome treated cylinder rods.	**X**		
10.2	There shall be a triple sheave box bolted to base and rod end of the cylinder.	**X**		
10.3	The wire cable travel is three times the cylinder stroke.	**X**		
	11.0 WING ARMS	**Abbreviation**	**Actual Dimension**	**Notes**
11.1	Two (2) arms shall run parallel to each other on 17" centers.	**X**		
11.2	They shall be non-telescopic and designed for proper length wing.	**X**		

	12.0 REAR SHEAVES	Abbreviation	Actual Dimension	Notes
12.1	The sheaves shall be 6" nominal size with an extra deep rope groove.	X		
12.2	The sheaves shall have 1¼" diameter axles with greaseable bronze bushings.	X		
12.3	The axle shall incorporate a positive location head to ensure non-rotation of axle.	X		
12.4	The sheaves shall be machined from solid steel.	X		
	13.0 REAR WING CABLE	**Abbreviation**	**Actual Dimension**	**Notes**
13.1	The wire cable shall be 1/2" diameter 8 by 25 improved plow steel with triple clamps, loop thimbles and anchor shackles at each end.	X		
13.2	There shall be 36" of ½" chain on free end to attach to wing lifting lug. (Wing Safety chain).	X		
13.3	Three (3) ½' cable clamps must be used and spaced three inches evenly apart from each other as required by OSHA stands. Any frayed cable ends need to be covered.	X		
	14.0 REAR SADDLE	**Abbreviation**	**Actual Dimension**	**Notes**
14.1	The rear saddle shall be laterally mounted section of minimum 6" x 4" x ½" wall thickness. There shall be ½" "L" shaped cheek plates with the tower end gusseted to form a box with the tower attach bracket. There shall be a minimum of two (2) 3" x 3" x 3/8" angle braces to stabilize the tower base. (Must be detachable if located below frame rail).	X		
14.2	Designed to be quick detachable including wing posts (and hydraulics) by the use of quick disconnecting fittings. (Fittings to be ½" diameter, Parker).	X		

14.3	Trip mechanism and wing plow to be approved by MaineDOT Fleet Services. The trip spring shall be a torsion type spring with a 1" diameter wire, minimum. Trip device shall be plumb.	**AE**	¾"	
14.4	The rear tower height shall be same as front tower height.	**X**		
14.5	Cables that operate over sheaves must be adjusted so that at maximum stroke, cable clamps, etc., will not be pulled into the sheaves.	**X**		
14.6	Push arms for 10' wing plows must be 5' minimum.	**X**		
14.7	All cables must be minimum ½" diameter 8 by 25 construction, improved plow steel.	**X**		
14.8	When possible, the rear tower must be angled to provide a straighter alignment for push arms and push arm joints.	**X**		
14.9	There shall be pipe struts supplied to diffuse impact loads through wider frame area.	**X**		
	15.0 TOOL BOX	**Abbreviation**	**Actual Dimension**	**Notes**
15.1	The box shall be a minimum of 10-gauge mild steel all welded construction.	**X**		
15.2	The box must be minimum 18" high x 7-3/8" wide x 72" long (interior dimensions) with a hinged door located on the driver's side.	**AE**	**18"x8"x66"**	
15.3	This box must be installed next to the hydraulic oil tank and extend lengthwise across the truck chassis. The tool box must be securely mounting but must also be designed for easy removal. Must be securely fastened to truck chassis.	**X**		

15.4	The design, construction and installation of this box may act as a catwalk with a nonskid top surface but must not interfere with the proper operations and/or necessary front dump angle of the front dump body.	**X**		
15.5	Box must meet MaineDOT paint requirements (See Paint Section) with a 3.5 Imron High Gloss Plow Yellow top coat.	**X**		

ATTACHMENTS SECTION

Section B ONE-WAY RIGHT OR LEFT PLOW WITH PLOW FRAME

The purpose and intent of this specification are to describe a One-Way Right or Left Plow with Plow Frame installed with necessary hydraulics and controls to make it fully functional on tandem axle trucks. Detailed specifications listed in Section 16.

	16.0 GENERAL	Abbreviation	Actual Dimension	Notes
16.1	Plow intake height 26" minimum; discharge height 54" minimum measured at top of curvature. Minimum circumference excluding moldboard backer angle must be 54¼" on the intake end and 89½" on the discharge end.	**X**		
16.2	Length of cutting edge shall be 11', cleared path 9' minimum at a 65° plowing angle. The overall length shall be 164".	**X**		
16.3	Designed and constructed for extreme plowing service.	**X**		
16.4	The moldboard shall be a one-piece ten-gauge construction, brake formed for additional rigidity. It shall be high speed curvature to eliminate blow-back.	**AE**	**Cold rolled**	
16.5	There shall be 29" of overhang, at a 65° attack angle, measured at the discharge end of the curvature plow.	**X**		
16.6	The top edge of the moldboard shall be reinforced with a HSS section of 3"x 2½"x ¼" angle iron. The moldboard backer angle shall be 6"x4"x¾" angle. The moldboard shall have eight (8) ½" flame cut vertical support ribs.	**X**		
16.7	AASHTO standard punching with carbide cutting edges.	**X**		
16.8	Intake shall have an end plate of 3/8" minimum.	**X**		

16.9	Attack angle of cutting edge must be easily adjustable from 45° through and including 70° by means of a tubular telescoping bar.	**X**		
16.10	There shall be two moldboard shoes and one nose shoe.	**X**		
16.11	Trip mechanism shall be of the trip moldboard buffer style.	**X**		
16.12	The trip mechanism shall be a buffer type incorporating two radially mounted compression springs. The springs shall be wound from .703" wire to a 4.07 ID" diameter with a spring rating of 422 and shall have a minimum of nine (9) active coils. These springs shall be retained by adjustable Nylok nut and plate washer. The retaining rod shall be C-1045 steel rod of 1½" diameter. The rod shall have a safety retainer pin located at the end of the thread which prohibits the nut from backing off from the rod.	**X**		
16.13	The main drive tubes of the push frame shall be a minimum of 5" 5"x¼" tubing. The lateral drive angle must be a minimum of 6"x6"x¾" angle which is boxed with ½" steel plate.	**AE**		
16.14	The drive angle shall have two connecting places to attach moldboard assembly with a center roller included.	**X**		
16.15	The oscillating push bar shall be flame cut from 1" steel and have a pivot bolt of 1¼" diameter grade five bolt with self-locking nut.	**X**		
16.16	Due to the buffer trip design, the push frame shall be supplied with adjustable frame shoes with 96" of bearing surface and a minimum Brinnell hardness of 37 each.	**X**		
16.17	Side winding screw adjustable leg (jack) positioned to support and balance plow	**X**		

	when removed (minimum 1,000 lb. capacity).			
16.18	All metal shall be free of rust and mill scale and prepared (blasted) for primer and finish coat.	**X**		
16.19	A two (2) part epoxy primer shall be applied to prepared metal surfaces to the minimum thickness of 3-5 mils dry.	**X**		
16.20	Paint shall be applied to a thickness of 5-7 mils dry and shall be Imron 3.5 HG Cat Highway Yellow color (paint code #42-3133). Axalta shall be the preferred brand of paint.	**X**		
16.21	Plow shall come with carbide plow cutting blades.	**X**		

Section C REVERSIBLE PLOW WITH CONTOUR CHANGE				
The purpose and intent of this specification are to describe a Reversible Plow with Contour Change installed with necessary hydraulics and controls to make it fully functional on tandem axle trucks. Detailed specifications in Section 17.				
	17.0 GENERAL	**Abbreviation**	**Actual Dimension**	**Notes**
17.1	Hydraulically reversible. Reverse action provided by two (2) 3½" diameter nitrate treated cylinders designed with 2,000 PSI pressure relief.	**X**		
17.2	Designed and constructed for extreme service.	**X**		
17.3	Length of cutting edge shall be 11', cleared path 9' at 35° of swing.	**X**		
17.4	Adjustable height of 33" minimum and 51" maximum with sufficient overhang and curvature for high speed plowing.	**X**		
17.5	Cutting edge, with trip edge mechanism fully exposed for convenient servicing.	**X**		
17.6	Lower moldboard reinforcement shall be 4"x4"x½" steel angle minimum.	**X**		
17.7	Minimum of six (6) torsion-type springs not less than 7/8" wire x 3"x¾" O.D. with not less than sixteen (16) active coils each. Springs to be mounted horizontally and must be preloaded to require an initial tripping force of approximately 1,900 foot-pounds at full compression.	**N/A**	**Compression**	
17.8	Trip edge attachment supports shall be ½" plate steel minimum on both the trip edge backer angle and moldboard rib structure.	**X**		
17.9	AASHTO standard punching with carbide steel cutting edge.	**X**		
17.10	Retainer plate secured below center pin to prevent pin from falling out.	**X**		

17.11	Attack angle of cutting edge must be easily adjustable from 60° through 85°.	**X**		
17.12	Control switch or lever for hydraulically reversing must be attached with other plow functions.	**X**		
17.13	Plow must be capable of automatically changing contour through the uses of hydraulics to act as a left or right hand one-way tapered plow and as a straight, non-tapered reversible plow.	**X**		
17.14	The flared or discharge end of the plow shall coincide with the direction to which the moldboard has been angled.	**X**		
17.15	The tapered moldboard shall assume an inside height of 33" at the low side and 51" at the discharge side whenever angled to the extreme right or left positions from center.	**X**		
17.16	Hydraulic contour changing must be activated by and in conjunction with plow reversing.	**X**		
17.17	Moldboard material shall be one piece non-spliced 3/8" thick ultra-high molecular weight yellow polyethylene with a minimum tensile strength of 7000 PSI (in accordance with ASTMD638).	**X**		
17.18	The polyethylene materials shall be made from new resin (recycled material not acceptable), and shall be color impregnated and ultra violet stabilized safety yellow pigmentation.	**X**		
17.19	Plow weight approximately 2400 lbs. minimum.	**X**		
17.20	Side winding screw adjustable leg (jack) positioned to support and balance plow when removed (minimum 1,000 lb. capacity).	**X**		

17.21	All metal shall be free of rust and mill scale and prepared (blasted) for primer and finish coat.	**X**		
17.22	A two (2) part epoxy primer shall be applied to prepared metal surfaces to the minimum thickness of 3-5 mils dry.	**X**		
17.23	Paint shall be applied to a thickness of 5-7 mils dry and shall be Imron 17.5 HG Cat Highway Yellow color (paint code #42-3133). Axalta shall be the preferred brand of paint.	**X**		
17.24	Plow shall come with carbide plow cutting blades.	**X**		

Section D LEFT & RIGHT WING PLOWS				
The purpose and intent of this specification are to describe Left & Right Wing Plows installed with necessary hydraulics and controls to make it fully functional on tandem axle trucks. Detailed specifications in Sections 18-19.				
	18.0 WING PLOWS (LEFT & RIGHT)	**Abbreviation**	**Actual Dimension**	**Notes**
18.1	Appropriate model for either 54,000 GVW or 32,000 GVW vehicle, whichever is required	**X**		
18.2	Heavy-duty model	**X**		
18.3	• Overall blade length 10' overall wing length shall be 11'to fit 32,000 GVW vehicle • Overall blade length 11' overall wing length shall be 12' to fit 54,000 GVW vehicle • Overall blade length 12' overall wing length shall be 13' to fit 54,000 GVW vehicle	**X**		
18.4	Minimum ten-gauge moldboard. The moldboard shall be fabricated with a 1" nose plate. The moldboard shall be supported by four 1/2" flame cut ribs. The top of the moldboard shall be supported by a 3" x 3"x ¼" HSS tube with intermediate support moldboard shall be supported by a 3" x 3"x ¼" HSS tube with intermediate support	**X**		
18.5	The backer angle will be 6" x 4"x ¾" angle minimum gusseted with 3/8" triangular plate, AASHTO standard punching	**X**		
18.6	The wing shall include two mounting positions for a 1½" pivot bolt. The pivot bolts shall be reinforced with a ½" plate washer welded to the skin plate	**X**		
18.7	The wing arm attachment bracket shall be bolted in place and adjustable in position. The arms shall be pinned with a 1" diameter grade eight plated hex cap screw secured with a Nylok hex nut.	**X**		

18.8	The blade shall be ½" x 8" C-1085 steel reversible cutting edge with coped corners on the intake end. There shall be two cast iron wear shoes bolted behind and through the base angle. The blade and shoes shall be secured with 5/8" grade five plated carriage bolts.	**X**		
18.9	Attack angle of 85°	**X**		
18.10	A removable safety chain attached to the nose of the plow must be provided	**X**		
	19.0 GENERAL	**Abbreviation**	**Actual Dimension**	**Notes**
19.1	All parts and components must be compatible with equipment currently in use by MaineDOT Fleet Services.	**X**		
19.2	Ten (10) parts and repair manuals as necessary.	**X**		
19.3	A two (2) part epoxy primer shall be applied to prepared metal surfaces to the minimum thickness of 3-5 mils dry.	**X**		
19.4	Paint shall be applied to a thickness of 5-7 mils dry and shall be Imron 3.5 HG Cat Highway Yellow color (paint code #42-3133). Axalta shall be the preferred brand of paint.	**X**		
19.5	All equipment must be thoroughly inspected, serviced and be ready for use upon delivery.	**X**		
19.6	Plow lights must be of halogen type, low profile, professionally mounted and wired with a weather pack type plug-in device for quick disconnect mounted in the engine compartment using OEM plow light socket.	**X**		
19.7	All wiring must be protected by wire loom and be weatherproof, soldered connections and heat shrink wrap must be used on all wiring.	**X**		

19.8	All wiring and hoses shall be mounted, routed and fastened in a professional manner to prevent chafing, rubbing, etc.	**X**		
19.9	All hardware installed shall not obstruct any vehicle or equipment lubrication points.	**X**		
19.10	All hardware installed shall not obstruct or interfere with any vehicle component or system.	**X**		
19.11	Vehicle bumper must be quick attachable for summer use and attached to plow hitch with pins.	**X**		
19.12	Main plow and plow wings must be capable of installation and/or removal easily by one person.	**X**		
19.13	All plow hydraulic cylinders must be easily rebuildable.	**X**		
19.14	Electrically controlled solenoids shall be equipped with manual overrides.	**X**		
19.15	All hydraulic fittings to be NPT thread with Teflon tape, JIC not acceptable.	**N/A**	**JIC**	
19.16	All cylinders must be double Chrome plated.	**AE**		
19.17	Solenoid operated plow valves must be capable of conversion to cable operation if necessary.	**X**		
19.18	All feed and return lines must have shut off valves to isolate the hydraulic tank.	**X**		
19.19	An emergency light mast of heavy wall steel pipe must be provided and securely fastened to the hydraulic tank. The mast must extend past the cab roof.	**X**		
19.20	Stainless Steel ½" tubing and ¾" tubing under the cab and toward the rear if required. Minimizing the rubber hydraulic hoses	**X**		

	lengths. Tubing shall be a minimum 304 SS welded seam tubing with the ½" tubing size has a side wall minimum of .049", the ¾" tubing has a side wall minimum of .065". Tubing flares shall be matched up with a JIC to hose end and shall have a Stainless Steel sleeves behind the flare as well as and Stainless Steel nuts. All Stainless tubing shall be run such manner that will not interfere with the accessibility of any filters or starter. Tubing holders shall be professionally designed and shall not allow the tubing to contact with each other. **(No wrapping of tubing will be accepted)** All brackets holding the tubing shall be easily removed to allow easy excess to components like transmission and engine.			

Section E	POWER REVERSING UNDERFRAME ROAD SCRAPER FOR WHEELER/TANDEM AXLE PLOW TRUCKS			
The purpose and intent of this specification are to describe an Underframe Road Scraper for tandem axle trucks. The road scraper shall be hydraulically operated and have a blade width of ten (10) feet. Detailed specifications in Sections 20-22.				
	20.0 SCRAPER	**Abbreviation**	**Actual Dimension**	**Notes**
20.1	Road Scraper shall be of heavy-duty construction and design for extreme use.	**N/A**		
20.2	Hydraulically operated. Wausau or approved equal.	**N/A**		
20.3	10' moldboard length approximately.	**N/A**		
20.4	20" overall height moldboard with blade.	**N/A**		
20.5	Nine (9') cleared swath at approximately 35°.	**N/A**		
20.6	Moldboard approximately 20" high x 1" corten steel.	**N/A**		
20.7	Moldboard shall be tiltable for road travel with a minimum travel distance of nine (9") inches above the ground.	**N/A**		
20.8	Integral shock absorbing safety trip device.	**N/A**		
20.9	Hydraulically operated raising and lowering.	**N/A**		
20.10	Moldboard will be HYDRAULICALLY operated reversing for left and right swing to an angle of 45°.	**N/A**		
20.11	Hydraulic relief valve set at 500 PSI. (Preferably in main valve section)	**N/A**		
20.12	Operated from cab either electrically or manually in commonality with the other plow, wing or sander controls.	**N/A**		
20.13	Scraper valves shall be stacked with plow valves.	**N/A**		
20.14	¾"x6" carbide cutting edge with standard AASHTO punching.	**N/A**		

20.15	Punching shall be 11/16" square holes with countersink 1 1/16" diameter 45° to receive 5/8" diameter plow bolts.	**N/A**		
20.16	Cutting edges/moldboard shall be AASHTO punched for two (2) 3' and one (1) 4' sections as requested.	**N/A**		
20.17	Quick detachable for summer operation to include the hydraulics.	**N/A**		
20.18	One (1) parts and repair manuals per unit.	**N/A**		
20.19	One (1) operator's manual per unit.	**N/A**		
20.20	All components and controls must be compatible with equipment currently in use by Fleet Services/MaineDOT.	**N/A**		
20.21	All metal shall be free of rust and mill scale and prepared (blasted) for primer and finish coat.	**N/A**		
20.22	A two (2) part epoxy primer shall be applied to prepared metal surfaces to the minimum thickness of 3-5 mils dry.	**N/A**		
20.23	Paint shall be applied to a thickness of 5-7 mils dry and shall be Imron 3.5 HG Cat Highway Yellow color (paint code #42-3133). Axalta shall be the preferred brand of paint.	**N/A**		
20.24	All paint and primers shall be lead free.	**N/A**		
	21.0 GENERAL	**Abbreviation**	**Actual Dimension**	**Notes**
21.1	Must be installed in accordance with manufacturer's specifications.	**N/A**		
21.2	If modifications to vehicle need to be made to meet scraper manufacturer's specifications and to permit proper operation of scraper, the modifications must be approved by both the vehicle manufacturer and Fleet Services,	**N/A**		

	MaineDOT and is required of the vendor/installer.			
21.3	All hydraulic cylinder rams must be nitrate coated and easily rebuildable.	**N/A**		
21.4	Mounting side plate must allow for multiple height variation from side to side.	**N/A**		
21.5	Multiple holes will allow for truck lean or severely crowned roads, thus allowing height adjustment to scraper.	**N/A**		
	22.0 WARRANTY	**Abbreviation**	**Actual Dimension**	**Notes**
22.1	Manufacturer's standard warranty will apply.	**N/A**		
22.2	Terms and conditions of warranty must be provided with bid proposal.	**N/A**		
22.3	Manufacturer's warranty will start with MaineDOT in-service date.	**N/A**		
22.4	Terms and conditions of warranty must be provided with bid proposal (Warranty must be clearly defined and all components covered must be clearly listed and identified).	**N/A**		
22.5	In-Service Date: Warranty on under frame road scraper (not placed in service immediately because of time lag due to installation of components, special equipment, seasonal usage or other delays) shall be warranted from the date the equipment is actually placed in service. MaineDOT Fleet Services Augusta shall notify the vendor in writing of "in service" date.	**N/A**		
22.6	Vendor shall be 100% responsible for all repair costs to include parts, labor during the warranty period.	**N/A**		

Section F	MANUALLY REVERSING UNDERFRAME ROAD SCRAPER FOR PATROL/SINGLE AXLE PLOW TRUCKS			
The purpose and intent of this specification are to describe an Underframe Road Scraper for single axle trucks. The road scraper shall be manually operated and have a blade width of ten (10) feet. Detailed specifications in Sections 23-25.				
	23.0 SCRAPER	**Abbreviation**	**Actual Dimension**	**Notes**
23.1	Road Scraper shall be of heavy-duty construction and design for extreme use.	**N/A**		
23.2	Manually operated. Wausau or approved equal.	**N/A**		
23.3	10' moldboard length approximately.	**N/A**		
23.4	20" overall height moldboard with blade.	**N/A**		
23.5	Nine (9') cleared swath at approximately 35°.	**N/A**		
23.6	Moldboard approximately 20" high x 1" corten steel.	**N/A**		
23.7	Moldboard shall be tiltable for road travel with a minimum travel distance of nine (9") inches above the ground.	**N/A**		
23.8	Integral shock absorbing safety trip device.	**N/A**		
23.9	Hydraulically operated raising and lowering.	**N/A**		
23.10	Moldboard will be MANUALLY operated reversing for left and right swing to an angle of 45°.	**N/A**		
23.11	Hydraulic relief valve set at 500 PSI. (Preferably in main valve section)	**N/A**		
23.12	Operated from cab either electrically or manually in commonality with the other plow, wing or sander controls.	**N/A**		
23.13	Scraper valves shall be stacked with plow valves.	**N/A**		
23.14	¾"x6" carbide cutting edge with standard AASHTO punching.	**N/A**		

23.15	Punching shall be 11/16" square holes with countersink 1 1/16" diameter 45° to receive 5/8" diameter plow bolts.	**N/A**		
23.16	Cutting edges/moldboard shall be AASHTO punched for two (2) 3' and one (1) 4' sections as requested.	**N/A**		
23.17	Quick detachable for summer operation to include the hydraulics.	**N/A**		
23.18	One (1) parts and repair manuals per unit.	**N/A**		
23.19	One (1) operator's manual per unit.	**N/A**		
23.20	All components and controls must be compatible with equipment currently in use by Fleet Services/MaineDOT.	**N/A**		
23.21	All metal shall be free of rust and mill scale and prepared (blasted) for primer and finish coat.	**N/A**		
23.22	A two (2) part epoxy primer shall be applied to prepared metal surfaces to the minimum thickness of 3-5 mils dry.	**N/A**		
23.23	Paint shall be applied to a thickness of 5-7 mils dry and shall be Imron 3.5 HG Cat Highway Yellow color (paint code #42-3133). Axalta shall be the preferred brand of paint.	**N/A**		
23.24	All paint and primers shall be lead free.	**N/A**		
	24.0 GENERAL	**Abbreviation**	**Actual Dimension**	**Notes**
24.1	Must be installed in accordance with manufacturer's specifications.	**N/A**		
24.2	If modifications to vehicle need to be made to meet scraper manufacturer's specifications and to permit proper operation of scraper, the modifications must be approved by both the vehicle manufacturer and Fleet Services,	**N/A**		

	MaineDOT and is required of the vendor/installer.			
24.3	All hydraulic cylinder rams must be nitrate coated and easily rebuildable.	**N/A**		
24.4	Mounting side plate must allow for multiple height variation from side to side.	**N/A**		
24.5	Multiple holes will allow for truck lean or severely crowned roads, thus allowing height adjustment to scraper.	**N/A**		
	25.0 WARRANTY	**Abbreviation**	**Actual Dimension**	**Notes**
25.1	Manufacturer's standard warranty will apply.	**N/A**		
25.2	Terms and conditions of warranty must be provided with bid proposal.	**N/A**		
25.3	Manufacturer's warranty will start with MaineDOT in-service date.	**N/A**		
25.4	Terms and conditions of warranty must be provided with bid proposal (Warranty must be clearly defined and all components covered must be clearly listed and identified).	**N/A**		
25.5	In-Service Date: Warranty on under frame road scraper (not placed in service immediately because of time lag due to installation of components, special equipment, seasonal usage or other delays) shall be warranted from the date the equipment is actually placed in service. MaineDOT Fleet Services Augusta shall notify the vendor in writing of "in service" date.	**N/A**		
25.6	Vendor shall be 100% responsible for all repair costs to include parts, labor during the warranty period.	**N/A**		

Section G	10-12 YARD HEAVY-DUTY CONSTRUCTION DUMP BODY			
The purpose and intent of this specification are to describe a 10-12 Yard Heavy-Duty Construction Dump Body with a length of 13' and CA of 132". Detailed specifications in Sections 26-31.				
	26.0 BODY	**Abbreviation**	**Actual Dimension**	**Notes**
26.1	Designed and constructed for extreme service.	**X**		
26.2	Unibody construction with no exposed or structural or longitudinal cross members.	**X**		
26.3	Length 13' with 12" overhang past body pivot.	**X**		
26.4	Body pivot point should align with the most rearward vertical point of rear tandem tires.	**X**		
26.5	Approximately 42" tailgate.	**X**		
26.6	Approximately 36" sides.	**X**		
26.7	10-yard water level capacity without side boards.	**X**		
26.8	Longitudinal shall be 3/16" AR400 steel minimum.	**X**		
26.9	Body bracing shall be fabricated of 3/16" AR400 steel minimum.	**X**		
26.10	Sides to be braced with 4 -7" (minimum) vertical box braces in addition to a boxed frame for tailgate.	**X**		
26.11	3/16" AR400 boxed top rail.	**AE**		AR450
26.12	Tailgate and tailgate frame box braced.	**X**		
26.13	Sloping tailgate braces and body sills.	**X**		
26.14	Full width rear apron under tailgate 6" wide bolted on and easily removable.	**X**		

26.15	When tailgate is closed, tailgate must be even with body floor with no gap between tailgate and body floor.	**X**		
26.16	One piece floor of 1/4" AR400 steel.	**AE**		AR 450
26.17	Hardware shall be extra heavy duty with 1¼" minimum upper and lower tailgate hinge pins.	**X**		
26.18	Two (2) 3/8 grade 70 rated tailgate chains with upper and lower eyes.	**X**		
26.19	Body hinge pins shall be designed for positive lubrication, grease fittings shall be located on the inner side of the body hinge pin with grease fitting and grease groove.	**X**		
26.20	Continuous welding inside and out. No stitch welding	**X**		
26.21	Driver controlled dual air operated tailgate cylinders.	**X**		
26.22	Body must be equipped with adequately braced ladder mounted on the right side, whose first step is 21" above the ground and extends to the top of the sideboards. The right side of the ladder must terminate in a grab handle 8" above the side board.	**X**		
26.23	Mud flaps positioned fore and aft of rear wheels and/or tandem.	**X**		
26.24	Headwall will be 54" high fabricated from 3/16" AR400 steel. All full weld, no stitch welding acceptable.	**AE**		AR 450
26.25	One gusseted non-slip step must be provided on the inside of the body adjacent to ladder on the ditch side of the vehicle.	**X**		
26.26	Permanently attached body support capable of holding body in raised position for servicing.	**AE**		Body prop bolted on hoist cradle

26.27	Cab protector not required.	**X**		
26.28	Driver controlled air operated tailgate.	**X**		
	27.0 LOAD COVER FABRIC	**Abbreviation**	**Actual Dimension**	**Notes**
27.1	Load cover shall be designed and treated for hot asphalt temperatures.	**X**		
27.2	Cover material shall be constructed of RFL (Resorcinol Formaldehyde Latex) and be capable of withstanding temperatures of 350 degrees.	**X**		
27.3	Load cover material shall be latex-coated woven Polyester Yarn fabric.	**X**		
27.4	Load covers must be compatible with all existing MaineDOT load cover systems.	**X**		
27.5	Load cover shall have no tail or additional fabric beyond the tailgate.	**X**		
	28.0 LOAD COVER ROLL-UP SYSTEM	**Abbreviation**	**Actual Dimension**	**Notes**
28.1	Shall have roll-up type mechanism.	**X**		
28.2	Aluminum windscreen provided.	**X**		
28.3	Must be capable of mounting to body headboard.	**X**		
28.4	Electric motor shall be covered.	**X**		
28.5	Donovan Bullet Model #2858 electric drive motor or approved equal.	**X**		
28.6	Minimum three-year warranty on electric motor.	**X**		

	29.0 LOAD COVER GENERAL REQUIREMENTS	Abbreviation	Actual Dimension	Notes
29.1	Control switch must be integrated into truck dash and professionally labeled.	X		
29.2	The cover shall accommodate a 10-13 yard body or larger and must accommodate not only the body and load, but in winter must accommodate a hopper sander and load.	X		
29.3	Cover arms must be anodized aluminum and the length adjustable.	X		
29.4	Cover arms will be bent such that arms are not above sides of body when cover is retracted.	X		
29.5	Extra spring tension must be provided for cover arms to prevent the cover from "sailing" while the truck is in motion.	X		
29.6	Load cover arms shall not, in any way, hinder a person form climbing the ladder safely.	X		
29.7	If load cover sailing occurs after installation and delivery to Fleet Services, it will be required to be corrected by the cover manufacturer at no cost to MaineDOT.	X		
29.8	Load cover arms pivot point shall be positioned in such manner that would not allow equipment loading material to damage that area.	X		
	30.0 HOIST AND SUBFRAME	**Abbreviation**	**Actual Dimension**	**Notes**
30.1	Single piston front telescopic hoist incorporated into the body which shall be designed and will not extend beyond the face of the body.	X		
30.2	Class 80 hoist NTEA rated.	X		
30.3	Dump angle approximately 50° minimum to rear.	X		

30.4	Body hydraulics to be compatible with systems currently in use by Fleet Services/MaineDOT.	**X**		
30.5	All hoist wear points capable of being lubricated with grease fitting placed in a safe, convenient location for servicing and the ability to except auto grease system fitting.	**X**		
30.6	All fastening hardware to be of highest quality material available.	**X**		
30.7	There shall be minimum of 2¼" diameter grease-able rear hinge pins. (Grease fitting must be located at the end of the pin, facing inward)	**AE**		Grease fittings on rear hinge blocks
	31.0 GENERAL REQUIREMENTS	**Abbreviation**	**Actual Dimension**	**Notes**
31.1	Steel surface preparation shall be a minimum SSPC #6, Commercial Blast.	**X**		
31.2	Epoxy primer, two-part system. The dry film thickness shall be between 6-8 mils.	**X**		
31.3	Finish coat will be 3.5 Imron Aluminum.	**X**		
31.4	Any controls to be compatible with those currently in use by MaineDOT Fleet Services.	**X**		
31.5	Parts and repair manuals as needed.	**X**		
31.6	Body up light to be installed in cab.	**X**		
31.7	NOTE: CA dimension will accommodate not only body but wing tower and hydraulic assembly for plows approximately 20".	**X**		
31.8	All wiring must be protected by wire loom or conduit.	**X**		
31.9	Soldered connections and heat shrink wrap must be used on all wire connections.	**X**		

31.10	Hardwood sideboards 10" x 2" minimum, wood, painted black must be supplied and installed by vendor.	**X**		
31.11	Marker, I.D., clearance lights must be LED	**X**		
31.12	Two stainless steel aerodynamic triple light box housing will be supplied by MaineDOT to be recessed in both the right and left rear post and fully welded around housing. The box will be mounted in the center of each post. Adequate holes must be provided through the frame and box to facilitate the installation of wires and connectors for the lights. The box will contain a rectangular Whelen strobe/halogen flashed which Fleet Services will install in the top position. The remaining two lights, which will be supplied by Fleet Services, will consist of a Whelen back-up lamp for the bottom position and a Whelen stop/tail/turn LED for the center position that will be installed by the body supplier. Dentsch waterproof connectors must be used on all Whelen lamps.	**X**		
31.13	Method or means to secure auto-greaser lines to the body that will be adjacent to the long sill.	**X**		

Section H 13' MULTIPURPOSE DUMP BODY				
The purpose and intent of this specification are to describe a 13' Multipurpose Center Conveyor Belt Over Chain Rear Spread Dump Body. Detailed specifications in Sections 32-42.				
	32.0 BODY	**Abbreviation**	**Actual Dimension**	**Notes**
32.1	Length 13' with 12" overhang past body pivot.	**X**		
32.2	10-yard water level capacity without side boards.	**X**		
32.3	Approximately 42" tailgate.	**X**		
32.4	Approximately 36" sides.	**X**		
32.5	Ten (10)" pockets for side boards, accepts two (2)" boards.	**X**		
32.6	Headwall to be 54" high fabricated from 3/16" Hardox 450 steel. All full weld, no stitch welding acceptable.	**X**		
32.7	Side material 3/16" Hardox 450 steel	**X**		
32.8	Front corner post 10-gauge core-ten 80 carbon steel, 7" wide by 3.38" deep.	**AE**		
32.9	Formed box top section, dirt shedding lower rub rail, with side board support midway.	**X**		
32.10	Rear corner post 10-gauge core-ten 80 carbon steel, 15" wide by 5" deep.	**AE**		
32.11	Rear corner post full bolster. Lower sill to be cut through post and welded forming an integral sill.	**X**		
32.12	Rear posts butt welded to lower sill not acceptable.	**X**		
32.13	Vertical extrusions supports on sides 10-gauge core-ten carbon steel. Supports fully welded, stitch welding of supports not acceptable.	**X**		

32.14	Three vertical side extrusions 7" wide by 3.38" deep.	X		
32.15	Grab handle shall be provided on the driver side of the body's headboard.	X		
32.16	Body must be equipped with adequately braced ladder mounted on the right side, whose first step is 21" above the ground and extends to the top of the sideboards. The right side of the ladder must terminate in a grab handle 8" above the side board.	X		
32.17	Mud flaps positioned fore and aft of rear wheels and/or tandem.	X		
32.18	One gusseted non-slip step must be provided on the inside of the body adjacent to ladder on the ditch side of the vehicle.	X		
32.19	Approximately exterior width of 99" and inside width of 88".	AE		
32.20	Two (2) Lift lugs per side.	X		
	33.0 FLOOR	**Abbreviation**	**Actual Dimension**	**Notes**
33.1	Floor material Hardox 450 steel.	X		
33.2	Interior width 88"	AE		
33.3	Angle floor with ramp at outer edges to sidewalls. Tub shape or radius body designs are not preferred.	X		
33.4	Long sills formed monocoque design incorporating the center conveyor, 11" deep section.	X		
33.5	Long sill material 3/16" plate.	X		
33.6	Long sills joined in center by two (2) cross tubes to provide ample support for conveyor floor welded to body long sills, cross tubes 3½" OD. Wall thickness .30"	X		

33.7	Floor includes bent plate stiffeners of 3/16" steel.	X		
33.8	Underbody pan required	X		
	34.0 TAILGATE	**Abbreviation**	**Actual Dimension**	**Notes**
34.1	Tailgate 3/16" Hardox 450 steel	X		
34.2	Bracing shall be 10-gauge core-ten steel	X		
34.3	Horizontal stiffeners and lower rub rail shall be dirt-shedding type.	X		
34.4	Driver controlled dual air operated tailgate cylinders.	X		
34.5	Double ½" flame cut plate with ⅝" latch fingers and 1¼" diameter lower latch rods.	X		
34.6	Upper hinge pins 1¼" with ⅜" outside ears and ¾" tailgate ears.	X		
34.7	Two (2) ⅜" grade 70 rated tailgate chains with upper and lower eyes.	X		
34.8	No stitch welding, all seams fully welded.	X		
34.9	Discharge door adjustable for multiple positions to allow for material metering when using spinner assembly for spreading material in snow and ice operations.	X		
34.10	Discharge door shall be design such that when completely shut it has no material leakage.	X		
34.11	Overhang of body with apron to be suitable for paver operation.	X		
34.12	Maximum 6" wide spreader apron.	X		
34.13	When tailgate is closed, tailgate must be even with body floor with no gap between tailgate and body floor.	X		

	35.0 CONVEYOR	Abbreviation	Actual Dimension	Notes
35.1	Center mounted conveyor set up for rear discharge, 24" preferred.	**AE**		
35.2	Discharge door to include screw-jack for infinite metering of material and shall not interfere with tailgate safety chains and be easy access from ground level.	**X**		
35.3	Conveyor floor 3/16" Hardox 450 steel.	**X**		
35.4	Poly conveyor return tray (easily removed) under body to prevent material spillage on chassis and components.	**X**		
35.5	Hydraulic motor drive, one (1) planetary 25:1 gear box at rear of conveyor assembly with removeable covers to protect motors from asphalt. Hydraulic fitting and sensor on motor shall also be positioned in such a manner that they are protected during paving application.	**X**		
35.6	Conveyor shall be chain type with a cross bar welded to every chain link	**X**		
35.7	Shall have 667-X drive chain	**X**		
35.8	Mechanical belt/chain take up	**N/A**		
35.9	Removable center conveyor cover plate 3/16" Hardox 450 steel.	**X**		
35.10	Sprockets to be cast steel only.	**X**		
35.11	Shaft and sprocket assembly to be designed and placed in conveyor to eliminate undue wear on conveyor floor assembly at either end.	**X**		
35.12	Body floor to overlap edge of conveyor chain to prevent chain "ride-up".	**X**		
35.13	Conveyor to end beyond tailgate such that tailgate and any center discharge or coal	**X**		

	doors close positively on conveyor tray to prevent leakage of material. Units with conveyor designs that end before the tailgate are neither desired nor acceptable.			
	36.0 SPINNER	**Abbreviation**	**Actual Dimension**	**Notes**
36.1	Spinner diameter 20" Poly	**N/A**	**18" Poly**	
36.2	Hydraulic spinner motor 3.0 CID	**X**		
36.3	Quick disconnects on hydraulic lines for ease of removal.	**X**		
36.4	Spinner assembly mounted beneath rear discharge door opening.	**X**		
36.5	Mount to be manual swing-away style such that complete assembly can be manually swung in towards chassis so that body can be raised to complete height in dump position without removal of spinner assembly.	**X**		
36.6	Spinner adjustable fore-aft, left-right and up-down.	**X**		
36.7	Spinner shall be braced and/or supported to prevent vibration and cracking.	**X**		
	37.0 LIQUID SYSTEM	**Abbreviation**	**Actual Dimension**	**Notes**
37.1	Liquid system designed to supply liquid to rear spinner assembly.	**X**		
37.2	Liquid capacity minimum of 200 gallons.	**X**		
37.3	Tanks shall have 2" fill ports.	**X**		
37.4	Tanks shall be mounted to the dump body, and designed for easy full excess as well as easily replaced and not be directly in contact of the against the side of the body.	**X**		

	38.0 LOAD COVER FABRIC	Abbreviation	Actual Dimension	Notes
38.1	Load cover shall be designed and treated for hot asphalt temperatures.	**X**		
38.2	Cover material shall be constructed of RFL (Resorcinol Formaldehyde Latex) and be capable of withstanding temperatures of 350 degrees.	**X**		
38.3	Load cover material shall be latex-coated woven Polyester Yarn fabric.	**X**		
38.4	Load covers must be compatible with all existing MaineDOT load cover systems.	**X**		
38.5	Load cover shall have no tail or additional fabric beyond the tailgate.	**X**		
	39.0 LOAD COVER ROLL-UP SYSTEM	**Abbreviation**	**Actual Dimension**	**Notes**
39.1	Shall have roll-up type mechanism.	**X**		
39.2	Aluminum windscreen provided.	**X**		
39.3	Must be capable of mounting to body headboard.	**X**		
39.4	Electric motor shall be covered.	**X**		
39.5	Donovan Bullet Model #2858 electric drive motor or approved equal.	**X**		
39.6	Minimum three-year warranty on electric motor.	**X**		

	40.0 LOAD COVER GENERAL REQUIREMENTS	Abbreviation	Actual Dimension	Notes
40.1	Control switch must be integrated into truck dash and professionally labeled.	X		
40.2	The cover shall accommodate a 10-13 yard body or larger and must accommodate not only the body and load, but in winter must accommodate a hopper sander and load.	X		
40.3	Cover arms must be anodized aluminum and the length adjustable.	X		
40.4	Cover arms will be bent such that arms are not above sides of body when cover is retracted.	X		
40.5	Extra spring tension must be provided for cover arms to prevent the cover from "sailing" while the truck is in motion.	X		
40.6	Load cover arms shall not, in any way, hinder a person form climbing the ladder safely.	X		
40.7	If load cover sailing occurs after installation and delivery to Fleet Services, it will be required to be corrected by the cover manufacturer at no cost to MaineDOT.	X		
40.8	Load cover arms pivot point shall be positioned in such manner that would not allow equipment loading material to damage that area.	X		
	41.0 HOIST AND SUBFRAME	**Abbreviation**	**Actual Dimension**	**Notes**
41.1	Single piston front telescopic hoist incorporated into the body which shall be designed and will not extend beyond the face of the body.	X		
41.2	Class 80 hoist NTEA rated.	X		

41.3	Dump angle approximately 50° minimum to rear.	**X**		
41.4	Body hydraulics to be compatible with systems currently in use by Fleet Services/MaineDOT.	**X**		
41.5	All hoist wear points capable of being lubricated with grease fitting placed in a safe, convenient location for servicing and the ability to except auto grease system fitting.	**X**		
41.6	All fastening hardware to be of highest quality material available.	**X**		
41.7	There shall be minimum of 2¼" diameter grease-able rear hinge pins. (Grease fitting must be located at the end of the pin, facing inward)	**X**		
	42.0 GENERAL REQUIREMENTS	**Abbreviation**	**Actual Dimension**	**Notes**
42.1	Steel surface preparation shall be a minimum SSPC #6, Commercial Blast.	**X**		
42.2	Epoxy primer, two-part system. The dry film thickness shall be between 6-8 mils.	**X**		
42.3	Finish coat will be 3.5 Imron Aluminum.	**X**		
42.4	Any controls to be compatible with those currently in use by MaineDOT Fleet Services.	**X**		
42.5	Parts and repair manuals as needed.	**X**		
42.6	Body up light to be installed in cab.	**X**		
42.7	NOTE: CA dimension will accommodate not only body but wing tower and hydraulic assembly for plows approximately 20".	**X**		
42.8	All wiring must be protected by wire loom or conduit.	**X**		

42.9	Soldered connections and heat shrink wrap must be used on all wire connections.	**X**		
42.10	Hardwood sideboards 10" x 2" minimum, wood, painted black must be supplied and installed by vendor.	**X**		
42.11	Marker, I.D., clearance lights must be LED	**X**		
42.12	Two stainless steel aerodynamic quad light housings will be supplied by MDOT to be fully welded to the exterior of both the right and left rear post. The box will be mounted in the center of the frame. Adequate holes must be provided through the frame and box to facilitate the installation of wires and connectors for the lights. The box will contain a rectangular Whelen strobe/halogen flasher which Fleet Services will install in the top position. The remaining two lights, which will be supplied by Fleet Services, will consist of a Whelen back up lamp for the lower position and a Whelen stop/tail/turn LED for the center position that will be installed by the body supplier. Dentsch waterproof connectors must be used on all Whelen lamps.	**X**		
42.13	Method or means to secure auto-greaser lines to the body that will be adjacent to the long sill.	**X**		

Section I 10' SIDE DUMP BODY

The purpose and intent of this specification are to describe a 10' side dump left front discharge dump body spreader which can be used as a conventional dump body. All construction to utilize continuous welding. Detailed specifications in **Sections 43-54**.

	43.0 BODY	Abbreviation	Actual Dimension	Notes
43.1	Length: 10' (6.8/8.8 yds)	**X**		
43.2	Interior width: 86"	**X**		
43.3	Exterior width: 102"	**AE**	**97 3/8"**	
43.4	Side height: 30"	**AE**	**27"**	
43.5	Tailgate Height: 39"	**X**		

	44.0 HEADBOARD AND CAB SHIELD	Abbreviation	Actual Dimension	Notes
44.1	Flat one piece 3/16" Hardox AR450	**X**		
44.2	Two (2) external vertical braces of 3/8" x 4" section	**X**		
44.3	10 Ga Corten break formed "C" section brace full width	**X**		
44.4	24" cab shield shall be 10 Ga 44W steel, continuously welded to headboard	**X**		
44.5	Cab shield side bracing shall be integral with front side board pockets	**X**		

	45.0 HOIST BASKET	Abbreviation	Actual Dimension	Notes
45.1	Floating trunnion cylinder pivot with removable greaseable bearing blocks, sized to match selected cylinder	**X**		
45.2	Basket back plate shall be 3/8" steel plate	**X**		
45.3	Basket side plates shall be ¾" steel plate	**X**		
45.4	Two (2) ¼" gussets welded between each side plate and the back plate	**X**		

45.5	Bearing blocks shall include zerk grease fittings	**X**		
	46.0 LIVE FLOOR AND WALL	**Abbreviation**	**Actual Dimension**	**Notes**
46.1	One-piece live action type 3/16" Hardox AR450 steel floor	**X**		
46.2	Live floor vertical wall section shall be 3/16" Hardox AR450	**X**		
46.3	Live wall section shall break to 90 degrees over the top of the full outer wall to prevent material from flowing between the live wall and outer wall	**AE**		OPEN SIDE
46.4	Top section shall include 6" high board pockets at front and rear to accept 1¾" thick side board planks and shall include a third pocket midway on the body	**X**		
46.5	Floor and wall sections shall be longitudinally break formed at their intersection and continuously welded together to form a full length 30 degree gusset	**X**		
46.6	Head sheet of tilt section shall be 3/16" Hardox material	**X**		
46.7	Shall have an adjustable polymer wiper of 3/8" material at the body headboard	**X**		
46.8	Floor and right inner side wall shall move as one unit and shall be hinged to left side conveyor tray at the long sill and shall be capable of 36 degrees of floor lift by two (2) 4" minimum diameter by 20" stroke cylinders	**X**		
46.9	Cylinder rods shall be nitrided	**X**		
46.10	Cylinders in retracted position shall be at 22 degree angle	**X**		

46.11	Rod end bosses shall be designed and mounted for maximum serviceability	**X**		
46.12	Cylinder rod end bosses shall include greaseable bushed pinning, with pin designed with grease grooves	**X**		
46.13	Base trunnion mount shall be 1" steel plate	**X**		
46.14	Cylinder pins shall be of 1¼" stress-proof steel and greaseable	**X**		
46.15	There shall be six (6) channel cross members of 3" steel, 4.1lbs/ft and shall be spaced with two (2) at each of the live floor hinge assemblies and two (2) intermediate spacing	**X**		
46.16	The two (2) outer sets of horizontal cross members shall be joined to vertical live wall supports with 14" x 9" x ½" plate sections to form lifting cylinder end bosses and shall include additional ½" plate steel shims for the rod ends	**X**		
46.17	There shall be three (3) independent hinges of 1¼" diameter 304 stainless steel rods with grease groove and zerk fitting	**X**		
46.18	Hinge sections shall be bolted to both the left hand body long sill and floor section for maximum serviceability	**X**		
46.19	Hinge tube shall be of 2" OD mechanical tubing with 3/8" thickness	**X**		
46.20	Hinge plates shall be of 3/8" steel with vertical gussets of ½" plate	**X**		
46.21	Right side of body shall have a fixed outer wall of 3/16" Hardox AR450 to provide required rigidity for dump body use mode and restriction of personnel entry under tilting floor body	**AE**	**Open side**	

46.22	There shall be safety props supplied to support the tilt floor during maintenance operations	**X**		
	47.0 SUB-FRAME	**Abbreviation**	**Actual Dimension**	**Notes**
47.1	Body long sills shall be 10" structural channel at 15.3lbs/ft	**X**		
47.2	Channel shall be tied together with four (4) ¼" steel plate supports, placed two (2) each at the base of the live floor lifting cylinders	**X**		
47.3	Shall include full-width, 14" height rear bumper of ¼" steel plate continuously welded to the long sills and vertical rear corner posts at either end to offer a fully integral bumper and increase the integrity of the body	**X**		
47.4	To maintain integrity of the body bumper shall be of solid design with no cut-out access doors	**X**		
47.5	Live floor, floor hinges, conveyor tray, chain return tray and life cylinders shall be removable for maintenance	**X**		
	48.0 SIDE	**Abbreviation**	**Actual Dimension**	**Notes**
48.1	Left hand body wall shall be one-piece Hardox AR450 3/16" with formed box section, top and bottom	**X**		
48.2	Vertical rear post shall have 11" x 4" base section	**X**		
48.3	Rear post shall be of full bolster design for additional rigidity with formed box section bottom rail extending through rear post and welded in place with rear post extending below bottom rail. Designs with rear post butt welded to bottom rail not acceptable.	**X**		
48.4	6" high front and rear board pockets to accept 1¾" planks	**X**		

48.5	Inner front board pocket shall be at top of headboard	**X**		
48.6	Shall have material shedding 45 degree lower rub rail standard	**X**		
48.7	Body shall be smooth side with no intermediate posts	**X**		
	49.0 TAILGATE AND LOCKING MECHANISM	**Abbreviation**	**Actual Dimension**	**Notes**
49.1	One-piece skin plate of 3/16" Hardox AR450	**X**		
49.2	Perimeter box reinforcement plus lower rub rail material shedding design	**X**		
49.3	Tailgate shall have two-way action standard	**X**		
49.4	Tailgate shall have 3/8" adjustment chains standard	**X**		
49.5	Tailgate shall have ¾" flame cut hinge ears with 1¼" diameter galvanized handle pins	**X**		
49.6	Tailgate shall have 1¼" diameter lower latch rod	**X**		
49.7	Two (2) chain hooks per side standard (attached to rear post)	**X**		
49.8	Air tailgate locking mechanism attached to a 1" diameter full-width traverse rod with four bearing points	**X**		
49.9	Positive lock cam action latches to give a "double" lock action	**X**		
49.10	Rear latches shall be independently adjustable	**X**		
49.11	½" plate latch ears with ½" flame cut lock finger	**X**		
49.12	Shall have air gate kit included as standard	**X**		

	50.0 CONVEYOR, DISCHARGE BOX & SPINNER	Abbreviation	Actual Dimension	Notes
50.1	Left side longitudinal conveyor shall empty to the front.	X		
50.2	The conveyor floor (upper tray) shall be bolted in for maximum serviceability	X		
50.3	Full-length conveyor cover (two-section) of 3/16" Hardox AR450 shall be steel hinged to fold and latch to the side	X		
50.4	Hinges on conveyor cover shall include zerk grease fittings	X		
50.5	Conveyor floor (upper tray) shall be formed from ¼" Hardox AR450 plate and shall be bolted in. Conveyor floor and return trays that are welded in are neither desired nor acceptable	X		
50.6	Conveyor chain shall be 667x pintle type chain 16" wide on center with 3/8" x 1¼" flights every second link (double bar type) providing no more than 4½" between flights	X		
50.7	Each end of flights bars shall be welded to chain link, both top and bottom of flight	X		
50.8	Flight bars shall be ramped up to chain link to reduce abrasive wear by weld point on conveyer floor	X		
50.9	Conveyor chains links shall be covered to prevent ride-up	X		
50.10	Conveyor chain shall be driven by a 5.9 cubic inch hydraulic motor through a 25:1 worm gear reducer	X		
50.11	Gear box assembly shall include cast iron drive box with bronze gear assemblies	X		
50.12	There shall be a 1¾" diameter front drive axle shaft carrying eight tooth steel	X		

	sprockets and a 1¼" rear idler shaft with cut steel sprockets. Units utilizing return roller assemblies in lieu of shaft and sprocket assemblies are neither desired nor acceptable.			
50.13	Motor and gear box assembly shall be mounted to drive shaft at side of discharge box with a coupler assembly such that this assembly can be removed for service without removal of shaft and sprocket assembly. Units that require removal of shaft and sprocket assembly with gear box are neither desired nor acceptable.	**X**		
50.14	Discharge box shall form front of conveyor frame and shall be an integral part of conveyor frame	**X**		
50.15	Mount shall be slotted to allow gear box/motor/drive shaft to be removed as a unit also if desired	**X**		
50.16	Clean-out cover on discharge box shall include positive tab and pin locking system and shall be removable without the use of tools by opening the cover and sliding to the free side of the pin and tube steel hinge assembly	**X**		
50.17	Discharge box cover shall include slots cut for visibility into the box with cover in place to observe material flow	**X**		
50.18	Conveyor chain adjustment shall be through the use of dual grease tensioners at the return end of the body	**X**		
50.19	There shall be a guillotine-type flow control door, minimum of 18" wide	**X**		
50.20	Door in full open position shall be 12" high, offering a 216 square inch total opening	**X**		
50.21	Floor control door shall include screw-style jack mounted to headboard above door for infinite material flow control	**X**		

50.22	Control rod and handle of flow control door shall be accessible from ground level	**X**		
50.23	There shall be a chassis mounted polymer chute feeding to a 6-flight 18" diameter poly spinner driven by an independent 3.0 cubic inch sealed hydraulic motor	**X**		
50.24	Polymer chute shall be capable of windrowing spread material to the road center by rotating 90 degrees.	**X**		
50.25	Spinner drive shall be chassis mounted and adjustable through three (3) axes: lateral, longitudinal and vertical	**X**		
	51.0 HYDRAULICS	**Abbreviation**	**Actual Dimension**	**Notes**
51.1	Body will be fully plumbed for both conveyor drive and side lift cylinders	**X**		
51.2	Stainless steel hydraulic feed	**X**		
51.3	Return lines mounted on body shall be stainless steel for durability on longitudinal lines	**X**		
	52.0 HOIST AND REAR HINGE	**Abbreviation**	**Actual Dimension**	**Notes**
52.1	Main dump body telescopic cylinder shall have nitride wear surfaces, multiple stages, self-bleeding and sized appropriately for the length of box desired	**X**		
52.2	Standard cylinder shall be single acting on all stages.	**X**		
52.3	Hoist shall be of "CS" design for use in high salt environments	**X**		
52.4	Cylinder rods to be nitrided	**X**		
52.5	Cylinder trunnion to include zerk grease fittings	**X**		

52.6	Rear hinge shall be fabricated with a base angle of 4" x 4" x 3/8" structural angle	**X**		
52.7	Two (2) 3" thick hinge ears pivoting on 2" diameter pins shall in turn be welded to the body.	**X**		
52.8	Safety prop included	**X**		
	53.0 CENTRAL GREASE LINE KIT	**Abbreviation**	**Actual Dimension**	**Notes**
53.1	Central grease block system for wear points on body as standard equipment	**X**		
53.2	Central greasing to include: a. Bearing blocks at base basket for main lift cylinder b. Main lift cylinder trunnion c. Front drive shaft bearings at conveyor d. Drive shaft bearings at gear box e. Rear idler return shaft bearings at conveyor f. Rod end side lift cylinders g. Base end side lift cylinders h. Front live floor hinge i. Mid live floor hinge j. Rear live floor hinge k. Conveyor cover hinges	**X**		
	54.0 OPTIONS	**Abbreviation**	**Actual Dimension**	**Notes**
54.1	Additional summer chute to move material 90 degrees to truck	**X**		
54.2	Hydraulically actuated door with in-cab control	**X**		
54.3	Folding ladder with three (3) rungs above, handhold	**X**		
54.4	Double acting main hoist cylinder	**X**		
54.5	Tailgate coal door	**X**		
54.6	Spreader apron	**X**		

54.7	SDS two (2) section hinged screen package	**AE**	**(4) Section**	
54.8	Poly discharge chute body mounted	**X**		
54.9	Summer discharge chute (windrow)	**X**		
54.10	Ladder, fold up style	**X**		
54.11	Tarp rods at body sides	**X**		
54.12	Shovel holder	**X**		
54.13	High temp tilt floor wiper at headboard	**X**		
54.14	Conveyor automatic spring roller chain tensioner in lieu of grease tensioners	**N/A**		

Section J 13' SIDE DUMP BODY				
The purpose and intent of this specification are to describe a 13' Side Dump Left Front Discharge Dump Body Spreader which can be used as a conventional dump body. All construction to utilize continuous welding. Detailed specifications in **Sections 55-66**.				
	55.0 BODY	**Abbreviation**	**Actual Dimension**	**Notes**
55.1	Length: 10' (10/13 yds)	**AE**	**13'**	
55.2	Interior width: 86"	**X**		
55.3	Exterior width: 102"	**AE**	**97 3/8"**	
55.4	Side height: 38"	**X**		
55.5	Tailgate Height: 42"	**X**		
	56.0 HEADBOARD AND CAB SHIELD	**Abbreviation**	**Actual Dimension**	**Notes**
56.1	Flat one piece 3/16" Hardox steel	**X**		
56.2	Two (2) external vertical braces of 3/8" x 4" section	**X**		
56.3	10 Ga Corten break formed "C" section brace full width	**X**		
56.4	24" cab shield shall be 10 Ga 44W steel, continuously welded to headboard	**X**		
56.5	Cab shield side bracing shall be integral with front side board pockets	**X**		
	57.0 HOIST BASKET	**Abbreviation**	**Actual Dimension**	**Notes**
57.1	Floating trunnion cylinder pivot with removable greaseable bearing blocks, sized to match selected cylinder	**X**		
57.2	Basket back plate shall be 3/8" steel plate	**X**		
57.3	Basket side plates shall be ¾" steel plate	**X**		

57.4	Two (2) ¼" gussets welded between each side plate and the back plate	X		
57.5	Bearing blocks shall include zerk grease fittings	X		
	58.0 LIVE FLOOR AND WALL	**Abbreviation**	**Actual Dimension**	**Notes**
58.1	One-piece live action type ¼" Hardox 205,000 psi steel floor	X		
58.2	Live floor vertical wall section shall be 3/16" Hardox	X		
58.3	Live wall section shall break to 90 degrees over the top of the full outer wall to prevent material from flowing between the live wall and outer wall	X		
58.4	Top section shall include 6" high board pockets at front and rear to accept 1¾" thick side board planks and shall include a third pocket midway on the body	X		
58.5	Floor and wall sections shall be longitudinally break formed at their intersection and continuously welded together to form a full length 30 degree gusset	X		
58.6	Head sheet of tilt section shall be 3/16" Hardox material	X		
58.7	Shall have an adjustable polymer wiper of 3/8" material at the body headboard	X		
58.8	Floor and right inner side wall shall move as one unit and shall be hinged to left side conveyor tray at the long sill and shall be capable of 36 degrees of floor lift by three (3) 4" minimum diameter by 20" stroke cylinders	X		
58.9	Cylinders in retracted position shall be at 22 degree angle	X		

58.10	Live cylinder rod ends shall mount to heavy-duty gusset between live floor and live wall c-channel and shall include heavy-duty bosses	**X**		
58.11	Rod end bosses shall be designed and mounted for maximum serviceability	**X**		
58.12	Cylinder rod end bosses shall include greaseable bushed pinning, with pin designed with grease grooves	**X**		
58.13	Base trunnion mount shall be 1" steel plate	**X**		
58.14	Cylinder pins shall be of 1¼" stress-proof steel and greaseable	**X**		
58.15	There shall be eight (8) channel cross members of 3" steel, 4.1lbs/ft and shall be spaced with two (2) at each of the live floor hinge assemblies and two (2) intermediate spacing	**X**		
58.16	The two (2) outer sets of horizontal cross members shall be joined to vertical live wall supports with 14" x 9" x ½" plate sections to form lifting cylinder end bosses and shall include additional ½" plate steel shims for the rod ends	**X**		
58.17	There shall be three (3) independent hinges of 1¼" diameter 304 stainless steel rods with grease groove and zerk fitting	**X**		
58.18	Hinge sections shall be bolted to both the left hand body long sill and floor section for maximum serviceability	**X**		
58.19	Hinge tube shall be of 2" OD mechanical tubing with 3/8" thickness	**X**		
58.20	Right side of body shall have a fixed outer wall of 3/16" Hardox steel to provide required rigidity for dump body use mode and restriction of personnel entry under tilting floor body	**AE**	**Open side**	

58.21	There shall be safety props supplied to support the tilt floor during maintenance operations	**X**		
	59.0 SUBFRAME	**Abbreviation**	**Actual Dimension**	**Notes**
59.1	Body long sills shall be 10" structural channel at 15.3lbs/ft	**X**		
59.2	Channel shall be tied together with four (4) ¼" steel plate supports, placed two (2) each at the base of the live floor lifting cylinders	**X**		
59.3	Shall include full-width, 14" height rear bumper of ¼" steel plate continuously welded to the long sills and vertical rear corner posts at either end to offer a fully integral bumper and increase the integrity of the body	**X**		
59.4	To maintain integrity of the body bumper shall be of solid design with no cut-out access doors	**X**		
59.5	Live floor, floor hinges, conveyor tray, chain return tray and life cylinders shall be removable for maintenance	**X**		
	60.0 SIDE	**Abbreviation**	**Actual Dimension**	**Notes**
60.1	Left hand body wall shall be one-piece Hardox 3/16" with formed box section, top and bottom	**X**		
60.2	Vertical rear post shall have 11" x 4" base section	**X**		
60.3	Rear post shall be of full bolster design for additional rigidity with formed box section bottom rail extending through rear post and welded in place with rear post extending below bottom rail. Designs with rear post butt welded to bottom rail not acceptable.	**X**		

60.4	6" high front and rear board pockets to accept 1¾" planks	**X**		
60.5	Inner front board pocket shall be at top of headboard	**X**		
60.6	Shall have material shedding 45 degree lower rub rail standard	**X**		
	61.0 TAILGATE AND LOCKING MECHANISM	**Abbreviation**	**Actual Dimension**	**Notes**
61.1	One-piece skin plate of 3/16" Hardox	**X**		
61.2	Perimeter box reinforcement plus lower rub rail material shedding design	**X**		
61.3	Tailgate shall have two-way action standard	**X**		
61.4	Tailgate shall have 3/8" adjustment chains standard	**X**		
61.5	Tailgate shall have ¾" flame cut hinge ears with 1¼" diameter galvanized handle pins	**X**		
61.6	Tailgate shall have 1¼" diameter lower latch rod	**X**		
61.7	Two (2) chain hooks per side standard (attached to rear post)	**X**		
61.8	Air tailgate locking mechanism attached to a 1" diameter full-width traverse rod with four bearing points	**X**		
61.9	Positive lock cam action latches to give a "double" lock action	**X**		
61.10	Rear latches shall be independently adjustable	**X**		
61.11	½" plate latch ears with ½" flame cut lock finger	**X**		
61.12	Shall have air gate kit included as standard	**X**		

	62.0 CONVEYOR, DISCHARGE BOX & SPINNER	Abbreviation	Actual Dimension	Notes
62.1	Left side longitudinal conveyor shall empty to the front.	**X**		
62.2	The conveyor floor (upper tray) shall be bolted in for maximum serviceability	**X**		
62.3	Full-length conveyor cover (three-section) of 3/16" Hardox steel shall be steel hinged to fold and latch to the side	**X**		
62.4	Hinges on conveyor cover shall include zerk grease fittings	**X**		
62.5	Conveyor floor (upper tray) shall be formed from ¼" Hardox plate and shall be bolted in. Conveyor floor and return trays that are welded in are neither desired nor acceptable	**X**		
62.6	Conveyor chain shall be 667x pintle type chain 16" wide on center with 3/8" x 1¼" flights every second link (double bar type) providing no more than 4½" between flights	**X**		
62.7	Each end of flights bars shall be welded to chain link, both top and bottom of flight	**X**		
62.8	Flight bars shall be ramped up to chain link to reduce abrasive wear by weld point on conveyer floor	**X**		
62.9	Conveyor chains links shall be covered to prevent ride-up	**X**		
62.10	Conveyor chain shall be driven by a 10 cubic inch hydraulic motor through a 25:1 worm gear reducer	**X**		
62.11	Gear box assembly shall include cast iron drive box with bronze gear assemblies	**X**		
62.12	There shall be a 1¾" diameter front drive axle shaft carrying eight tooth steel sprockets and a 1¼" rear idler shaft with cut steel sprockets. Units utilizing return roller	**X**		

	assemblies in lieu of shaft and sprocket assemblies are neither desired nor acceptable.			
62.13	Motor and gear box assembly shall be mounted to drive shaft at side of discharge box with a coupler assembly such that this assembly can be removed for service without removal of shaft and sprocket assembly. Units that require removal of shaft and sprocket assembly with gear box are neither desired nor acceptable.	**X**		
62.14	Discharge box shall form front of conveyor frame and shall be an integral part of conveyor frame	**X**		
62.15	Mount shall be slotted to allow gear box/motor/drive shaft to be removed as a unit also if desired	**X**		
62.16	Clean-out cover on discharge box shall include positive tab and pin locking system and shall be removable without the use of tools by opening the cover and sliding to the free side of the pin and tube steel hinge assembly	**X**		
62.17	Discharge box cover shall include slots cut for visibility into the box with cover in place to observe material flow	**X**		
62.18	Conveyor chain adjustment shall be through the use of dual grease tensioners at the return end of the body	**X**		
62.19	There shall be a guillotine-type flow control door, minimum of 18" wide	**X**		
62.20	Door in full open position shall be 12" high, offering a 216 square inch total opening	**X**		
62.21	Floor control door shall include screw-style jack mounted to headboard above door for infinite material flow control	**X**		

62.22	Control rod and handle of flow control door shall be accessible from ground level	**X**		
62.23	There shall be a chassis mounted polymer chute feeding to a 6-flight 18" diameter poly spinner driven by an independent 3.0 cubic inch sealed hydraulic motor	**X**		
62.24	Polymer chute shall be capable of windrowing spread material to the road center by rotating 90 degrees.	**X**		
62.25	Spinner drive shall be chassis mounted and adjustable through three (3) axes: lateral, longitudinal and vertical	**X**		
	63.0 HYDRAULICS	**Abbreviation**	**Actual Dimension**	**Notes**
63.1	Body will be fully plumbed for both conveyor drive and side lift cylinders	**X**		
63.2	Return lines mounted on body shall be stainless steel for durability on longitudinal lines	**X**		
	64.0 HOIST AND REAR HINGE	**Abbreviation**	**Actual Dimension**	**Notes**
64.1	Main dump body telescopic cylinder shall have nitride wear surfaces, multiple stages, self-bleeding and sized appropriately for the length of box desired	**X**		
64.2	Standard cylinder shall be single acting on all stages.	**X**		
64.3	Hoist shall be of "CS" design for use in high salt environments	**X**		
64.4	Cylinder trunnion to include zerk grease fittings	**X**		
64.5	Rear hinge shall be fabricated with a base angle of 4" x 4" x 3/8" structural angle	**X**		

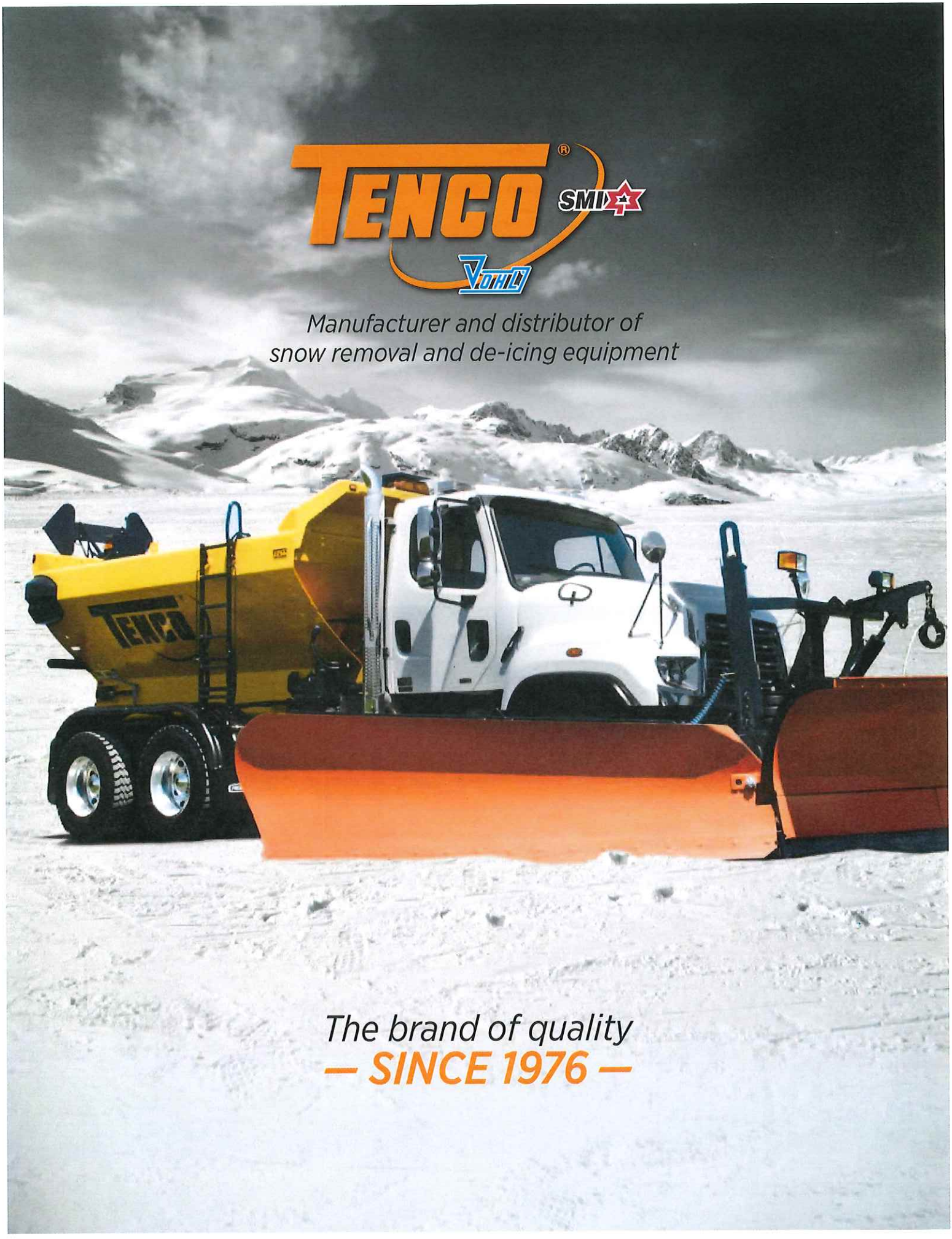
64.6	Two (2) 3" thick hinge ears pivoting on 2" diameter pins shall in turn be welded to the body.	**X**		
64.7	Safety prop included	**X**		
	65.0 CENTRAL GREASE LINE KIT	**Abbreviation**	**Actual Dimension**	**Notes**
65.1	Central grease block system for wear points on body as standard equipment	**X**		
65.2	Central greasing to include: a. Bearing blocks at base basket for main lift cylinder b. Main lift cylinder trunnion c. Front drive shaft bearings at conveyor d. Drive shaft bearings at gear box e. Rear idler return shaft bearings at conveyor f. Rod end side lift cylinders g. Base end side lift cylinders h. Front live floor hinge i. Mid live floor hinge j. Rear live floor hinge k. Conveyor cover hinges	**X**		
	66.0 OPTIONS	**Abbreviation**	**Actual Dimension**	**Notes**
66.1	Additional summer chute to move material 90 degrees to truck	**X**		
66.2	Hydraulically actuated door with in-cab control	**X**		
66.3	Folding ladder with three (3) rungs above, handhold	**X**		
66.4	Double acting main hoist cylinder	**X**		
66.5	Tailgate coal door	**X**		
66.6	Spreader apron	**X**		
66.7	SDS two (2) section hinged screen package	**AE**	**(4) Section**	

66.8	Poly discharge chute body mounted	**X**		
66.9	Summer discharge chute (windrow)	**X**		
66.10	Ladder, fold up style	**X**		
66.11	Tarp rods at body sides	**X**		
66.12	Shovel holder	**X**		
66.13	High temp tilt floor wiper at headboard	**X**		
66.14	Conveyor automatic spring roller chain tensioner in lieu of grease tensioners	**N/A**		

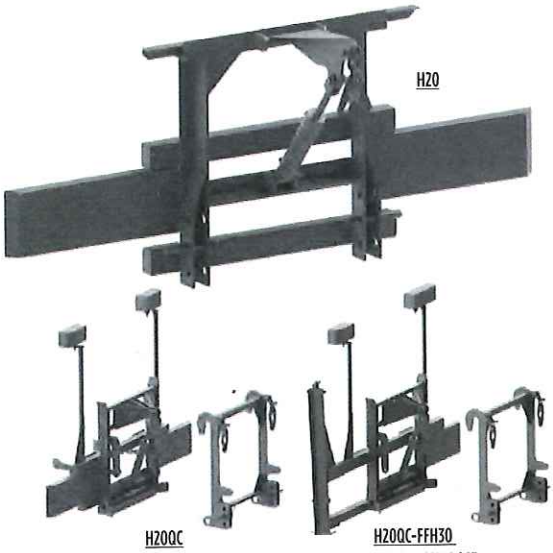
	Section K REQUIREMENTS SECTIONS			
	67.0 WARRANTY	**Abbreviation**	**Actual Dimension**	**Notes**
67.1	Manufacturer's standard warranty will apply.	**X**		
67.2	Terms and conditions of warranty to be provided with bid proposal (Warranty must be clearly defined and all components covered must be clearly listed and identified).	**X**		
67.3	Manufacturer's warranty will start with MaineDOT in-service date.	**X**		
67.4	Vendor shall be 100% responsible for all repair costs to include parts, labor during the warranty period.	**X**		
	68.0 MANUALS AND SOFTWARE REQUIREMENT	**Abbreviation**	**Actual Dimension**	**Notes**
68.1	There shall be two (2) operator's manuals per unit.	**X**		
68.2	There shall be two (2) shop repair manuals or CDs per unit.	**X**		
68.3	There shall be two (2) parts manuals or CDs per unit.	**X**		
	69.0 GENERAL REQUIREMENTS	**Abbreviation**	**Actual Dimension**	**Notes**
69.1	All pinch points shall be clearly marked.	**X**		
69.2	Equipment must be fully inspected, serviced, fully assembled, and ready to work upon delivery.	**X**		
69.3	All hardware installed shall not obstruct any lubrication points, or interfere with proper operation.	**X**		
69.4	All safety, warning and instructional decals must be properly displayed and appropriate for application.	**X**		

69.5	MaineDOT Fleet Services reserves the right to pre-inspect before delivery.	**X**		
69.6	Upon delivery of unit or units all necessary paper work such as Certificate of Origin, dealer's certificate and invoices shall accompany unit(s).	**X**		
69.7	All awarded proposals will include shipping and delivery to: MaineDOT Fleet Services, 66 Industrial Drive, Augusta, ME 04330.	**X**		

	70.0 BID SUBMISSION REQUIREMENT	**Abbreviation**	**Actual Dimension**	**Notes**
70.1	In addition to required information as exhibited in the specifications, the Bidder shall also provide: • Warranty and extended warranty data and all sub-components. • Detailed Specifications required on the proposed. Failure to supply the required documentation may render the bid non-responsive.	**NA**		There is not any extended warranty available


TENCO
SMI
VIOHL
Manufacturer and distributor of
snow removal and de-icing equipment
TENCO
The brand of quality
— SINCE 1976 —

DESIGNED TO HANDLE THE MOST DEMANDING OF NEEDS



H20

H20QC

H20QC-FFH30 WITH FRONT POST

H20 HITCH

LOW-PROFILE HITCH FOR LIGHT TRUCKS ONLY*

- Tubular steel construction to endure severe snow removal conditions
- Mounts close to chassis to reduce stress on front axle
- Stress created from snow plowing operations is transmitted back along the chassis frame rails to reduce pressure on hitch and from axle

*Ensure the capacity of axles

MODEL NUMBER	WEIGHT	CABLE FRONT POST	HYDRAULIC FRONT POST
H20 – Basic	300 lbs	-	-
H20-FFH30 – With Front Post	500 lbs	-	✔
H20QC – Quick Detach	600 lbs	-	-
H20QC-FFH30 – With Front Post	700 lbs	-	✔

H345LM-25X51

H345LM-25X51-FW-R

H345LM HITCH

LOW-PROFILE HITCH DESIGNED FOR ALL CHASSIS EXCEPT 4 x 4s

- Low mount style hitch that enables the truck hood to be tilted forward at all times without having to detach hitch or plow
- For safety, cylinder and lift arm can be tucked within the hitch when plow is detached
- Utilizes 4" diameter x 10 1/2" stroke double acting lift cylinder with nitrated piston rod

MODEL NUMBER	WEIGHT	CABLE FRONT POST	HYDRAULIC FRONT POST
H345LM-25x51 – Basic	450 lbs	-	-
H345LM-25x51-FW-R – With right wing attachment	600 lbs	-	✔

H345-FW-R

H345 HITCH

DESIGNED FOR ALL CHASSIS

- Rugged elevated style hitch with built-in steel bumpers
- Recommended whenever a chassis is to be equipped with a combination from plow and side wing system
- Complete hitch (and side wing post if applicable) can be easily tilted forward through the removal of two (2) pins – allows the truck hood to open
- Front wing post is supported by two (2) 5" x 3" x 3/8" rectangular steel tubes and 4" x 3" x 3/8" angle iron

MODEL NUMBER	WEIGHT	CABLE FRONT POST	HYDRAULIC FRONT POST
H345 – Basic	525 lbs	-	-
H345-FW-R – Right wing attachment	575 lbs	✔	✔
H345-FW-FW – Right and left wing attachment	635 lbs	✔	✔

H345QC HITCH

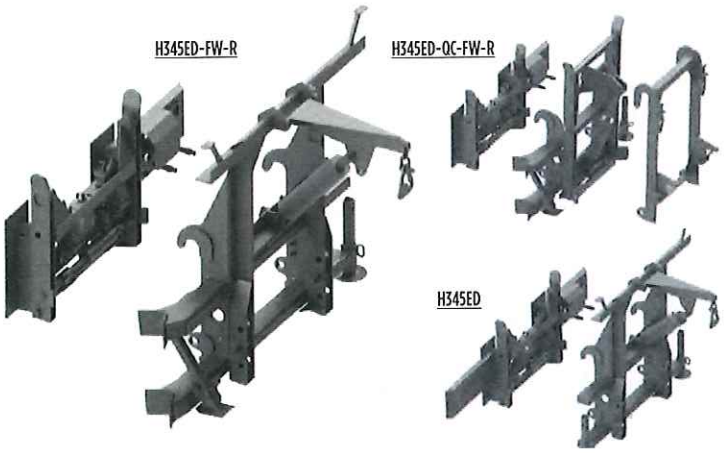

H345QC-FW-R

DESIGNED FOR ALL CHASSIS

- Quick coupler system that offers several advantages over conventional type hitches
- Connect / disconnect snow plow through activation of lift cylinder – the operator does not have to leave cab
- Secure plow hitch through lower hydraulic locking pin
- Hinged upper section of QC hitch can be hydraulically lowered from the cab to enable truck hood to tilt forward

MODEL NUMBER	WEIGHT	CABLE FRONT POST	HYDRAULIC FRONT POST
H345QC – Basic	1150 lbs	-	-
H345QC-FW-R – Right wing attachment	1200 lbs	✔	✔
H345QC-FW-FW – Right and left wing attachment	1200 lbs	✔	✔

H345ED HITCH


H345ED-FW-R

H345ED-QC-FW-R

H345ED

DESIGNED FOR ALL CHASSIS

- Easy to detach plow and wing

MODEL NUMBER	WEIGHT	CABLE FRONT POST	HYDRAULIC FRONT POST
H345ED – Basic	1150 lbs	-	-
H345ED-FW-R – Right wing attachment	1200 lbs	✔	✔
H345ED-QC-FW-R – Quick Detach with right wing attachment	1625 lbs	✔	✔

"H-CUS" HITCH


TCH345CU-NA-LT-F-ST

HCUSEXT-I-IN2 COMPLET
Available without cheek plates upon request

H-CUS CUSTOM TILT-OVER HITCH

- Several versions of this custom designed hitch are available for installation onto specific chassis
- Built-in side plates form an integral part of the hitch – engineered for rapid mount to truck frame
- Low mount arrangement enables chassis hood to tilt forward at all times

MODEL NUMBER	WEIGHT
TCH345CU-NA-LT-E	685 lbs
HCUSEXT-I-IN2	850 lbs
TCH345CU-NA-LT-F-ST	900 lbs

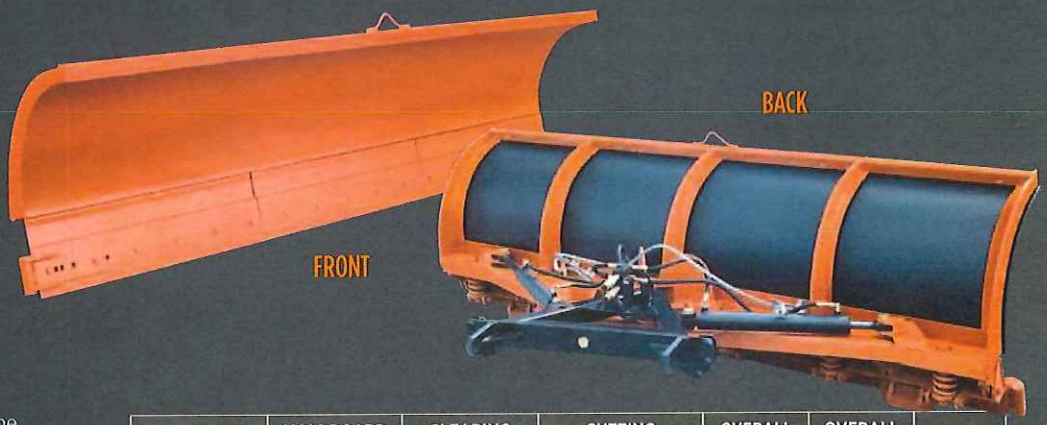
HITCH OPTIONS


TENCOLOC HITCH SIDE


QUICK TACH HITCH SIDE


HYDRAULIC TILT

POSSIBILITIES THAT ARE VIRTUALLY UNLIMITED



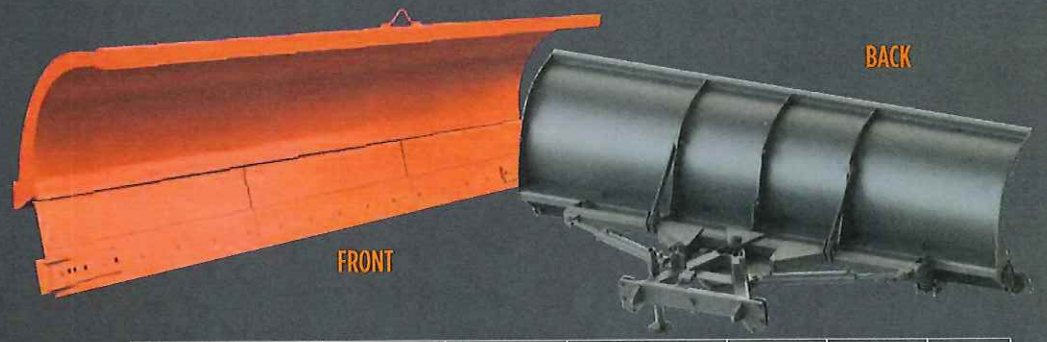
MEDIUM DUTY TRIP EDGE REVERSIBLE PLOW

IDEAL FOR URBAN USE, INCLUDING PARKING LOTS, ALLEYS, ETC.

- Available in steel or weight saving Tenelene.
- Lightweight design makes it ideal for operating with low GVW type chassis.
- Reversible plow can be rapidly transferred to 1, 2 or 3 section bottom trip edge as required. Adjustment necessitates simple attaching/ detaching of 2 bolts.
- 2 curb shoes and 2 moldboard shoes are standard.

MODEL NUMBER	MOLDBOARD MATERIAL	CLEARING PATH	CUTTING EDGE	OVERALL LENGTH	OVERALL HEIGHT	WEIGHT
TCP-9T-36-E1	.300 Tenelene	7' 10"	5/8" x 6" x 108" (*)	9'	36"	1150 lbs
TCP-10S-36-E1	10 ga. steel	8' 8"	5/8" x 6" x 120" (*)	10'	36"	1320 lbs
TCP-10T-36-E1	.300 Tenelene	8' 8"	5/8" x 6" x 120" (*)	10'	36"	1270 lbs
TCP-11S-36-E1	10 ga. steel	9' 6"	5/8" x 6" x 132" (*)	11'	36"	1700 lbs
TCP-11T-36-E1	.300 Tenelene	9' 6"	5/8" x 6" x 132" (*)	11'	36"	1600 lbs

(*) Cutting Edge is in 3 sections



HEAVY DUTY TRIP EDGE REVERSIBLE PLOW

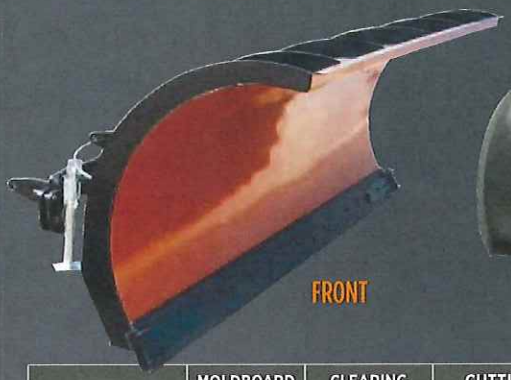
IDEAL FOR URBAN AND RURAL USE

- Available in steel or weight saving Tenelene.
- Designed for extreme snow removal operations.
- Unique bottom section trip edge design permits fast spring tension adjustment and replacement.
- Compression spring design offers superior safety as compared to other makes of bottom trip edge plows which utilize a pre-torqued torsion type spring system.
- Moldboard curvature designed to reduce snow blow back during high speed operations.
- Moldboard pitch adjustment.

MODEL NUMBER	MOLDBOARD MATERIAL	CLEARING PATH	CUTTING EDGE	OVERALL LENGTH	OVERALL HEIGHT	WEIGHT
TCP-10-S-42-E4-HA2	10 ga. steel	8' 8"	5/8" x 6" x 120" (*)	10'	42"	2000 lbs
TCP-10-T-42-E4-HA2	.300 Tenelene	8' 8"	5/8" x 6" x 120" (*)	10'	42"	1990 lbs
TCP-11-S-42-E4-HA	10 ga. steel	9' 6"	5/8" x 6" x 132" (*)	11'	42"	2080 lbs
TCP-11-T-42-E4-HA	.300 Tenelene	9' 6"	5/8" x 6" x 132" (*)	11'	42"	2065 lbs
TCP-12-S-42-E4-HA2	10 ga. steel	10' 5"	5/8" x 6" x 144" (*)	12'	42"	2150 lbs
TCP-12-T-42-E4-HA2	.300 Tenelene	10' 5"	5/8" x 6" x 144" (*)	12'	42"	2130 lbs
TCP-14-S-42-E4-HA2	10 ga. steel	12' 1"	5/8" x 6" x 168" (*)	14'	42"	2370 lbs
TCP-14-T-42-E4-HA2	.300 Tenelene	12' 1"	5/8" x 6" x 168" (*)	14'	42"	2350 lbs

(*) Cutting Edge is in 3 sections

FKC REVERSIBLE SNOW PLOW WITH "C" SHAPED MOLDBOARD



EXCEPTIONAL MOLDBOARD CONTOUR FOR EFFECTIVE SNOW REMOVAL AT ALL PLOWING SPEEDS

- Unequalled moldboard support structure permits snow clearing operations in the most severe conditions, including high snowfall accumulation roadways.
- Full moldboard safety trip mechanism – upon encountering road obstructions, the complete moldboard extends forward through 2 trip arm assemblies.
- Each trip arm utilizes a heavy duty compression spring, forcing the moldboard to return to its original plowing position after passing the road obstruction.

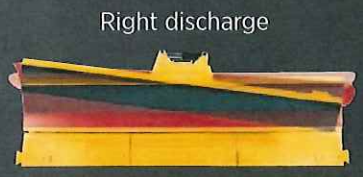
MODEL NUMBER	MOLDBOARD MATERIAL	CLEARING PATH	CUTTING EDGE	OVERALL LENGTH	OVERALL HEIGHT	WEIGHT	# OF RIBS
TCP-10-S-42-FKC	10 ga. steel	8' 8"	5/8" x 6" x 120"	10'	42"	2136 lbs	8
TCP-11-S-42-FKC	10 ga. steel	9' 6"	5/8" x 6" x 132"	11'	42"	2209 lbs	8
TCP-12-S-42-FKC	10 ga. steel	10' 5"	5/8" x 6" x 144"	12'	42"	2282 lbs	8
TCP-14-S-42-FKC	10 ga. steel	12' 1"	5/8" x 6" x 168"	14'	42"	2478 lbs	10

EXPRESS WAY TYPE REVERSIBLE PLOW

IN ADDITION TO ALL THE ADVANTAGES OF A "C" SHAPED MOLDBOARD, THIS SNOWPLOW OFFERS SUPERIOR SNOW CASTING

MODEL NUMBER	MOLDBOARD MATERIAL	CLEARING PATH	CUTTING EDGE	OVERALL LENGTH	OVERALL HEIGHT	WEIGHT	# OF RIBS
TCP-11-X-FK-HA2	10 ga. steel	9' 6"	5/8" x 6" x 132"	11'	42" center/ 54" ends	2200 lbs	7
TCP-12-X-FK-HA2	10 ga. steel	10' 5"	5/8" x 6" x 144"	12'	42" center/ 56" ends	2280 lbs	7
TCP-14-X-FK-HA2	10 ga. steel	12' 1"	5/8" x 6" x 168"	14'	42" center/ 60" ends	2420 lbs	7

"TWIST AND SHOOT" REVERSIBLE PLOW



COMBINES ALL THE ADVANTAGES OF A ONE-WAY PLOW AND A REVERSIBLE PLOW

- Weight saving Tenelene moldboard..
- Unique design permits utilization at any plowing speed and in every type of snow clearing condition.
- Adjust shape of moldboard according to climatic conditions:
  - One way profile for right side discharge and superior snow casting.
  - One way profile for left side discharge and superior snow casting.
  - Consistent moldboard height for right or left side discharge.

MODEL NUMBER	MOLDBOARD MATERIAL	CLEARING PATH	CUTTING EDGE	OVERALL HEIGHT	NOSE HEIGHT	DISCHARGE HEIGHT	WEIGHT
TCP-11-V-E4-HA2	.300 Tenelene	9'6"	5/8" x 6" x 132"	49 1/4"	34"	48"	2450 lbs
TCP-12-V-E4-HA2	.300 Tenelene	10' 5"	5/8" x 6" x 144"	49 1/4"	35"	49"	2650 lbs

UNBEATABLE IN SNOW

At Tenco, we've been building snowplows for close to 40 years. Ambassadors in our field, we've created a product with unique features that offer the kind of efficiency our competitors just can't match. Designed for high-speed snow clearing, Tenco's one-way plow casts snow even further.

FEATURES

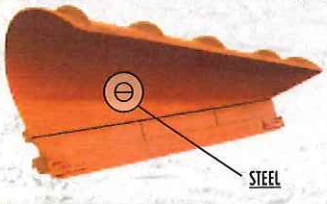
(Standard on all One Way Plow)

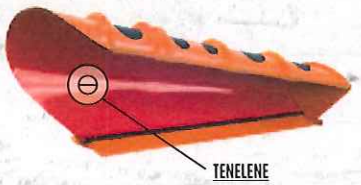
- Roll formed moldboard for better snow dispersal
- Increased curvature along upper section to minimize snow blow back
- Cutting edge supported by sturdy backer angle
- Adjustable moldboard pitch
- Drive frame designed to withstand the rigors of severe snow removal conditions
- Safety caps on compression springs – full moldboard trip models only
- Height adjustable drive frame shoes

Advantages of Tenelene moldboards: non-corrosive material and a slick surface to prevent snow from adhering to plow

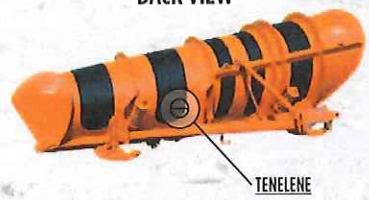
Steel moldboard (shown in this photo)

FRONT VIEW

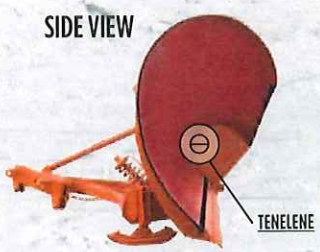




BACK VIEW



SIDE VIEW



NEW MODEL NUMBER	MOLDBOARD MATERIAL	CLEARING PATH	INTAKE HEIGHT	DISCHARGE HEIGHT	WEIGHT
ONE WAY FULL MOLDBOARD TRIP PLOW					
TCO-10T-47-SR-ST	.300 Tenelene	9' 2"	26"	47"	980 lbs
TCO-11S-55-SR-ST	10 ga. steel	9' 3"	30"	55"	2400 lbs
TCO-11T-55-SR-ST	.300 Tenelene	9' 3"	30"	55"	2400 lbs
TCO-11S-63-SR-ST	10 ga. steel	9' 3"	34"	63"	2450 lbs
TCO-11T-63-SR-ST	.300 Tenelene	9' 3"	34"	63"	2450 lbs
TCO-11S-66-SR-ST	10 ga. steel	9' 3"	38"	66"	2650 lbs
TCO-11T-66-SR-ST	.300 Tenelene	9' 3"	38"	66"	2640 lbs
TCO-12S-63-SR-ST	10 ga. steel	10' 3"	32"	63"	2580 lbs
TCO-12T-63-SR-ST	.300 Tenelene	10' 3"	32"	63"	2550 lbs
TCO-12S-68-SR-ST	10 ga. steel	10' 3"	36"	68"	2720 lbs
ONE WAY BOTTOM TRIP EDGE PLOW					
TCO-11S-57-E2R-HA2	10 ga. steel	9' 3"	33"	57"	2500 lbs

AVAILABLE PLOW OPTIONS

- Carbide cutting edge
- Rubber deflector
- Screw adjustable drive frame shoes
- Tencoloc swivel bar
- Quick tach swivel bar

OPENING THE DOOR TO A WORLD OF POSSIBILITIES

Wing moldboards are available in steel or corrosion resistant Tenelene material

FRONT SIDE WING SYSTEM

- Side wing moldboards are supported by 3/8" thick full height steel ribs.
- 4" x 6" x 5/8" thick steel backer angle makes the wing ideal for use in the most severe snow removal conditions.
- Lead section of wing moldboard includes a 1" thick steel plate for attachment to front post hinge.
- Upper and lower push arms attach to moldboard through a floating adapter to allow the wing to follow the contours of the road surface.

MID MOUNT SIDE WING SYSTEM

Maneuver with precision

A side wing is an easy addition to any chassis already equipped with a standard dump body, conventional spreader or combination dump body/spreader. Tenco's dual lift design—through a cylinder in the front post and the rear push arm lift cylinder—offers superior control and greater precision when raising or lowering the wing.

Extendable lower push arms available as an option

REAR SIDE WING SYSTEM

Increase total clearing width

Easily adaptable to fit the trucks in your existing fleet, the rear mount side wing is an excellent add-on to an underbody scraper that acts like a scraper extension.

WING TRAVEL POSITIONER: A virtually indispensable option

A wing travel positioner increases the driver's field of vision by tucking under the passenger window when not in use, and reduces the risk of accident.

MODEL NUMBER	MATERIAL	CUTTING EDGE LENGTH	OVERALL LENGTH	NOSE HEIGHT	DISCHARGE HEIGHT	WEIGHT
TCW-9T-30-N-R*	.300 Tenelene	9'	10'	24"	30 1/2"	375 lbs
TCW-11T-30-N-R	.300 Tenelene	11'	12'	24"	30"	460 lbs
TCW-9S-37-N-R	10 ga. steel	9'	10'	32"	37"	780 lbs
TCW-9T-37-N-R	.300 Tenelene	9'	10'	32"	37"	790 lbs
TCW-10H-38-N-R	0.188" steel	10'	11'	32"	38 1/2"	910 lbs
TCW-10T-38-N-R	.300 Tenelene	10'	11'	32"	38 1/2"	920 lbs
TCW-11H-39-N-R	0.188" steel	11'	12'	32"	39 1/2"	990 lbs
TCW-11T-39-N-R	.300 Tenelene	11'	12'	32"	39 1/2"	950 lbs
TCW-12H-40-N-R	0.188" steel	12'	13'	32"	40 1/2"	1 040 lbs
TCW-12T-40-N-R	.300 Tenelene	12'	13'	32"	40 1/2"	1050 lbs
TCW-14H-42-N-R	0.188" steel	14'	14' 10"	32"	42 1/2"	1167 lbs

* Model TCW-9T-30-N-R Tenelene wing moldboard to suit low pro style chassis' can only be used in combination with H20 front post and FAF3LP rear post assembly.

TACKLE THE TOUGHEST TASKS

900 SERIES UNDERBODY SCRAPER

Every component of the 900 Series scraper has been meticulously designed to withstand the most severe road maintenance tasks encountered year round.

- 1' thick one-piece unnotched rotating plate
- Lift cylinder/trip spring canisters are retained by 8 1/4" x 8 1/4" 4-bolt flanges
- Two (2) 4" diameter double acting reverse cylinders are protected by a cross-over relief valve
- Reversing cylinders are attached to rotating plate through 2" pivot pins
- Safety mechanism

NEW MODEL NUMBER	MOLDBOARD LENGTH	MOLDBOARD THICKNESS	MOLDBOARD HEIGHT	CUTTING WIDTH AT 45°	WEIGHT
TCU-910-T-K-RH	10'	1"	20"	7' 1"	1950 lbs
TCU-911-T-K-RH	11'	1"	20"	7' 9"	2050 lbs
TCU-912-T-K-RH	12'	1"	20"	8' 6"	2150 lbs

700 SERIES UNDERBODY SCRAPER

(one way underbody scraper with air springs)

For operator safety, a dual air bag system cushions the impact upon encountering road obstructions. Independently controls the pressure of each air bag for maximum efficiency when scraping hard packed snow and ice – especially on uneven road surfaces.

The result of continual innovation in underbody scraper technology!

- In-cab control console provides a unique air springs down pressure adjustment mechanism and is included with the underbody scraper.
- Cutting edge is supported by a boxed section consisting of two (2) 3/8" thick formed Brinell 400 steel plates and a 1 1/4" X 4 1/4" flat bar.
- Scraper is raised and lowered through a 2 1/2" diameter x 9" stroke double acting cylinder.
- 1" thick moldboard is supported by seven (7) 5/8" thick Brinell 400 steel plates.
- Ample ground clearance when scraper is in travel position.

NEW MODEL NUMBER	MOLDBOARD LENGTH	MOLDBOARD THICKNESS	MOLDBOARD HEIGHT	NUMBER OF RIBS	CUTTING WIDTH AT 45°	WEIGHT
TCU-711-T-P-FX	11'	1"	15"	7	119 5/8"	2080 lbs
TCU-712-T-P-FX	12'	1"	15"	7	130 1/2"	2180 lbs

TCU-311 SERIES UNDERBODY SCRAPER

- 25 degree angle
- 1/4" Brinell 450 blade
- 4 x 50 W reinforcement
- Floating down by chain
- Low maintenance
- Easy installation
- 2 triple convolution type air bags with strength right on cutting edge for better down force

NEW MODEL NUMBER	MOLDBOARD LENGTH	MOLDBOARD THICKNESS	MOLDBOARD HEIGHT	CUTTING WIDTH AT 45°	WEIGHT
TCU-311-T-P-X	11'	.25" / Hardox 450	15"	119 5/8"	1430 lbs

REAR SCRAPER ULTRA HEAVY-DUTY

- Hydraulic lift angle model to facilitate clearance
- 8' 4" clearing width
- Push frame consisting of two (2) 3 1/2" x 3 1/2" x 3/8" tubular levers, a 4" x 6" x 5/8" angle section and multiple strategically placed ribs
- Two (2) 4" x 12" x 1 1/2" hydraulic cylinders
- One (1) protection valve in the return line
- One (1) accumulator (nitrogen) for cushioning

ONE BODY, 2 DIFFERENT USES

Ideal for snow removal contractors and some municipalities, these super heavy duty spreaders slide easily into and out of an existing dump body to help you get the most out of your equipment.

MODEL NUMBER	WATER LEVER CAPACITY	HOPPER LENGTH	HOPPER WIDTH	SIDES HEIGHT	OVERALL HEIGHT	OVERALL LENGTH	OVERALL WIDTH	WEIGHT APPROX.*
TCD-10-54-AS	5.9' cu yds	10'	7'	54"	5' 2"	13' 2"	7'	2675 lbs
TCD-11-54-AS	6.5' cu yds	11'	7'	54"	5' 2"	14' 2"	7'	2845 lbs
TCD-10-63-AS	7.8' cu yds	10'	7'	63"	5' 11"	13 2"	7'	2775 lbs
TCD-11-63-AS	8.6' cu yds	11'	7'	63"	5' 11"	14' 2"	7'	2945 lbs
TCD-12-63-AS	9.5' cu yds	12'	7'	63"	5'11"	15' 2"	7'	3145 lbs
TCD-13-63-AS	10.3' cu yds	13'	7'	63"	5' 11"	16' 2"	7'	3315 lbs
TCD-14-63-AS	11.1' cu yds	14'	7'	63"	5' 11"	17' 2"	7'	3550 lbs
TCD-15-63-AS	11.9' cu yds	15'	7'	63"	5' 11"	18' 2"	7'	3685 lbs

*with chute

Slide-in Spreaders, V-Box

- 10 gauge steel hopper sides, tailgate and front panel.
- 3/16" thick steel conveyor section and floor.
- Fully welded steel construction.
- Optional top screens.
- D667X self-cleaning pintle chain.
- Optional 304 & 201 stainless steel construction throughout.
- Available cross conveyor, except on model TCD-2-AS.

SPREADERS THAT GO THE DISTANCE

XE Frame Mounted Spreaders

- Choose from a multitude of configurations – rear discharge, front discharge or front left and/or right side discharge utilizing a cross conveyor.
- Chain tension is through easily adjustable grease cylinder.
- Chute constructed from combination polyethylene and stainless steel to prevent rust.
- Spreader attached to chassis through Aeon rubber helper springs to reduce shock and vibration.
- Top screens and access ladder are standard components.
- 24" wide main conveyor D88K chain rated @ 49,000 lbs.
- 7.7 cu in main conveyor hydraulic motor.
- Side panel is gradually sloped to ensure smooth and uninterrupted flow of material onto main conveyor.
- Lowest center of gravity in spreader industry.
- Chain tension is easily adjusted through grease cylinder.
- Significant weight savings as compared to competitive versions of 12 cu yd spreaders.
- Modern engineering techniques ensures spreader shape eliminates potential stress points – spreader will last much longer than traditional designed sanders.

Fenders are also available in steel.

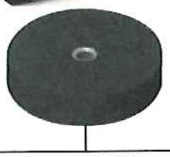
XE Model

AVAILABLE OPTIONS

- Various types of ladders, grab handles, lighting systems (including MTQ/QMT version).
- Automated spreader controllers.
- Pre-wet system including two (2) 300 litres (80 US gallons) liquid tanks.

Multiple lights options

Plastic fender & LED lights



12 urethane discs between spreader and chassis frame reduces vibration.

The unique Triflex three points mounting system

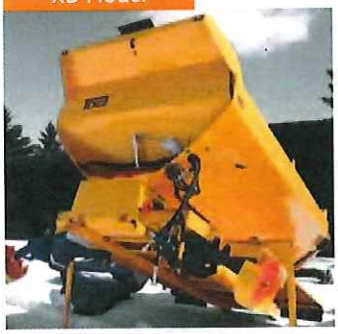
XD chassis mount spreader with rear tailgate and front lift hoist for dumping capabilities

- Hopper is provided with tailgate to enable removal of load upon completion of material spreading.
- Utilizes existing front lift telescopic hoist on truck to attach to spreader.
- Fully welded steel construction.
- Spreader also available in 304 stainless steel.
- Rear or front center discharge configurations.

MODEL NUMBER	WATER LEVER CAPACITY	HOPPER LENGTH	HOPPER WIDTH	HAUTEUR DES CÔTÉS	OVERALL LENGTH*	OVERALL HEIGHT	OVERALL WIDTH WITH LADDER	WEIGHT APPROX.*	CAPACITY
TCD-10-56-XE	5.6' cu yds	10'	92"	56"	10'	77"	102"	3695 lbs	6.8 cu yds
TCD-10-56-XD	6.1' cu yds	10'	92"	56"	10'	77"	102"	4215 lbs	6.8 cu yds
TCD-12-56-XE	7.0' cu yds	12'	92"	56"	12'	77"	102"	4335 lbs	8.4 cu yds
TCD-12-56-XD	7.4' cu yds	12'	92"	56"	12'	77"	102"	4815 lbs	8.4 cu yds
TCD-14-63-XE	10.6' cu yds	14'	92"	63"	14'	79"	102"	4830 lbs	12.3 cu yds
TCD-14-63-XD	11.1' cu yds	14'	92"	63"	14'	79"	102"	5400 lbs	12.3 cu yds
TCD-16-63-XE	12.3' cu yds	16'	92"	63"	16'	79"	102"	5265 lbs	14.2 cu yds
TCD-16-63-XD	12.8' cu yds	16'	92"	63"	16'	79"	102"	5800 lbs	14.2 cu yds

*Height of spreaders includes screens | Weight of Slide-in Spreaders includes chute and V-box

XD Model



THE ONLY INTERCHANGEABLE MODEL ON THE MARKET

Quick cycle time to remove dump body from chassis and replace with this particular type of hopper spreader.

Combination body (U-COMBO)

VERSATILE, RELIABLE, AND MULTITASKING

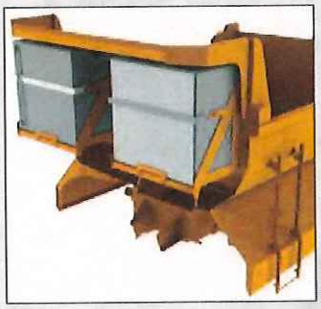
Tenco's U-COMBO body combines all the features of a dump body and a spreader in one. Available in a range of models, the U-COMBO allows you to spread abrasive from both sides of the truck, as well as from the rear. With this type of body, switching from dump to spread mode is as easy as child's play.

- Unique body structure ensures consistent, uninterrupted material flow to main conveyor.
- The ability to spread material on both sides (front right or front left).
- The ability to spreading material from the rear or the front with easy control within the truck cab.
- The ability to carry a minimum of 200 gallons of liquid for the pre-treatment of roads.

Available in Standard Mild Steel & Hardox 450 Steel.

AVAILABLE IN A MULTITUDE OF CONFIGURATIONS

Optional pre-wet liquid tanks* installed inside fenders for protection.



Optional pre-wet liquid tanks* installed below cabshield.

Main conveyor is driven through planetary drive mechanism utilizing a 10 cu in displacement motor and 2" diameter driveshaft.

*Tanks are constructed from long lasting polyethylene material.

MODEL NUMBER	HOPPER LENGTH	OVERALL LENGTH	INSIDE WIDTH	SIDE HEIGHT	TAILGATE HEIGHT	WATER LEVER CAPACITY	CAPACITY WITH 6" SIDEBOARDS	WEIGHT
TCM-10-T	10'	10' 6"	91 5/8"	46"	47"	7.7 cu yds	47"	4460 lbs
TCM-11-T	11'	11' 6"	91 5/8"	46"	55"	8.5 cu yds	55"	4797 lbs
TCM-12-T	12'	12' 6"	91 5/8"	46"	55"	9.4 cu yds	55"	5127 lbs
TCM-13-T	13'	13' 6"	91 5/8"	46"	63"	10.2 cu yds	63"	5221 lbs
TCM-14-T	14'	14' 6"	91 5/8"	46"	63"	11.1 cu yds	63"	5315 lbs
TCM-15-T	15'	15' 6"	91 5/8"	46"	66"	12 cu yds	66"	5885 lbs
TCM-16-T	16'	16' 6"	91 5/8"	46"	66"	12.8 cu yds	66"	6450 lbs

OFTEN IMITATED, BUT NEVER EQUALLED

A Floor strength ensures an even lift from side tilt cylinders. Eliminates the necessity of a 50/50 flow divider. Side tilt cylinders are equipped with a nitrated rod. Hinged conveyor cover remains with body at all times.

B Six (6) panel tailgate includes 3/16" thick Brinell 450 steel. Full width tailgate enables 12M body to undertake all dump body functions.

C Floor rotates on 1 3/4" hard induction chromed hinge shaft for superior strength.

D Long members of 10" I-Beam @ 25.4 lb/ft. STANDARDS.

E Bolt-on floor with 3 greasing points on single axle, 4 greasing points on tandem axle.

F Floor and conveyor cover is constructed from 3/16" thick Brinell 450 steel.

G Honeycomb type floor under structure creates a material shedding design.

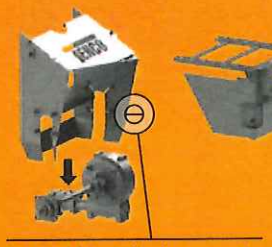
H Available with optional 304 stainless steel side, front, and rear panels.

PRE-WETTING SYSTEM

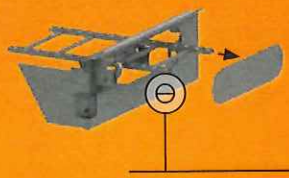
OPTIONS

- Sides and front panel manufactured from Brinell 450 steel
- Aluminum tailgate
- Electronic spreader control
- Coal chute door (1, 2, or 3 as needed)
- Rear tailgate lateral opening (barn door)
- Bolt-on apron
- Pre-wetting system with 160 gallon tank installed under cabshield
- Summer chute
- Special paint
- Hydraulically actuated discharge chute
- Screens
- Lights in rear corner posts
- Extended greasing points on floor hinge (3 or 4)
- Sides, front panel and tailgate constructed from 304 stainless steel
- Hinged, fold-up type ladder

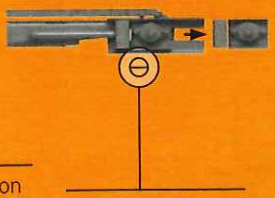
MAINTENANCE INNOVATION



Slotted front discharge system allows gear box, sprockets, bearings and shaft to be easily removed.



Opening in rear apron permits quick access to the chain, chain adjusters, shaft and sprockets.



Chain tension adjustment is through two (2) grease cylinders.

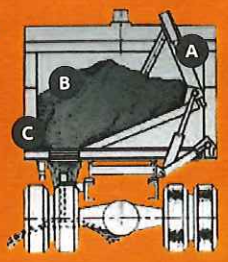
MODEL NUMBER	INSIDE LENGTH	INSIDE WIDTH	SIDE HEIGHT	TAILGATE HEIGHT	WATER LEVER CAPACITY	WEIGHT (APPROX.)
TCB-9-T-AL-S-LF	9'	88"	27"	39"	5.5 cu yds	4360 lbs
TCB-10-T-AL-S-LF	10'	88"	27"	39"	6.11 cu yds	4860 lbs
TCB-11-T-AL-S-LF	11'	88"	27"	39"	6.72 cu yds	5360 lbs
TCB-12-T-AH-S-LF	12'	88"	39"	51"	10.59 cu yds	5880 lbs
TCB-13-T-AH-S-LF	13'	88"	39"	51"	11.47 cu yds	6300 lbs
TCB-14-T-AH-S-LF	14'	88"	39"	51"	12.35 cu yds	6670 lbs

LOW CENTER OF GRAVITY

A Load is substantially diminished before requiring activation of side tilt mechanism.

B Full capacity of body is utilized.

C Rapidly convert from dump to spread mode by adjusting hinged conveyor cover.



A GREATER BREADTH OF EXPERTISE

TENCO'S EXPERTISE NOW EXTENDS TO MANUFACTURING SNOWBLOWERS FOR LOADERS.

Our in-depth knowledge of airport snow removal needs served us well in developing these high-performance machines. No matter what the task at hand, they'll get the job done in record time.

TC-202 Model

Vohl Tenco Model/
VOHL DV-4000

Tenco snowblowers boast integrated safety features and impressive snow removal capacity, with a casting distance between 40 feet (12 metres) through the spot casting chute and 150 feet (45 metres) through the impeller casing.

POWER TRAIN SYSTEM

- Automatic engine shutdown for low oil pressure, high engine temperature and low coolant level
- Clutch engagement at low engine RPM's only
- Emergency stop button on control panel
- Inability to start engine if clutch is already engaged

Options:

Carbide skates | Carbide cutting edge | Residential muffler* | Two (2) working lights* | Hydraulically extendable truck loading chute | Steering vanes* | Hi-tensile steel liner for impeller and chute: Trimay for TCS-172 & 202/ chromium carbide for DV-4000

*Standard on DV-4000

	TCS-172-LMM	TCS-202-LMM	DV-4000
DIMENSIONS & WEIGHT			
Overall height	138" (3454 mm)	135" (3429 mm)	132" (3355 mm)
Overall cutting width	102" (2590 mm)	103" (2616 mm)	110" (2795 mm)
Working height	W50" (1270 mm)	54" (1372 mm)	57" (1447 mm)
Weight (approx.)	7950 lbs (3606 kg)	9300 lbs (4227 kg)	10 900 lbs (4955 kg)
Augers	(2) 16" (406 mm) dia.	(2) 20" (508 mm) dia.	(2) 26" (660 mm) dia. Patented dynamically balanced auger design
*Impeller *150° rotation *includes 5 bolt-on concave impeller blades*	34" (864 mm) dia.	38" (965 mm) dia.	38" (965 mm) dia.
*Spot casting chute *300° rotation*	13" (330 mm) dia.	16" (406 mm) dia.	15 1/4" (387 mm) dia. Patented spot casting chute with greaseable ball and socket joints (option)
ENGINE			
HP	225 HP (168 kW)	275 HP (205 kW)	275 HP (205 kW)
Torque	758 lb-ft (1028N-m) at 1400 RPM	927 lb-ft (1257N-m) at 1400 RPM	886 lb-ft (1201N-m) at 1500 RPM
Displacement	442 po³ (7.2 litre)	442 po³ (7.2 litre)	548 po³ (9.0 litre)
Tons/Hour Operating Capacity	2000 Tons	2750 Tons	2750 Tons
Loader Attachment Limit	2 1/2 & 3 Yard Loader	3 Yard Loaders	4 & 5 Yard Loaders

WATERING HAS NEVER BEEN SAFER OR EASIER THAN THIS

Thanks to its extendable arm and directional nozzle that can bypass obstacles, the PCL-500 offers a clean, safe, and efficient way to hose down sidewalks and water flowers in hanging baskets on lamp posts.

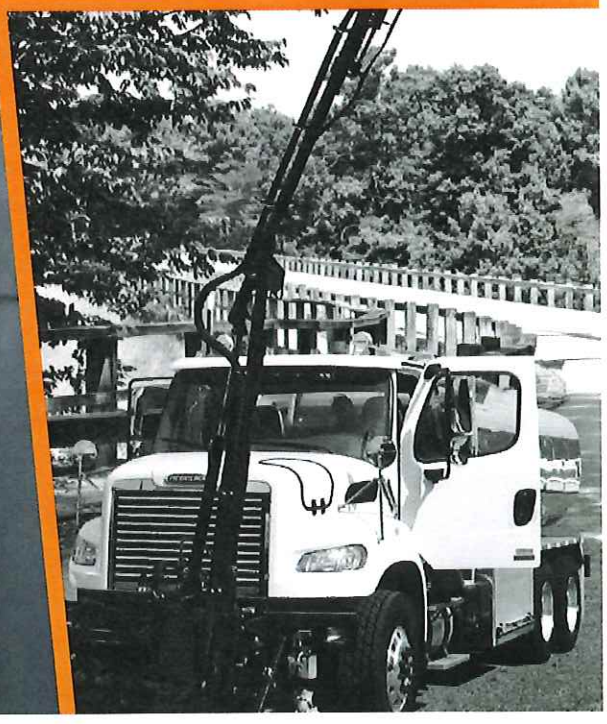
Benefit from Tenco's expertise as North America's only manufacturer of watering arms.

PCL-500 TENCO WATERING ARM

- Add a reliable piece of equipment to your tanker truck.
- The PCL-500 arm is the safest and most reliable equipment on the market.
- Flexibility allows the arm to move around obstacles such as park benches, garbage cans, etc.
- The powerful PCL-500 allows cleaning the streets with the water flow controlled by the directional nozzle.
- Can be used for spraying chemicals on trees, flowers, and lawns.
- Other possible uses with the PCL-500 is watering winter exterior skating rinks.
- Entirely hydraulic components.

THE PCL-500 WATERING ARM
is an Exclusive Tenco Patent Product

In cab control



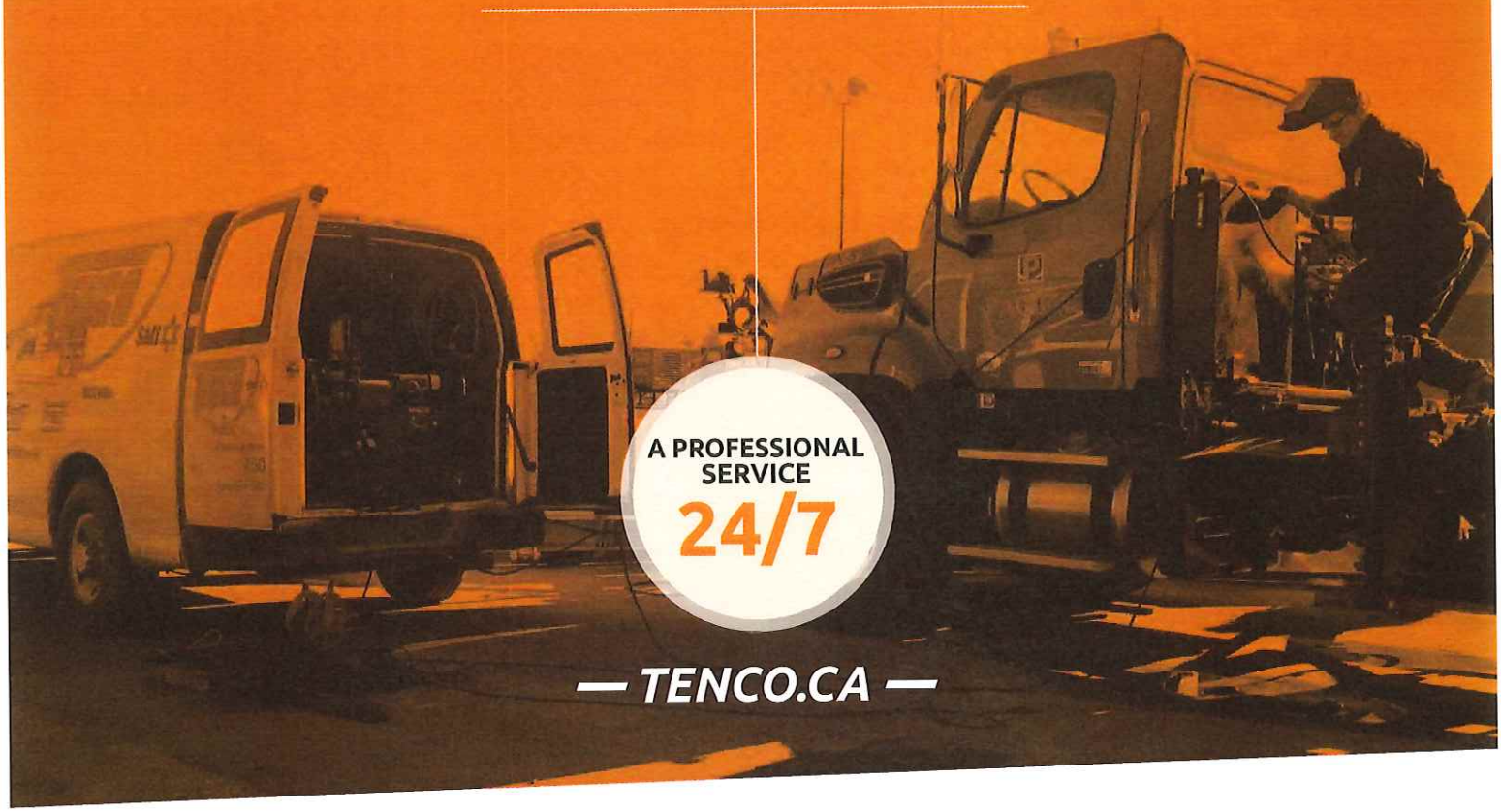
TENCO, one of North America's most highly-renowned companies founded in 1976, is a manufacturer and distributor of snow removal and de-icing equipment.

***TENCO** offers:*

- a complete range of snow removal and de-icing equipment
- reliable, superior-quality equipment
- unparalleled customer service through a network of more than 80 distributors worldwide
- a vast parts inventory

***TENCO Inc.** also distributes various other products, including:*

- Self-propelled snowblowers
- 21-ft runway sweepers
- Dump bodies
- Giletta spreaders (GPS control and symmetrical spraying)



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450 N. Main Street
Barre, Vermont 05641
United States

T. 802 476-3161
Toll free 1 800 451-5014
F. 1 802 476-1003

YOUR AUTHORIZED TENCO INC. DISTRIBUTOR

VENDOR CUSTOMER CODE	SUPPLIER PART NUMBER	SUPPLIER NAME	MANUFACTURER NAME	MANUFACTURER PART NUMBER	COMMODITY CODE	ITEM DESCRIPTION	EXTENDED DESCRIPTION	UNIT OF MEASURE	LIST PRICE	DELIVERY DAYS
VS0000020390	TENCOSEC-A Q1	TENCO	TENCO		76561	BASE UNIT SNOW PLOW GEAR SYSTEM	RIGHT-HAND SYSTEM SET UP	ea	$25,252.00	210
VS0000020390	TENCOSEC-A Q2	TENCO	TENCO		76561	BASE UNIT SNOW PLOW GEAR SYSTEM	LEFT-HAND SYSTEM SET UP	ea	$25,875.00	210
VS0000020390	TENCOSEC-A Q3	TENCO	TENCO		76561	BASE UNIT SNOW PLOW GEAR SYSTEM	DOUBLE SYSTEM SET UP	ea	$31,225.00	210
VS0000020390	TENCOSEC-B Q1	TENCO	TENCO		76561	ONE-WAY RIGHT OR LEFT PLOW WITH PLOW FRAME	INSTALLATION OF ONE-WAY RIGHT HAND PLOW	ea	$33,715.00	210
VS0000020390	TENCOSEC-B Q2	TENCO	TENCO		76561	ONE-WAY RIGHT OR LEFT PLOW WITH PLOW FRAME	INSTALLATION OF ONE-WAY LEFT HAND PLOW	ea	$33,807.00	210
VS0000020390	TENCOSEC-B Q3	TENCO	TENCO		76561	ONE-WAY RIGHT OR LEFT PLOW WITH PLOW FRAME	**PURCHASE** OF THE ONE-WAY RIGHT HAND PLOW	ea	$9,925.00	150
VS0000020390	TENCOSEC-B Q4	TENCO	TENCO		76561	ONE-WAY RIGHT OR LEFT PLOW WITH PLOW FRAME	**PURCHASE** OF THE ONE-WAY LETF HAND PLOW	ea	$9,925.00	150
VS0000020390	TENCOSEC-C Q1	TENCO	TENCO		76561	REVERSIBLE PLOW WITH CONTOUR CHANGE	INSTALLATION OF REVERSIBLE PLOW WITH CONTOUR CHANGE	ea	$35,705.00	210
VS0000020390	TENCOSEC-C Q2	TENCO	TENCO		76561	REVERSIBLE PLOW WITH CONTOUR CHANGE	**PURCHASE** OF THE REVERSIBLE PLOW WITH CONTOUR CHANGE	ea	$12,585.00	180
VS0000020390	TENCOSEC-D Q1	TENCO	TENCO		76561	LEFT & RIGHT WING PLOWS	INSTALLATION OF 11' WING	ea	$39,114.00	210
VS0000020390	TENCOSEC-D Q2	TENCO	TENCO		76561	LEFT & RIGHT WING PLOWS	INSTALLATION OF 12' WING	ea	$39,393.00	210
VS0000020390	TENCOSEC-D Q3	TENCO	TENCO		76561	LEFT & RIGHT WING PLOWS	INSTALLATION OF 13' WING	ea	$39,594.00	210
VS0000020390	TENCOSEC-D Q4	TENCO	TENCO		76561	LEFT & RIGHT WING PLOWS	**PURCHASE** OF 11' RIGHT OR LEFT WING	ea	$14,170.00	150
VS0000020390	TENCOSEC-D Q5	TENCO	TENCO		76561	LEFT & RIGHT WING PLOWS	**PURCHASE** OF 12' RIGHT OR LEFT WING	ea	$14,785.00	150
VS0000020390	TENCOSEC-D Q6	TENCO	TENCO		76561	LEFT & RIGHT WING PLOWS	**PURCHASE** OF 13' RIGHT OR LEFT WING	ea	$15,315.00	150
VS0000020390	TENCOSEC-G Q1	TENCO	TENCO		76561	10-12 YARD HEAVY-DUTY CONSTRUCTION DUMP BODY	INSTALLATION OF 10-12 YARD HEAVY-DUTY CONSTRUCTION DUMP BODY	ea	$37,945.00	210
VS0000020390	TENCOSEC-G Q2	TENCO	TENCO		76561	10-12 YARD HEAVY-DUTY CONSTRUCTION DUMP BODY	**PURCHASE** OF 10-12 YARD HEAVY-DUTY CONSTRUCTION DUMP BODY	ea	$16,375.00	120
VS0000020390	TENCOSEC-H Q1	TENCO	TENCO		76561	13' MULTIPURPOSE DUMP BODY	INSTALLATION OF 13' MULTIPURPOSE DUMP BODY	ea	$63,690.00	210
VS0000020390	TENCOSEC-H Q2	TENCO	TENCO		76561	13' MULTIPURPOSE DUMP BODY	**PURCHASE** OF 13' MULTIPURPOSE DUMP BODY	ea	$35,750.00	210
VS0000020390	TENCOSEC-I Q1	TENCO	TENCO		76561	10' SIDE DUMP BODY	INSTALLATION OF 10' SIDE DUMP BODY	ea	$51,500.00	210
VS0000020390	TENCOSEC-I Q2	TENCO	TENCO		76561	10' SIDE DUMP BODY	**PURCHASE** OF 10' SIDE DUMP BODY	ea	$27,555.00	150
VS0000020390	TENCOSEC-J Q1	TENCO	TENCO		76561	13' SIDE DUMP BODY	INSTALLATION OF 13' SIDE DUMP BODY	ea	$54,490.00	210
VS0000020390	TENCOSEC-J Q2	TENCO	TENCO		76561	13' SIDE DUMP BODY	**PURCHASE** OF 13' SIDE DUMP BODY	ea	$31,331.00	150