

NEW

State of Maine**Master Agreement****Effective Date:** 03/28/19**Expiration Date:** 03/27/21**Master Agreement Description:** Master Agreement for International Heavy Duty Plow Trucks**Buyer Information**Donny Crockett 207-624-7336 **ext.** Donny.Crockett@maine.gov**Issuer Information**Cheryl Holmes 207-624-8261 **ext.** cheryl.a.holmes@maine.gov**Requestor Information**Jessica Norton 207-624-8226 **ext.** Jessica.h.norton@MAINE.GOV**Authorized Departments**

17D MOTOR TRANSPORT

Vendor Information**Vendor Line #: 1****Vendor ID**

VC1000019609

Vendor Name

DAIGLE & HOUGHTON INC

Alias/DBA**Vendor Address Information**

PO BOX 191

FT KENT, ME 04743

US

Vendor Contact Information

Gary Daigle

207-834-6186 **ext.**

gary@daigleandhoughton.com

Commodity Information

Vendor Line #: 1

Vendor Name: DAIGLE & HOUGHTON INC

Commodity Line #: 1

Commodity Code: 07208

Commodity Description: Master Agreement for International Heavy Duty Plow Trucks

Commodity Specifications: As per the specifications attached made part of this MA.

Commodity Extended Description: See attached documents

Quantity	UOM	Unit Price
0.00000		\$0.00
Delivery Days	Free on Board	
180	FOB Dest, Freight Prepaid	
Contract Amount	Service Start Date	Service End Date
\$0.00		
Catalog Name	Discount	
International	0.0000 %	
	Discount Start Date	Discount End Date
	03/28/19	03/27/21

VENDOR CUSTOMER CODE	SUPPLIER PART NUMBER	SUPPLIER NAME	MANUFACTURER NAME	MANUFACTURER PART NUMBER	COMMODITY CODE	ITEM DESCRIPTION	EXTENDED DESCRIPTION	UNIT OF MEASURE	LIST PRICE
VC1000019609	11	Daigle & Houghton	International		07208	International HV507 Reg.Cab, Single Air Bag	34,000 lb. GVWR T4X2, Reg.Cab, Frame Upgrade RBM 3,350,000, Right or Left Air Bag, Heated W/S	ea	\$93,094.78
VC1000019609	12	Daigle & Houghton	International		07208	International HV507 Reg.Cab, Dual Air Bags	34,000 lb. GVWR T4X2, Reg.Cab, Frame Upgrade RBM 3,350,000, Dual Air Bags, Heated W/S	ea	\$93,864.78
VC1000019609	13	Daigle & Houghton	International		07208	International HV507 Crew Cab, Single Air Bag	34,000 lb. GVWR T4X2, Crew Cab, Frame Upgrade RBM 3,350,000, Right or Left Air Bag, Heated W/S	ea	\$100,630.74
VC1000019609	14	Daigle & Houghton	International		07208	International HV507 Crew Cab, Dual Air Bags	34,000 lb. GVWR T4X2, Crew Cab, Frame Upgrade RBM 3,350,000, Dual Air Bags, Heated W/S	ea	\$101,400.74
VC1000019609	15	Daigle & Houghton	International		07208	International HV513SFA Wheeler, Single Air Bag	54,000 lb. GVWR T6X4, Wheeler, Frame Upgrade RBM 3,350,000, Allison 4500 w/PTO, Right or Left Air Bag, Heated W/S	ea	\$123,812.05
VC1000019609	16	Daigle & Houghton	International		07208	International HV513SFA Wheeler, Dual Air Bags	54,000 lb. GVWR T6X4, Wheeler, Frame Upgrade RBM 3,350,000, Allison 4500 w/PTO, Dual Air Bags, Heated W/S	ea	\$124,582.05
VC1000019609	17	Daigle & Houghton	International		07208	International HV513SFA Wheeler, Single Air Bag, Locking Diff	54,000 lb. GVWR T6X4, Wheeler, Frame Upgrade RBM 3,350,000, Allison 4500 w/PTO, 4 Axle Locking Diff, Right or Left Air Bag, Heated W/S	ea	\$124,692.05
VC1000019609	18	Daigle & Houghton	International		07208	International HV513SFA Wheeler, Dual Air Bags, Locking Diff	54,000 lb. GVWR T6X4, Wheeler, Frame Upgrade RBM 3,350,000, Allison 4500 w/PTO, 4 Axle Locking Diff, Dual Air Bags, Heated W/S	ea	\$125,462.05
VC1000019609	19	Daigle & Houghton	International		07208	International HV513SFA Wheeler, Single Air Bag, Eaton	54,000 lb. GVWR T6X4, Wheeler, Frame Upgrade RBM 3,350,000, Eaton UltraShift+ w/PTO, Right or Left Air Bag, Heated W/S	ea	\$118,978.05
VC1000019609	110	Daigle & Houghton	International		07208	International HV513SFA Wheeler, Dual Air Bags, Eaton	54,000 lb. GVWR T6X4, Wheeler, Frame Upgrade RBM 3,350,000, Eaton UltraShift+ w/PTO, Dual Air Bags, Heated W/S	ea	\$119,748.05

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

RFQ # 17D18091200000000000085

HEAVY DUTY SNOW PLOW TRUCK CAB & CHASSIS (3 Types)

Thirty-Four Thousand (34,000 lb.) GVWR T4X2 Heavy Truck Regular Cab

Thirty-Four Thousand (34,000 lb.) GVWR T4X2 Heavy Truck Crew Cab

Fifty-Four Thousand (54,000 lb.) GVWR T6X4 Heavy Truck Wheeler Regular Cab

**All with automatic transmission. Cab and Chassis designed to mount a Dump Body,
with Ice and Snow Removal Equipment**

Quotations/Responses Due: 11/1/2018 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. 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 **MaineDOT** ("Requesting Department"). 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 **10/11/2018 at 9:00 am** in Augusta, Maine at the MaineDOT Fleet Services Conference Room, 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 10/18/2018** 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 10/25/2018**.
- **QUOTATION DUE DATE:** Quotations must be received no later than 4:00 p.m. Eastern Standard Time (EST), on **11/1/2018**. **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**

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
- **Appendix B:** Detailed Specifications for all 3 types (B-1, B-2, & B-3)
- **Appendix D:** Maine Business and Economic Impact Consideration Form
- **Appendix E:** Municipality Political Subdivision and School District Participation Certification
- **Appendix F:** Certifications
- **Cost Response Sheets**
- **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	MM/DD/2018	MM/DD/2020
Renewal Period #1	MM/DD/2020	MM/DD/2022
Renewal Period #2	MM/DD/2022	MM/DD/2023

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.
- f. **Maine Business and Economic Impact Consideration**

Using **Appendix D** (Maine Business and Economic Impact Consideration Form), the Bidder (Bidder identified on the "Bid Cover Page" - **Appendix A**) is required to describe the Bidder's investment in the State of Maine as reported on the most recently completed IRS form W-2. Consideration of this information in making contract award decisions is required in accordance with Executive Order 2017-003, which states "Evaluators of competitive bids for goods and services shall give consideration to the investment in the State by business enterprises as a best-value criterion." The State reserves the right to verify this information at any time during the evaluation process or after.

The Maine Business and Economic Impact Consideration will allow up to a 10% reduction in a Bidder's submitted price for comparison purposes when determining award. The exact percentage will be determined using the information provided by Bidders on their submitted Maine Business and Economic Impact Consideration Form (**Appendix D**) compared to the percentage breakdowns below:

Maine Business Analysis	Percentage
Average Percentage of Maine Business Impact - 1 to 74%	2%
Average Percentage of Maine Business Impact - 75 to 100%	4%

Maine Economic Impact	Percentage
Sum of Maine Economic Analysis - \$1 to \$1,000,000	2%
Sum of Maine Economic Analysis - \$1,000,001 to \$10,000,000	4%
Sum of Maine Economic Analysis - over \$10,000,000	6%

The percentages from both Maine Business Analysis and Maine Economic Impact will be combined for a Bidder's total percentage reduction in price. For example, if a Bidder has a "Average Percentage of Maine Business Impact - 1 to 74%" in Maine Business Analysis and a "Sum of Maine Economic Analysis - \$1,000,001 to \$10,000,000" in Maine Economic Impact, their total percentage reduction for price comparison would be 6% (2% + 4%).

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 §8-303 (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."

1.0 MaineDOT GENERAL REQUIREMENTS

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

1. Purchase of any/all of these 3 types of heavy duty plow trucks is subject to a Financial Assistance Agreement between the Department and the U.S. Department of Transportation.
2. All vehicle 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. Vehicle 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 vehicle 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 vehicle manufacturer or bidder in the omission of parts or details required to make the vehicle 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 one vehicle 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 vehicle(s) being bid. This material shall be mailed 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 Appendix F - Section 3.0 Specification Compliance of the Invitation to Quote.

High lifecycle operating and maintenance costs based on evaluation of vehicle performance, warranty data, and local availability of service and parts pursuant to Appendix F - Section 2.0 Equipment Performance & Warranty Data of the Invitation to Quote.

Quotes considered not responsive due to lack of required certificates and information required in Appendix F - Certifications of the Invitation to Quote.

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 reserves 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 G.

2.0 MaineDOT INSTRUCTIONS TO BIDDERS

SCOPE: The Division of Procurement Services is requesting bids on behalf of MaineDOT Fleet Services for 3 types of heavy duty plow trucks; 34,000 GVW T4X2 HVY SNOW PLOW CHASSIS Regular Cab, 34,000 GVW T4X2 HVY SNOW PLOW CHASSIS Extended Cab, and 54,000 GVW T6X4 HVY SNOW PLOW CHASSIS Wheeler. MaineDOT Fleet Services requires a staggered delivery schedule, anticipating 2 to 3 trucks per month for a period of 24 months. After the contract(s) have been awarded, a firm schedule detailing the number of units and types of units that will be expected each month will be established for the first twelve months. A Purchase Order for the first 12 months of the 24-month cycle will be awarded to the successful bidder(s) after bid evaluation.

CONTRACT PERIOD: 2 years from the date of the award.

PRICES: Prices are expected to remain firm for the 24-month contract period.

BASE PRICE CALCULATION PRODUCER PRICE INDEX ESCALATOR

Heavy Trucks shall be at the prices quoted. These prices shall remain firm/fixed for any orders issued by MaineDOT within a period of two (2) years of contract award. The price(s) of any heavy trucks ordered by MaineDOT after the initial two (2) year firm/fixed price period shall be that quoted (Base Order Prices) plus/minus any change which will be calculated based on the following formula which utilizes the U.S. Department of Labor/Bureau of Labor Statistics Producer Price Index ("PPI") Category 1411-06842, "Trucks, Truck Tractor and Bus Chassis over 33,000 lbs.". The change in this index will be used to adjust the Base Order Prices. However, in no event will the price(s) for any purchase order release exceed, by more than five percent (5%) increase over the remaining three (3) years of the five (5) year contract.

Simple Percentage Method.

One method of price adjustment is to have the base price changed by the same percentage as the percent change in a selected PPI. To illustrate, suppose that a contract escalation clause called for using the intermediate demand PPI titled Materials and components for manufacturing, not seasonally adjusted. Also suppose that the value of this index was 178.4 for December 2010, the month that corresponds with the base price for escalation, \$1,000 per unit. Twelve months later, when December 2011 data were released and the first stipulated price adjustment was to be made, the index value for December 2011, published mid-January 2012, was 187.7. The percent change represents an increase of 5.2 percent in the index for Materials and components for manufacturing and a \$52 per unit increase in the price for the escalated product. (See below.)

Index at time of calculation, December 2011: 187.7
Divided by index at time base price was set, December 2010: 178.4
Equals 1.052

Base price \$1,000
Multiplied by 1.052
Equals adjusted price \$1,052

All future releases, including the equipment modification(s), will be priced based upon the new revised Base Award Price.

Note: This is an example only to indicate how the PPI Calculated Pricing will be determined for Option Year Orders.

AMENDMENTS AND/OR ADDENDUMS: Any and all amendments and or addendums to this bid will be posted on Vendor Self Service (VSS) as an amendment. It is the bidder's responsibility to periodically check the bid on VSS for amendments.

QUESTIONS AND ANSWERS: If you have a question regarding this RFQ, you must submit your questions thru the Question and Answer link on the Solicitation Details View page. Your answer will appear there as well. It is the vendor's responsibility to log in to view all questions and answers posted there. Questions and Answers obtained any other way will not be valid for this RFQ.

EMISSIONS: In accordance with the Maine Department of Environmental Protection Rules Chapter 127 New Motor Vehicle Emission Standards, all new vehicles purchased in Maine and equipped with a heavy-duty diesel engine (HDDE), beginning with Model Year 2012 must be certified to meet California Emissions Standards. Certification of Compliance (California Certified-NTE-testing) documentation required.

EVALUATION AND AWARD: The following information **MUST** be electronically entered to your response in Vendor Self Service:

Price is to be submitted electronically in VSS. Enter one lot totals for items being bid. (System purpose only). Line item award consideration will be given. NOTE: Your grand total price for all items you are bidding must be submitted electronically in order for your response to be considered. Delivery days also must be entered; enter in as a number only. For example, you would not enter in 15 days but just 15.

1. A separate sheet noting any and all EXCEPTIONS which are being taken to the specifications MUST be included with your response. Please follow the specification format by referencing Bid Item #, page number, title of specification page, and the specific spec. number.
2. A copy of the specification MUST be returned noting these same exceptions and also identifying the make, model, brand, type, Size, etc. of the components which are being supplied.
3. The most recent advertising literature pertaining to the vehicle, equipment and/or accessories which are being offered to also include any technical specifications or information.

AWARD: Pricing will be evaluated by combining the above items and factoring the total quantity of each item to determine the lowest price from a single manufacturer. In determining which bid reflects the Best Value to the State of Maine, we will consider the factors listed in the attached special bid instructions (**See Attachment 1 – SPECIAL BID INSTRUCTIONS AND REQUIREMENTS FOR VEHICLES AND/OR HIGHWAY MAINTENANCE EQUIPMENT AND ACCESSORIES BID SEPARATELY BUT DELIVERED AS A COMPLETE UNIT**).

MaineDOT reserves the right to award to multiple bidders based on the evaluation results that include, but are not limited to: best value, delivery time, warranty, and the most closely met specifications in the RFP. The award will be made in the best interest of MaineDOT, as determined by the Department.

It is also the State's intention to award all the accessory packages to one contractor considering best value to the State.

NOTE: The State of Maine reserves the right to evaluate alternates and determine equivalency.

ORDERING PROCEDURE: Delivery Order(s) will be issued upon award for the determined number of units and accessories to be purchased. At any time during the contract period if it is determined that more units are needed; the awarded Purchase Order(s) will be amended to reflect the new quantity and price.

Upon award of bid and before delivery of vehicles or equipment MaineDOT must receive a complete list of parts containing part description, manufacturers part number etc. for the entire vehicle or equipment including any or all accessories which are supplied as part of the bid. This does not relieve the bidder from supplying repair or other manuals as required in the individual specification.

INSPECTIONS

PRE-DELIVERY INSPECTION: A factory pre-delivery inspection is required after vehicles are completed but before delivery to dealer. Inspection to be completed by State of MaineDOT Fleet Services, or their designated representatives. Inspectors shall number two (2) people. The cost of inspection, including round trip airfare (if necessary) and lodging for a period not exceeding 3 days, 2 nights, shall be included in the bid price.

MaineDOT Fleet Services also reserves the right to: (no costs to the bidder)

1. Send in factory inspectors to your factory at any time during the building of these vehicles.
2. Have a Pre-manufacturing meeting which shall include a meeting with the bidder and the factory representatives, a tour of the factory, and a complete review of the specifications.

The completed vehicle shall be inspected by the State of MaineDOT Fleet Services, prior to delivery to the procuring agency at a location determined by Maine Department of Transportation Fleet Services.

DELIVERY: Delivery is expected to be 90 days from receipt of a Purchase order form the Division of Procurement Services or sooner.

CANCELLATION OF CONTRACT: The State of Maine Division of Procurement Services reserves the right to cancel a contract with a thirty-day written notice or cancel immediately if the contractor does not conform to terms and conditions of contract.

Heavy Truck Evaluation Overview

September, 2018

The following provides an overview of the heavy truck 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 truck orders. There will not be a guaranteed amount of trucks ordered from each vendor. The Department will be monitoring the new trucks and gathering data for a truck evaluation process that will be used to determine which vendor/manufacturer(s) is the best fit for MaineDOT's operation. The Department's truck evaluation results will determine additional/future truck orders.

Trucks 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

Trucks that do not perform to the satisfaction of the Department will not receive additional orders until the vendor corrects the issues of concern.

The truck 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 truck orders until the Department's expectations are met as determined by the Department.

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

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:		
<i>(provide information requested below if different from above)</i>		
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:

Appendix B

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

DETAILED SPECIFICATIONS

RFQ # 17D18091200000000000085

HEAVY DUTY SNOW PLOW TRUCK CAB & CHASSIS (3 Types)

Please see individual specifications attached to this RFQ for each of the 3 types of trucks, as per below:

Commodity Line #1: 34,000 GVWR T4X2 HVY SNOW PLOW CHASSIS Regular Cab

Commodity Line #2: 34,000 GVWR T4X2 HVY SNOW PLOW CHASSIS Crew Cab

Commodity Line #3: 54,000 GVWR T6X4 HVY SNOW PLOW CHASSIS Wheeler

All with automatic transmission. Cab and Chassis designed to mount a Dump Body, with Ice and Snow Removal Equipment

Appendix C

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

COST RESPONSE

RFQ # 17D18091200000000000085

HEAVY DUTY SNOW PLOW TRUCK CAB & CHASSIS (3 Types)

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.

Fill out required sections in this word document, in Vendor Self Service (VSS) enter in price, delivery days, attach word document and descriptive literature and submit your response.

- **Appendix A:** Bid Cover Page and Debarment Form
- **Appendix B:** Detailed Specifications for all 3 types (B-1, B-2, & B-3)
- **Appendix D:** Maine Business and Economic Impact Consideration Form
- **Appendix E:** Municipality Political Subdivision and School District Participation Certification
- **Appendix F:** Certifications
- **Cost Response Sheets**
- **Product Data/Information Sheets**
- **Warranty Information**

BID SUBMISSION REQUIREMENTS:

In addition to required information as exhibited in the specifications, the Bidder shall also provide:

- Warranty and extended warranty data for chassis, cab, and all sub-components.
- Specifications on the proposed Engine, Transmission, and Chassis.
- A computer analysis of the proposed engine, transmission, rear end combination which is being offered must be provided with bid returns.
- Manufacturer's web-based Service Information site.
- Failure to supply the required documentation may render the bid non-responsive.

Prior to any vehicles being accepted by, and any partial payment being made by MaineDOT/Fleet Services, all vehicles will be inspected for compliance to these Technical specifications. The inspections will be performed by MaineDOT/Fleet Services or their designated representative.

Please include F.O.B. Destination shipping in your bid pricing!

Appendix D

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

MAINE BUSINESS AND ECONOMIC IMPACT CONSIDERATION FORM

RFQ # 17D18091200000000000085

Maine Business and Economic Impact Consideration, as defined in this RFQ document, will ONLY be applied to bids that included the information requested below.

Instructions:

Maine Business Analysis

1. Fill in the total number of full time employees (FTE) your company employs companywide and how many of the FTE are Maine residents.
2. Fill in the total dollar value for companywide payroll and the total amount of payroll paid to Maine Residents.

Maine Economic Impact

1. Fill in the amount stated on your company's most recent W-2 for:
 - Income taxes paid in Maine
 - Property taxes paid in Maine
2. Fill in the amount of wages paid to Maine residents.
3. Fill in the estimated dollar value your company paid to Maine Subcontractors in the last fiscal year.

Bidder's Organization Name:	
-----------------------------	--

MAINE BUSINESS ANALYSIS		
	Total	Maine Residents
Number of FTE Employees:		
Payroll:		

MAINE ECONOMIC IMPACT	
Income Taxes Paid (State):	
Property Taxes Paid (Local):	
Wages to Maine Residents:	
Payments to Maine Subcontractors Estimated:	

Appendix E

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

**MUNICIPALITY POLITICAL SUBDIVISION and SCHOOL DISTRICT PARTICIPATION
CERTIFICATION**

RFQ # 17D180912000000000000085

HEAVY DUTY SNOW PLOW TRUCK CAB & CHASSIS (3 Types)

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 F

RFQ # 17D18091200000000000085

HEAVY DUTY SNOW PLOW TRUCK CAB & CHASSIS (3 Types)

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 G

RFQ # 17D180912000000000000085

HEAVY DUTY SNOW PLOW TRUCK CAB & CHASSIS (3 Types)

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.

ATTACHMENT 1

SPECIAL BID INSTRUCTIONS AND REQUIREMENTS FOR VEHICLES AND/OR HIGHWAY MAINTENANCE EQUIPMENT AND ACCESSORIES BID SEPARATELY BUT DELIVERED AS A COMPLETED UNIT

Timeliness in the delivery of the completed vehicles, potential ability and resources of the organization answering the bid and previous familiarity with the products will be an important factor in determining award of bid and quantity of units awarded. It is expected that the selected vendors or manufacturers will deliver a pre-determined number of units per week. Beginning and ending dates of delivery will be negotiated and finalized after award of bid at the pre-production meeting. A tentative delivery schedule for cab and chassis or completed vehicle delivery must be submitted with each bid and must be signed by the individual who is responsible to make such a commitment. Any bid submitted without a signed tentative delivery schedule may be rejected. Suppliers, dealers and/or vendors will be responsible for poor workmanship from the date the vehicle is placed in service. In addition, any vehicle returned to the supplier for adjustments, corrections or repairs due to poor workmanship (poor workmanship is defined as: anything that is less than what would be generally acceptable by the trade) will be fined as of the day the poor workmanship becomes evident, and until the correction is made and the vehicle returned to service, at a rate of \$50.00 per calendar day per vehicle and may be deducted from the retent or payment due for any completed unit. Any and all penalties may be waived at the discretion of Fleet Services. The attached specifications include the entire and complete vehicle as a unit, i.e., cab and chassis and all accessory equipment such as bodies, sanders, plows, plow gear, lights, controls, etc. It is expected that vehicle (cab and chassis) manufacturers and/or dealers submit a bid for the vehicle only, to the Bureau of Procurement Services. Please note that provisions may be required for clear frame and pre-punching for mounting accessories. Accessory equipment suppliers (bodies, plows, controls, etc.) will submit a bid for accessory equipment only, to the Bureau of Procurement Services. The purpose of sending complete vehicle and accessory equipment specifications to all interested parties is that they may familiarize themselves with the total requirements of the finished product. Upon approval of a pilot cab and chassis the vehicle supplier will drop ship vehicles to the selected accessory supplier for installation of plows, bodies, etc., and Fleet Services will, upon invoice and verification of delivery, pay for the units delivered minus a 10% retent. The accessory supplier will install all necessary accessories and perform any other work required to finish the complete unit and submit a pilot for review and approval by Fleet Services. When the finished units are completed, they will either be delivered to Fleet Services, Augusta or to the selling vehicle dealer if cab and chassis pre-delivery work is required. If pre-delivery work is required, the selling dealer will make final delivery to Fleet Services.

Proper assembly of the completed units is paramount to the correct operation and longevity of the equipment being purchased. Fleet Services will therefore require that a pre-production meeting be held at Fleet Services headquarters, between the representatives of Fleet Services, the selected dealer, all major component suppliers, if necessary, and the final assembler of the completed unit. This meeting will occur following award of bid and prior to assembly and acceptance of any pilot unit for each item as listed in the request for bid. Fleet Services, at its discretion, may waive any or all pre-production meetings.

Any or all accessory equipment required as part of this bid must be tested and certified by the installer or assembler of such equipment as fully operational and functional on the day of delivery to Fleet Services, MaineDOT. MaineDOT Fleet Services may, at its discretion and expense, station an inspector at the site or place of assembly of any or all of the accessory equipment, to test such equipment and inspect the workmanship involved before the completed unit leaves the place of final assembly. Any unit not passing the MaineDOT inspection must be corrected before delivery.

Since the continuous operation of the vehicle and/or equipment as specified is of the utmost importance and sometimes of an urgent nature, it is necessary that the successful bidder be in a position

to render prompt parts and if necessary, service. The successful dealer and accessory supplier must maintain and/or have a permanent presence and access to parts inventory within the State of Maine. The parts inventory shall be applicable to the vehicles and/or equipment supplied to the State of Maine and must be of sufficient quantity and variety to offer a level of parts availability of 95% within 48 hours from time of order by MaineDOT. Availability of normally expendable items such as filters, belts, hydraulic lines and hoses shall not exceed 24 hours. Bidder shall attach a proposed program for parts and service availability for evaluation. Review of the bidder's ability to provide prompt parts and service may be a determining factor in the award of bid. Upon award of bid and before delivery of vehicles or equipment MaineDOT must receive a complete list of parts containing part description, manufacturers part number etc. for the entire vehicle or equipment including any or all accessories which are supplied as part of the bid. This does not relieve the bidder from supplying repair or other manuals as required in the individual specification.

The manufacturer of the truck chassis and cab must furnish, as a minimum, the manufacturer's warranty, the dealer, vendor, or contractor supplying the accessory equipment must guarantee or provide a warranty in writing of all other items of allied equipment including but not limited to bodies, hoists, snow plow equipment, hydraulic systems and electronic/electrical controls against faulty workmanship and materials for a minimum period of one (1) year from the date the unit is placed in service by Fleet Services/MaineDOT. Replacement of faulty units, assemblies or parts shall be made by the dealer, vendor or contractor supplying the affected part, at no cost to Fleet Services/MaineDOT. All warranties and guarantees are to become effective the date the completed unit is placed in service by Fleet Services/MaineDOT. During the term of the manufacturer's warranty Fleet Services reserves the right to perform any and all warranty work "in house" to meet operational needs or demands with the exception of major engine, transmission and rear axle rebuild or repair. Fleet Services will recover all parts and labor cost (labor time as allowed by manufacturer's flat rate manual x Fleet Services standard labor rate at the time of repair) by billing the manufacturer, dealer or accessory supplier. Manufacturer's flat rate manual must be supplied at time of bid. O.E.M. parts may be supplied at no cost by the manufacturer or dealer for warranty service and will not be billed by Fleet Services, or may be purchased by Fleet Services on the open market to meet operational demands and billed to the dealer or accessory supplier. Any and all defective parts will be returned to the manufacturer or dealer upon request. Additionally, Fleet Services will perform no other paper work other than what is necessary for Fleet Services to track the cost of warranty repair through its own billing system. Manufacturers, dealers or vendors who are selected to supply any equipment, vehicles or accessories to Fleet Services, must place Fleet Services on a mailing list to provide warranty recalls and/or technical updates or service bulletins. Address this correspondence to the Fleet Services Manager's Office, 66 Industrial Drive Augusta, Maine 04330.

Vehicles and/or equipment will have land mobile radio transmitters installed after delivery. Antennas may be mounted on the roof, trunk lid, fenders or glass. Transceivers will operate in the following bands 30 to 50 MHz, 150-162 MHz and 450-470 MHz. All vehicle electronic circuits including but not limited to ignition, clocks, AM/FM radio receivers, computers, emission controls, electronic fuel systems and components, ABS brakes, air bags, plow and sander controls, alternators and regulators shall be designed or modified to suppress, bypass or otherwise prevent interference from affecting the mobile two-way radio transceiver. Also, the vehicle's electronic equipment shall be unaffected by the radio frequency energy generated and radiated by the transmitter portion of installed transceivers. No vehicle system and/or accessory shall operate and/or fail to operate as a result of the activation of the radio transmitter in any manner which may constitute a safety hazard. Either before or after final acceptance any vehicle or equipment which does not meet these requirements may be rejected in whole or returned for correction at no cost. Radio receiver sensitivity is 0.30 micro volts for 12db of SINAD. The radio transmitter power output will be 60 watts RMS into a 50 Ohm antenna mounted on the vehicle. Testing of radio performance will be done per Motorola communication specification "Measuring Effective Sensitivity" method. MaineDOT Radio Communication Maintenance group will perform the testing and acceptance.

Appendix A

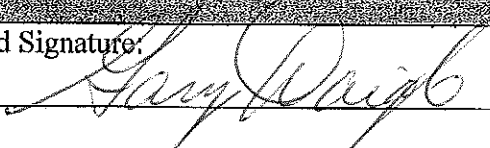
STATE OF MAINE DEPARTMENT OF ADMINISTRATIVE AND FINANCIAL SERVICES DIVISION OF PROCUREMENT SERVICES

BID COVER PAGE and DEBARMENT FORM

Bidder's Organization Name: Daigle & Houghton, Inc.		
Chief Executive - Name/Title: Gary Daigle, President		
Tel: 207-834-6186	Fax: 207-834-6183	E-mail: gary@daigleandhoughton.com
Headquarters Street Address: 130 Market St.		
Headquarters City/State/Zip: Fort Kent, ME 04743		
<i>(provide information requested below if different from above)</i>		
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: Gary Daigle	Title: President
Authorized Signature: 	Date: 11/2/2018

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: <i>Cary Daigle</i>	Title: <i>President</i>
Authorized Signature: <i>Cary Daigle</i>	Date: <i>11/2/18</i>

Appendix B

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

DETAILED SPECIFICATIONS

RFQ # 17D18091200000000000085

HEAVY DUTY SNOW PLOW TRUCK CAB & CHASSIS (3 Types)

Please see individual specifications attached to this RFQ for each of the 3 types of trucks, as per below:

Commodity Line #1: 34,000 GVWR T4X2 HVY SNOW PLOW CHASSIS Regular Cab

Commodity Line #2: 34,000 GVWR T4X2 HVY SNOW PLOW CHASSIS Crew Cab

Commodity Line #3: 54,000 GVWR T6X4 HVY SNOW PLOW CHASSIS Wheeler

All with automatic transmission. Cab and Chassis designed to mount a Dump Body, with Ice and Snow Removal Equipment

Appendix C

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

COST RESPONSE

RFQ # 17D18091200000000000085

HEAVY DUTY SNOW PLOW TRUCK CAB & CHASSIS (3 Types)

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.

Fill out required sections in this word document, in Vendor Self Service (VSS) enter in price, delivery days, attach word document and descriptive literature and submit your response.

- **Appendix A:** Bid Cover Page and Debarment Form
- **Appendix B:** Detailed Specifications for all 3 types (B-1, B-2, & B-3)
- **Appendix D:** Maine Business and Economic Impact Consideration Form
- **Appendix E:** Municipality Political Subdivision and School District Participation Certification
- **Appendix F:** Certifications
- **Cost Response Sheets**
- **Product Data/Information Sheets**
- **Warranty Information**

BID SUBMISSION REQUIREMENTS:

In addition to required information as exhibited in the specifications, the Bidder shall also provide:

- Warranty and extended warranty data for chassis, cab, and all sub-components.
- Specifications on the proposed Engine, Transmission, and Chassis.
- A computer analysis of the proposed engine, transmission, rear end combination which is being offered must be provided with bid returns.
- Manufacturer's web-based Service Information site.
- Failure to supply the required documentation may render the bid non-responsive.

Prior to any vehicles being accepted by, and any partial payment being made by MaineDOT/Fleet Services, all vehicles will be inspected for compliance to these Technical specifications. The inspections will be performed by MaineDOT/Fleet Services or their designated representative.

Please include F.O.B. Destination shipping in your bid pricing!

Appendix E

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

MUNICIPALITY POLITICAL SUBDIVISION and SCHOOL DISTRICT PARTICIPATION
CERTIFICATION

RFQ # 17D180912000000000000085

HEAVY DUTY SNOW PLOW TRUCK CAB & CHASSIS (3 Types)

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

x Yes, with conditions as follows: Same pricing honored if specifications remain the same. The same discount will be passed on but price may differ with different options.

No

Name of Company: Daigle & Houghton, Inc.

Address: 130 Market Street, Fort Kent, ME 04743

Signature: _____

Date: 11/2/18

Appendix F

RFQ # 17D18091200000000000085

HEAVY DUTY SNOW PLOW TRUCK CAB & CHASSIS (3 Types)

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.

11/2/18

Dated

Gary Daigle
Printed name of Person Bidding


Authorized Signature

President
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)**

Warranty claims performed in our dealerships submitted in house. Outside warranties performed at facilities will be submitted by dealership, parts replaced must be returned and all labor costs must meet SRT provided by manufacture.

3. **EQUIPMENT INFORMATION:**

YEAR: 2020 EQUIPMENT MAKE: International

EQUIPMENT MODEL: Model HV507SFA (34000 GVW) and HV513SFA (54,0000 GVW)

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

Marked as Item 4 in attachments

5. **BASIC EQUIPMENT WARRANTY DESCRIPTION**

Marked as Item 5 in attachments

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: 130 Market Street, Fort Kent

ADDRESS 2: 571 Coldbrook Rd., Hermon

ADDRESS 3: 154 Pleasant Hill Rd., Scarborough

ADDRESS 4:

ADDRESS 5:

CONTACT NAME: Ryan Daigle

TELEPHONE: 207-941-9600

EQUIPMENT PARTS PROVIDER: Truck and engine parts same as warranty and service facilities

ADDRESS: Fort Kent, Hermon, Scarborough

CONTACT NAME: Ryan Daigle

TELEPHONE: 207-941-9600


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.

11/2/18

Dated


Signature

Gary Daigle
Print Name

Daigle & Houghton, Inc.
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.

11/2/18

Dated

Gary Daigle
Printed name of Person Bidding


Authorized Signature

President
Title

Appendix G

RFQ # 17D18091200000000000085

HEAVY DUTY SNOW PLOW TRUCK CAB & CHASSIS (3 Types)

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.

ATTACHMENT 1

SPECIAL BID INSTRUCTIONS AND REQUIREMENTS FOR VEHICLES AND/OR HIGHWAY MAINTENANCE EQUIPMENT AND ACCESSORIES BID SEPARATELY BUT DELIVERED AS A COMPLETED UNIT

Timeliness in the delivery of the completed vehicles, potential ability and resources of the organization answering the bid and previous familiarity with the products will be an important factor in determining award of bid and quantity of units awarded. It is expected that the selected vendors or manufacturers will deliver a pre-determined number of units per week. Beginning and ending dates of delivery will be negotiated and finalized after award of bid at the pre-production meeting. A tentative delivery schedule for cab and chassis or completed vehicle delivery must be submitted with each bid and must be signed by the individual who is responsible to make such a commitment. Any bid submitted without a signed tentative delivery schedule may be rejected. Suppliers, dealers and/or vendors will be responsible for poor workmanship from the date the vehicle is placed in service. In addition, any vehicle returned to the supplier for adjustments, corrections or repairs due to poor workmanship (poor workmanship is defined as: anything that is less than what would be generally acceptable by the trade) will be fined as of the day the poor workmanship becomes evident, and until the correction is made and the vehicle returned to service, at a rate of \$50.00 per calendar day per vehicle and may be deducted from the retent or payment due for any completed unit. Any and all penalties may be waived at the discretion of Fleet Services. The attached specifications include the entire and complete vehicle as a unit, i.e., cab and chassis and all accessory equipment such as bodies, sanders, plows, plow gear, lights, controls, etc. It is expected that vehicle (cab and chassis) manufacturers and/or dealers submit a bid for the vehicle only, to the Bureau of Procurement Services. Please note that provisions may be required for clear frame and pre-punching for mounting accessories. Accessory equipment suppliers (bodies, plows, controls, etc.) will submit a bid for accessory equipment only, to the Bureau of Procurement Services. The purpose of sending complete vehicle and accessory equipment specifications to all interested parties is that they may familiarize themselves with the total requirements of the finished product. Upon approval of a pilot cab and chassis the vehicle supplier will drop ship vehicles to the selected accessory supplier for installation of plows, bodies, etc., and Fleet Services will, upon invoice and verification of delivery, pay for the units delivered minus a 10% retent. The accessory supplier will install all necessary accessories and perform any other work required to finish the complete unit and submit a pilot for review and approval by Fleet Services. When the finished units are completed, they will either be delivered to Fleet Services, Augusta or to the selling vehicle dealer if cab and chassis pre-delivery work is required. If pre-delivery work is required, the selling dealer will make final delivery to Fleet Services.

Proper assembly of the completed units is paramount to the correct operation and longevity of the equipment being purchased. Fleet Services will therefore require that a pre-production meeting be held at Fleet Services headquarters, between the representatives of Fleet Services, the selected dealer, all major component suppliers, if necessary, and the final assembler of the completed unit. This meeting will occur following award of bid and prior to assembly and acceptance of any pilot unit for each item as listed in the request for bid. Fleet Services, at its discretion, may waive any or all pre-production meetings.

Any or all accessory equipment required as part of this bid must be tested and certified by the installer or assembler of such equipment as fully operational and functional on the day of delivery to Fleet Services, MaineDOT. MaineDOT Fleet Services may, at its discretion and expense, station an inspector at the site or place of assembly of any or all of the accessory equipment, to test such equipment and inspect the workmanship involved before the completed unit leaves the place of final assembly. Any unit not passing the MaineDOT inspection must be corrected before delivery.

Since the continuous operation of the vehicle and/or equipment as specified is of the utmost importance and sometimes of an urgent nature, it is necessary that the successful bidder be in a position

to render prompt parts and if necessary, service. The successful dealer and accessory supplier must maintain and/or have a permanent presence and access to parts inventory within the State of Maine. The parts inventory shall be applicable to the vehicles and/or equipment supplied to the State of Maine and must be of sufficient quantity and variety to offer a level of parts availability of 95% within 48 hours from time of order by MaineDOT. Availability of normally expendable items such as filters, belts, hydraulic lines and hoses shall not exceed 24 hours. Bidder shall attach a proposed program for parts and service availability for evaluation. Review of the bidder's ability to provide prompt parts and service may be a determining factor in the award of bid. Upon award of bid and before delivery of vehicles or equipment MaineDOT must receive a complete list of parts containing part description, manufacturers part number etc. for the entire vehicle or equipment including any or all accessories which are supplied as part of the bid. This does not relieve the bidder from supplying repair or other manuals as required in the individual specification.

The manufacturer of the truck chassis and cab must furnish, as a minimum, the manufacturer's warranty, the dealer, vendor, or contractor supplying the accessory equipment must guarantee or provide a warranty in writing of all other items of allied equipment including but not limited to bodies, hoists, snow plow equipment, hydraulic systems and electronic/electrical controls against faulty workmanship and materials for a minimum period of one (1) year from the date the unit is placed in service by Fleet Services/MaineDOT. Replacement of faulty units, assemblies or parts shall be made by the dealer, vendor or contractor supplying the affected part, at no cost to Fleet Services/MaineDOT. All warranties and guarantees are to become effective the date the completed unit is placed in service by Fleet Services/MaineDOT. During the term of the manufacturer's warranty Fleet Services reserves the right to perform any and all warranty work "in house" to meet operational needs or demands with the exception of major engine, transmission and rear axle rebuild or repair. Fleet Services will recover all parts and labor cost (labor time as allowed by manufacturer's flat rate manual x Fleet Services standard labor rate at the time of repair) by billing the manufacturer, dealer or accessory supplier. Manufacturer's flat rate manual must be supplied at time of bid. O.E.M. parts may be supplied at no cost by the manufacturer or dealer for warranty service and will not be billed by Fleet Services, or may be purchased by Fleet Services on the open market to meet operational demands and billed to the dealer or accessory supplier. Any and all defective parts will be returned to the manufacturer or dealer upon request. Additionally, Fleet Services will perform no other paper work other than what is necessary for Fleet Services to track the cost of warranty repair through its own billing system. Manufacturers, dealers or vendors who are selected to supply any equipment, vehicles or accessories to Fleet Services, must place Fleet Services on a mailing list to provide warranty recalls and/or technical updates or service bulletins. Address this correspondence to the Fleet Services Manager's Office, 66 Industrial Drive Augusta, Maine 04330.

Vehicles and/or equipment will have land mobile radio transmitters installed after delivery. Antennas may be mounted on the roof, trunk lid, fenders or glass. Transceivers will operate in the following bands 30 to 50 MHz, 150-162 MHz and 450-470 MHz. All vehicle electronic circuits including but not limited to ignition, clocks, AM/FM radio receivers, computers, emission controls, electronic fuel systems and components, ABS brakes, air bags, plow and sander controls, alternators and regulators shall be designed or modified to suppress, bypass or otherwise prevent interference from affecting the mobile two-way radio transceiver. Also, the vehicle's electronic equipment shall be unaffected by the radio frequency energy generated and radiated by the transmitter portion of installed transceivers. No vehicle system and/or accessory shall operate and/or fail to operate as a result of the activation of the radio transmitter in any manner which may constitute a safety hazard. Either before or after final acceptance any vehicle or equipment which does not meet these requirements may be rejected in whole or returned for correction at no cost. Radio receiver sensitivity is 0.30 micro volts for 12db of SINAD. The radio transmitter power output will be 60 watts RMS into a 50 Ohm antenna mounted on the vehicle. Testing of radio performance will be done per Motorola communication specification "Measuring Effective Sensitivity" method. MaineDOT Radio Communication Maintenance group will perform the testing and acceptance.

Commodity Line #1 Specifications

Thirty-Four Thousand (34,000 lb.) GVWR T4X2 Heavy Truck Regular Cab

Thirty-Four Thousand (34,000 lb.) GVWR Regular Cab Truck with automatic transmission. Cab and Chassis designed to mount a Dump Body, with Ice and Snow Removal Equipment

INTENT

It is the purpose and intent of these specifications to describe a base vehicle and options with a Thirty-Four Thousand (34,000) pound GVWR, of substantial and durable construction congruent to practices acceptable to the chassis manufacturer. A vehicle, with a conventional cab (pick up type cabs and expanded roofs are not acceptable). This vehicle will be used in all months of the year pertaining to highway maintenance activities in a climate related to such as that in The State of Maine, by The Maine Department of Transportation. During winter maintenance, the vehicles main purpose will be the removal of ice and snow, sanding and salting which necessitates the installation of a myriad of controls, radios, etc. To accommodate these controls and provide acceptable operator ergonomics and comfort it is imperative that the truck cabs provide as much clear interior space as possible. The cab width must be a minimum of 70" interior door to interior door while the dash board, heater and other appurtenances must not diminish interior clear space for the installation of controls, radios, etc. The chassis is to be the heaviest duty available with all possible options to make it a heavy-duty vehicle.

The purpose of the BBC dimension is strictly to provide guidance in the selection of the appropriate make and model. Reasonable allowances will be made for the BBC dimension provided that intrusion of engine or doghouse into the cab is kept to an absolute minimum. The seats must be a premium high back and the most comfortable available with a minimum of 5" of vertical travel in the air suspended driver's seat. At full vertical driver seat height, there must be sufficient head, chest and lower torso clearance to both the roof and the steering wheel for individuals of larger than normal stature.

If cab mounted air ride suspension is provided as standard equipment by the manufacturer, then the vertical exhaust must be either cab mounted (which is preferred) or additional CA must be added to accommodate the frame mounting of the exhaust. Additionally, and for any other reason, if the exhaust system intrudes upon or diminishes useable CA then additional CA must be added to accommodate the loss. Fuel tanks must not extend past the rear of the cab.

It will also be the responsibility of the Bidder and/or Vehicle manufacturer to supply any and all “factory plow truck option packages” necessary to facilitate the assembly of the truck chassis and the related components supplied by others (such as the body and plow vendors) into a completed and fully functional plow truck. This would refer to inclusion of but not to be limited to special plow truck spring and suspension components, plow truck wiring harnesses, electrical relays, additional electronic speedometer feeds, plow truck light harnesses, etc. MaineDOT/Fleet Services must approve the “factory plow truck option packages,” prior to purchases or assembly.

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 vehicle pursuant to these specifications.

Any part or detail which makes the vehicle 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 automobile industry. All parts shall be new and in no case will used, reconditioned or obsolete parts be accepted. The parts on all vehicles 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.

REGULAR CAB PATROLS

The following abbreviations must be used:

X	As specified
N/A	Not Available
DI	Dealer Installed
AE	Approved Equal

	2.0 ENGINE The proposed diesel engine <u>must</u> comply with the New Motor Vehicle Emission Standards issued by the Maine Department of Environmental Protection in the Code of Maine Rules (06-096 CMR Chapter 127).	Abbreviation	Actual Dimension	Notes
2.1	IHC, Volvo, Cummins, Detroit, Mack or Paccar	X		Cummins L9
2.2	300 H.P. minimum	X		300 HP
2.3	800 lbs. ft. torque, minimum	X		860 lb. ft. torque
2.4	Adapter for Spicer coupler 2-2-479 on crankshaft, factory installed	X		
2.5	Engine idle time history must be maintained and accessible from the truck's onboard computer system.	X		
2.6	Stainless Steel oil pan or approved equal	X		
2.7	A wet sleeve engine.	X		
2.8	Proven history of application in similar service.	X		
2.9	Turbocharger	X		
2.10	Oil cooled.	X		

2.11	Extreme service oil filtration system (no remote mount filter assembly will be accepted).	X		
2.12	Magnetic oil drain plug.	X		
2.13	Engine block heater 115 volts with 1,250 watts, receptacle with spring operated lid mounted under driver's door.	AE		120VOLDT /1000W for cummins ISL-L9
	3.0 TRANSMISSION	Abbreviation	Actual Dimension	Notes
3.1	Dedicated ground speed wire shall be accessible inside the cab for connection to spreader controls.	X		
3.2	Synthetic oil must be provided.	X		
3.3	PTO openings.	X		
3.4	Magnetic oil plug.	X		
3.5	Input rated at not less than 125% of net engine torque.	X		
3.6	Must have 2" input shaft.	X		
3.7	Stainless Steel transmission cooler.	AE		Internal water to oil in end cap of Radiator
3.8	Allison Transmission Model 3500RDS (1-5 or approved equal)	X		
3.9	Push button selector to be flush mounted in dash or OEM counsel.	AE		Steering column mounted – stalk shifter
3.10	Fourth generation electronic control shift selector with 2009 prognostic feature.	X		
3.11	Third gear hold option	X		
3.12	Additional stainless-steel transmission cooling must be supplied.	X		Stainless Steel cooler hoses

3.13	Factory filled with TranSynd or Tes 295 equivalent fluid.	X		
3.14	Allison transmission electronic control module to be relocated inside the cab to minimize exposure to corrosive elements.	X		
	4.0 STEERING	Abbreviation	Actual Dimension	Notes
4.1	Must not interfere with plow application. Manufacturer's turning radius summary must be submitted with bid.	X		
4.2	Turning radius must not exceed a maximum distance of (33') thirty-three feet.	X		
4.3	Heavy-duty design suitable for snowplow and dump truck service.	X		
4.4	Ample gear reduction for off highway operation.	X		
4.5	Integral power steering or factory installed hydraulic boosters.	X		
	5.0 DRIVELINE	Abbreviation	Actual Dimension	Notes
5.1	Driveline to be heavy-duty and factory balanced.	X		
5.2	Universal joints on driveline SPL250HD.	AE		SPL 170 XL
	6.0 REAR AXLE	Abbreviation	Actual Dimension	Notes
6.1	Driver controlled differential power divider. The differential to be equipped with a safety feature, that will automatically disengage the locking differential at a speed of approximately 20 MPH.	X		
6.2	Prefer Meritor RS23-160, 23,000 lb. capacity single reduction rear.	X		

6.3	Rear end ratio should be 5.38 drive line ratio or a similar ration approved through Allison Scan Review report.	AE		4.56 Ratio = 77.7 MPH
6.4	Magnetic oil drain plug.	X		
6.5	Oil lubricated and sealed wheel bearings.	X		
6.6	Synthetic oil must be provided.	X		
	7.0 REAR SPRINGS AND SUSPENSION	Abbreviation	Actual Dimension	Notes
7.1	31,000 lbs. capacity rear main springs, minimum.	X		
7.2	Clearance between inner dual tires and suspension system and break chambers not to be less than 2”.	X		
7.3	All hardware to be designed for extreme service.	X		
7.4	Helper springs to be multi-leaf design and largest capacity.	X		
7.5	Spring mounting brackets and hardware (including shackles) to be designed for extreme service.	X		
7.6	Main spring assembly to be double wrapped front and rear.	X		
7.7	If a rear suspension is supplied utilizing torque arms with front and rear floating spring hangers, then a transverse torque arm from the frame to the top of the differential housing must also be supplied.	X		

	8.0 FRONT AXLE	Abbreviation	Actual Dimension	Notes
8.1	16,000 lb. minimum capacity set forward axle.	X		MFS-18-133A Wide Track
8.2	Wide track, I-beam type with a minimum 50 degree turn angle.	X		
8.3	Set forward Axle suitable for snow plow and dump truck service.	X		
8.4	King pins to be metallic bushings with Zerk type grease fittings at all bushing locations.	X		
8.5	Prefer double king pin locks in axle.	X		
8.6	Heavy-duty double acting shock absorbers.	X		
8.7	Synthetic oil lubricated and sealed wheel bearings with visible oil supply. Wheel bearings to be rated at 16,000 lb. minimum capacity.	X		
8.8	Largest capacity power steering reservoir with filter located for ease of service.	X		
8.9	Flexible fender extensions must be provided for the front fender wells if necessary to protect the hood and cab from wheel spray and splash.	X		
	9.0 FRONT SPRINGS	Abbreviation	Actual Dimension	Notes
9.1	Spring capacity L.H. 9,000 lbs. at ground minimum, multi-leaf or combination of multi-leaf spring and helper. Additional leaves added to factory spring to meet specs are not acceptable.	X		
9.2	Spring capacity R.H. 9,000 lbs. at ground minimum, multi-leaf or combination of multi-leaf spring and helper. Additional leaves added to factory spring to meet specs are not acceptable.	X		

9.3	Heavy-duty suspension designed to support plow or vee plow and wing in travel position and under full ballast load with no appreciable sag or deflection on either side. (1" + or -1/2").	X		
9.4	Spring mounting hardware and brackets (including shackles) to be H.D.	X		
9.5	The complete suspension system, but especially the front springs, must be designed, constructed or reconstructed/reinforced if necessary to substantially transfer weight to the rear axle and rear wheels/suspension opposite the wing to prevent the unloading of this axle with plow gear and plows in the up or carry position with an empty body.	X		
	10.0 AIR/BRAKE SYSTEM	Abbreviation	Actual Dimension	Notes
10.1	Front brakes 16½ x 6" air brakes	X		
10.2	Rear brakes 16½ x 7"	X		
10.3	Long stroke 3" brake chambers 30/30 long stroke Haldex Life Seal chambers on rear axles. Front brake chambers to be Haldex Life Seal	AE		Std. Chambers Front sealed (not Haldex) Haldex life seal - rear
10.4	Haldex automatic brake adjusters on all axles.	X		
10.5	Bendix Tu Flo 500 air compressor lubricated via the engine lube system.	AE		18.7 CFM
10.6	Dual air brake system.	X		
10.7	Bendix AD-IP air dryer, to include heater.	X		
10.8	Pull drains on each reservoir with the loose end of the cable attached professionally in a location that is easily accessible to the operator.	X		

10.9	Reservoir to have ample road clearance and be of sufficient reserve capacity to support all vehicle air accessories and systems and have capacity to also support a tag-along trailer.	X		
10.10	Semitrailer connections and breakaway valve mounted on the rearmost cross member in such a way as not to interfere with proper placement of lights, pintle hook or license plates.	X		
10.11	Hand control valve (trolley valve) mounted on the steering column to operate the semitrailer.	AE		Hand Control Valve mounted on dash panel
10.12	Air horn.	X		
10.13	Air compressor to have dry filtered air inlet.	X		
10.14	Front and rear S cam brakes preferred.	X		
10.15	All brakes must have backing plates.	X		
10.16	All brake air lines will be run in the same locations.	X		
	11.0 ELECTRICAL SYSTEM	Abbreviation	Actual Dimension	Notes
11.1	12 volt Leece-Neville 160-amp capacity alternator Model 2800JB/BLD 2309.	AE		Leece – Noville 160 AMP with remote sensor
11.2	Delco 39 Gear Reduction starter with overcrank protection.	X		
11.3	Three (3) 12 volt batteries, 2700 CCA @ 0° F, 104-amp hour capacity, minimum, maintenance free type, must be mounted on frame rail to accommodate and not interfere with mounted snow plow equipment.	X		
11.4	Enclosed battery compartment with proper ventilation to the outside atmosphere.	X		

11.5	All exterior wiring to be of salt resistant type in suitable loom or conduit. Waterproof plug type connectors to be used at all exposed locations. All connections not waterproofed must be shrink wrapped.	X		
11.6	Manually operated lockable master battery disconnect switch location is not be mounted on the floor or in the environment, preferability in cab where it's readily accessible to operator. The battery disconnect switch break on the negative cable side.	X		
11.7	Sealed battery cable ends, color-coded. (Red + Pos., Black-Neg.).	X		
11.8	Trailer feed circuit to rear of frame to include combined Trailer Stop, Tail, Turn, Marker Light, Trailer ABS. Wiring connections to be inside cab for mounting DOT electric brake control.	X		
11.9	A complete "AS BUILT" wiring schematic manual on CD or Thumb Drive required to be supplied. A sample wiring schematic required to be supplied with the bid proposal.	X		
11.10	All electrical connections are required to be treated with di-electric grease.	DI		
11.11	All electrical cable will be run in the same locations on all units.	X		
	12.0 FRAME	Abbreviation	Actual Dimension	Notes
12.1	Single Heavy-Duty Channel Frame Rail powder coated with a minimum of PSI 1,200,000, Section Modulus 22.12, RBM 2,654,400.	AE		Psi-120,000 Sm – 20.93 Rbm – 2,511,600 Powder coated – E coat
12.2	Straight channel frame rail suitable for heavy-duty plow and dump truck service.	X		

12.3	Fish plates not acceptable.	X		
12.4	Frame designed as to not interfere with Spicer crankshaft coupler 2-2-79.	X		
12.5	All heavy-duty gusseted cross members	X		
12.6	Frame extension are required to meet the same standard as truck frame if extensions are required.	X		
	13.0 FUEL SYSTEM	Abbreviation	Actual Dimension	Notes
13.1	Heavy-duty aluminum, minimum 2-inch wide straps with rubber shims/liners must be used.	X		
13.2	Tank <u>must not</u> extend past the rear of the cab.	AE		Fuel tank Extends 3" BOC
13.3	Aluminum step type fuel tank with a minimum capacity of 70 gallons.	X		
13.4	Non-skid step.	X		
13.5	12" minimum road clearance mandatory.	X		
13.6	Manually operated hand fuel primer pump.	X		
13.7	Fuel lines to be the appropriate flexible type line.	X		
13.8	Tanks to be vented in such a manner to prevent fuel spillage if operating on a slope or on level ground with tank full and fuel warm.	X		
	14.0 WHEELS AND TIRES	Abbreviation	Actual Dimension	Notes
14.1	One piece white powder coat paint tubeless heavy load application 10 hole, 285 mm rims, <ul style="list-style-type: none"> F) 9.0 X 22.5 with 7.0" wheel off set Accuride A29300PW 	X		

	<ul style="list-style-type: none"> R) 8.25 X 22.5 with 6.62" wheel off set Accuride A29169PW 			
14.2	Wheels, rims and tires to provide tire chain clearance without use of adapters, spacers, spoke extensions etc., local modifications not acceptable.	X		
14.3	Rear tires to be the Bridgestone M799 model tread design or approved equal with an approved manufacture, Bridgestone, Michelin, or Continental brand.	AE		Continental HDCI - Front
14.4	Front tires to be the Bridgestone M860A model tread design or approved equal with an approved manufacture, Bridgestone, Michelin, or Continental brand.	AE		Continental HSC1
14.5	Front 315/80R 22.5 LRL radial tubeless tire (L ply rating).	X		
14.6	Rear 11R X 22.5 LRH radial tubeless tire with it (H ply rating).	X		
14.7	13.5" Dual wheel spacing required.	AE		13.24" std.
14.8	Liquid tire balancer KTB tire treatment (U.S. EPA approved).	DI		Not Recommended
14.9	Heavy-duty 5 hand hole hub piloted wheel system.	X		
14.10	Lead wheel weight will not be accepted.	X		Lead Wiegths not used
14.11	Each unit to be delivered with one mounted spare front tire and one mounted spare rear tire. Tires shall have the liquid balancer installed.	X		
15.0 COOLING SYSTEM		Abbreviation	Actual Dimension	Notes
15.1	Radiator and mounts to be designed and installed so as not to interfere with Spicer crankshaft coupler 2-2-79.	X		

15.2	Space to be provided under or through radiator to mount crankshaft driven hydraulic pump.	X		
15.3	Non-silicone type radiator and coolant lines.	X		
15.4	Radiator core and tanks to be of heavy-duty design and construction.	X		
15.5	Ample capacity for continuous high engine output under extreme temperatures and/or operating conditions.	X		
15.6	Heavy-duty mounting brackets and hardware.	X		
15.7	Two-stage fan clutch.	X		
15.8	Coolant to be Extended Life rated for –35 degrees upon delivery to MaineDOT Fleet Services.	X		
	16.0 EXHAUST	Abbreviation	Actual Dimension	Notes
16.1	Vertical exhaust designed and installed so as not to interfere with any customer installed accessories (i.e. snow plows, hydraulic tanks, etc.).	X		
16.2	Exhaust deflector elbow	X		
16.3	Heavy-duty mounting brackets, elbows, piping and expansion joints.	X		
16.4	Aluminized horizontal muffler.	AE		STAINLESS STEEL
16.5	Exhaust System design to keep noise to lowest practical level in accordance with Federal Regulations.	X		
	17.0 FILTERS	Abbreviation	Actual Dimension	Notes
17.1	Heavy-duty dry type air filter	X		

17.2	Operator's controlled snow valve for drawing air directly under engine hood is mandatory to prevent snow from clogging air filter. A seasonal two-way air inlet control valve is mandatory. Must be factory installed and clearly marked for use.	X		
17.3	All filters must be mounted to facilitate ease of servicing.	X		
17.4	Disposable spin on type oil and fuel filters.	X		
17.5	Local filter installations or modifications are not acceptable.	X		
17.6	Fuel filter on the inlet or suction side of the injection pump <u>required</u> .	X		
	18.0 CAB	Abbreviation	Actual Dimension	Notes
18.1	To accommodate the controls and provide acceptable operator ergonomics and comfort it is imperative that the truck cabs provide as much clear interior space as possible. The cab width must be a minimum of 70" interior door to interior door while the dash board, heater and other appurtenances must not diminish interior clear space for the installation of controls, radios, etc. The chassis is to be the heaviest duty available with all possible options to make it a heavy-duty vehicle.	X		
18.2	Ergonomic integrated dash, minimum of fourteen (14) (factory installed) in ergonomic dash, low amperage switches with LED lighting. Three (3) colored LED lighted indicators controllable by means of relays. Circuit must support 20 amps, controlled by Remote Power Modules, installed inside cab to allow MaineDOT easy component wiring installation. All switches to be professionally labeled using factory laser cut plastic inserts.	X		

18.3	Standard BBC dimension approximately 112".	AE		
18.4	Hood and fender to be of one piece design, tilt forward type with factory installed side access panels to provide safe, easy, complete access to the engine compartment for daily service (including coolant check) and periodic maintenance with full plow gear (including wing and post) installed. NOTE: Plow gear will not be moved or modified to accommodate hood opening.	XX		
18.5	Hood fenders must be designed to be no lower than the bottom of fuel tank and be secured tightly to prevent sailing. If need wind sail brackets are acceptable.	X		
18.6	Tilt and telescoping steering wheel.	X		
18.7	All marker lights to be LED type.	X		
18.8	Dome light to have independent switch and not interfere with the Departments two-way radio.	X		
18.9	Cab heater to be highest capacity available.	X		
18.10	Automatic low oil pressure/high temperature warning system wired in such a way as not to be easily accessible to the operator and be operational only when ignition switch is on.	X		
18.11	Heavy-duty 2-speed minimum, electrically operated windshield wipers with time delay.	X		
18.12	Dual sun visors.	X		
18.13	Dual outside mirrors to be no less than 16" x 7" with integrated convex mirrors on both sides with marker light. All mirrors to be 4-way electronically adjustable and heated.	AE		14.1" X 7.55 FLAT 7.48" X 6.77" CONVEX
18.14	Exterior cab grab handle driver side.	X		

18.15	Exterior cab grab handle, passenger side.	DI		
18.16	Seat belt webbing to be a highly visible, bright orange in color.	X		
18.17	Driver's seat to be a premium high back cloth covered seat which will incorporate the following features/options: a. adjustable dampening of the shock absorber b. wide seat cushion c. air controlled triple lumbar support d. front and rear seat cushion adjustment e. fore/aft seat track adjustment f. adjustable reclining backrest g. air adjustable back rest bolsters h. air adjustable seat cushion bolsters i. dual folding seat armrests j. five (5)-year warranty seat	X		
18.18	The passenger seat to be a deluxe or premium air-suspension seat with adjustable reclining backrest and lumbar support.	X		
18.19	Instruments to include but not limited to: Oil pressure gauge, Water temperature gauge, Fuel gauge, Brake warning lights, low air pressure light and alarm, voltmeter, Tachometer, air pressure gauge, Air filter restriction gauge and all gauges to be properly marked and illuminated. (Transmission temp gauge with Automatic).	X		
18.20	Windshield to be constructed with tinted glass.	X		
18.21	Full coverage insulated floor mat.	X		
18.22	All pedals are to be suspended off floor	X		
18.23	Heavy-duty insulated closed cab construction. Cab insulation rating required with bid.	X		

18.24	Stationary grill is highly preferred to increase engine accessibility when plow hardware is attached.	X		
18.25	12 Volt power port outlet and USB port.	X		
18.26	Back-up alarm	X		
18.27	All vehicles to be keyed alike and supplied with 2 keys.	X		
18.28	Fresh air intake for heater/defroster must be protected or designed and installed to prevent entrance of sand/salt.	X		
18.29	Radiator grill openings to be of such size and design to protect radiator core from road debris of approximately $\frac{5}{8}$ " diameter.	X		
18.30	AM-FM radio with Bluetooth	X		
18.31	Suitable heavy-duty full width front bumper must be supplied on vehicle.	X		
18.32	Conventional cab - expanded, modified or bubble roof unacceptable.	X		
18.33	Daytime running headlights.	X		
18.34	Sealed beam headlights of halogen type.	X		
18.35	Air conditioning.	X		
18.36	Cruise control	X		
	19.0 PAINT	Abbreviation	Actual Dimension	Notes
19.1	Base coat clear coat paint.	X		
19.2	Color True Blue Metallic Dupont #M6620	X		
19.3	Chassis frame semi-gloss black enamel.	X		
19.4	Wheels white powder coated.	X		

19.5	Cab interior Gray.	X		
	20.0 WHEELBASE AND CA	Abbreviation	Actual Dimension	Notes
20.1	Wheelbase to be approximately 180" or no longer or shorter than is essential for mounting a 10', 5-cubic yard front dump body with 12" overhang and 20" minimum space between cab and body for mounting plow tower.	X		
20.2	Cab axle dimension to be approximately 108".	X		
20.3	WB & CA to accommodate a 5-cubic yard body and hoist and a rear tower hydraulic assembly for a wing plow.	X		
20.4	AF dimension must allow for minimum 12' of frame to extend past rear tires to facilitate mounting of the dump body.	X		
20.5	Clean, unobstructed CA to facilitate the mounting of plow equipment and body.	AE		4" BOC ADDED TO WHEELBASE
	21.0 EMISSIONS	Abbreviation	Actual Dimension	Notes
21.1	A certification that states each new truck is equipped with a heavy-duty diesel engine (HDDE) that complies with, the New Motor Vehicle Emission Standards issued by the Maine Department of Environmental Protection in, the Code of Maine Rules (06-096 CMR Chapter 127).	X		
	22.0 PROGRAMMING	Abbreviation	Actual Dimension	Notes
22.1	<u>No</u> engine idle time to accumulate when combination of "engine is running, parking brakes are released and the transmission is in gear and over 2 mph".	X		

22.2	Parking brake alarm, Electric horn sounds repeatedly when parking brake is not engaged with ignition off and driver's door open.	X		
22.3	All switches and indicators must be configured and labeled per MaineDOT specifications.	X		
22.4	Onboard dash diagnostic	X		
22.5	Driver controlled locking differential. The differential to be equipped with a safety feature, that will automatically disengage the locking differential at a speed of approximately 20 MPH.	X		
22.6	Cruise control to be set as low as possible (max 25 mph).	X		
22.7	Top speed to be set at 75 mph.	X		
22.8	PTO speed set at 1200 rpm.	X		
22.9	Record and view MPG at the Dash Cluster.	X		
22.10	Windshield wipers to be automatically forced to slowest intermittent speed when the parking brake is set and wipers left on for a predetermined time.	X		
	23.0 WARRANTY	Abbreviation	Actual Dimension	Notes
23.1	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).	X		
23.2	In-Service Date: Warranty on vehicles (not placed in service immediately because of time lag due to installation of plow	X		

	components, special equipment, seasonal usage or other delays) to be warranted from the date the vehicle is actually placed in service. MaineDOT Fleet Services Augusta will notify the vendor in writing of "in service" date.			
23.3	During the term of the manufacturer's warranty Fleet Services reserves the right to perform any and all warranty "in house" to meet operational needs or demand with the exception of major engine, transmission and rear axle rebuild or repair unless pre-authorization by vendor. Fleet Services will recover all parts and labor cost as allowed by manufacturer's flat rate manual OEM parts may be supplied at no cost by the manufacturer, dealer or may be purchased by Fleet Services on the open market to meet operational demand. Any and all defective parts will be returned to the manufacturer or dealer upon request.	X		
	24.0 MANUALS	Abbreviation	Actual Dimension	Notes
24.1	One (1) operator's manual per unit.	X		
24.2	Ten (10) Shop equipment repair manuals, CDs or Thumb Drive	X		
24.3	Ten (10) Shop equipment repair manuals, CDs or Thumb Drive	X		
24.4	Ten (10) Equipment parts manuals, CDs or Thumb Drive	X		
24.5	Ten (10) Engine parts manuals, CDs or Thumb Drive	X		
	25.0 TRAINING	Abbreviation	Actual Dimension	Notes
25.1	All manufacturer's training programs being offered, to be defined in detail and a written proposal of what those programs will <u>entail</u> and submitted with bid packet.	X		

25.2	Training for Operation and Maintenance personnel to be performed by a factory certified trainer only. To include a minimum of 4 hours of training to take place within the 5 MaineDOT Regions within the State. This Training may be videotaped by MaineDOT for future use by MaineDOT trainers.	X		
25.3	Any applicable training material, (i.e., video tapes, manuals, CD, etc.) which is available for the components, systems or equipment, etc. must be supplied by the vendor, manufacturer, or dealer to MaineDOT with written permission for MaineDOT to duplicate such at will for in-house usage/training.	X		
	26.0 GENERAL	Abbreviation	Actual Dimension	Notes
26.1	All manuals, CDs or Thumb Drives should be delivered prior to acceptance of the final chassis.	X		
26.2	Chassis to be completely serviced, tuned up, wheels balanced (front) and steering geometer. Documentation of such service must be provided pertaining to each vehicle upon delivery.	X		
26.3	Vehicles offered must comply with all applicable Federal and State of Maine Regulations. Certified GVWR must be furnished.	X		
26.4	It is the responsibility of the chassis manufacturer to provide or reposition components to provide "clear frame" for installation of accessories or accessory equipment.	X		
26.5	The CA, WB and placement of the body etc. must not cause the summer loaded vehicle to exceed the gross axle weight for special commodities as specified in Title 29-A, Section 2357, 2, A. or B. as appropriate.	X		

	27.0 SERVICES	Abbreviation	Actual Dimension	Notes
27.1	MaineDOT's objective is to have the vendor provide warranty and service at facilities that are as close as possible to localities where the trucks will be used. To that end, MaineDOT desires that the vendors will have warranty and service facilities located within 75 miles of each division headquarters, Scarborough, Augusta, Dixfield, Bangor and Caribou.	AE		Execption is Dixfield to Scarborough is 77 Miles, Hermon is 101 Miles.
27.2	Vendors must provide a list of bidder service center locations.	X		
27.3	Bidders must supply a written explanation describing such things as the locations of the facilities, the times the facilities will be available for use, qualifications of the staff at the facilities and how the vendor will provide warranty and service at these service facilities. (Explain in a written document submitted with the proposal).	X		
	28.0 GENERAL OPTIONS The following items shall be listed and priced separately	Price List all available packages		Notes
28.1	Extended Engine Warranty (Warranty coverage and time frame must be clearly defined and all components covered must be clearly listed and identified).	\$ 2,765 48 mo./150k mi. \$ 2,790 60 mo./100k mi. \$ 2,581 72 mo. / 150k mi.		
28.2	Extended Warranty Tow packet (Warranty coverage, time frame and additional cost to MaineDOT must be clearly laid out and described).	\$ 590/\$275/ tow incident \$ 660/\$275/ tow incident \$ 760/\$275/ tow incident		36 months 48 months 60 months
28.3	Vendor is to be (100%) responsible for all transportation costs during standard 12-month warranty period if vehicle is non-drivable.	X		
	29.0 OPTIONS	Abbreviation	Actual Dimension	Notes

	CAB			
29.1	Factory or a factory outfitter's facility installed Dual, Left or Right Driver Controlled Auxiliary Air Bags (double wing vehicles) shall have individual switches to control each air bag. Air bag pricing information required with bid.	Dual Airbags \$ 1,540 Left or Right Airbag \$ 770 PER		
29.2	Multiplex wiring.	X		
29.3	Power windows, controlled at each door for easy accessibility for both driver and passenger.	X		
29.4	Power door locks for both doors controlled at driver's door or at dash panel.	X		
29.5	Heated windshield Pricing information required with bid.	\$ 632.00		
	PROGRAMMING			
29.6	All doors must unlock when driver's door is open.	X		
29.7	All doors required to lock once truck reaches 5 mph.	X		
29.8	Pre-trip exterior light inspection switch- Engaging light inspection switch will sequentially flash all exterior lights.	X		
	MANUALS			
29.9	MaineDOT shall have free accessibility to manufacturer's web based Service Information program for a period of not less than 5 years. In this program, Fleet, shall have access to all vehicle information by using vehicle VIN #. This program shall include; Parts and Operators manuals, all warranty information, complete troubleshooting & diagnostic and wiring diagrams manuals for the engine and truck chassis. VIN specific "as built" components. (Programs being offered must be provided with bid packet, access code	X		

	must be provided in bid for MaineDOT to review programs.)									
29.10	Provide ten (10) interface USB-Link Drivers and cables that are compatible to vehicle and laptop. Pricing information required with bid.	\$ 756/ USB LINK								
29.11	Provide ten (10) of the latest version of vehicle interface diagnostic software programs subscriptions that diagnose Engine, Chassis, Transmission, ABS, instrument panels and other electronic functions. The program must support wired or wireless connectivity. Pricing information required with bid.	\$ N.C.								
29.12	Over a 5 year period the vendor shall provide MaineDOT ten (10) subscriptions of the latest version of vehicle interface diagnostic software. Also, the USB-Link Drivers and Cables if the new version requires USB-Link Drivers and Cables to be update. Pricing information required with bid.	\$ N.C.								
	TRAINING									
29.13	Training for the Fleet Services Technicians shall be performed at each two (2) MaineDOT Fleet Services maintenance facilities. Technician training, shall include but not limited to the following: trouble shooting, and test procedures for Electrical System, Drive Train, Engine and Transmission Electronics Training and shall take place on the 11 th month from the vehicle in-service date, prior to the expiration date of the vehicle warranty (unless a conflict of scheduling arises in which case the proposed training dates may need to be extended). <table><tr><td><u>Training Requirements</u></td><td># of Hours</td><td># of Technicians</td></tr><tr><td>Engine</td><td>16</td><td>Up to 15</td></tr></table>	<u>Training Requirements</u>	# of Hours	# of Technicians	Engine	16	Up to 15	\$ 2200 / DAY 4 DAYS = \$8,800 PER TRAINING WEEK TRAINING PERFORMED BY FACTORY CERTIFIED TRAINER		
<u>Training Requirements</u>	# of Hours	# of Technicians								
Engine	16	Up to 15								

	Electrical System 16 Up to 15 Transmission 8 Up to 15 Heater/HVAC 8 Up to 15 Pricing information required with bid.			
29.14	Any and all training must be performed by a factory certified trainer and not by sales personnel.	\$ X		
29.15	MaineDOT Fleet Services will require a refresher/follow-up training on Engine, Electrical, Transmission and HVAC systems on 11 th month of the second year from the vehicle in-service date. Pricing information required with bid.	\$ 8,800.00 (\$2200/DAY 4 DAYS)		
	GENERAL OPTIONS			
29.16	MaineDOT hourly rate for service or repairs at awarded Bidder's facility. Pricing information required with bid.	\$ 98.00 / HR.		

BID SUBMISSION REQUIREMENTS:

In addition to required information as exhibited in the specifications, the Bidder shall also provide:

- Warranty and extended warranty data for chassis, cab, and all sub-components.
- Specifications on the proposed Engine, Transmission, and Chassis.
- A computer analysis of the proposed engine, transmission, rear end combination which is being offered must be provided with bid returns.
- Manufacturer's web-based Service Information site.
- Failure to supply the required documentation may render the bid non-responsive.

Prior to any vehicles being accepted by, and any partial payment being made by MaineDOT/Fleet Services, all vehicles will be inspected for compliance to these Technical specifications. The inspections will be performed by MaineDOT/Fleet Services or their designated representative.

Commodity Line #2 Specifications

Thirty-Four Thousand (34,000 lb.) GVWR T4X2 Heavy Truck Crew Cab

Thirty-Four Thousand (34,000 lb.) GVWR Crew Cab Truck with automatic transmission. Cab and Chassis designed to mount a Dump Body, with Ice and Snow Removal Equipment

INTENT

It is the purpose and intent of these specifications to describe a base vehicle and options with a Thirty-Four Thousand (34,000) pound GVWR, of substantial and durable construction congruent to practices acceptable to the chassis manufacturer. A vehicle, with a conventional cab (pick up type cabs and expanded roofs are not acceptable). This vehicle will be used in all months of the year pertaining to highway maintenance activities in a climate related to such as that in The State of Maine, by The Maine Department of Transportation. During winter maintenance, the vehicles main purpose will be the removal of ice and snow, sanding and salting which necessitates the installation of a myriad of controls, radios, etc. To accommodate these controls and provide acceptable operator ergonomics and comfort it is imperative that the truck cabs provide as much clear interior space as possible. The cab width must be a minimum of 70" interior door to interior door while the dash board, heater and other appurtenances must not diminish interior clear space for the installation of controls, radios, etc. The chassis is to be the heaviest duty available with all possible options to make it a heavy-duty vehicle.

The purpose of the BBC dimension is strictly to provide guidance in the selection of the appropriate make and model. Reasonable allowances will be made for the BBC dimension provided that intrusion of engine or doghouse into the cab is kept to an absolute minimum. The seats must be a premium high back and the most comfortable available with a minimum of 5" of vertical travel in the air suspended driver's seat. At full vertical driver seat height, there must be sufficient head, chest and lower torso clearance to both the roof and the steering wheel for individuals of larger than normal stature.

If cab mounted air ride suspension is provided as standard equipment by the manufacturer, then the vertical exhaust must be either cab mounted (which is preferred) or additional CA must be added to accommodate the frame mounting of the exhaust. Additionally, and for any other reason, if the exhaust system intrudes upon or diminishes useable CA then additional CA must be added to accommodate the loss. Fuel tanks must not extend past the rear of the cab.

It will also be the responsibility of the Bidder and/or Vehicle manufacturer to supply any and all "factory plow truck option packages" necessary to facilitate the assembly of the truck chassis and the

related components supplied by others (such as the body and plow vendors) into a completed and fully functional plow truck. This would refer to inclusion of but not to be limited to special plow truck spring and suspension components, plow truck wiring harnesses, electrical relays, additional electronic speedometer feeds, plow truck light harnesses, etc. MaineDOT/Fleet Services must approve the “factory plow truck option packages,” prior to purchases or assembly.

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 vehicle pursuant to these specifications.

Any part or detail which makes the vehicle 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 automobile industry. All parts shall be new and in no case will used, reconditioned or obsolete parts be accepted. The parts on all vehicles 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.

CREW CAB PATROLS

The following abbreviations must be used:

X	As specified
N/A	Not Available
DI	Dealer Installed
AE	Approved Equal

	2.0 ENGINE The proposed diesel engine <u>must</u> comply with the New Motor Vehicle Emission Standards issued by the Maine Department of Environmental Protection in the Code of Maine Rules (06-096 CMR Chapter 127).	Abbreviation	Actual Dimension	Notes
2.1	IHC, Volvo, Cummins, Detroit, Mack or Paccar			Cummins L-9
2.2	300 H.P. minimum	x		
2.3	800 lbs. ft. torque, minimum	x		860 ft-lb
2.4	Adapter for Spicer coupler 2-2-479 on crankshaft, factory installed	x		
2.5	Engine idle time history must be maintained and accessible from the truck's onboard computer system.	x		
2.6	Stainless Steel oil pan or approved equal	x		
2.7	A wet sleeve engine.	x		
2.8	Proven history of application in similar service.	x		
2.9	Turbocharger	x		
2.10	Oil cooled.	x		
2.11	Extreme service oil filtration system (no remote mount filter assembly will be accepted).	x		
2.12	Magnetic oil drain plug.	x		

2.13	Engine block heater 115 volts with 1,250 watts, receptacle with spring operated lid mounted under driver's door.	AE		120 volt/1000 watt
	3.0 TRANSMISSION	Abbreviation	Actual Dimension	Notes
3.1	Dedicated ground speed wire shall be accessible inside the cab for connection to spreader controls.	x		
3.2	Synthetic oil must be provided.	x		
3.3	PTO openings.	x		
3.4	Magnetic oil plug.	x		
3.5	Input rated at not less than 125% of net engine torque.	x		
3.6	Must have 2" input shaft.	x		
3.7	Stainless Steel transmission cooler.	AE		Internal water to oil in end cap of radiator
3.8	Allison Transmission Model 3500RDS (1-5) or approved equal	x		
3.9	Push button selector to be flush mounted in dash or OEM counsel.	x		
3.10	Fourth generation electronic control shift selector with 2009 prognostic feature.	x		
3.11	Third gear hold option	x		
3.12	Additional stainless-steel transmission cooling must be supplied.	x		Stainless steel cooler hoses
3.13	Factory filled with TranSynd or Tes 295 equivalent fluid.	x		
3.14	Allison transmission electronic control module shall be relocated inside the cab to minimize exposure to corrosive elements.	x		

	4.0 STEERING	Abbreviation	Actual Dimension	Notes
4.1	Must not interfere with plow application. Manufacturer's turning radius summary must be submitted with bid.	x		
4.2	Turning radius must not exceed a maximum distance of (33') thirty-three feet.	x		
4.3	Heavy-duty design suitable for snowplow and dump truck service.	x		
4.4	Ample gear reduction for off highway operation.	x		
4.5	Integral power steering or factory installed hydraulic boosters.	x		
	5.0 DRIVELINE	Abbreviation	Actual Dimension	Notes
5.1	Driveline to be heavy-duty and factory balanced.	x		
5.2	Universal joints on driveline SPL250HD.	AE		SPL 170XL
	6.0 REAR AXLE	Abbreviation	Actual Dimension	Notes
6.1	Driver controlled differential power divider. The differential shall be equipped with a safety feature, that will automatically disengage the locking differential at a speed of approximately 20 MPH.	x		
6.2	Prefer Meritor RS23-160, 23,000 lb. capacity single reduction rear.	x		
6.3	Rear end ratio should be 5.38 drive line ratio or a similar ration approved through Allison Scan Review report.	AE		4.56 ratio = 77.7MPH
6.4	Magnetic oil drain plug.	x		
6.5	Oil lubricated and sealed wheel bearings.	x		

6.6	Synthetic oil must be provided.	x		
	7.0 REAR SPRINGS AND SUSPENSION	Abbreviation	Actual Dimension	Notes
7.1	31,000 lbs. capacity rear main springs, minimum.	x		
7.2	Clearance between inner dual tires and suspension system and break chambers shall not be less than 2”.	x		
7.3	All hardware shall be designed for extreme service.	x		
7.4	Helper springs shall be multi-leaf design and largest capacity.	x		
7.5	Spring mounting brackets and hardware (including shackles) shall be designed for extreme service.	x		
7.6	Main spring assembly shall be double wrapped front and rear.	x		
7.7	If a rear suspension is supplied utilizing torque arms with front and rear floating spring hangers, then a transverse torque arm from the frame to the top of the differential housing must also be supplied.	x		

	8.0 FRONT AXLE	Abbreviation	Actual Dimension	Notes
8.1	16,000 lb. minimum capacity set forward axle.	x		
8.2	Wide track, I-beam type with a minimum 50 degree turn angle.	x		
8.3	Set forward Axle suitable for snow plow and dump truck service.	x		
8.4	King pins to be metallic bushings with Zerk type grease fittings at all bushing locations.	x		

8.5	Prefer double king pin locks in axle.	x		
8.6	Heavy-duty double acting shock absorbers.	x		
8.7	Synthetic oil lubricated and sealed wheel bearings with visible oil supply. Wheel bearings to be rated at 16,000 lb. minimum capacity.	x		
8.8	Largest capacity power steering reservoir with filter located for ease of service.	x		
8.9	Flexible fender extensions must be provided for the front fender wells if necessary to protect the hood and cab from wheel spray and splash.	x		
	9.0 FRONT SPRINGS	Abbreviation	Actual Dimension	Notes
9.1	Spring capacity L.H. 9,000 lbs. at ground minimum, multi-leaf or combination of multi-leaf spring and helper. Additional leaves added to factory spring to meet specs are not acceptable.	x		
9.2	Spring capacity R.H. 9,000 lbs. at ground minimum, multi-leaf or combination of multi-leaf spring and helper. Additional leaves added to factory spring to meet specs are not acceptable.	x		
9.3	Heavy-duty suspension designed to support plow or vee plow and wing in travel position and under full ballast load with no appreciable sag or deflection on either side. (1" + or -1/2").	x		
9.4	Spring mounting hardware and brackets (including shackles) to be H.D.	x		
9.5	The complete suspension system, but especially the front springs, must be designed, constructed or reconstructed/reinforced if necessary to substantially transfer weight to the rear axle	x		

	and rear wheels/suspension opposite the wing to prevent the unloading of this axle with plow gear and plows in the up or carry position with an empty body.			
	10.0 AIR/BRAKE SYSTEM	Abbreviation	Actual Dimension	Notes
10.1	Front brakes 16½ x 6” air brakes	x		
10.2	Rear brakes 16½ x 7”	x		
10.3	Long stroke 3” brake chambers 30/30 long stroke Haldex Life Seal chambers on rear axles. Front brake chambers to be Haldex Life Seal	AE		Front Bendix std not available Haldex life seat rear
10.4	Haldex automatic brake adjusters on all axles.	x		
10.5	Bendix Tu Flo 500 air compressor lubricated via the engine lube system.	AE		18.7CFM
10.6	Dual air brake system.	x		
10.7	Bendix AD-IP air dryer, to include heater.	x		
10.8	Pull drains on each reservoir with the loose end of the cable attached professionally in a location that is easily accessible to the operator.	x		
10.9	Reservoir to have ample road clearance and be of sufficient reserve capacity to support all vehicle air accessories and systems and have capacity to also support a tag-along trailer.	xx		
10.10	Semitrailer connections and breakaway valve mounted on the rearmost cross member in such a way as not to interfere with proper placement of lights, pintle hook or license plates.	x		

10.11	Hand control valve (trolley valve) mounted on the steering column to operate the semitrailer.	AE		Mounted on dash panelx
10.12	Air horn.	x		
10.13	Air compressor to have dry filtered air inlet.	x		
10.14	Front and rear S cam brakes preferred.	x		
10.15	All brakes must have backing plates.	x		
10.16	All brake air lines will be run in the same locations.	x		
	11.0 ELECTRICAL SYSTEM	Abbreviation	Actual Dimension	Notes
11.1	12 volt Leece-Neville 160-amp capacity alternator Model 2800JB/BLD 2309.	AE		LN -160 amp w. remote sensor
11.2	Delco 39 Gear Reduction starter with overcrank protection.	x		
11.3	Three (3) 12 volt batteries, 2700 CCA @ 0° F, 104-amp hour capacity, minimum, maintenance free type, must be mounted on frame rail to accommodate and not interfere with mounted snow plow equipment.	x		
11.4	Enclosed battery compartment with proper ventilation to the outside atmosphere.	x		
11.5	All exterior wiring to be of salt resistant type in suitable loom or conduit. Waterproof plug type connectors to be used at all exposed locations. All connections not waterproofed must be shrink wrapped.	x		
11.6	Manually operated lockable master battery disconnect switch location is not be mounted on the floor or in the environment, preferability in cab where it's readily accessible to operator. The battery disconnect switch break on the negative cable side.	x		

11.7	Sealed battery cable ends, color-coded. (Red + Pos., Black-Neg.).	x		
11.8	Trailer feed circuit to rear of frame includes: Combined Trailer Stop, Tail, Turn, Marker Light, Trailer ABS. Wiring connections location to be inside cab for mounting DOT electric brake control.	x		
11.9	A complete "AS BUILT" wiring schematic manual on CD or Thumb Drive required to be supplied. A sample wiring schematic required to be supplied with the bid proposal.	x		
11.10	All electrical connections are required to be treated with di-electric grease.	DI		Not recommended
11.11	All electrical cable will be run in the same locations on all units.	x		
	12.0 FRAME	Abbreviation	Actual Dimension	Notes
12.1	Single Heavy-Duty Channel Frame Rail powder coated with a minimum of PSI 1200,000, Section Modulus 22.12, RBM 2,654,400.	AE		PSI 120,000 SM 20.93 RBM 2,511,600
12.2	Straight channel frame rail suitable for heavy-duty plow and dump truck service.	x		
12.3	Fish plates not acceptable.	x		
12.4	Frame designed as not to interfere with Spicer crankshaft coupler 2-2-79.	x		
12.5	All heavy-duty gusseted cross members	x		
12.6	Frame extension are required to meet the same standard as truck frame if extensions are required.	x		
	13.0 FUEL SYSTEM	Abbreviation	Actual Dimension	Notes

13.1	Heavy-duty aluminum, minimum 2-inch wide straps with rubber shims/liners must be used.	x		
13.2	Tank <u>must not</u> extend past the rear of the cab.	x		
13.3	Aluminum step type fuel tank with a minimum capacity of 70 gallons.	x		
13.4	Non-skid step.	x		
13.5	12" minimum road clearance mandatory.	x		
13.6	Manually operated hand fuel primer pump.	x		
13.7	Fuel lines to be the appropriate flexible type line.	x		
13.8	Tanks to be vented in such a manner to prevent fuel spillage if operating on a slope or on level ground with tank full and fuel warm.	x		
	14.0 WHEELS AND TIRES	Abbreviation	Actual Dimension	Notes
14.1	One piece white powder coat painted, tubeless heavy load application 10 hole, 285 mm rims, <ul style="list-style-type: none"> F) 9.0 X 22.5 with 7.0" wheel off set Accuride A29300PW R) 8.25 X 22.5 with 6.62" wheel off set Accuride A29169PW 	x		
14.2	Wheels, rims and tires shall provide tire chain clearance without use of adapters, spacers, spoke extensions etc., local modifications not acceptable.	x		
14.3	Rear tires shall be the Bridgestone M799 model tread design or approved equal with an approved manufacture, Bridgestone, Michelin, or Continental brand.	x		Continental HDC1

14.4	Front tires shall be the Bridgestone M860A model tread design or approved equal with an approved manufacture, Bridgestone, Michelin, or Continental brand.	x		Continental HSC1
14.5	Front 315/80R 22.5 LRL radial tubeless tire (L ply rating).	x		
14.6	Rear 11R X 22.5 LRH radial tubeless tire with it (H ply rating).	x		
14.7	13.5" Dual wheel spacing required.	AE		13.24"
14.8	Liquid tire balancer KTB tire treatment (U.S. EPA approved).	DI		
14.9	Heavy-duty 5 hand hole hub piloted wheel system.	x		
14.10	Lead wheel weight will not be accepted.	x		
14.11	Each unit shall be delivered with one mounted spare front tire and one mounted spare rear tire. Tires shall have the liquid balancer installed.	x		
	15.0 COOLING SYSTEM	Abbreviation	Actual Dimension	Notes
15.1	Radiator and mounts shall be designed and installed so as not to interfere with Spicer crankshaft coupler 2-2-79.	x		
15.2	Space shall be provided under or through radiator to mount crankshaft driven hydraulic pump.	x		
15.3	Non-silicone type radiator and coolant lines.	x		
15.4	Radiator core and tanks shall be of heavy-duty design and construction.	x		
15.5	Ample capacity for continuous high engine output under extreme temperatures and/or operating conditions.	x		

15.6	Heavy-duty mounting brackets and hardware.	x		
15.7	Two-stage fan clutch.	x		
15.8	Coolant shall be Extended Life rated for –35 degrees upon delivery to MaineDOT Fleet Services.	x		
	16.0 EXHAUST	Abbreviation	Actual Dimension	Notes
16.1	Vertical exhaust designed and installed so as not to interfere with any customer installed accessories (i.e. snow plows, hydraulic tanks, etc.).	x		
16.2	Exhaust deflector elbow	x		
16.3	Heavy-duty mounting brackets, elbows, piping and expansion joints.	x		
16.4	Aluminized horizontal muffler.	AE		Stainless steel material
16.5	Exhaust System design to keep noise to lowest practical level in accordance with Federal Regulations.	x		
	17.0 FILTERS	Abbreviation	Actual Dimension	Notes
17.1	Heavy-duty dry type air filter	x		
17.2	Operator's controlled snow valve for drawing air directly under engine hood is mandatory to prevent snow from clogging air filter. A seasonal two-way air inlet control valve is mandatory. Must be factory installed and clearly marked for use.	x		
17.3	All filters must be mounted to facilitate ease of servicing.	x		
17.4	Disposable spin on type oil and fuel filters.	x		

17.5	Local filter installations or modifications are not acceptable.	x		
17.6	Fuel filter on the inlet or suction side of the injection pump <u>required</u> .	x		
	18.0 CAB	Abbreviation	Actual Dimension	Notes
18.1	To accommodate the controls and provide acceptable operator ergonomics and comfort it is imperative that the truck cabs provide as much clear interior space as possible. The cab width must be a minimum of 70" interior door to interior door while the dash board, heater and other appurtenances must not diminish interior clear space for the installation of controls, radios, etc. The chassis is to be the heaviest duty available with all possible options to make it a heavy-duty vehicle.	x		
18.2	Ergonomic integrated dash, minimum of fourteen (14) (factory installed) in ergonomic dash, low amperage switches with LED lighting. Three (3) colored LED lighted indicators controllable by means of relays. Circuit must support 20 amps, controlled by Remote Power Modules, installed inside cab to allow MaineDOT easy component wiring installation. All switches to be professionally labeled using factory laser cut plastic inserts.	x		
18.3	Standard BBC dimension approximately 135".	AE		150.9" BBC
18.4	Hood and fender to be of one piece design, tilt forward type with factory installed side access panels to provide safe, easy, complete access to the engine compartment for daily service (including coolant check) and periodic maintenance with full plow gear (including wing and post) installed. NOTE: Plow gear will not be moved or modified to accommodate hood opening.	x		

18.5	Hood fenders must be designed to be no lower than the bottom of fuel tank and be secured tightly to prevent sailing. If need wind sail brackets are acceptable.	x		
18.6	Tilt and telescoping steering wheel.	x		
18.7	Four door crew cab with seating for five (5) occupants.	x		
18.8	All marker lights shall be LED type.	x		
18.9	Dome light shall have independent switch and shall not interfere with the Departments two-way radio.	x		
18.10	Cab heater shall be highest capacity available.	x		
18.11	Automatic low oil pressure/high temperature warning system wired in such a way as not to be easily accessible to the operator and be operational only when ignition switch is on.	x		
18.12	Heavy-duty 2-speed minimum, electrically operated windshield wipers with time delay.	x		
18.13	Dual sun visors.	x		
18.14	Dual outside mirrors shall be no less than 16" x 7" with integrated convex mirrors on both sides with marker light. All mirrors shall be 4-way electronically adjustable and heated.	AE		14.1x7.55 flat glass 7.48x6.77 convex
18.15	Exterior cab grab handle driver side.	x		
18.16	Exterior cab grab handle, passenger side.	x		
18.17	Seat belt webbing shall be a highly visible, bright orange in color.	DI		
18.18	Driver's seat shall be a premium high back cloth covered seat which will incorporate the following features/options:	x		

	a. adjustable dampening of the shock absorber b. wide seat cushion c. air controlled triple lumbar support d. front and rear seat cushion adjustment e. fore/aft seat track adjustment f. adjustable reclining backrest g. air adjustable back rest bolsters h. air adjustable seat cushion bolsters i. dual folding seat armrests j. five (5)-year warranty seat			
18.19	The passenger seat shall be a deluxe or premium air-suspension seat with adjustable reclining backrest and lumbar support.	x		
18.20	Instruments to include but not limited to: Oil pressure gauge, Water temperature gauge, Fuel gauge, Brake warning lights, low air pressure light and alarm, voltmeter, Tachometer, air pressure gauge, Air filter restriction gauge and all gauges shall be properly marked and illuminated. (Transmission temp gauge with Automatic).	x		
18.21	Windshield shall be constructed with tinted glass.	x		
18.22	Full coverage insulated floor mat.	x		
18.23	All pedals are to be suspended off floor	x		
18.24	Heavy-duty insulated closed cab construction. Cab insulation rating required with bid.	x		Regulation letter in attachments
18.25	Stationary grill is highly preferred to increase engine accessibility when plow hardware is attached.	x		
18.26	12 Volt power port outlet and USB port.	x		
18.27	Back-up alarm	x		

18.28	All vehicles to be keyed alike and supplied with 2 keys.	x		
18.29	Fresh air intake for heater/defroster must be protected or designed and installed to prevent entrance of sand/salt.	x		
18.30	Radiator grill openings to be of such size and design to protect radiator core from road debris of approximately $\frac{5}{8}$ " diameter.	x		
18.31	AM-FM radio with Bluetooth	x		
18.32	Suitable heavy-duty full width front bumper must be supplied on vehicle.	x		
18.33	Conventional cab - expanded, modified or bubble roof unacceptable.	x		
18.34	Daytime running headlights.	x		
18.35	Sealed beam headlights of halogen type.	x		
18.36	Air conditioning.	x		
18.37	Cruise control	x		
	19.0 PAINT	Abbreviation	Actual Dimension	Notes
19.1	Base coat clear coat paint.	x		
19.2	Color True Blue Metallic Dupont #M6620	x		
19.3	Chassis frame semi-gloss black enamel.	x		
19.4	Wheels white powder coated.	x		
19.5	Cab interior Gray.	x		
	20.0 WHEELBASE AND CA	Abbreviation	Actual Dimension	Notes
20.1	Wheelbase shall be approximately 220" or no longer or shorter than is essential for mounting a 10', 5-cubic yard front dump	AE		228"

	body with 12" overhang and 20" minimum space between cab and body for mounting plow tower.			
20.2	Cab axle dimension shall be approximately 108".	x		
20.3	WB & CA shall accommodate a 5-cubic yard body and hoist and a rear tower hydraulic assembly for a wing plow.	x		
20.4	AF dimension must allow for minimum 12' of frame to extend past rear tires to facilitate mounting of the dump body.	x		
20.5	Clean, unobstructed CA to facilitate the mounting of plow equipment and body.	x		
	21.0 EMISSIONS	Abbreviation	Actual Dimension	Notes
21.1	A certification that states each new truck is equipped with a heavy-duty diesel engine (HDDE) that complies with, the New Motor Vehicle Emission Standards issued by the Maine Department of Environmental Protection in, the Code of Maine Rules (06-096 CMR Chapter 127).	x		

	22.0 PROGRAMMING	Abbreviation	Actual Dimension	Notes
22.1	No engine idle time shall accumulate when combination of “engine is running, parking brakes are released and the transmission is in gear and over 2 mph”.	x		
22.2	Parking brake alarm, Electric horn sounds repeatedly when parking brake is not engaged with ignition off and driver’s door open.	x		
22.3	All switches and indicators must be configured and labeled per MaineDOT specifications.	x		
22.4	Onboard dash diagnostic	x		
22.5	Driver controlled locking differential. The differential shall be equipped with a safety feature, that will automatically disengage the locking differential at a speed of approximately 20 MPH.	x		
22.6	Cruise control to be set as low as possible (max 25 mph).	x		
22.7	Top speed to be set at 75 mph.	x		
22.8	PTO speed set at 1200 rpm.	x		
22.9	Record and view MPG at the Dash Cluster.	x		
22.10	Windshield wipers shall be automatically forced to slowest intermittent speed when the parking brake is set and wipers left on for a predetermined time.	x		
	23.0 WARRANTY	Abbreviation	Actual Dimension	Notes
23.1	Terms and conditions of warranty must be provided with bid proposal (Warranty must	x		

	be clearly defined and all components covered must be clearly listed and identified).			
23.2	In-Service Date: Warranty on vehicles (not placed in service immediately because of time lag due to installation of plow components, special equipment, seasonal usage or other delays) shall be warranted from the date the vehicle is actually placed in service. MaineDOT Fleet Services Augusta shall notify the vendor in writing of "in service" date.	x		
23.3	During the term of the manufacturer's warranty Fleet Services reserves the right to perform any and all warranty "in house" to meet operational needs or demand with the exception of major engine, transmission and rear axle rebuild or repair unless pre-authorization by vendor. Fleet Services will recover all parts and labor cost as allowed by manufacturer's flat rate manual OEM parts may be supplied at no cost by the manufacturer, dealer or may be purchased by Fleet Services on the open market to meet operational demand. Any and all defective parts will be returned to the manufacturer or dealer upon request.	x		
	24.0 MANUALS	Abbreviation	Actual Dimension	Notes
24.1	One (1) operator's manual per unit.	x		
24.2	Ten (10) Shop equipment repair manuals, CDs or Thumb Drive	x		
24.3	Ten (10) Engine shop manuals, CDs or Thumb Drive	x		
24.4	Ten (10) Equipment parts manuals, CDs or Thumb Drive	x		
24.5	Ten (10) Engine parts manuals, CDs or Thumb Drive	x		

	25.0 TRAINING	Abbreviation	Actual Dimension	Notes
25.1	All manufacturer's training programs being offered, shall be defined in detail and a writing proposal of what those programs will <u>entail</u> and submitted with bid packet.	x		
25.2	Training for Operation and Maintenance personnel to be performed by a factory certified trainer only. To include a minimum of 4 hours of training to take place within the 5 MaineDOT Regions within the State. This Training may be videotaped by MaineDOT for future use by MaineDOT trainers.	x		
25.3	Any applicable training material, (i.e., video tapes, manuals, CD, etc.) which is available for the components, systems or equipment, etc. must be supplied by the vendor, manufacturer, or dealer to MaineDOT with written permission for MaineDOT to duplicate such at will for in-house usage/training.	x		
	26.0 GENERAL	Abbreviation	Actual Dimension	Notes
26.1	All manuals, CDs or Thumb Drives should be delivered prior to acceptance of the final chassis.	x		
26.2	Chassis to be completely serviced, tuned up, wheels balanced (front) and steering geometer. Documentation of such service must be provided pertaining to each vehicle upon delivery.	x		
26.3	Vehicles offered must comply with all applicable Federal and State of Maine Regulations. Certified GVWR must be furnished.	x		
26.4	It is the responsibility of the chassis manufacturer to provide or reposition components to provide "clear frame" for	x		

	installation of accessories or accessory equipment.			
26.5	The CA, WB and placement of the body etc. must not cause the summer loaded vehicle to exceed the gross axle weight for special commodities as specified in Title 29-A, Section 2357, 2, A. or B. as appropriate.	x		
	27.0 SERVICES	Abbreviation	Actual Dimension	Notes
27.1	MaineDOT's objective is to have the vendor provide warranty and service at facilities that are as close as possible to localities where the trucks will be used. To that end, MaineDOT desires that the vendors will have warranty and service facilities located within 75 miles of each division headquarters, Scarborough, Augusta, Dixfield, Bangor and Caribou.	x		Location detail attached
27.2	Vendors must provide a list of bidder service center locations.	x		
27.3	Bidders must supply a written explanation describing such things as the locations of the facilities, the times the facilities will be available for use, qualifications of the staff at the facilities and how the vendor will provide warranty and service at these service facilities. (Explain in a written document submitted with the proposal).	x		
	28.0 GENERAL OPTIONS The following items shall be listed and priced separately	Price List all available packages		Notes
28.1	Extended Engine Warranty (Warranty coverage and time frame must be clearly defined and all components covered must be clearly listed and identified).	\$ 2765/48 months/150000 \$ 2790/60 months/100000 \$ 2581/72 months/150000		After treatment included
28.2	Extended Warranty Tow packet (Warranty coverage, time frame and additional cost to MaineDOT must be clearly laid out and described).	\$ 590/36 months \$ 660/48 months \$ 760/60months		\$275 maximum/tow

28.3	Vendor is to be (100%) responsible for all transportation costs during standard 12-month warranty period if vehicle is non-drivable.	x		
	29.0 OPTIONS	Abbreviation	Actual Dimension	Notes
	CAB			
29.1	Factory or a factory outfitter's facility installed Dual, Left or Right Driver Controlled Auxiliary Air Bags (double wing vehicles) shall have individual switches to control each air bag. Air bag pricing information required with bid.	Dual Airbags \$ 1540 Left or Right Airbag \$ 770		
29.2	Multiplex wiring.	x		
29.3	Power windows, controlled at each door for easy accessibility for both driver and passenger.	x		
29.4	Power door locks for both doors controlled at driver's door or at dash panel.	x		
29.5	Heated windshield Pricing information required with bid.	\$ 632		
	PROGRAMMING			
29.6	All doors must unlock when driver's door is open.	x		
29.7	All doors must lock once truck reaches 5 mph.	x		
29.8	Pre-trip exterior light inspection switch-Engaging light inspection switch will sequentially flash all exterior lights.	x		
	MANUALS			
29.9	MaineDOT shall have free accessibility to manufacturer's web based Service Information program for a period of not less than 5 years. In this program, Fleet, shall have access to all vehicle information by using vehicle VIN #. This program shall	x		

	include; Parts and Operators manuals, all warranty information, complete troubleshooting & diagnostic and wiring diagrams manuals for the engine and truck chassis. VIN specific “as built” components. (Programs being offered must be provided with bid packet, access code must be provided in bid for MaineDOT to review programs.)			
29.10	Provide ten (10) interface USB-Link Drivers and cables that are compatible to vehicle and laptop. Pricing information required with bid.	\$ 756/unit = \$7560		
29.11	Provide ten (10) of the latest version of vehicle interface diagnostic software programs subscriptions that diagnose Engine, Chassis, Transmission, ABS, instrument panels and other electronic functions. The program must support wired or wireless connectivity. Pricing information required with bid.	\$ included		
29.12	Over a 5 year period the vendor shall provide MaineDOT ten (10) subscriptions of the latest version of vehicle interface diagnostic software. Also, the USB-Link Drivers and Cables if the new version requires USB-Link Drivers and Cables to be update. Pricing information required with bid.	\$ included		
	TRAINING			
29.13	Training for the Fleet Services Technicians shall be performed at each two (2) MaineDOT Fleet Services maintenance facilities. Technician training, shall include but not limited to the following: trouble shooting, and test procedures for Electrical System, Drive Train, Engine and Transmission Electronics Training and shall take place on the 11 th month from the vehicle in-service date, prior to the expiration date of the vehicle warranty (unless a conflict of scheduling arises in	\$ 2200/day, minimum 4 days = \$8800 per training session		

	which case the proposed training dates may need to be extended).																		
	<table><tr><td><u>Training Requirements</u></td><td># of Hours</td><td># of Technicians</td></tr><tr><td>Engine</td><td>16</td><td>Up to 15</td></tr><tr><td>Electrical System</td><td>16</td><td>Up to 15</td></tr><tr><td>Transmission</td><td>8</td><td>Up to 15</td></tr><tr><td>Heater/HVAC</td><td>8</td><td>Up to 15</td></tr></table>	<u>Training Requirements</u>	# of Hours	# of Technicians	Engine	16	Up to 15	Electrical System	16	Up to 15	Transmission	8	Up to 15	Heater/HVAC	8	Up to 15			
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Electrical System	16	Up to 15																	
Transmission	8	Up to 15																	
Heater/HVAC	8	Up to 15																	
	Pricing information required with bid.																		
29.14	Any and all training must be performed by a factory certified trainer and not by sales personnel.	x																	
29.15	MaineDOT Fleet Services will require a refresher/follow-up training on Engine, Electrical, Transmission and HVAC systems on 11 th month of the second year from the vehicle in-service date. Pricing information required with bid.	\$ 2200/day, minimum 4 days unless Daigle & Houghton certified can train \$550/day																	
	GENERAL OPTIONS																		
29.16	MaineDOT hourly rate for service or repairs at awarded Bidder's facility. Pricing information required with bid.	\$ 98/hour																	

BID SUBMISSION REQUIREMENTS:

In addition to required information as exhibited in the specifications, the Bidder shall also provide:

- Warranty and extended warranty data for chassis, cab, and all sub-components.
- Specifications on the proposed Engine, Transmission, and Chassis.
- A computer analysis of the proposed engine, transmission, rear end combination which is being offered must be provided with bid returns.
- Manufacturer's web-based Service Information site.
- Failure to supply the required documentation may render the bid non-responsive.

Prior to any vehicles being accepted by, and any partial payment being made by MaineDOT/Fleet Services, all vehicles will be inspected for compliance to these Technical specifications. The inspections will be performed by MaineDOT/Fleet Services or their designated representative.

Commodity Line #3 Specifications

Fifty-Four Thousand (54,000 lb.) GVWR T6X4 Heavy Truck Wheeler Regular Cab

Fifty-Four Thousand (54,000 lb.) GVWR Heavy Truck with Cab and Chassis designed to mount a Dump Body, with Ice and Snow Removal Equipment

INTENT

It is the purpose and intent of these specifications to describe a base vehicle and options with a Fifty-Four Thousand (54,000) pound GVWR, of substantial and durable construction congruent to practices acceptable to the chassis manufacturer. A vehicle, with a conventional cab (pick up type cabs and expanded roofs are not acceptable). This vehicle will be used in all months of the year pertaining to highway maintenance activities in a climate related to such as that in the State of Maine, by MaineDOT. During winter maintenance, the vehicle's main purpose will be the removal of ice and snow, sanding and salting which necessitates the installation of a myriad of controls, radios, etc. To accommodate these controls and provide acceptable operator ergonomics and comfort, it is imperative that the truck cabs provide as much clear interior space as possible. The cab width must be a minimum of 70" interior door to interior door while the dash board, heater and other appurtenances must not diminish interior clear space for the installation of controls, radios, etc. The chassis is to be the heaviest duty available with all possible options to make it a heavy-duty vehicle.

The purpose of the BBC dimension is strictly to provide guidance in the selection of the appropriate make and model. Reasonable allowances will be made for the BBC dimension provided that intrusion of engine or doghouse into the cab is kept to an absolute minimum. The seats must be a premium high back and the most comfortable available with a minimum of 5" of vertical travel in the air suspended driver's seat. At full vertical driver seat height, there must be sufficient head, chest and lower torso clearance to both the roof and the steering wheel for individuals of larger than normal stature.

If cab mounted air ride suspension is provided as standard equipment by the manufacturer, then the vertical exhaust must be either cab mounted (which is preferred) or additional CA must be added to accommodate the frame mounting of the exhaust. Additionally, and for any other reason, if the exhaust system intrudes upon or diminishes useable CA then additional CA must be added to accommodate the loss. Fuel tank must not extend past the rear of the cab.

It will also be the responsibility of the Bidder and/or Vehicle manufacturer to supply any and all "factory plow truck option packages" necessary to facilitate the assembly of the truck chassis and the related components supplied by others (such as the body and plow vendors) into a completed and fully functional plow truck. This would refer to inclusion of, but not to be limited to, special plow truck

spring and suspension components, plow truck wiring harnesses, electrical relays, additional electronic speedometer feeds, plow truck light harnesses, etc. MaineDOT Fleet Services must approve the “factory plow truck option packages,” prior to purchases or assembly.

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 vehicle pursuant to these specifications.

Any part or detail which makes the vehicle 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 automobile industry. All parts shall be new and in no case, will used, reconditioned or obsolete parts be accepted. The parts on all vehicles 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.

WHEELERS**The following abbreviations must be used:**

X	As specified
N/A	Not Available
DI	Dealer Installed
AE	Approved Equal

	2.0 ENGINE The proposed diesel engine <u>must</u> comply with the New Motor Vehicle Emission Standards issued by the Maine Department of Environmental Protection in the Code of Maine Rules (06-096 CMR Chapter 127).	Abbreviation	Actual Dimension	Notes
2.1	IHC, Volvo, Cummins, Detroit, Mack or Paccar	X		A 26
2.2	410 H.P. minimum	X		440 HP
2.3	1,450 lbs. ft. torque, minimum	X		
2.4	Adapter for Spicer coupler 2-2-479 on crankshaft, factory installed	X		
2.5	Engine idle time history must be maintained and accessible from the truck's onboard computer system.	X		
2.6	Stainless Steel oil pan or approved equal	X		
2.7	A wet sleeve engine.	X		
2.8	Proven history of application in similar service.	X		
2.9	Turbocharger	X		
2.10	Oil cooled.	X		
2.11	Extreme service oil filtration system (no remote mount filter assembly will be accepted).	X		
2.12	Magnetic oil drain plug.	X		

2.13	Engine block heater 115 volts with 1,250 watts, receptacle with spring operated lid mounted under driver's door.	AE		120 VOLT/1150 WATT
2.14	Three level engine manufacture Engine/Jacob's brake required.	X		
	3.0 CLUTCH	Abbreviation	Actual Dimension	Notes
3.1	Clutch to be manually adjusted Eaton/Fuller EZ Pedal (no self-adjusting).	X		
3.2	Heavy-duty 14.5" dual plate, coaxial dampened.	AE		15.5"
3.3	Cast iron pressure plate, manually adjustable, with grease-able throw out bearing.	X		
3.4	One (1) piece torque limiting clutch brake.	X		
	4.0 TRANSMISSION	Abbreviation	Actual Dimension	Notes
4.1	Dedicated ground speed wire shall be accessible inside the cab for connection to spreader controls.	X		
4.2	Synthetic oil must be provided.	X		
4.3	Fuller RTO 16909ALL or approved equal.	X		
4.4	PTO openings.	X		
4.5	Magnetic oil plug.	X		
4.6	Input rated at not less than 125% of net engine torque.	X		
4.7	Must have 2" input shaft.	X		
4.8	Stainless Steel transmission cooler.	AE		OIL TYPE INCL. IN END RADIATOR CAP

	5.0 STEERING	Abbreviation	Actual Dimension	Notes
5.1	Must not interfere with plow application. Manufacturer's turning radius summary must be submitted with bid.	X		
5.2	Turning radius not to exceed a maximum distance of (33') thirty-three feet.	X		
5.3	Heavy-duty design suitable for snowplow and dump truck service.	X		
5.4	Ample gear reduction for off highway operation.	X		
5.5	Dual integral power steering boxes	X		
5.6	Integral power steering or factory installed hydraulic boosters.	X		
	6.0 DRIVELINE	Abbreviation	Actual Dimension	Notes
6.1	Driveline to be heavy-duty and factory balanced.	X		
6.2	Universal joints on driveline SPL250HD.	X		
6.3	Universal joints on inter axle driveline SPL170XL.	X		
	7.0 REAR AXLE	Abbreviation	Actual Dimension	Notes
7.1	Driver controlled differential power divider. The differential shall be equipped with a safety feature, that will automatically disengage the locking differential at a speed of approximately 20 MPH.	X		
7.2	Prefer Meritor RT46-160P, 46,000 lb. tandem axle with power divider (operated by air control on dash).	X		

7.3	Rear end ratio should be geared to accommodate engine RPM and transmission gear ratios while allowing for higher gradability, a 25% minimum off highway start.	X		
7.4	Magnetic oil drain plug.	X		
7.5	Oil lubricated and sealed wheel bearings.	X		
7.6	Synthetic oil to be provided.	X		
	8.0 REAR SPRINGS AND SUSPENSION	Abbreviation	Actual Dimension	Notes
8.1	46,000 lbs. suspension rating.	X		
8.2	T-Ride Suspension (3-leaf), Turftrax, Chalmer, or Hendrickson Suspension with 4 rear shocks or approved equal.	X		
8.3	Clearance between inner dual tires and suspension system and break chambers not to be less than 2".	X		
8.4	All hardware designed for extreme service.	X		
8.5	If a rear suspension is supplied utilizing torque arms with front and rear floating spring hangers, then a transverse torque arm from the frame to the top of the differential housing must also be supplied.	X		
	9.0 FRONT AXLE	Abbreviation	Actual Dimension	Notes
9.1	20,000 lb. minimum capacity set forward axle.	X		
9.2	Wide track, I-beam type with a minimum 50 degree turn angle.	X		
9.3	Set forward Axle suitable for snow plow and dump truck service.	X		
9.4	King pins to be metallic bushings with Zerk type grease fittings at all bushing locations.	X		

9.5	Prefer double king pin locks in axle.	X		
9.6	Heavy-duty double acting shock absorbers.	X		
9.7	Synthetic oil lubricated and sealed wheel bearings with visible oil supply. Wheel bearings rated at 20,000 lb. minimum capacity.	X		
9.8	Largest capacity power steering reservoir with filter located for ease of service.	X		
9.9	Flexible fender extensions provided for the front fender wells if necessary to protect the hood and cab from wheel spray and splash.	X		
	10.0 FRONT SPRINGS	Abbreviation	Actual Dimension	Notes
10.1	Spring capacity L.H. 11,500 lbs. at ground minimum, multi-leaf or combination of multi-leaf spring and helper. Additional leaves added to factory spring to meet specs are not acceptable.	X		
10.2	Spring capacity R.H. 11,500 lbs. at ground minimum, multi-leaf or combination of multi-leaf spring and helper. Additional leaves added to factory spring to meet specs are not acceptable.	X		
10.3	Heavy-duty suspension designed to support plow or vee plow and wing in travel position and under full ballast load with no appreciable sag or deflection on either side. (1" + or - 1/2").	X		
10.4	Spring mounting hardware and brackets (including shackles) Heavy Duty type	X		
10.5	The complete suspension system, but especially the front springs, to be designed, constructed or reconstructed/reinforced if necessary to substantially transfer weight to the rear axle and rear wheels/suspension	X		

	opposite the wing to prevent the unloading of this axle with plow gear and plows in the up or carry position with an empty body.			
	11.0 AIR/BRAKE SYSTEM	Abbreviation	Actual Dimension	Notes
11.1	Front brakes 16½ x 6" air brakes	X		
11.2	Rear brakes 16½ x 7"	X		
11.3	Long stroke 3" brake chambers 30/30 long stroke Haldex Life Seal chambers on rear axles. Front brake chambers to be Haldex Life Seal.	AE		FRONT BENDIX STD, REAR HALDEX LIFE SEAL
11.4	Rear most brake chambers must be mounted forward or rotated higher enough to prevent interference with pavers and shoulder boxes.	X		
11.5	Haldex automatic brake adjusters on all axles.	X		
11.6	Bendix Tu Flo 500 air compressor lubricated via the engine lube system.	AE		BENDIXBA-921 15.9CFM
11.7	Dual air brake system.	X		
11.8	Bendix AD-IP air dryer, to include heater.	X		
11.9	Pull drains on each reservoir with the loose end of the cable attached professionally in a location that is easily accessible to the operator.	X		
11.10	Reservoir to have ample road clearance and be of sufficient reserve capacity to support all vehicle air accessories and systems and have capacity to also support a tag-along trailer.	X		
11.11	Semitrailer connections and breakaway valve mounted on the rearmost cross member in such a way as not to interfere with proper placement of lights, pintle hook or license plates.	X		

11.12	Hand control valve (trolley valve) mounted on the steering column to operate the semitrailer.	AE		MOUNTED ON DASH PANEL
11.13	Air horn.	X		
11.14	Air compressor to be dry filtered air inlet.	X		
11.15	Front and rear S cam brakes preferred.	X		
11.16	All brakes require backing plates.	X		
11.17	All brake air lines will be run in the same locations.	X		
	12.0 ELECTRICAL SYSTEM	Abbreviation	Actual Dimension	Notes
12.1	12 volt Leece-Neville 160-amp capacity alternator Model 2800JB/BLD 2309.	X		
12.2	Delco 39 Gear Reduction starter with over crank protection.	X		
12.3	Three (3) 12 volt batteries, 2700 CCA @ 0° F, 104-amp hour capacity, minimum, maintenance free type, to be mounted on frame rail to accommodate and not interfere with mounted snow plow equipment.	X		
12.4	Enclosed battery compartment with proper ventilation to the outside atmosphere.	X		
12.5	All exterior wiring requires salt resistant type in suitable loom or conduit. Waterproof plug type connectors required to be used at all exposed locations. All connections not waterproofed required to be shrink wrapped.	X		
12.6	Manually operated lockable master battery disconnect switch location is not be mounted on the floor or in the environment, preferability in cab where it's readily accessible to operator. The battery	X		

	disconnect switch break on the negative cable side.			
12.7	Sealed battery cable ends, color-coded. (Red + Pos., Black-Neg.).	X		
12.8	Trailer feed circuit to rear of frame requirement includes, combined Trailer Stop, Tail, Turn, Marker Light, Trailer ABS.	X		
12.9	A complete "AS BUILT" wiring schematic manual on CD or Thumb Drive required to be supplied. A sample wiring schematic required to be supplied with the bid proposal.	X		
12.10	All electrical connections are required to be treated with di-electric grease.	DI		NOT RECOMMENDED
12.11	All electrical cable will be run in the same locations on all units.	X		
	13.0 FRAME	Abbreviation	Actual Dimension	Notes
13.1	Single Heavy-Duty Channel Frame Rail powder coated with a minimum of PSI 1,200,000, Section Modulus 21.12, RBM 2,654,400.	AE		PSI 120,000 SM 20.93 RBM 2,511,600 E COAT
13.2	Straight channel frame rail suitable for heavy-duty plow and dump truck service.	X		
13.3	Fish plates not acceptable.	X		
13.4	Frame designed as not to interfere with Spicer crankshaft coupler 2-2-79.	X		
13.5	All heavy-duty gusseted cross members	X		
13.6	Frame extension are required to meet the same standard as truck frame if extensions are required.	X		
	14.0 FUEL SYSTEM	Abbreviation	Actual Dimension	Notes

14.1	Heavy-duty aluminum, minimum 2-inch wide straps with rubber shims/liners must be used.	X		
14.2	Tank <u>must not</u> extend past the rear of the cab.	AE		4"
14.3	Aluminum step type fuel tank with a minimum capacity of 80 gallons.	AE		70 GALLON TO REDUCE CA LOSS
14.4	Non-skid step.	X		
14.5	12" minimum road clearance mandatory.	X		
14.6	Manually operated hand primer pump.	X		
14.7	Fuel lines to be the appropriate flexible type line.	X		
14.8	Tanks are required to be vented in such a manner to prevent fuel spillage if operating on a slope or on level ground with tank full and fuel warm.	X		
	15.0 WHEELS AND TIRES	Abbreviation	Actual Dimension	Notes
15.1	One piece white powder coat painted tubeless heavy load application 10 hole, 285 mm rims, <ul style="list-style-type: none"> F) 9.0 X 21.5 with 7.0" wheel off set Accuride A29300PW R) 8.25 X 21.5 with 6.62" wheel off set Accuride A29169PW 	X		
15.2	Wheels, rims and tires shall provide tire chain clearance without use of adapters, spacers, spoke extensions etc., local modifications not acceptable.	X		
15.3	Rear tires shall be the Bridgestone M799 model tread design or approved equal with an approved manufacture, Bridgestone, Michelin, or Continental brand.	X		CONTINENTAL HDC1 – DESCRIPTION IN ATTACHMENTS

15.4	Front tires shall be the Bridgestone M860A model tread design or approved equal with an approved manufacture, Bridgestone, Michelin, or Continental brand.	X		CONTINENTAL HSC1 – SPECS IN ATTCHMTS
15.5	Front 315/80R 21.5 LRL radial tubeless tire (L ply rating).	X		
15.6	Rear 11R X 21.5 LRH radial tubeless tire with it (H ply rating).	X		
15.7	13.5" Dual wheel spacing required.	X		
15.8	Liquid tire balancer KTB tire treatment (U.S. EPA approved).	DI		
15.9	Heavy-duty 5 hand hole hub piloted wheel system.	X		
15.10	Lead wheel weight will not be accepted.	X		
15.11	Each unit delivered with one mounted spare front tire and one mounted spare rear tire. Tires required to have the liquid balancer installed.	X		
	16.0 COOLING SYSTEM	Abbreviation	Actual Dimension	Notes
16.1	Radiator and mounts shall be designed and installed so as not to interfere with Spicer crankshaft coupler 2-2-79.	X		
16.2	Space shall be provided under or through radiator to mount crankshaft driven hydraulic pump.	X		
16.3	Non-silicone type radiator and coolant lines.	X		
16.4	Radiator core and tanks to be of heavy-duty design and construction.	X		
16.5	Ample capacity for continuous high engine output under extreme temperatures and/or operating conditions.	X		

16.6	Heavy-duty mounting brackets and hardware.	X		
16.7	Two-stage fan clutch.	X		
16.8	Coolant shall be Extended Life rated for –35 degrees upon delivery to MaineDOT Fleet Services.	X		
	17.0 EXHAUST	Abbreviation	Actual Dimension	Notes
17.1	Vertical exhaust designed and installed so as not to interfere with any customer installed accessories (i.e. snow plows, hydraulic tanks, etc.).	X		
17.2	Exhaust deflector elbow	X		
17.3	Heavy-duty mounting brackets, elbows, piping and expansion joints.	X		
17.4	Aluminized horizontal muffler.	AE		STAINLESS STEEL
17.5	Exhaust System design to keep noise to lowest practical level in accordance with Federal Regulations.	X		
	18.0 FILTERS	Abbreviation	Actual Dimension	Notes
18.1	Heavy-duty dry type air filter	X		
18.2	Operator's controlled snow valve for drawing air directly under engine hood is mandatory to prevent snow from clogging air filter. A seasonal two-way air inlet control valve is mandatory. Factory installed and clearly marked for use.	X		
18.3	All filters to be mounted to facilitate ease of servicing.	X		
18.4	Disposable spin on type oil and fuel filters.	AE		CARTRIDGE TYPE

18.5	Local filter installations or modifications are not acceptable.	X		
18.6	Fuel filter on the inlet or suction side of the injection pump <u>required</u> .	X		
	19.0 CAB	Abbreviation	Actual Dimension	Notes
19.1	To accommodate the controls and provide acceptable operator ergonomics and comfort it is imperative that the truck cabs provide as much clear interior space as possible. The cab width must be a minimum of 70" interior door to interior door while the dash board, heater and other appurtenances must not diminish interior clear space for the installation of controls, radios, etc. The chassis is to be the heaviest duty available with all possible options to make it a heavy-duty vehicle.	X		
19.2	Ergonomic integrated dash, minimum of fourteen (14) (factory installed) in ergonomic dash, low amperage switches with LED lighting. Three (3) colored LED lighted indicators controllable by means of relays. Circuit must support 20 amps, controlled by a Module, installed inside cab to allow MDOT easy component wiring installation. All switches to be professionally labeled using factory laser cut plastic inserts.	X		
19.3	Standard BBC dimension approximately 112".	X		
19.4	Hood and fender to be of one piece design, tilt forward type with factory installed side access panels to provide safe, easy, complete access to the engine compartment for daily service (including coolant check) and periodic maintenance with full plow gear (including wing and post) installed. NOTE: Plow gear will not be moved or modified to accommodate hood opening.	X		

19.5	Hood fenders must be designed to be no lower than the bottom of fuel tank and be secured tightly to prevent sailing. If need wind sail brackets are acceptable.	X		
19.6	Tilt and telescoping steering wheel.	X		
19.7	All marker lights to be LED type.	X		
19.8	Dome light required to have independent switch and not interfere with departments two-way radio.	X		
19.9	Cab heater to be highest capacity available.	X		
19.10	Automatic low oil pressure/high temperature warning system wired in such a way as not to be easily accessible to the operator and be operational only when ignition switch is on.	X		
19.11	Heavy-duty 2-speed minimum, electrically operated windshield wipers with time delay.	X		
19.12	Dual sun visors.	X		
19.13	Dual outside mirrors to be no less than 16" x 7" with integrated convex mirrors on both sides with marker light. All mirrors to be 4-way electronically adjustable and heated.	AE		14.1X7.55 FLAT GLASS 7.48X6.77 CONVEX
19.14	Exterior cab grab handle driver side.	X		
19.15	Exterior cab grab handle, passenger side.	DI		
19.16	Seat belt webbing to be a highly visible, bright orange in color.	X		
19.17	Driver's seat is required to be a premium high back cloth covered seat which will incorporate the following features/options: <ul style="list-style-type: none"> a. adjustable dampening of the shock absorber b. wide seat cushion c. air controlled triple lumbar support d. front and rear seat cushion 	X		

	adjustment e. fore/aft seat track adjustment f. adjustable reclining backrest g. air adjustable back rest bolsters h. air adjustable seat cushion bolsters i. dual folding seat armrests j. five (5)-year warranty seat			
19.18	The passenger seat is required to be a deluxe or premium air-suspension seat with adjustable reclining backrest and lumbar support.	X		
19.19	Instruments to include but not limited to: Oil pressure gauge, Water temperature gauge, Fuel gauge, Brake warning lights, low air pressure light and alarm, voltmeter, Tachometer, air pressure gauge, Air filter restriction gauge and all gauges to be properly marked and illuminated. (Transmission temp gauge with Automatic).	X		
19.20	Windshield constructed with tinted glass.	X		
19.21	Full coverage insulated floor mat.	X		
19.22	All pedals are to be suspended off floor.	X		
19.23	Heavy-duty insulated closed cab construction. Cab insulation rating required with bid.	X		US FMCSA TITLE 49
19.24	Stationary grill is highly preferred to increase engine accessibility when plow hardware is attached.	X		
19.25	12 Volt power port outlet and USB port.	X		
19.26	Back-up alarm	X		
19.27	All vehicles to be keyed alike and supplied with 2 keys.	X		
19.28	Fresh air intake for heater/defroster required to be protected or designed and installed to	X		

	prevent entrance of sand/salt.			
19.29	Radiator grill openings to be of such size and design to protect radiator core from road debris of approximately 5/8" diameter.	X		
19.30	AM-FM radio with Bluetooth	X		
19.31	Suitable heavy-duty full width front bumper required to be supplied on vehicle.	X		
19.32	Conventional cab - expanded, modified or bubble roof unacceptable.	X		
19.33	Daytime running headlights.	X		
19.34	Sealed beam headlights of halogen type.	X		
19.35	Air conditioning.	X		
19.36	Cruise control	X		
	20.0 PAINT	Abbreviation	Actual Dimension	Notes
20.1	Base coat clear coat paint.	X		
20.2	Color True Blue Metallic Dupont #M6620	X		
20.3	Chassis frame semi-gloss black enamel.	X		
20.4	Wheels white powder coated.	X		
20.5	Cab interior Gray.	X		
	21.0 WHEELBASE AND CA	Abbreviation	Actual Dimension	Notes
21.1	Wheelbase to be approximately 218".	X		
21.2	CA to be approximately 132" with CE of approximately 197" minimum.	X		
21.3	The CA dimension will allow the rear of the body (without an apron) to be within 6" of the most rearward circumference point of the	X		

	rear tandem tires.			
21.4	WB & CA is required to accommodate a 12-cubic yard body and hoist and a rear tower hydraulic assembly for a wing plow.	X		
21.5	AF dimension requires a minimum 12' of frame to extend past rear tires to facilitate mounting of the dump body.	X		
21.6	Clean, unobstructed CA to facilitate the mounting of plow equipment and body.	X		
	22.0 EMISSIONS	Abbreviation	Actual Dimension	Notes
22.1	A certification that states each new truck is equipped with a heavy-duty diesel engine (HDDE) that complies with, the New Motor Vehicle Emission Standards issued by the Maine Department of Environmental Protection in, the Code of Maine Rules (06-096 CMR Chapter 127).	X		
	23.0 PROGRAMMING	Abbreviation	Actual Dimension	Notes
23.1	No engine idle time shall accumulate when combination of "engine is running, parking brakes are released and the transmission is in gear and over 2 mph".	X		
23.2	Parking brake alarm, Electric horn sounds repeatedly when parking brake is not engaged with ignition off and driver's door open.	X		
23.3	All switches and indicators must be configured and labeled per MaineDOT specifications.	X		
23.4	Onboard dash diagnostic	X		
23.5	Brake lights work in conjunction with engine brake.	X		
23.6	Cruise control to be set as low as possible	X		

	(max 25 mph).			
23.7	Top speed to be set at 75 mph.	X		
23.8	PTO speed set at 1200 rpm.	X		
23.9	Record and view MPG at the Dash Cluster.	X		
23.10	Windshield wipers to be automatically forced to slowest intermittent speed when the parking brake is set and wipers left on for a predetermined time.	X		
	24.0 WARRANTY	Abbreviation	Actual Dimension	Notes
24.1	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		
24.2	In-Service Date: Warranty on vehicles (not placed in service immediately because of time lag due to installation of plow components, special equipment, seasonal usage or other delays) to be warranted from the date the vehicle is the actual placed in service. MDOT Fleet Services Augusta will notify the vendor in writing of "in service" date.	X		
24.3	During the term of the manufacturer's warranty Fleet Services reserves the right to perform any and all warranty "in house" to meet operational needs or demand with the exception of major engine, transmission and rear axle rebuild or repair unless pre-authorization by vendor. Fleet Services will recover all parts and labor cost as allowed by manufacturer's flat rate manual OEM parts may be supplied at no cost by the manufacturer, dealer or may be purchased by Fleet Services on the open market to meet operational demand. Any and all defective parts will be returned to the manufacturer or	X		

	dealer upon request.			
	25.0 MANUALS	Abbreviation	Actual Dimension	Notes
25.1	One (1) operator's manual per unit.	X		
25.2	Ten (10) Shop equipment repair manuals, CDs or Thumb Drive	X		
25.3	Ten (10) Engine shop manuals, CD or Thumb Drive	X		
25.4	Ten (10) Equipment parts manuals, CDs or Thumb Drive	X		
25.5	Ten (10) Engine parts manuals, CDs or Thumb Drive	X		
	26.0 TRAINING	Abbreviation	Actual Dimension	Notes
26.1	All manufacturer's training programs being offered, shall be defined in detail and a writing proposal of what those programs will entail and submitted with bid packet.	X		
26.2	Training for Operation and Maintenance personnel to be performed by a factory certified trainers only. To include a minimum of 4 hours of training to take place within the 5 MaineDOT Regions within the State. This Training may be videotaped by MaineDOT for future use by MaineDOT trainers.	X		
26.3	Any applicable training material, (i.e., video tapes, manuals, CD, etc.) which is available for the components, systems or equipment, etc. is required to be supplied by the vendor, manufacturer, or dealer to MaineDOT with written permission for MaineDOT to duplicate such at will for in-house usage/training.	X		
	27.0 GENERAL	Abbreviation	Actual Dimension	Notes

27.1	All manuals, CDs or Thumb Drives should be delivered prior to acceptance of the final chassis.	X		
27.2	Chassis to be completely serviced, tuned up, wheels balanced (front) and steering geometer. Documentation of such service is required to be provided pertaining to each vehicle upon delivery.	X		
27.3	Vehicles offered are required to comply with all applicable Federal and State of Maine Regulations. Certified GVWR is required to be furnished.	X		
27.4	It is the responsibility of the chassis manufacturer to provide or reposition components to provide "clear frame" for installation of accessories or accessory equipment.	X		
27.5	The CA, WB and placement of the body etc. cannot cause the summer loaded vehicle to exceed the gross axle weight for special commodities as specified in Title 29-A, Section 2357, 2, A. or B. as appropriate.	X		
	28.0 SERVICES	Abbreviation	Actual Dimension	Notes
28.1	MaineDOT's objective is to have the vendor provide warranty and service at facilities that are as close as possible to localities where the trucks will be used. To that end, MaineDOT desires that the vendors will have warranty and service facilities located within 75 miles of each division headquarters, Scarborough, Augusta, Dixfield, Bangor and Caribou.	X		DESCRIBED IN ATTACHMENT 28.1
28.2	Vendors are required to provide a list of bidder service center locations.	X		ATTACHMENT 28.1
28.3	Bidders are required to supply a written explanation describing such things as the locations of the facilities, the times the facilities will be available for use,	X		ATTACHMENT 28.1

	qualifications of the staff at the facilities and how the vendor will provide warranty and service at these service facilities. (Explain in a written document submitted with the proposal).			
	29.0 GENERAL OPTIONS The following items shall be listed and priced separately	Price List all available packages		Notes
29.1	Extended Engine Warranty (Warranty coverage and time frame is to be clearly defined and all components covered to be clearly listed and identified).	\$ 2500/60 months/100,000 \$ 4600/72 months/250,000 \$ 5800/84 months/150,000		Engine and after treatment
29.2	Extended Warranty Tow packet (Warranty coverage, time frame and additional cost to MDOT to be clearly laid out and described).	\$ 490/ 36 months \$ 560/48 months \$ 660/60 months		Maximum \$275/tow
29.3	Vendor is to be (100%) responsible for all transportation costs during standard 12-month warranty period if vehicle is non-drivable.	x		
	30.0 AUTOMATIC TRANSMISSION OPTIONS PRICING	Price		Notes
30.1	Allison 4500 Automatic with PTO provision	\$ 13,814		
30.2	I-Shift Automatic with PTO provision	\$ NA		
30.3	Eaton UltraShift <i>PLUS</i> with PTO provision	\$ 8980		
30.4	Dash or OEM Console mounted push button shift selector.	AE		STEERING COLUMN MOUNTED
30.5	Temp Gauge	X		
30.6	Automatic transmission with the capability of programing it for plow mode.	X		
	31.0 OPTIONS	Abbreviation	Actual Dimension	Notes

	REAR AXLE			
31.1	Locking differential, where all 4 axles are locked. Pricing information required with bid.	\$ 880		
	CAB			
31.2	Factory or a factory outfitter's facility installed Dual, Left or Right Driver Controlled Auxiliary Air Bags (double wing vehicles) shall have individual switches to control each air bag. Air bag pricing information required with bid.	Dual Airbags \$ 1540 Left or Right Airbag \$ 770		
31.3	Multiplex wiring	X		
31.4	Power windows, controlled at each door for easy accessibility for both driver and passenger.	X		
31.5	Power door locks for both doors controlled at driver's door or at dash panel.	X		
31.6	Heated windshield Pricing information required with bid.	\$ 632		
	PROGRAMMING			
31.7	All doors must unlock when driver's door is open.	X		
31.8	All doors required to lock once truck reaches 5 mph.	X		
31.9	Pre-trip exterior light inspection switch-Engaging light inspection switch will sequentially flash all exterior lights.	X		
	MANUALS			
31.10	MaineDOT shall have free accessibility to manufacturer's web based Service Information program for a period of not less than 5 years. In this program, Fleet, shall have access to all vehicle information by using vehicle VIN #. This program shall include; Parts and Operators manuals, all warranty information, complete troubleshooting & diagnostic and wiring	X		

	diagrams manuals for the engine and truck chassis. VIN specific "as built" components. (Programs being offered must be provided with bid packet, access code must be provided in bid for MaineDOT to review programs.)			
31.11	Provide ten (10) interface USB-Link Drivers and cables that are compatible to vehicle and laptop. Pricing information required with bid.	\$ 756/UNIT		
31.12	Provide ten (10) of the latest version of vehicle interface diagnostic software programs subscriptions that diagnose Engine, Chassis, Transmission, ABS, instrument panels and other electronic functions. The program must support wired or wireless connectivity. Pricing information required with bid.	\$ NO CHARGE		
31.13	Over a 5 year period, the vendor shall provide MaineDOT ten (10) subscriptions of the latest version of vehicle interface diagnostic software. Also, the USB-Link Drivers and Cables if the new version requires USB-Link Drivers and Cables to be update. Pricing information required with bid.	\$ NO CHARGE		
	TRAINING			
31.14	Training for the Fleet Services Technicians will be performed at each two (2) MaineDOT Fleet Services maintenance facilities. Technician training, will include but not limited to the following: trouble shooting, and test procedures for Electrical System, Drive Train, Engine and Transmission Electronics Training and is required to take place on the 11 th month from the vehicle in-service date, prior to the expiration date of the vehicle warranty (unless a conflict of scheduling arises in which case the proposed training dates may need to be extended).	\$ 2200/DAY, MINIMUM 4 DAYS=\$8800/ TRAINING. CONDUCTED BY FACTORY CERTIFIED		

	<u>Training Requirements</u>	# of Hours	# of Technicians		
	Engine	16	Up to 15		
	Electrical System	16	Up to 15		
	Transmission	8	Up to 15		
	Heater/HVAC	8	Up to 15		
	Pricing information required with bid.				
31.15	Any and all training is required to be performed by a factory certified trainer and not by sales personnel.		X		
31.16	MaineDOT Fleet Services will require a refresher/follow-up training on Engine, Electrical, Transmission and HVAC systems on 11 th month of the second year from the vehicle in-service date. Pricing information required with bid.		\$ 2200/DAY MINIMUM 4 DAYS		
	GENERAL OPTIONS				
31.17	MaineDOT hourly rate for service or repairs at awarded Bidder's facility. Pricing information required with bid.		\$ 98/HR		

BID SUBMISSION REQUIREMENTS:

In addition to required information as exhibited in the specifications, the Bidder shall also provide:

- Warranty and extended warranty data for chassis, cab, and all sub-components.
- Specifications on the proposed Engine, Transmission, and Chassis.
- A computer analysis of the proposed engine, transmission, rear end combination which is being offered must be provided with bid returns.
- Failure to supply the required documentation may render the bid non-responsive.

Prior to any vehicles being accepted by, and any partial payment being made by MaineDOT/Fleet Services, all vehicles will be inspected for compliance to these Technical specifications. The inspections will be performed by MaineDOT/Fleet Services or their designated representative.

Prepared For:

MAINE DOT
Dan Rolfe
66 Industrial Dr.
Augusta, ME 04330-7857
(207)287 - 3521
Reference ID: N/A

Presented By:

DAIGLE & HOUGHTON INC
Gary Daigle
130 MARKET STREET
FORT KENT ME 04743 -
(207)834-6186

Thank you for the opportunity to provide you with the following quotation on a new International truck. I am sure the following detailed specification will meet your operational requirements, and I look forward to serving your business needs.

Model Profile
2020 HV513 SFA (HV513)

AXLE CONFIG:	6X4
APPLICATION:	Front Plow and Underbelly Scraper with Spreader
MISSION:	Requested GVWR: 56000. Calc. GVWR: 0 Calc. Start / Grade Ability: 57.50% / 2.99% @ 55 MPH Calc. Geared Speed: 77.6 MPH
DIMENSION:	Wheelbase: 219.00, CA: 135.50, Axle to Frame: 75.00
ENGINE, DIESEL:	{International A26} EPA 2017, 410HP @ 1700 RPM, 1450 lb-ft Torque @ 1000 RPM, 2100 RPM Governed Speed, 410 Peak HP (Max)
TRANSMISSION, MANUAL:	{Fuller RTO(F)-16909ALL} 11-Speed Manual, with Overdrive and Double-Lo, with Lube Oil Pump, with Air Shift
CLUTCH:	{Eaton Fuller Easy-Pedal Advantage} Manual Adjust, Two-Plate, Cast Angle Spring, Ceramic, 15.5" Diameter, 7-Spring with Pre-Damper (Soft Rate) Mechanical Pull-Type Control, 4-Button Disc, 1750 lb-ft Torque Capacity
AXLE, FRONT NON-DRIVING:	{Meritor MFS-20-133A} Wide Track, I-Beam Type, 20,000-lb Capacity
AXLE, REAR, TANDEM:	{Meritor RT-46-160P} Single Reduction, 46,000-lb Capacity, with Lube Oil Pump, 200 Wheel Ends Gear Ratio: 4.56
CAB:	Conventional
TIRE, FRONT:	(3) 315/80R22.5 Load Range L HSC1 (CONTINENTAL), 484 rev/mile, 68 MPH, All-Position
TIRE, REAR:	(8) 11R22.5 Load Range H HDC1 (CONTINENTAL), 488 rev/mile, 75 MPH, Drive
SUSPENSION, REAR, TANDEM:	{Hendrickson HMX-460-54} Walking Beam, 46,000-lb Capacity, 54" Axle Spacing, Rubber Springs, with Transverse Torque Rods, Rubber End Bushings
PAINT:	Cab schematic 100WM Location 1: 6M24, Blue (Custom) Chassis schematic N/A

<u>Description</u>	<u>F/R Wt</u> (lbs)	<u>Tot Wt</u> (lbs)
Base Chassis, Model HV513 SFA with 219.00 Wheelbase, 135.50 CA, and 75.00 Axle to Frame.	7997/4333	12330
AXLE CONFIGURATION {Navistar} 6x4	0/0	0
<u>Includes</u>		
: DRIVESHAFT 1810 Series Transmission to Rear Axle		
: INNER-AXLE SHAFT 1710 Series Forward Rear Axle to Rear Rear Axle		
<u>Notes</u>		
: Pricing may change if axle configuration is changed.		
FRAME RAILS Heat Treated Alloy Steel (120,000 PSI Yield); 10.866" x 3.622" x 0.433" (276.0mm x 92.0mm x 11.1mm); 456.0" (11582mm) Maximum OAL	194/473	667
BUMPER, FRONT Steel, Swept Back	0/0	0
FRAME EXTENSION, FRONT Integral; 20" In Front of Grille	138/-33	105
CROSSMEMBER, INTERMEDIATE (1) 5-Piece ilo Each Single Dogbone with 4x2, 4x4 Chassis and Each Double Dogbone with 6x4, 6x6 and 8x6 Tridem Chassis	27/23	50
CROSSMEMBER, SUSPENSION (2) 5-Piece Steel Replacing (2) Double Dogbone, Forward and Rear	-2/123	121
WHEELBASE RANGE 199" (505cm) Through and Including 264" (670cm)	0/0	0
AXLE, FRONT NON-DRIVING {Meritor MFS-20-133A} Wide Track, I-Beam Type, 20,000-lb Capacity	186/0	186
AXLE, FRONT DRIVING, LUBE {EmGard FE-75W-90} Synthetic Oil; 30 thru 39.99 Pints	0/0	0
SHOCK ABSORBERS, FRONT	47/0	47
BRAKE SYSTEM, AIR Dual System for Straight Truck Applications	0/0	0
BRAKES, FRONT, AIR CAM 16.5" x 6", Includes 24 SqIn Long Stroke Brake Chambers	26/0	26
TRAILER CONNECTIONS Four-Wheel, with Hand Control Valve and Tractor Protection Valve, for Straight Truck	0/0	0
DRAIN VALVE {Berg} with Pull Chain, for Air Tank	0/0	0
AIR BRAKE ABS {Bendix AntiLock Brake System} Full Vehicle Wheel Control System (4-Channel)	0/0	0
AIR DRYER {Bendix AD-IP} with Heater	22/3	25
BRAKE CHAMBERS, FRONT AXLE {Bendix} 24 SqIn	18/0	18
BRAKE CHAMBERS, REAR AXLE {Haldex Life Seal+} 30/30 Spring Brake	0/0	0
SLACK ADJUSTERS, FRONT {Haldex} Automatic	0/0	0
SLACK ADJUSTERS, REAR {Haldex} Automatic	0/0	0
BRAKES, REAR, AIR CAM S-Cam; 16.5" x 7.0"; Includes 30/30 Sq.In. Long Stroke Brake Chamber and Spring Actuated Parking Brake	0/52	52
AIR COMPRESSOR {Bendix BA-921 Head Unload} 15.9 CFM Capacity, Single Cylinder	0/0	0
AIR DRYER LOCATION Mounted to Outside Left Rail on Fuel Water Separator Bracket	0/0	0
DUST SHIELDS, FRONT BRAKE for Air Brakes	5/0	5
DUST SHIELDS, REAR BRAKE for Air Brakes	0/12	12
BRAKE CHAMBERS, SPRING on Rear/Rear Axle Located Inside Rear Tire Envelope (Meets Asphalt Spreader/Paver Clearance Requirements)	0/0	0
AIR TANK LOCATION (2) : One Mounted Under Each Frame Rail, Front of Rear Suspension, Parallel to Rail	0/0	0

<u>Description</u>	<u>F/R Wt</u> (lbs)	<u>Tot Wt</u> (lbs)
STEERING COLUMN Tilting and Telescoping	16/3	19
STEERING WHEEL 4-Spoke; 18" Dia., Black	0/0	0
STEERING GEAR (2) {Sheppard M100/M80} Dual Power	119/0	119
DRIVESHAFT SYSTEM SPL250XL Driveshaft and SPL170XL Interaxle Shaft in lieu of 1810 Driveshaft and 1710 Interaxle Shaft	0/0	0
AFTERTREATMENT COVER Steel, Black	0/0	0
EXHAUST SYSTEM Single Horizontal Aftertreatment Device, Frame Mounted Right Side Under Cab; for Single Vertical Tail Pipe, Frame Mounted Right Side Back of Cab	32/45	77
ENGINE COMPRESSION BRAKE by Jacobs; for N13/A26 Engines, with Selector Switch and On/Off Switch	48/1	49
TAIL PIPE (1) Turnback Type, Non-Bright, for Single Exhaust	0/0	0
EXHAUST HEIGHT 10' 11"	2/0	2
MUFFLER/TAIL PIPE GUARD (1) Non-Bright Aluminum	0/0	0
SWITCH, FOR EXHAUST 3 Position, Momentary, Lighted Momentary, ON/CANCEL, Center Stable, INHIBIT REGEN, Mounted in IP Inhibits Diesel Particulate Filter Regeneration When Switch is Moved to ON While Engine is Running, Resets When Ignition is Turned OFF	0/0	0
ELECTRICAL SYSTEM 12-Volt, Standard Equipment	0/0	0
CIGAR LIGHTER Includes Ash Cup	0/0	0
BATTERY TERMINALS Sealed	2/0	2
ALTERNATOR {Leece-Neville AV160P2013} Brush Type; 12 Volt 160 Amp. Capacity, Pad Mount	0/0	0
BODY BUILDER WIRING Back of Standard or Sleeper Cab at Left Frame or Under Extended or Crew Cab at Left Frame; Includes Sealed Connectors for Tail/Amber Turn/Marker/ Backup/Accessory Power/Ground and Sealed Connector for Stop/Turn	2/0	2
ELECTRIC TRAILER BRAKE/LIGHTS Accommodation Package to Rear of Frame; for Combined Trailer Stop, Tail, Turn, Marker Light Circuits; Includes Electric Trailer Brake Accommodation Package with Cab Connections for Mounting Customer Installed Electric Brake Unit, Less Trailer Socket	0/2	2
BATTERY SYSTEM {Fleetrite} Maintenance-Free, (3) 12-Volt 2850CCA Total	10/11	21
RADIO AM/FM/WB/Clock/Bluetooth/USB Input/3.5MM Auxiliary Input, MP3, Apple Device Play & Control, Bluetooth for Phone & Music	2/0	2
SPEAKERS (2) 6.5" Dual Cone Mounted in Both Doors, (2) 5.25" Dual Cone Mounted in Both B-Pillars	7/1	8
BACK-UP ALARM Electric, 102 dBA	0/3	3
AUXILIARY HARNESS 3.0' for Auxiliary Front Head Lights and Turn Signals for Front Plow Applications	2/0	2
TRAILER AUXILIARY FEED CIRCUIT for Electric Trailer Brake Accommodation/Air Trailer ABS; with 30 Amp Fuse and Relay, Controlled by Ignition Switch	1/0	1
STOP, TURN, TAIL & B/U LIGHTS {Weldon} LED Multi-Function Lamp, Mounted Outside Rails, Includes License Plate Light	-3/14	11
HORN, ELECTRIC Disc Style	0/0	0
STOP-LIGHT WIRING MODIFIED Stop-Lights Turned on When Engine Compression Brake, Exhaust Brake or Retarder is Activated	0/0	0
BATTERY BOX Aluminum with Plastic Cover, 18" Wide, 2, 3, or 4 Battery Capacity, Mounted Left Side Back of Cab	-10/-12	-22

<u>Description</u>	<u>F/R Wt</u> (lbs)	<u>Tot Wt</u> (lbs)
WINDSHIELD WIPER SPD CONTROL Force Wipers to Slowest Intermittent Speed When Park Brake Set and Wipers Left on for a Predetermined Time	0/0	0
SWITCH, TOGGLE, FOR WORK LIGHT Lighted; on Instrument Panel and Wiring Effects for Customer Furnished Back of Cab Light	2/1	3
RUNNING LIGHT (2) Daytime	1/0	1
CLEARANCE/MARKER LIGHTS (5) {Truck Lite} Amber LED Lights, Flush Mounted on Cab or Sunshade	0/0	0
TEST EXTERIOR LIGHTS Pre-Trip Inspection will Cycle all Exterior Lamps Except Back-up Lights	0/0	0
STARTING MOTOR {Delco Remy 39MT} 12 Volt; Gear Reduced, with Thermal Over-Crank Protection	0/0	0
ALARM, PARKING BRAKE Electric Horn Sounds in Repetitive Manner When Vehicle Park Brake is "NOT" Set, with Ignition "OFF" and any Door Opened	0/0	0
CIRCUIT BREAKERS Manual-Reset (Main Panel) SAE Type III with Trip Indicators, Replaces All Fuses	0/0	0
TURN SIGNALS, FRONT Includes LED Side Turn Lights Mounted on Fender	0/0	0
HORN, AIR Black, Single Trumpet, with Lanyard Pull Cord	0/0	0
POWER SOURCE, ADDITIONAL Auxiliary Power Output (APO) & USB Port, Located in the Instrument Panel	0/0	0
FENDER EXTENSIONS Rubber	0/0	0
LOGOS EXTERIOR Model Badges	0/0	0
LOGOS EXTERIOR, ENGINE Badges	0/0	0
HOOD, HATCH (01) for Servicing	5/0	5
GRILLE Stationary, Chrome	0/0	0
INSULATION, SPLASH PANELS for Sound Abatement	3/0	3
BUG SCREEN Mounted Behind Grille	5/0	5
FRONT END Tilting, Fiberglass, with Three Piece Construction Includes Long Hood	0/0	0
PAINT SCHEMATIC, PT-1 Single Color, Design 100	0/0	0
<u>Includes</u>		
: PAINT SCHEMATIC ID LETTERS "WM"		
PAINT TYPE Base Coat/Clear Coat, 1-2 Tone	0/0	0
PAINT CLASS Single Custom Color	0/0	0
LABEL, DEF "DEF ONLY"	0/0	0
PROMOTIONAL PACKAGE Government Silver Package	0/0	0
KEYS - ALL ALIKE, ADDITIONAL 2 Keys	0/0	0
KEYS - ALL ALIKE, ID I-1624 Compatible with Z-250	0/0	0
CLUTCH {Eaton Fuller Easy-Pedal Advantage} Manual Adjust, Two-Plate, Cast Angle Spring; Ceramic, 15.5" Diameter, 7-Spring with Pre-Damper (Soft Rate) Mechanical Pull-Type Control, 4-Button Disc, 1750 lb-ft Torque Capacity	0/0	0
GREASE FITTINGS Remote; for Clutch Cross Shaft	0/0	0
ANTI-FREEZE Red, Extended Life Coolant; To -40 Degrees F/ -40 Degrees C, Freeze Protection	0/0	0

<u>Description</u>	<u>F/R Wt</u> (lbs)	<u>Tot Wt</u> (lbs)
PTO EFFECTS, ENGINE FRONT for N13/A26 Engines, Less PTO, Unit, Includes Adapter Plate on Engine Front Mounted	0/0	0
ENGINE, DIESEL {International A26} EPA 2017, 410HP @ 1700 RPM, 1450 lb-ft Torque @ 1000 RPM, 2100 RPM Governed Speed, 410 Peak HP (Max)	0/0	0
FAN DRIVE {Horton Drivemaster} Direct Drive Type, Two Speed with Residual Torque Device for Disengaged Fan Speed	0/0	0
AIR CLEANER Dual Element, with Integral Snow Valve and In-Cab Control	6/0	6
FEDERAL EMISSIONS {International A26} EPA, OBD and GHG Certified for Calendar Year 2018	0/0	0
ACCESSORY WIRING, SPECIAL for Road Speed Wire Coiled Under Instrument Panel for Customer Use	0/0	0
HOSE CLAMPS, RADIATOR HOSES , Mechanical Type; with Constant-Tension Functionality	0/0	0
OIL PAN Stainless Steel, for N13/A26 Engines	53/3	56
FAN DRIVE SPECIAL EFFECTS Fan Cooling Ring with Fan Shroud Effects, Engine Mounted	0/0	0
COOLANT FILTER for A26 Engines	7/0	7
EMISSION COMPLIANCE Low NOx Idle Engine, Complies with California Clean Air Regulations; Includes "Certified Clean Idle" Decal located on Driver Door	0/0	0
RADIATOR Aluminum; Welded, Front to Back CrossFlow System, 1292 SqIn, 1008 SqIn CAC	0/0	0
BLOCK HEATER, ENGINE {Phillips} 120V/1150W	0/0	0
TRANSMISSION, MANUAL {Fuller RTO(F)-16909ALL} 11-Speed Manual, with Overdrive and Double-Lo, with Lube Oil Pump, with Air Shift	177/83	260
OIL COOLER MANUAL TRANSMISSION Water to Oil Type Included in Radiator End Tank (REQUIRES TRANSMISSION LUBE PUMP)	0/0	0
TRANSMISSION OIL {EmGard 40W} Synthetic; 22 thru 33.99 Pints	0/0	0
PTO LOCATION Bottom of Transmission	0/0	0
AXLE, REAR, TANDEM {Meritor RT-46-160P} Single Reduction, 46,000-lb Capacity, with Lube Oil Pump, 200 Wheel Ends . Gear Ratio: 4.56	0/2381	2381
SUSPENSION, REAR, TANDEM {Hendrickson HMX-460-54} Walking Beam, 46,000-lb Capacity, 54" Axle Spacing, Rubber Springs, with Transverse Torque Rods, Rubber End Bushings	0/500	500
SUSPENSION/REAR-AXLE IDENTITY for Meritor Tandem Rear Axles with Bar-Pin Beam Attachment Type Suspensions	0/0	0
SHOCK ABSORBERS, REAR (4) for Hendrickson HMX Suspension Only, Mounted from Frame to Beam	0/31	31
AXLE, REAR, LUBE {EmGard FE-75W-90} Synthetic Oil; 65 thru 89.99 Pints	0/0	0
DEF TANK 9.5 U.S. Gal. 35.9L Capacity, Frame Mounted Outside Left Rail, Under Cab	0/0	0
FUEL/WATER SEPARATOR {Racor} Fuel Pre-Filter and Filter Base, Includes Water-In-Fuel Sensor	0/0	0
LOCATION FUEL/WATER SEPARATOR Mounted Outside Left Rail, 66" Back of Cab	0/0	0
FUEL TANK Top Draw, Non-Polished Aluminum, 26" Dia, 70 US Gal (265L), Mounted Left Side, Under Cab	-9/1	-8
FUEL COOLER Less Thermostat; Mounted in Front of Cooling Module	15/0	15
CAB Conventional	0/0	0
AIR CONDITIONER with Integral Heater & Defroster	52/4	56

<u>Description</u>	<u>F/R Wt</u> (lbs)	<u>Tot Wt</u> (lbs)
GAUGE CLUSTER Base Level; English with English Speedometer and Tachometer, for Air Brake Chassis, Includes Engine Coolant Temperature, Primary and Secondary Air Pressure, Fuel and DEF Gauges, Oil Pressure Gauge, Includes 3 Inch Monochromatic Text Display	0/0	0
GAUGE, AIR CLEANER RESTRICTION {Filter-Minder} with Black Bezel Mounted in Instrument Panel	2/0	2
IP CLUSTER DISPLAY On Board Diagnostics Display of Fault Codes in Gauge Cluster	0/0	0
GAUGE, VOLTMETER Auxiliary Gauge, Located in Center Panel. Standard Cluster Also Includes Digital Voltage Readout	0/0	0
SEAT, DRIVER {National 2000 195} Air Suspension, High Back with Integral Headrest, Cloth, Isolator, 3 Chamber Lumbar, 2 Position Front Cushion Adjust, -3 to +14 Degree Back Angle Adjust, Cushion and Back Bolsters	0/0	0
SEAT, PASSENGER {National} Air-Suspension, High Back with Integral Headrest, Cloth, Isolated, 1 Chamber Lumbar, 2 Position Front Cushion Adjustment, -3 to +14 Degree Seat Back Adjustment	56/23	79
MIRRORS (2) Aero; Pedestal, Power Adjust, Heated Heads, Turn Signals, Black Heads and Arms, 6.3" x 13.82" Flat Glass, 6.38" x 6.18" Convex Glass Both Sides	0/0	0
CAB SOUND INSULATION Includes Dash Insulator and Engine Cover Insulator, Premium Floormat, and Sound Dampening Patches	27/0	27
SEAT BELT All Orange; 1 to 3	0/0	0
CAB INTERIOR TRIM Classic, for Day Cab	0/0	0
<u>Includes</u>		
: CONSOLE, OVERHEAD Molded Plastic with Dual Storage Pockets, Retainer Nets and CB Radio Pocket; Located Above Driver and Passenger		
: DOME LIGHT, CAB Door Activated and Push On-Off at Light Lens, Timed Theater Dimming, Integral to Overhead Console, Center Mounted		
: SUN VISOR (2) Padded Vinyl; 2 Moveable (Front-to-Side) Primary Visors, Driver Side with Toll Ticket Strap		
ARM REST, RIGHT, DRIVER SEAT	3/0	3
HOSE CLAMPS, HEATER HOSE {Breeze} Belleville Washer Type	0/0	0
WINDOW, POWER (2) and Power Door Locks, Left and Right Doors, Includes Express Down Feature	5/0	5
HOURLMETER, PTO for Customer Provided PTO; with Indicator Light and Hourmeter in Gauge Cluster Includes Return Wire for PTO Feedback Switch	2/0	2
FRESH AIR FILTER Attached to Air Intake Cover on Cowl Tray in Front of Windshield Under Hood	1/0	1
CAB REAR SUSPENSION Air Bag Type	0/0	0
INSTRUMENT PANEL Wing Panel	0/0	0
ACCESS, CAB Steel, Driver & Passenger Sides, Two Steps Per Door, for use with Regular and Extended Cabs	0/0	0
WHEEL, SPARE, DISC {Accuride 29300} 22.5x9.00 Rims, Powder Coat Steel, 10-Stud, 285.75mm BC, Hub-Piloted	54/54	108
WHEELS, FRONT {Accuride 29300} DISC; 22.5x9.00 Rims, Powder Coat Steel, 5-Hand Hole, 10-Stud, 285.75mm BC, Hub-Piloted, Flanged Nut, with Steel Hubs	82/0	82
WHEELS, REAR {Accuride 29169} DUAL DISC; 22.5x8.25 Rims, Powder Coat Steel, 5-Hand Hole, 10-Stud, 285.75mm BC, Hub-Piloted, Flanged Nut, with .472" Thick Increased Capacity Disc and Steel Hubs	0/88	88
TIRE, SPARE Equal to Model Standard	0/0	0

Description

	<u>F/R Wt</u> (lbs)	<u>Tot Wt</u> (lbs)
BDY INTG, REMOTE POWER MODULE (2) Mounted Inside Cab behind Driver Seat; Up to 6 Outputs & 6 Inputs each, Max. 20 amp. per Channel, Max. 80 amp Total (Includes 2 Switch Packs with Latched Switches)	0/0	0
BDY INTG, SWITCH MOMNTRY 3POS Rocker, Backlit, with "ON" Indicator Mounted on Dash, Latching Software, for 2; Auxiliary Load 20 amp. Maximum; Power Available Only in "Ignition" or "Accessory" Position, Output Also Controlled by a Customer Remote Mounted Switch (requires 2 Remote Power Module inputs & 2 outputs)	0/0	0
BDY INTG, DASH IND LT TRICOLOR (3) for Optional Usage Customer to Program	0/0	0
(8) TIRE, REAR 11R22.5 Load Range H HDC1 (CONTINENTAL), 488 rev/mile, 75 MPH, Drive	0/72	72
(3) TIRE, FRONT 315/80R22.5 Load Range L HSC1 (CONTINENTAL), 484 rev/mile, 68 MPH, All-Position	123/0	123
SUSPENSION, FRONT, SPRING 23000 multi leaf front springs (03ACT)	223/0	223
Cab schematic 100WM		
Location 1: 6M24, Blue (Custom)		
Chassis schematic N/A		

Services Section:

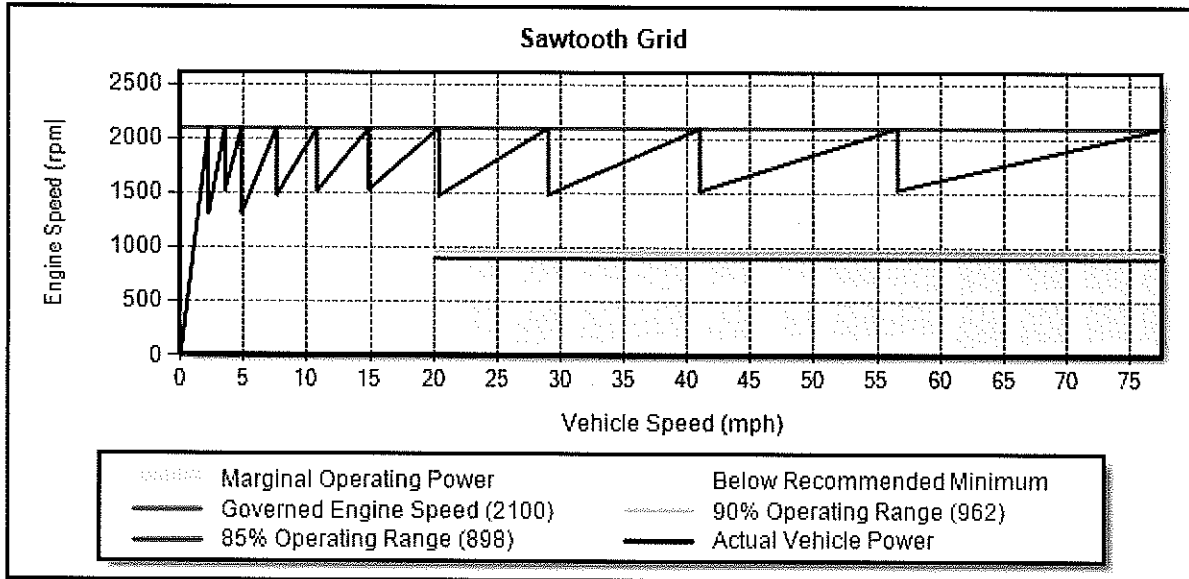
WARRANTY Standard for HV513, HV613 Models, Effective with Vehicles Built July 1, 2017 or Later, CTS-2030A	0/0	0
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Total Component Weight:

	9783/8295	18078
rear spare wheel and tire 11R22.5 HDC1	0/0	0
furnish and install key locking battery disconnect switch left side under dash	0/0	0
right side grab handle	0/0	0
KTB liquid tire balance	0/0	0
USB diagnostic cable	0/0	0
training for engine, electrical, transmission (\$2200/day/4 days)	0/0	0
CD's, thumb drives for parts and service	0/0	0
Maine DOT diamond logic template	0/0	0
Total Goods Purchased:	0/0	0

The weight calculations included in this proposal are an estimate of future vehicle weight. The actual weight as manufactured may be different from the estimated weight. Navistar, Inc. shall not be liable for any consequences resulting from any differences between the estimated weight of a vehicle and the actual weight.

ENGINE/TRANSMISSION MATCHING



Sawtooth Details

Gear	Trans Ratio	Upshift Power Avail		Govern Power Avail		Peak Power Comparison			Warn Msg
		Veh Spd (MPH)	Eng Spd (RPM)	Veh Spd (MPH)	Eng Spd (RPM)	Gear Step (%)	85% Range (%)	90% Range (%)	
1	26.08	0.0	0	2.2	2100	60.00	134	118	@
2	16.30	2.2	1313	3.5	2100	37.55	134	118	@
3	11.85	3.5	1527	4.8	2100	59.92	134	118	
4	7.41	4.8	1313	7.6	2100	41.68	134	118	
5	5.23	7.6	1482	10.8	2100	37.99	134	118	
6	3.79	10.8	1522	14.9	2100	36.82	134	118	
7	2.77	14.9	1535	20.4	2100	42.05	134	118	
8	1.95	20.4	1478	29.0	2100	41.30	134	118	
9	1.38	29.0	1486	41.0	2100	38.00	134	118	
10	1.00	41.0	1522	56.6	2100	36.99	134	118	
11	0.73	56.6	1533	77.6	2100	0.00	134	118	

@ - WHEELSLIP CAN OCCUR AT THE GRADE SHOWN. THE VEHICLE IS CAPABLE OF INCREASED GRADEABILITY IF MORE WEIGHT IS PLACED ON THE DRIVE AXLES.

STEADY STATE PERFORMANCE

Performance Results	Gear	Veh Spd (mph)	Eng Spd (rpm)	Fuel Econ (mpg)	Grade (%)	Notes
LEVEL ROAD MAXIMUM SPEED	11	78.2	2116	5.49	0.00	
HI GEAR SPEED @ RATED RPM	11	77.6	2100	5.52	0.44	
55.0 MPH STEADY-STATE	11	55.0	1489	8.17	2.99	
TYPICAL OPERATING SPEED	11	72.0	1949	6.15	1.36	- Calculated Grade Ability/Fuel Economy

VEHICLE ORDER CODING ERRORS MAY RESULT IF THE "LEVEL ROAD MAX SPEED" VALUE EXCEEDS THE "HI GEAR SPEED @ RATED RPM" AND IS USED AS THE ENGINE PROGRAMMABLE VEHICLE SPEED LIMIT.

IF THE RESULTS CONTAIN "-----", VEHICLE CANNOT ATTAIN THAT SPEED.

IF THE RESULTS CONTAIN "*****", THE ENGINE USED DOES NOT HAVE A FUEL MAP. FUEL ECONOMY CANNOT BE PREDICTED.

Recommendations / General Information

IDLE FUEL RATE : 0.53 GALS/HR @ 600.0 RPM

Fuel Economy Route: Normal Route - City, Suburban, and Highway

Key Fuel Economy Information	City	Suburban	Highway	Notes
MILES PER GALLON	4.48	6.76	7.49	
AVERAGE MPH	18.4	39.4	54.5	
MISSION MINUTES	30.77	52.60	173.52	

IF THE RESULTS CONTAIN "*****", THE ENGINE USED DOES NOT HAVE A FUEL MAP. FUEL ECONOMY CANNOT BE PREDICTED.

GRADEABILITY PERFORMANCE

Grade Ability Table

Gear	Trans Ratio	Gear Step	Veh Spd (mph)	Eng Spd (rpm)	Whl Pwr (hp)	Grade (%)	Warn Msg	Start Grade (%)	Notes
1	26.08	60.00	0.8	800	62.48	57.50	@	57.50	- Calculated Start Ability
			1.0	1000	78.10	57.50	@		
			2.2	2100	164.02	57.50	@		
2	16.30	37.55	1.3	800	99.97	57.50	@	57.50	
			1.7	1000	124.96	57.50	@		
			2.2	1313	164.02	57.50	@		
			3.5	2100	262.43	57.50	@		
3	11.85	59.92	1.8	800	125.88	51.19		41.19	
			2.3	1000	171.89	57.50	@		
			3.5	1527	262.43	57.50	@		
			4.8	2100	288.14	43.17			
4	7.41	41.68	2.9	800	127.21	29.76		19.76	
			3.6	1000	244.68	49.39			
			4.8	1313	321.49	49.43			
			7.6	2100	290.83	25.53			
5	5.23	37.99	4.1	800	127.78	20.42		10.42	
			5.2	1000	245.91	32.83			
			7.6	1482	361.66	32.54			
			10.8	2100	291.90	17.56			
6	3.79	36.82	5.7	800	128.07	14.47		4.47	
			7.1	1000	246.60	23.05			
			10.8	1522	366.38	22.44			
			14.9	2100	292.29	12.41			
7	2.77	42.05	7.8	800	128.15	10.32		0.32	
			9.7	1000	246.91	16.44			
			14.9	1535	366.72	15.85			
			20.4	2100	292.10	8.78			
8	1.95	41.30	13.8	1000	246.87	11.25			
			20.4	1478	362.00	11.10			
			29.0	2100	291.05	5.81			
9	1.38	38.00	29.0	1486	362.57	7.47			
			41.0	2100	288.77	3.64			
10	1.00	36.99	41.0	1522	368.44	4.94			
			56.6	2100	288.34	2.03			
11	0.73	0.00	56.6	1533	357.67	2.85			
			74.1	2006	314.22	1.00			
			77.2	2091	279.90	0.50			
			77.6	2100	275.86	0.44			
			78.2	2116	229.80	0.00			

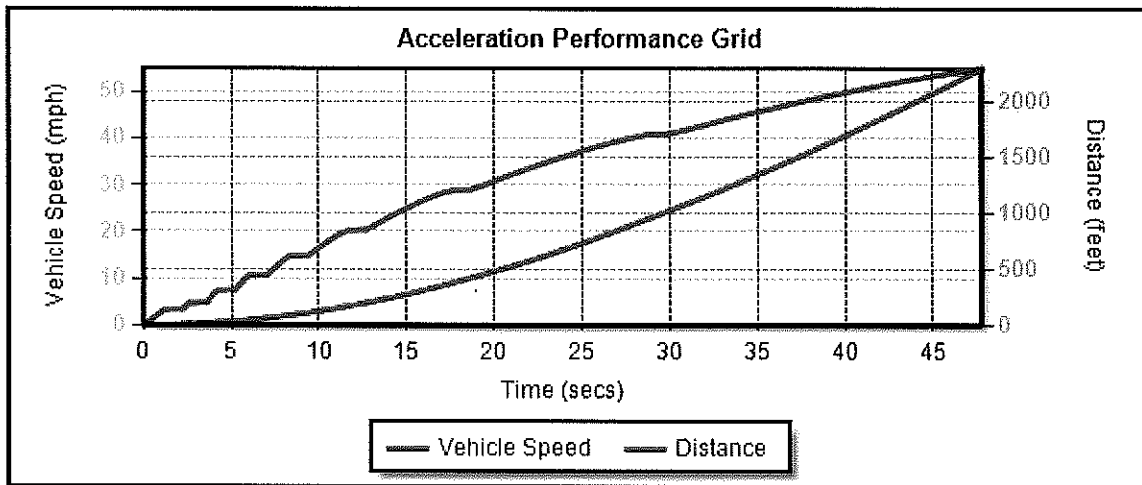
STARTING / TOP GEAR PERFORMANCE

Gear	Trans Ratio	Gear Step	Veh Spd (mph)	Eng Spd (rpm)	Whl Pwr (hp)	Grade (%)	Warn Msg	Start Grade (%)	Notes
1	26.08	60.00	0.8		62.48	57.50	@	57.50	- Calculated Start Ability
2	16.30	37.55	1.3		99.97	57.50	@	57.50	
3	11.85	59.92	1.8		125.88	51.19		41.19	
4	7.41	41.68	2.9		127.21	29.76		19.76	
5	5.23	37.99	4.1		127.78	20.42		10.42	
6	3.79	36.82	5.7		128.07	14.47		4.47	
7	2.77	42.05	7.8		128.15	10.32		0.32	

@ - WHEELSLIP CAN OCCUR AT THE GRADE SHOWN. THE VEHICLE IS CAPABLE OF INCREASED GRADEABILITY IF MORE WEIGHT IS PLACED ON THE DRIVE AXLES.

ACCELERATION PERFORMANCE RESULTS

Acceleration Performance Grid



Acceleration Performance: TIME TO ACCELERATE ON A GRADE TO 55.0 (MPH) IS 47.84 (SECS)

Acceleration Performance Details

Gear	Time (secs)	Distance (feet)	Speed (mph)	Notes
2	0.36	0.3	1.0	
	0.72	1.1	2.0	
	1.08	2.4	3.0	
	1.26	3.2	3.5	
	2.26	8.3	3.4	
3	2.50	9.7	4.4	
	2.60	10.3	4.8	
	3.60	17.3	4.7	
4	3.79	18.7	5.7	
	3.99	20.6	6.7	
	4.24	23.1	7.6	
	5.24	34.3	7.5	
5	5.45	36.8	8.5	
	5.69	39.9	9.5	
	5.97	44.1	10.5	
	6.08	45.7	10.8	
	7.08	61.5	10.7	
6	7.34	65.8	11.7	
	7.62	70.9	12.7	
	7.93	76.9	13.7	
	8.30	84.5	14.7	
	8.41	87.0	14.9	
7	9.41	108.8	14.8	
	9.75	116.3	15.8	
	10.11	124.8	16.8	
	10.49	134.5	17.8	
	10.90	145.4	18.8	
	11.36	158.6	19.8	
8	11.73	169.4	20.4	
	12.73	199.3	20.3	
	13.18	213.0	21.3	
	13.65	227.9	22.3	

Gear	Time (secs)	Distance (feet)	Speed (mph)	Notes
9	14.14	244.4	23.3	
	14.66	262.4	24.3	
	15.20	282.0	25.3	
	15.76	303.2	26.3	
	16.37	327.2	27.3	
	17.07	355.5	28.3	
	17.69	381.7	29.0	
	18.69	424.1	28.8	
	19.34	452.0	29.8	
	20.01	481.8	30.8	
	20.71	513.9	31.8	
	21.43	548.3	32.8	
	22.19	585.1	33.8	
	22.96	624.2	34.8	
	23.77	665.8	35.8	
	24.60	710.1	36.8	
	25.47	758.1	37.8	
	26.44	812.1	38.8	
	27.51	873.9	39.8	
	28.71	945.0	40.8	
10	28.98	961.2	41.0	
	29.98	1021.2	40.8	
	30.95	1079.7	41.8	
	31.95	1141.8	42.8	
	32.98	1207.5	43.8	
	34.05	1277.1	44.8	
	35.16	1350.8	45.8	
	36.31	1428.5	46.8	
	37.49	1510.1	47.8	
	38.70	1596.0	48.8	
	39.95	1686.3	49.8	
	41.24	1781.4	50.8	
	42.59	1882.9	51.8	
	44.04	1994.5	52.8	
	45.65	2119.6	53.8	
	47.42	2260.7	54.8	
	47.84	2295.0	55.0	

REQUIRED TCAPE INFORMATION

TCAPE Factors For Vehicle

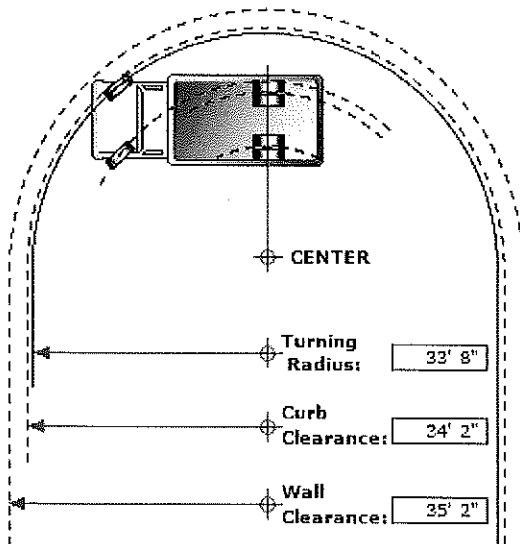
Selected Rear Axle Gear Ratio(s):	4.56
Parked PTO:	NO
Enroute PTO:	NO
Vehicle Vocation:	MODERATE ON/OFF HIGHWAY
ID Wheel Slip Conditions:	Yes
Road Governor/Cruise Ctrl:	No
Engine Fan Type:	VISCOUS
Road Surface Type:	TYPICAL
Fuel Economy Route:	Normal Route - City, Suburban, and Highway
Acceleration Grade (%):	0.0
Frontal Area (FT ²):	76
Speed Limit on Route (MPH):	61.0
Relative Drag Coefficient:	85
Alternator (A):	40
Steering Gear (HP):	2.60
Air Conditioner (HP):	3.20
Vehicle Width (IN):	96
Acceleration Start Gear:	2
Vehicle Height (IN):	115
Weight on Drive Axle (LBF):	46000
Acceleration Vehicle Spd (MPH):	55.0
Air Compressor (HP):	2.20
TIRE, FRONT	2 - RADIAL LOWPROFILE
TIRE, REAR	8 - RADIAL NORMAL

Components

0002ARY	AXLE, FRONT NON-DRIVING {Meritor MFS-20-133A} Wide Track, I-Beam Type, 20,000-lb Capacity
0004SPM	AIR COMPRESSOR {Bendix BA-921 Head Unload} 15.9 CFM Capacity, Single Cylinder
0005PTB	STEERING GEAR (2) {Sheppard M100/M80} Dual Power
0008GXJ	ALTERNATOR {Leece-Neville AVI160P2013} Brush Type; 12 Volt 160 Amp. Capacity, Pad Mount
0012BEA	ENGINE, DIESEL {International A26} EPA 2017, 410HP @ 1700 RPM, 1450 lb-ft Torque @ 1000 RPM, 2100 RPM Governed Speed, 410 Peak HP (Max)
0012THT	FAN DRIVE {Horton Drivemaster} Direct Drive Type, Two Speed with Residual Torque Device for Disengaged Fan Speed
0013GNA	TRANSMISSION, MANUAL {Fuller RTO(F)-16909ALL} 11-Speed Manual, with Overdrive and Double-Lo, with Lube Oil Pump, with Air Shift
0014GRR	AXLE, REAR, TANDEM {Meritor RT-46-160P} Single Reduction, 46,000-lb Capacity, with Lube Oil Pump, 200 Wheel Ends
0016030	CAB Conventional
0016BAM	AIR CONDITIONER with Integral Heater & Defroster
07382135420	TIRE, REAR 11R22.5 Load Range H HDC1 (CONTINENTAL), 488 rev/mile, 75 MPH, Drive 11R22.5 Load Range H HDC1 (CONTINENTAL), 488 rev/mile, 75 MPH, Drive
07792545419	TIRE, FRONT 315/80R22.5 Load Range L HSC1 (CONTINENTAL), 484 rev/mile, 68 MPH, All-Position 315/80R22.5 Load Range L HSC1 (CONTINENTAL), 484 rev/mile, 68 MPH, All-Position

TCAPE HAS BEEN DESIGNED TO GIVE ECONOMY AND PERFORMANCE PREDICTIONS WHICH HAVE BEEN SHOWN TO BE TYPICAL FOR MOST OPERATIONS. HOWEVER, DUE TO OPERATING CONDITIONS, DRIVER INFLUENCES, AND OTHER FACTORS, YOUR RESULTS MAY VARY FROM THOSE PREDICTED. ALSO, BECAUSE OF FUEL MAPPING PROCEDURES USED BY VARIOUS ENGINE MANUFACTURERS, COMPARISONS OF FUEL ECONOMY RESULTS FOR DIFFERENT BRANDS OF ENGINES MAY VARY FROM THOSE SHOWN.

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Series: HV
Model: HV513
Description: HV513 SFA
Model Year: 2020

Calculation Factors

Wheelbase: 219
Front Axle: 0002ARY
Description: AXLE, FRONT NON-DRIVING, {Meritor MFS-20-133A}
Wide Track, I-Beam Type, 20,000-lb Capacity
Front Wheel: 0027DUL
Description: WHEELS, FRONT, {Accuride 29300} DISC; 22.5x9.00 Rims,
Powder Coat Steel, 5-Hand Hole, 10-Stud, 285.75mm BC,
Hub-Piloted, Flanged Nut, with Steel Hubs
Front Tire: 07792545419
Description: TIRES, 315/80R22.5 Load Range L HSC1
(CONTINENTAL), 484 rev/mile, 68 MPH, All-Position
Steering Gear: 0005PTB
Description: STEERING GEAR, (2) {Sheppard M100/M80} Dual Power

Turning Radius StatisticsGeneral Information

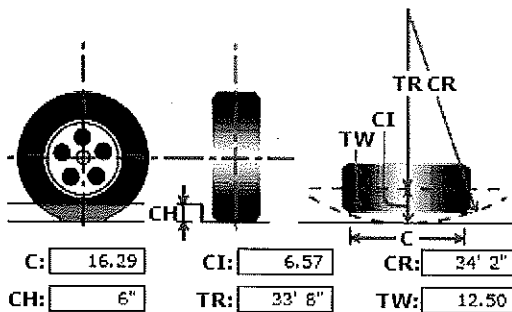
Inside Turn Angle: 40 Degrees
Radial Overhang: 18

Axle Information

KingPin Inclination: 6.25 Degrees
KingPin Center: 71

Turning Radius - Curb View

C	- Curb Contact Length:	16.29
CI	- Curb Clearance Increment:	6.57
CR	- Curb Clearance Radius:	34'2"
CH	- Curb Height:	6"
TR	- Turning Radius:	33'8"
TW	- Tire Width:	12.50



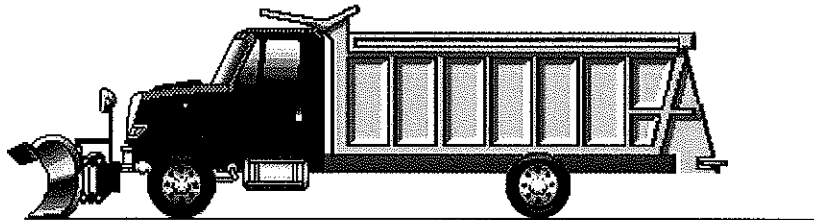
* All Measurements are in inches, unless otherwise specified.

This information is based on engineering information available at this time. Actual figures may vary. Navistar, Inc. cannot accept liability for consequences due to this variance.

Prepared For:
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 (207)287 - 3521
 Reference ID: N/A

Presented By:
 DAIGLE & HOUGHTON INC
 Gary Daigle
 130 MARKET STREET
 FORT KENT ME 04743 -
 (207)834-6186

Thank you for the opportunity to provide you with the following quotation on a new International truck. I am sure the following detailed specification will meet your operational requirements, and I look forward to serving your business needs.



Model Profile
2019 HV507 SFA (HV507)

AXLE CONFIG:	4X2
APPLICATION:	Front Plow and Wing with Spreader
MISSION:	Requested GVWR: 39000. Calc. GVWR: 41000 Calc. Start / Grade Ability: 30.28% / 2.28% @ 55 MPH Calc. Geared Speed: 79.1 MPH
DIMENSION:	Wheelbase: 187.00, CA: 112.00, Axle to Frame: 75.00
ENGINE, DIESEL:	{Cummins L9 300} EPA 2017, 300HP @ 2000 RPM, 860 lb-ft Torque @ 1300 RPM, 2200 RPM Governed Speed, 300 Peak HP (Max)
TRANSMISSION, AUTOMATIC:	{Allison 3500 RDS} 5th Generation Controls, Wide Ratio, 5-Speed with Overdrive, with PTO Provision, Less Retarder, Includes Oil Level Sensor, with 80,000-lb GVW and GCW Max, On/Off Highway
CLUTCH:	Omit Item (Clutch & Control)
AXLE, FRONT NON-DRIVING:	{Meritor MFS-18-133A} Wide Track, I-Beam Type, 18,000-lb Capacity
AXLE, REAR, SINGLE:	{Meritor RS-23-160} Single Reduction, 23,000-lb Capacity, Driver Controlled Locking Differential, 200 Wheel Ends Gear Ratio: 4.56
CAB:	Conventional
TIRE, FRONT:	(3) 315/80R22.5 Load Range L HSC1 (CONTINENTAL), 484 rev/mile, 68 MPH, All-Position
TIRE, REAR:	(4) 11R22.5 Load Range H HDC1 (CONTINENTAL), 488 rev/mile, 75 MPH, Drive
SUSPENSION, RR, SPRING, SINGLE:	31,000-lb Capacity, Vari-Rate Springs, with 4500-lb Capacity Auxiliary Multileaf Springs
PAINT:	Cab schematic 100WK Location 1: 6M24, Blue (Custom) Chassis schematic N/A

<u>Description</u>	<u>F/R Wt</u> (lbs)	<u>Tot Wt</u> (lbs)
Base Chassis, Model HV507 SFA with 187.00 Wheelbase, 112.00 CA, and 75.00 Axle to Frame.	6050/3747	9797
AXLE CONFIGURATION {Navistar} 4x2	0/0	0
<u>Notes</u> : Pricing may change if axle configuration is changed.		
FRAME RAILS Heat Treated Alloy Steel (120,000 PSI Yield); 10.866" x 3.622" x 0.433" (276.0mm x 92.0mm x 11.1mm); 456.0" (11582mm) Maximum OAL	136/421	557
BUMPER, FRONT Steel, Swept Back	0/0	0
FRAME EXTENSION, FRONT Integral; 20" In Front of Grille	139/-34	105
WHEELBASE RANGE 146" (370cm) Through and Including 195" (495cm)	0/0	0
BRACKET, CAB MOUNT Heavy Duty	14/3	17
AXLE, FRONT NON-DRIVING {Meritor MFS-18-133A} Wide Track, I-Beam Type, 18,000-lb Capacity	186/0	186
AXLE, FRONT DRIVING, LUBE {EmGard FE-75W-90} Synthetic Oil; 1 thru 29.99 Pints	0/0	0
SHOCK ABSORBERS, FRONT	45/0	45
SUSPENSION, FRONT, SPRING Multileaf, Shackle Type, 18,000-lb Capacity, Less Shock Absorbers	190/0	190
BRAKE SYSTEM, AIR Dual System for Straight Truck Applications	0/0	0
BRAKES, FRONT, AIR CAM 16.5" x 6", Includes 24 SqIn Long Stroke Brake Chambers	26/0	26
TRAILER CONNECTIONS Four-Wheel, with Hand Control Valve and Tractor Protection Valve, for Straight Truck	2/0	2
AIR BRAKE ABS {Bendix AntiLock Brake System} Full Vehicle Wheel Control System (4-Channel)	0/0	0
AIR DRYER {Bendix AD-IP} with Heater	17/10	27
BRAKE CHAMBERS, SPRING Relocated To Rear Of Rear Axle For Maximum Ground Clearance	0/0	0
SLACK ADJUSTERS, FRONT {Haldex} Automatic	0/0	0
SLACK ADJUSTERS, REAR {Haldex} Automatic	0/0	0
BRAKES, REAR, AIR CAM S-Cam; 16.5" x 7.0"; Includes 30/30 Sq.In. Long Stroke Brake Chamber and Spring Actuated Parking Brake	0/26	26
AIR COMPRESSOR {Cummins} 18.7 CFM Capacity	0/0	0
AIR DRYER LOCATION Mounted Inside Left Rail, Back of Cab	14/7	21
DUST SHIELDS, FRONT BRAKE for Air Brakes	5/0	5
DUST SHIELDS, REAR BRAKE for Air Brakes	0/6	6
DRAIN VALVE (3) with Pull Chains for Air Tanks	0/0	0
AIR TANK LOCATION (2) : One Mounted Under Each Frame Rail, Front of Rear Suspension, Parallel to Rail	0/0	0
STEERING COLUMN Tilting and Telescoping	16/3	19
STEERING WHEEL 4-Spoke; 18" Dia., Black	0/0	0
STEERING GEAR (2) {Sheppard M100/M80} Dual Power	92/-5	87
DRIVESHAFT {Dana Spicer} SPL170XL in lieu of 1710 Series	0/0	0
AFTERTREATMENT COVER Aluminum	8/3	11

<u>Description</u>	<u>F/R Wt</u> (lbs)	<u>Tot Wt</u> (lbs)
EXHAUST SYSTEM Single Horizontal Aftertreatment Device, Frame Mounted Right Side Under Cab; for Single Vertical Tail Pipe, Frame Mounted Right Side Back of Cab	129/47	176
TAIL PIPE (1) Turnback Type, Non-Bright, for Single Exhaust	0/0	0
EXHAUST HEIGHT 11' 6"	3/0	3
MUFFLER/TAIL PIPE GUARD (1) Non-Bright Aluminum	0/0	0
SWITCH, FOR EXHAUST 3 Position, Momentary, Lighted Momentary, ON/CANCEL, Center Stable, INHIBIT REGEN, Mounted in IP Inhibits Diesel Particulate Filter Regeneration When Switch is Moved to ON While Engine is Running, Resets When Ignition is Turned OFF	2/0	2
ELECTRICAL SYSTEM 12-Volt, Standard Equipment	0/0	0
CIGAR LIGHTER Includes Ash Cup	1/0	1
HORN, ELECTRIC (2) Disc Style	1/0	1
BATTERY TERMINALS Sealed	2/0	2
ALTERNATOR {Leece-Neville AV160P2013} Brush Type; 12 Volt 160 Amp. Capacity, Pad Mount, with Remote Sense	0/0	0
BODY BUILDER WIRING Back of Standard or Sleeper Cab at Left Frame or Under Extended or Crew Cab at Left Frame; Includes Sealed Connectors for Tail/Amber Turn/Marker/ Backup/Accessory Power/Ground and Sealed Connector for Stop/Turn	2/0	2
ELECTRIC TRAILER BRAKE/LIGHTS Accommodation Package to Rear of Frame; for Combined Trailer Stop, Tail, Turn, Marker Light Circuits; Includes Electric Trailer Brake Accommodation Package with Cab Connections for Mounting Customer Installed Electric Brake Unit, Less Trailer Socket	0/2	2
BATTERY SYSTEM {Fleetrite} Maintenance-Free, (3) 12-Volt 2850CCA Total	36/39	75
RADIO AM/FM/WB/Clock/Bluetooth/USB Input/3.5MM Auxiliary Input, MP3, Apple Device Play & Control, Bluetooth for Phone & Music	4/0	4
SPEAKERS (2) 6.5" Dual Cone Mounted in Both Doors, (2) 5.25" Dual Cone Mounted in Both B-Pillars	5/3	8
BACK-UP ALARM Electric, 102 dBA	0/3	3
TRAILER AUXILIARY FEED CIRCUIT for Electric Trailer Brake Accommodation/Air Trailer ABS; with 30 Amp Fuse and Relay, Controlled by Ignition Switch	1/0	1
AUXILIARY HARNESS 5.0' for Auxiliary Front Head Lights and Turn Signals for Front Plow Applications	3/0	3
BATTERY CABLES with 2 Auxiliary Sealed Battery Posts, 1 Positive and 1 Negative	1/0	1
BATTERY BOX Steel, with Fiberglass Cover, 35" Back of Cab, Mounted Left Side Perpendicular to Frame Rail	-42/19	-23
WINDSHIELD WIPER SPD CONTROL Force Wipers to Slowest Intermittent Speed When Park Brake Set and Wipers Left on for a Predetermined Time	0/0	0
SWITCH, TOGGLE, FOR WORK LIGHT Lighted; on Instrument Panel and Wiring Effects for Customer Furnished Back of Cab Light	2/1	3
RUNNING LIGHT (2) Daytime	0/0	0
CLEARANCE/MARKER LIGHTS (5) {Truck Lite} Amber LED Lights, Flush Mounted on Cab or Sunshade	0/0	0
TEST EXTERIOR LIGHTS Pre-Trip Inspection will Cycle all Exterior Lamps Except Back-up Lights	0/0	0
STARTING MOTOR {Delco Remy 38MT Type 300} 12 Volt; less Thermal Over-Crank Protection	8/1	9
COURTESY LIGHT (2) Mounted In Front Map Pocket Left and Right Side	1/0	1

<u>Description</u>	<u>F/R Wt</u> (lbs)	<u>Tot Wt</u> (lbs)
INDICATOR, LOW COOLANT LEVEL with Audible Alarm	0/0	0
ALARM, PARKING BRAKE Electric Horn Sounds in Repetitive Manner When Vehicle Park Brake is "NOT" Set, with Ignition "OFF" and any Door Opened	0/0	0
CIRCUIT BREAKERS Manual-Reset (Main Panel) SAE Type III with Trip Indicators, Replaces All Fuses	0/0	0
TURN SIGNALS, FRONT Includes LED Side Turn Lights Mounted on Fender	0/0	0
BATTERY DISCONNECT SWITCH 300 Amp; Cab Mounted, Disconnects Charging Circuits; Locks with Padlock	2/0	2
HORN, AIR Black, Single Trumpet, with Lanyard Pull Cord	3/0	3
FENDER EXTENSIONS Rubber	6/0	6
LOGOS EXTERIOR Model Badges	0/0	0
LOGOS EXTERIOR, ENGINE Badges	0/0	0
HOOD, HATCH (01) for Servicing	5/0	5
INSULATION, UNDER HOOD for Sound Abatement	10/0	10
GRILLE Stationary, Chrome	0/0	0
INSULATION, SPLASH PANELS for Sound Abatement	2/0	2
BUG SCREEN Mounted Behind Grille	5/0	5
FRONT END Tilting, Fiberglass, with Three Piece Construction; for WorkStar/HV	0/0	0
CHASSIS COATING Corrosion Resistant E-Coat Primer Coating for Single Frame Rails	0/0	0
PAINT SCHEMATIC, PT-1 Single Color, Design 100	0/0	0
<u>Includes</u>		
: PAINT SCHEMATIC ID LETTERS "WK"		
PAINT TYPE Base Coat/Clear Coat, 1-2 Tone	0/0	0
PAINT CLASS Single Custom Color	0/0	0
LABEL, DEF "DEF ONLY"	0/0	0
PROMOTIONAL PACKAGE Government Silver Package	0/0	0
KEYS - ALL ALIKE, ADDITIONAL 2 Keys	0/0	0
KEYS - ALL ALIKE, ID I-1624 Compatible with Z-250	0/0	0
CLUTCH Omit Item (Clutch & Control)	-52/-11	-63
ANTI-FREEZE Red, Extended Life Coolant; To -40 Degrees F/ -40 Degrees C, Freeze Protection	0/0	0
BLOCK HEATER, ENGINE 120V/1000W, for Cummins ISB/B6.7/ISL/L9 Engines	3/0	3
PTO EFFECTS, ENGINE FRONT Less PTO Unit, Includes Adapter Plate on Engine Front Mounted	10/0	10
ENGINE, DIESEL {Cummins L9 300} EPA 2017, 300HP @ 2000 RPM, 860 lb-ft Torque @ 1300 RPM, 2200 RPM Governed Speed, 300 Peak HP (Max)	560/4	564
FAN DRIVE {Horton Drivemaster} Direct Drive Type, Two Speed with Residual Torque Device for Disengaged Fan Speed	0/0	0
RADIATOR Cross Flow, Series System; 1228 SqIn Aluminum Radiator Core with Internal Water to Oil Transmission Cooler and 1167 In Charge Air Cooler	23/-5	18

<u>Description</u>	<u>F/R Wt</u> (lbs)	<u>Tot Wt</u> (lbs)
AIR CLEANER Dual Element, with Integral Snow Valve and In-Cab Control	6/0	6
FEDERAL EMISSIONS {Cummins L9} EPA, OBD and GHG Certified for Calendar Year 2018	0/0	0
THROTTLE, HAND CONTROL Engine Speed Control for PTO; Electronic, Stationary Pre-Set, Two Speed Settings; Mounted on Steering Wheel	0/0	0
ACCESSORY WIRING, SPECIAL for Road Speed Wire Coiled Under Instrument Panel for Customer Use	0/0	0
HOSE CLAMPS, RADIATOR HOSES {R.G. Ray Mini Flex Seal} Coil Spring/"T"-Bolt Type, for Radiator Hoses over 1" I.D.	0/0	0
EMISSION COMPLIANCE Low NOx Idle Engine, Complies with California Clean Air Regulations; Includes "Certified Clean Idle" Decal located on Driver Door	0/0	0
ENGINE CONTROL, REMOTE MOUNTED Provision for; Includes Wiring for Body Builder Installation of PTO Controls; with Ignition Switch Control for Cummins ISB/B6.7 or ISL/L9 Engines	0/0	0
TRANSMISSION, AUTOMATIC {Allison 3500 RDS} 5th Generation Controls, Wide Ratio, 5-Speed with Overdrive, with PTO Provision, Less Retarder, Includes Oil Level Sensor, with 80,000-lb GVW and GCW Max, On/Off Highway	185/65	250
TRANSMISSION SHIFT CONTROL for Column Mounted Stalk Shifter	0/0	0
TRANSMISSION DIPSTICK Relocated to Right Side of Transmission	0/0	0
TRANSMISSION COOLER HOSES Stainless Steel	0/0	0
TRANSMISSION OIL Synthetic; 29 thru 42 Pints	0/0	0
ALLISON SPARE INPUT/OUTPUT for Rugged Duty Series (RDS); General Purpose Trucks, Construction	0/0	0
TRANSMISSION TCM LOCATION Located Inside Cab	0/0	0
SHIFT CONTROL PARAMETERS Allison 3000 or 4000 Series Transmissions, 5th Generation Controls, Performance Programming	0/0	0
PTO CONTROL, DASH MOUNTED For Customer Provided PTO; Includes Switch, Electric/Air Solenoid, Piping and Wiring	5/0	5
PTO LOCATION Dual, Left and Right Side of Transmission	0/0	0
AXLE, REAR, SINGLE {Meritor RS-23-160} Single Reduction, 23,000-lb Capacity, Driver Controlled Locking Differential, 200 Wheel Ends . Gear Ratio: 4.56	0/230	230
SUSPENSION, RR, SPRING, SINGLE 31,000-lb Capacity, Vari-Rate Springs, with 4500-lb Capacity Auxiliary Multileaf Springs	0/177	177
AXLE, REAR, LUBE {EmGard FE-75W-90} Synthetic Oil; 30 thru 39.99 Pints	0/0	0
FUEL/WATER SEPARATOR {Racor 400 Series,} with Primer Pump, Includes Water-in-Fuel Sensor	0/0	0
LOCATION FUEL/WATER SEPARATOR Mounted Inside Left Rail, 24" Back of Cab	0/0	0
FUEL TANK Top Draw, Non-Polished Aluminum, 26" Dia, 70 US Gal (265L), Mounted Left Side, Under Cab	8/11	19
DEF TANK 7 U.S. Gal. 26.5L Capacity, Frame Mounted Outside Left Rail, Under Cab	0/0	0
CAB Conventional	0/0	0
AIR CONDITIONER with Integral Heater & Defroster	54/2	56
GAUGE CLUSTER Base Level; English with English Speedometer and Tachometer, for Air Brake Chassis, Includes Engine Coolant Temperature, Primary and Secondary Air Pressure, Fuel and DEF Gauges, Oil Pressure Gauge, Includes 3 Inch Monochromatic Text Display	0/0	0

Description

	<u>F/R Wt</u> (lbs)	<u>Tot Wt</u> (lbs)
GAUGE, OIL TEMP, AUTO TRANS for Allison Transmission	1/0	1
GAUGE, AIR CLEANER RESTRICTION {Filter-Minder} with Black Bezel Mounted in Instrument Panel	2/0	2
IP CLUSTER DISPLAY On Board Diagnostics Display of Fault Codes in Gauge Cluster	0/0	0
GAUGE, VOLTMETER Auxiliary Gauge, Located in Center Panel. Standard Cluster Also Includes Digital Voltage Readout	0/0	0
SEAT, DRIVER {National 2000 195} Air Suspension, High Back with Integral Headrest, Cloth, Isolator, 3 Chamber Lumbar, 2 Position Front Cushion Adjust, -3 to +14 Degree Back Angle Adjust, Cushion and Back Bolsters	24/11	35
SEAT, PASSENGER {National} Air-Suspension, High Back with Integral Headrest, Cloth, Isolated, 1 Chamber Lumbar, 2 Position Front Cushion Adjustment, -3 to +14 Degree Seat Back Adjustment	42/37	79
GRAB HANDLE Chrome; Towel Bar Type with Anti-Slip Rubber Inserts; for Cab Entry Mounted Left Side Only at "B" Pillar	3/0	3
MIRRORS (2) Aero; Pedestal, Power Adjust, Heated Heads, Turn Signals, Black Heads and Arms, 6.3" x 13.82" Flat Glass, 6.38" x 6.18" Convex Glass Both Sides	0/0	0
SEAT BELT All Orange; 1 to 3	0/0	0
CAB INTERIOR TRIM Classic, for Day Cab	0/0	0
<u>Includes</u>		
: CONSOLE, OVERHEAD Molded Plastic with Dual Storage Pockets, Retainer Nets and CB Radio Pocket; Located Above Driver and Passenger	0/0	0
: DOME LIGHT, CAB Door Activated and Push On-Off at Light Lens, Timed Theater Dimming, Integral to Overhead Console, Center Mounted	3/0	3
: SUN VISOR (2) Padded Vinyl; 2 Moveable (Front-to-Side) Primary Visors, Driver Side with Toll Ticket Strap	12/0	12
SEAT BELT COMFORT CLIP	0/0	0
ARM REST, RIGHT, DRIVER SEAT	3/0	3
CAB SOUND INSULATION Includes Dash Insulator and Engine Cover Insulator	12/0	12
HOSE CLAMPS, HEATER HOSE {Breeze} Belleville Washer Type	0/0	0
WINDOW, POWER (2) and Power Door Locks, Left and Right Doors, Includes Express Down Feature	5/0	5
HOURLMETER, PTO for Customer Provided PTO; with Indicator Light and Hourmeter in Gauge Cluster Includes Return Wire for PTO Feedback Switch	2/0	2
FRESH AIR FILTER Attached to Air Intake Cover on Cowl Tray in Front of Windshield Under Hood	0/0	0
CAB REAR SUSPENSION Air Bag Type	0/0	0
INSTRUMENT PANEL Wing Panel	0/0	0
WINDSHIELD WIPER BLADES Snow Type	0/0	0
WINDSHIELD WASHER RESERVOIR Mounted Under Cab with Remote Fill Mounted Behind Cab Drivers Side	2/0	2
ACCESS, CAB Steel, Driver & Passenger Sides, Two Steps Per Door, for use with Regular and Extended Cabs	0/0	0
WHEEL, SPARE, DISC {Accuride 29300} 22.5x9.00 Rims, Powder Coat Steel, 10-Stud, 285.75mm BC, Hub-Piloted	0/0	0
WHEELS, FRONT {Accuride 29300} DISC; 22.5x9.00 Rims, Powder Coat Steel, 5-Hand Hole, 10-Stud, 285.75mm BC, Hub-Piloted, Flanged Nut, with Steel Hubs	0/108	108
	72/0	72

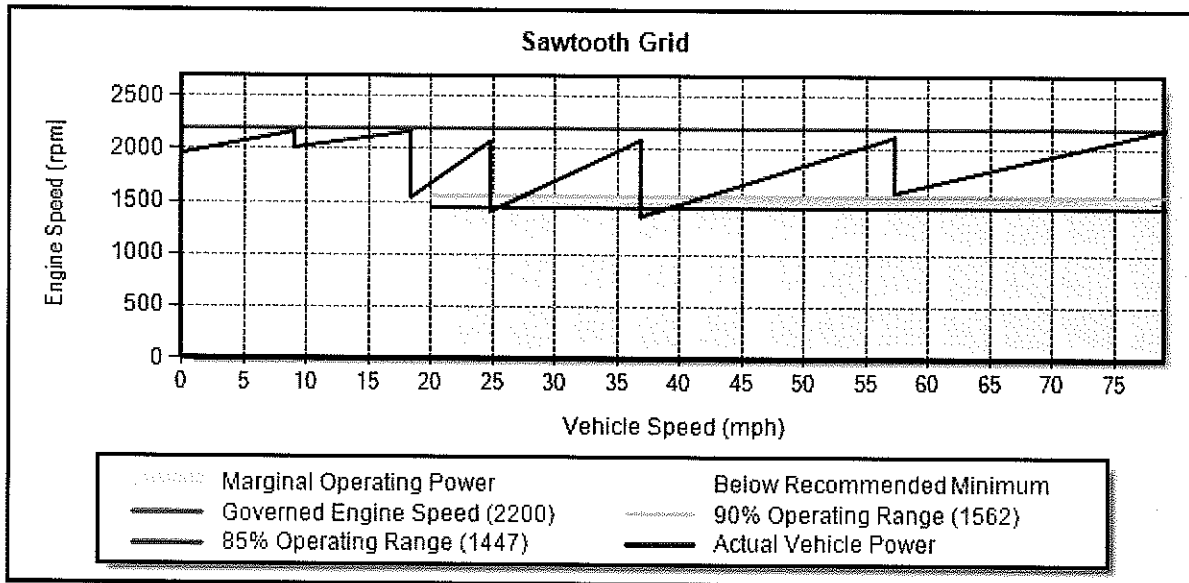
<u>Description</u>	<u>F/R Wt</u> (lbs)	<u>Tot Wt</u> (lbs)
WHEELS, REAR {Accuride 29169} DUAL DISC; 22.5x8.25 Rims, Powder Coat Steel, 5-Hand Hole, 10-Stud, 285.75mm BC, Hub-Piloted, Flanged Nut, with .472" Thick Increased Capacity Disc and Steel Hubs	0/24	24
TIRE, SPARE Equal to Model Standard	0/0	0
BDY INTG, REMOTE POWER MODULE (2) Mounted Inside Cab behind Driver Seat; Up to 6 Outputs & 6 Inputs each, Max. 20 amp. per Channel, Max. 80 amp Total (Includes 2 Switch Packs with Latched Switches)	0/0	0
BDY INTG, SWITCH MOMNTRY 3POS Rocker, Backlit, with "ON" Indicator Mounted on Dash, Latching Software, for 2; Auxiliary Load 20 amp. Maximum; Power Available Only in "Ignition" or "Accessory" Position, Output Also Controlled by a Customer Remote Mounted Switch (requires 2 Remote Power Module inputs & 2 outputs)	0/0	0
BDY INTG, DASH IND LT TRICOLOR (3) for Optional Usage Customer to Program	0/0	0
(4) TIRE, REAR 11R22.5 Load Range H HDC1 (CONTINENTAL), 488 rev/mile, 75 MPH, Drive	0/36	36
(3) TIRE, FRONT 315/80R22.5 Load Range L HSC1 (CONTINENTAL), 484 rev/mile, 68 MPH, All-Position	123/0	123
BRAKE CHAMBERS, REAR AXLE rear haldex life seal rear brake chambers (04EXX)	1/1	2
BRAKE CHAMBERS, FRONT AXLE front Haldex life seal brake chambers	1/1	2
MISCELLANEOUS stainless steel oil pan	0/20	20
Cab schematic 100WK		
Location 1: 6M24, Blue (Custom)		
Chassis schematic N/A		

Services Section:

WARRANTY Standard for HV507, HV50B, HV607 Models, Effective with Vehicles Built July 1, 2017 or Later, CTS-2025A	0/0	0
Total Component Weight:	8227/5013	13240
rear spare wheel and tire 11R22.5 HDC1	1/1	2
furnish and install Battery disconnect switch with key operated, left side of dash	1/1	2
right side grab handle	0/0	0
KTB liquid tire balance	0/0	0
USB-link interface and cables	0/0	0
	0/0	0
stainless steel oil pan	0/0	0
Total Goods Purchased:	2/2	4

The weight calculations included in this proposal are an estimate of future vehicle weight. The actual weight as manufactured may be different from the estimated weight. Navistar, Inc. shall not be liable for any consequences resulting from any differences between the estimated weight of a vehicle and the actual weight.

ENGINE/TRANSMISSION MATCHING



Sawtooth Details

Gear	Trans Ratio	Upshift Power Avail		Govern Power Avail		Peak Power Comparison			Warn Msg
		Veh Spd (MPH)	Eng Spd (RPM)	Veh Spd (MPH)	Eng Spd (RPM)	Gear Step (%)	85% Range (%)	90% Range (%)	
1C	4.59	0.0	1963	9.0	2168	N/A	52	41	
2C	2.26	9.0	2020	18.4	2170	N/A	52	41	
2L	2.26	18.4	1546	24.8	2081	N/A	52	41	
3L	1.53	24.8	1409	36.9	2095	N/A	52	41	
4L	1.00	36.9	1369	57.3	2125	N/A	52	41	
5L	0.75	57.3	1594	79.1	2200	N/A	52	41	

@ - WHEELSLIP CAN OCCUR AT THE GRADE SHOWN. THE VEHICLE IS CAPABLE OF INCREASED GRADEABILITY IF MORE WEIGHT IS PLACED ON THE DRIVE AXLES.

STEADY STATE PERFORMANCE

Performance Results	Gear	Veh Spd (mph)	Eng Spd (rpm)	Fuel Econ (mpg)	Grade (%)	Notes
LEVEL ROAD MAXIMUM SPEED	5L	80.0	2225	6.33	0.00	
HI GEAR SPEED @ RATED RPM	5L	79.1	2200	6.37	0.43	
55.0 MPH STEADY-STATE	5L	55.0	1530	9.93	2.28	
TYPICAL OPERATING SPEED	5L	65.0	1808	8.36	1.81	- Calculated Grade Ability/Fuel Economy

VEHICLE ORDER CODING ERRORS MAY RESULT IF THE "LEVEL ROAD MAX SPEED" VALUE EXCEEDS THE "HI GEAR SPEED @ RATED RPM" AND IS USED AS THE ENGINE PROGRAMMABLE VEHICLE SPEED LIMIT.

IF THE RESULTS CONTAIN "-----", VEHICLE CANNOT ATTAIN THAT SPEED.

IF THE RESULTS CONTAIN "*****", THE ENGINE USED DOES NOT HAVE A FUEL MAP. FUEL ECONOMY CANNOT BE PREDICTED.

Recommendations / General Information

IDLE FUEL RATE : 0.76 GALS/HR @ 700.0 RPM

TORQUE CONVERTER : TC-418 STALL RATIO: 1.98

Fuel Economy Route: Normal Route - City, Suburban, and Highway

Key Fuel Economy Information	City	Suburban	Highway	Notes
MILES PER GALLON	6.54	9.51	9.43	
AVERAGE MPH	19.0	39.9	54.6	
MISSION MINUTES	29.76	51.94	173.34	

IF THE RESULTS CONTAIN "*****", THE ENGINE USED DOES NOT HAVE A FUEL MAP. FUEL ECONOMY CANNOT BE PREDICTED.

GRADEABILITY PERFORMANCE

Enroute - Full Throttle Upshift Performance

Gear	Trans Ratio	Veh Spd (mph)	Eng Spd (rpm)	Whl Pwr (hp)	Grade (%)	Warn Notes
						Msg
1C	4.59	0.0	1963	0.00	41.28	@ STALL
		5.2	2038	185.75	35.62	70% EFF
		6.8	2088	208.95	30.28	80% EFF
		9.0	2168	221.40	23.46	
2C	2.26	9.0	2020	169.36	17.57	
		18.4	2170	222.75	10.88	
2L	2.26	18.4	1546	226.38	11.07	
		24.8	2081	260.32	9.24	
3L	1.53	24.8	1409	206.57	7.14	
		36.9	2095	259.24	5.67	
4L	1.00	36.9	1369	200.20	4.13	##
		57.3	2125	254.44	2.63	
5L	0.75	57.3	1594	229.09	2.20	
		74.4	2069	254.22	1.00	
		78.5	2184	242.96	0.50	
		79.1	2200	241.21	0.43	RATED RPM
		80.0	2225	211.44	0.00	LEVEL ROAD

STARTING / TOP GEAR PERFORMANCE

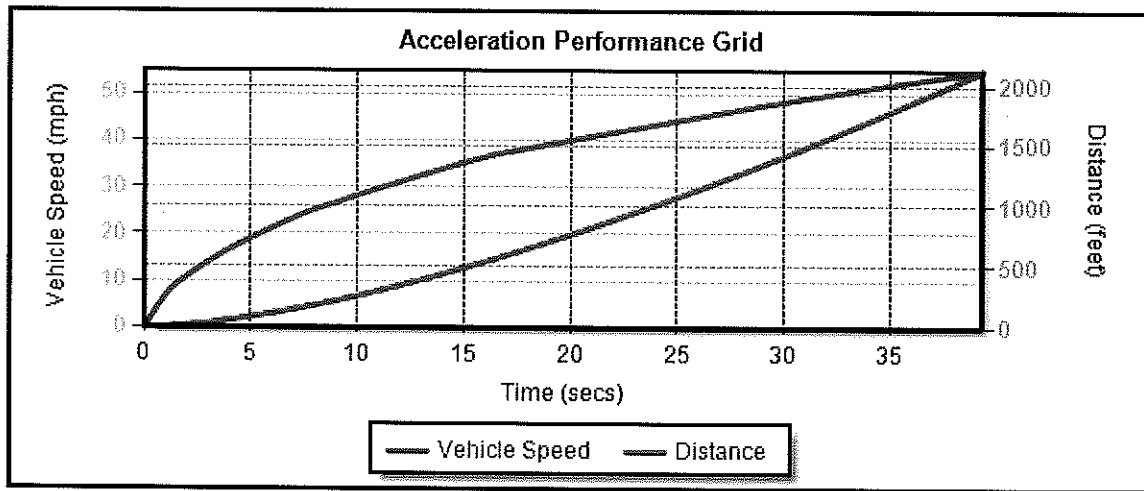
Gear	Trans Ratio	Veh Spd (mph)	Eng Spd (rpm)	Whl Pwr (hp)	Grade (%)	Warn Notes
						Msg
1C	4.59	0.0		0.00	41.28	@ STALL
		6.8		208.95	30.28	80% EFF - Calculated Start Ability

@ - WHEELSLIP CAN OCCUR AT THE GRADE SHOWN. THE VEHICLE IS CAPABLE OF INCREASED GRADEABILITY IF MORE WEIGHT IS PLACED ON THE DRIVE AXLES.

THE TRANSMISSION WAS SIMULATED IN PERFORMANCE OPERATING MODE.

ACCELERATION PERFORMANCE RESULTS

Acceleration Performance Grid



Acceleration Performance: TIME TO ACCELERATE ON A GRADE TO 55.0 (MPH) IS 39.35 (SECS)

Acceleration Performance Details

Gear	Time (secs)	Distance (feet)	Speed (mph)	Notes
1C	0.14	0.1	1.0	
	0.29	0.4	2.0	
	0.43	0.9	3.0	
	0.56	1.6	4.0	
	0.71	2.6	5.0	
	0.86	3.8	6.0	
	1.03	5.4	7.0	
	1.22	7.5	8.0	
	1.44	10.2	9.0	
2C	1.44	10.3	9.0	
	1.73	14.4	10.0	
	2.03	19.0	11.0	
	2.34	24.2	12.0	
	2.66	30.1	13.0	
	3.00	36.8	14.0	
	3.36	44.4	15.0	
	3.73	53.0	16.0	
	4.13	62.6	17.0	
	4.55	73.4	18.0	
2L	4.73	78.2	18.4	
	5.18	90.7	19.4	
	5.63	104.0	20.4	
	6.09	118.1	21.4	
	6.56	133.2	22.4	
	7.05	149.5	23.4	
	7.55	167.4	24.4	
	7.76	174.8	24.8	
3L	8.43	199.8	25.8	
	9.11	225.8	26.8	
	9.78	252.9	27.8	
	10.46	281.2	28.8	
	11.15	310.7	29.8	

Gear	Time (secs)	Distance (feet)	Speed (mph)	Notes
4L	11.84	341.5	30.8	
	12.54	373.7	31.8	
	13.26	407.7	32.8	
	13.99	443.5	33.8	
	14.74	481.4	34.8	
	15.52	521.8	35.8	
	16.34	565.4	36.8	
	16.41	569.0	36.9	
	17.55	631.9	37.9	
	18.71	696.8	38.9	
	19.87	763.8	39.9	
	21.03	832.9	40.9	
	22.21	904.2	41.9	
	23.39	977.7	42.9	
	24.58	1053.6	43.9	
	25.79	1132.1	44.9	
	27.01	1213.6	45.9	
	28.25	1298.0	46.9	
	29.50	1385.4	47.9	
	30.78	1476.1	48.9	
	32.09	1570.9	49.9	
	33.43	1670.1	50.9	
	34.81	1774.0	51.9	
	36.23	1883.1	52.9	
	37.69	1997.5	53.9	
	39.21	2118.9	54.9	
	39.35	2130.0	55.0	

REQUIRED TCAPE INFORMATION

TCAPE Factors For Vehicle

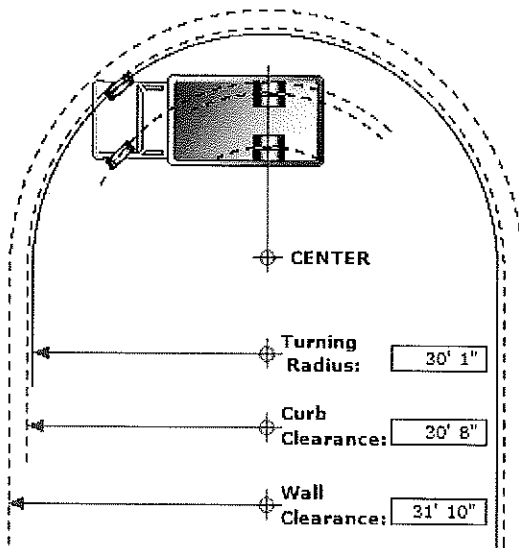
Selected Rear Axle Gear Ratio(s):	4.56
Parked PTO:	NO
Enroute PTO:	NO
Vehicle Vocation:	MODERATE ON/OFF HIGHWAY
ID Wheel Slip Conditions:	Yes
Road Governor/Cruise Ctrl:	No
Engine Fan Type:	VISCOUS
Road Surface Type:	TYPICAL
Fuel Economy Route:	Normal Route - City, Suburban, and Highway
Acceleration Grade (%):	0.0
Frontal Area (FT ²):	76
Speed Limit on Route (MPH):	61.0
Relative Drag Coefficient:	85
Alternator (A):	40
Steering Gear (HP):	2.60
Air Conditioner (HP):	3.20
Vehicle Width (IN):	96
Vehicle Height (IN):	110
Weight on Drive Axle (LBF):	23000
Acceleration Vehicle Spd (MPH):	55.0
Air Compressor (HP):	2.20
TIRE, FRONT	2 - RADIAL LOWPROFILE
TIRE, REAR	4 - RADIAL NORMAL

Components

0002ARZ	AXLE, FRONT NON-DRIVING {Meritor MFS-18-133A} Wide Track, I-Beam Type, 18,000-lb Capacity
0004SPA	AIR COMPRESSOR {Cummins} 18.7 CFM Capacity
0005PTB	STEERING GEAR (2) {Sheppard M100/M80} Dual Power
0008GXD	ALTERNATOR {Leece-Neville AV160P2013} Brush Type; 12 Volt 160 Amp. Capacity, Pad Mount, with Remote Sense
0012EHU	ENGINE, DIESEL {Cummins L9 300} EPA 2017, 300HP @ 2000 RPM, 860 lb-ft Torque @ 1300 RPM, 2200 RPM Governed Speed, 300 Peak HP (Max)
0012THT	FAN DRIVE {Horton Drivemaster} Direct Drive Type, Two Speed with Residual Torque Device for Disengaged Fan Speed
0013AVG	TRANSMISSION, AUTOMATIC {Allison 3500 RDS} 5th Generation Controls, Wide Ratio, 5-Speed with Overdrive, with PTO Provision, Less Retarder, Includes Oil Level Sensor, with 80,000-lb GVW and GCW Max, On/Off Highway
0014ARB	AXLE, REAR, SINGLE {Meritor RS-23-160} Single Reduction, 23,000-lb Capacity, Driver Controlled Locking Differential, 200 Wheel Ends
0016030	CAB Conventional
0016BAM	AIR CONDITIONER with Integral Heater & Defroster
07382135420	TIRE, REAR 11R22.5 Load Range H HDC1 (CONTINENTAL), 488 rev/mile, 75 MPH, Drive 11R22.5 Load Range H HDC1 (CONTINENTAL), 488 rev/mile, 75 MPH, Drive
07792545419	TIRE, FRONT 315/80R22.5 Load Range L HSC1 (CONTINENTAL), 484 rev/mile, 68 MPH, All-Position 315/80R22.5 Load Range L HSC1 (CONTINENTAL), 484 rev/mile, 68 MPH, All-Position

TCAPE HAS BEEN DESIGNED TO GIVE ECONOMY AND PERFORMANCE PREDICTIONS WHICH HAVE BEEN SHOWN TO BE TYPICAL FOR MOST OPERATIONS. HOWEVER, DUE TO OPERATING CONDITIONS, DRIVER INFLUENCES, AND OTHER FACTORS, YOUR RESULTS MAY VARY FROM THOSE PREDICTED. ALSO, BECAUSE OF FUEL MAPPING PROCEDURES USED BY VARIOUS ENGINE MANUFACTURERS, COMPARISONS OF FUEL ECONOMY RESULTS FOR DIFFERENT BRANDS OF ENGINES MAY VARY FROM THOSE SHOWN.

NAVISTAR, INC. SHALL NOT BE LIABLE FOR ANY LOSS OF PROFITS, LOSS OF USE, INTERRUPTION OF BUSINESS OR INDIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES OF ANY KIND THAT ARE INCURRED BY DEALER OR BY DEALER'S CUSTOMERS AS A RESULT OF RELIANCE ON TCAPE, WHETHER THE CLAIM IS IN CONTRACT, TORT (INCLUDING NEGLIGENCE), STRICT LIABILITY OR OTHERWISE.



Series: HV
Model: HV507
Description: HV507 SFA
Model Year: 2019

Calculation Factors

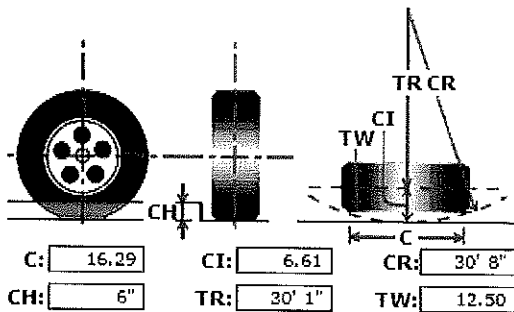
Wheelbase: 187
Front Axle: 0002ARZ
Description: AXLE, FRONT NON-DRIVING, {Meritor MFS-18-133A} Wide Track, I-Beam Type, 18,000-lb Capacity
Front Wheel: 0027DUL
Description: WHEELS, FRONT, {Accuride 29300} DISC; 22.5x9.00 Rims, Powder Coat Steel, 5-Hand Hole, 10-Stud, 285.75mm BC, Hub-Piloted, Flanged Nut, with Steel Hubs
Front Tire: 07792545419
Description: TIRES, 315/80R22.5 Load Range L HSC1 (CONTINENTAL), 484 rev/mile, 68 MPH, All-Position
Steering Gear: 0005PTB
Description: STEERING GEAR, (2) {Sheppard M100/M80} Dual Power

Turning Radius StatisticsGeneral Information

Inside Turn Angle: 40 Degrees
Radial Overhang: 21

Axle Information

KingPin Inclination: 6.25 Degrees
KingPin Center: 71

Turning Radius - Curb View

C - Curb Contact Length: 16.29
CI - Curb Clearance Increment: 6.61
CR - Curb Clearance Radius: 30' 8"
CH - Curb Height: 6"
TR - Turning Radius: 30' 1"
TW - Tire Width: 12.50

* All Measurements are in inches, unless otherwise specified.

This information is based on engineering information available at this time. Actual figures may vary. Navistar, Inc. cannot accept liability for consequences due to this variance.

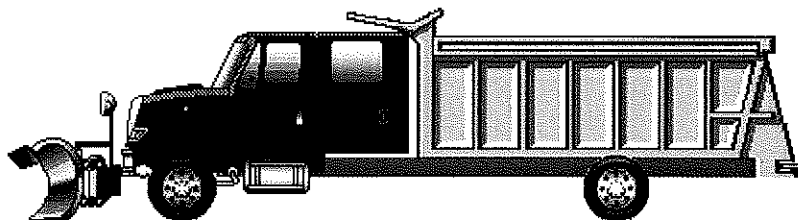
Prepared For:

MAINE DOT
 Dan Rolfe
 66 Industrial Dr.
 Augusta, ME 04330-7857
 (207)287 - 3521
 Reference ID: N/A

Presented By:

DAIGLE & HOUGHTON INC
 Gary Daigle
 130 MARKET STREET
 FORT KENT ME 04743 -
 (207)834-6186

Thank you for the opportunity to provide you with the following quotation on a new International truck. I am sure the following detailed specification will meet your operational requirements, and I look forward to serving your business needs.



Model Profile
2019 HV507 SFA (HV507)

AXLE CONFIG:	4X2
APPLICATION:	Front Plow and Wing with Spreader
MISSION:	Requested GVWR: 39000. Calc. GVWR: 41000 Calc. Start / Grade Ability: 30.28% / 2.28% @ 55 MPH Calc. Geared Speed: 79.1 MPH
DIMENSION:	Wheelbase: 228.00, CA: 109.10, Axle to Frame: 75.00
ENGINE, DIESEL:	{Cummins L9 300} EPA 2017, 300HP @ 2000 RPM, 860 lb-ft Torque @ 1300 RPM, 2200 RPM Governed Speed, 300 Peak HP (Max)
TRANSMISSION, AUTOMATIC:	{Allison 3500 RDS} 5th Generation Controls, Wide Ratio, 5-Speed with Overdrive, with PTO Provision, Less Retarder, Includes Oil Level Sensor, with 80,000-lb GVW and GCW Max, On/Off Highway
CLUTCH:	Omit Item (Clutch & Control)
AXLE, FRONT NON-DRIVING:	{Meritor MFS-18-133A} Wide Track, I-Beam Type, 18,000-lb Capacity
AXLE, REAR, SINGLE:	{Meritor RS-23-160} Single Reduction, 23,000-lb Capacity, Driver Controlled Locking Differential, 200 Wheel Ends Gear Ratio: 4.56
CAB:	Conventional 6-Man Crew Cab
TIRE, FRONT:	(3) 315/80R22.5 Load Range L HSC1 (CONTINENTAL), 484 rev/mile, 68 MPH, All-Position
TIRE, REAR:	(4) 11R22.5 Load Range H HDC1 (CONTINENTAL), 488 rev/mile, 75 MPH, Drive
SUSPENSION, RR, SPRING, SINGLE:	31,000-lb Capacity, Vari-Rate Springs, with 4500-lb Capacity Auxiliary Multileaf Springs
PAINT:	Cab schematic 100WK Location 1: 6M24, Blue (Custom) Chassis schematic N/A

Description

	<u>F/R Wt</u> (lbs)	<u>Tot Wt</u> (lbs)
Base Chassis, Model HV507 SFA with 228.00 Wheelbase, 109.10 CA, and 75.00 Axle to Frame.	6050/3747	9797
AXLE CONFIGURATION {Navistar} 4x2	0/0	0
<u>Notes</u> : Pricing may change if axle configuration is changed.		
FRAME RAILS Heat Treated Alloy Steel (120,000 PSI Yield); 10.250" x 3.610" x 0.375" (260.4mm x 91.7mm x 9.5mm); 456.0" (11582mm) Maximum OAL	168/401	569
BUMPER, FRONT Steel, Swept Back	0/0	0
FRAME EXTENSION, FRONT Integral; 20" In Front of Grille	132/-27	105
WHEELBASE RANGE 197" (500cm) Through and Including 264" (670cm)	0/0	0
AXLE, FRONT NON-DRIVING {Meritor MFS-18-133A} Wide Track, I-Beam Type, 18,000-lb Capacity	186/0	186
AXLE, FRONT DRIVING, LUBE {EmGard FE-75W-90} Synthetic Oil; 1 thru 29.99 Pints	0/0	0
SHOCK ABSORBERS, FRONT	45/0	45
SUSPENSION, FRONT, SPRING Multileaf, Shackle Type, 18,000-lb Capacity, Less Shock Absorbers	190/0	190
SPRINGS, FRONT AUXILIARY Air Bag, Right Side Only, Driver Control	15/0	15
BRAKE SYSTEM, AIR Dual System for Straight Truck Applications	0/0	0
BRAKES, FRONT, AIR CAM 16.5" x 6", Includes 24 SqIn Long Stroke Brake Chambers	26/0	26
TRAILER CONNECTIONS Four-Wheel, with Hand Control Valve and Tractor Protection Valve, for Straight Truck	2/0	2
AIR BRAKE ABS {Bendix AntiLock Brake System} Full Vehicle Wheel Control System (4-Channel)	0/0	0
AIR DRYER {Bendix AD-IP} with Heater	19/8	27
BRAKE CHAMBERS, SPRING Relocated To Rear Of Rear Axle For Maximum Ground Clearance	0/0	0
BRAKE CHAMBERS, FRONT AXLE {MGM} 24 SqIn	19/0	19
BRAKE CHAMBERS, REAR AXLE {Haldex Life Seal+} 30/30 Spring Brake	0/20	20
SLACK ADJUSTERS, FRONT {Haldex} Automatic	0/0	0
SLACK ADJUSTERS, REAR {Haldex} Automatic	0/0	0
BRAKES, REAR, AIR CAM S-Cam; 16.5" x 7.0"; Includes 30/30 Sq.In. Long Stroke Brake Chamber and Spring Actuated Parking Brake	0/26	26
AIR COMPRESSOR {Cummins} 18.7 CFM Capacity	0/0	0
AIR DRYER LOCATION Mounted Inside Left Rail, Back of Cab	15/6	21
AIR TANK LOCATION (2) Mounted Under Battery Box, Outside Left Rail, Under Cab	0/0	0
DUST SHIELDS, FRONT BRAKE for Air Brakes	5/0	5
DUST SHIELDS, REAR BRAKE for Air Brakes	0/6	6
DRAIN VALVE (3) with Pull Chains for Air Tanks	0/0	0
STEERING COLUMN Tilting and Telescoping	17/2	19
STEERING WHEEL 4-Spoke; 18" Dia., Black	0/0	0
STEERING GEAR (2) {Sheppard M100/M80} Dual Power	91/-4	87

<u>Description</u>	<u>F/R Wt</u> (lbs)	<u>Tot Wt</u> (lbs)
DRIVESHAFT {Dana Spicer} SPL170XL in lieu of 1710 Series	0/0	0
AFTERTREATMENT COVER Aluminum	9/2	11
EXHAUST SYSTEM Single Horizontal Aftertreatment Device, Frame Mounted Right Side Under Cab; for Single Vertical Tail Pipe, Frame Mounted Right Side Back of Cab	138/38	176
TAIL PIPE (1) Turnback Type, Non-Bright, for Single Exhaust	0/0	0
EXHAUST HEIGHT 11' 6"	3/0	3
MUFFLER/TAIL PIPE GUARD (1) Non-Bright Aluminum	0/0	0
SWITCH, FOR EXHAUST 3 Position, Momentary, Lighted Momentary, ON/CANCEL, Center Stable, INHIBIT REGEN, Mounted in IP Inhibits Diesel Particulate Filter Regeneration When Switch is Moved to ON While Engine is Running, Resets When Ignition is Turned OFF	2/0	2
ELECTRICAL SYSTEM 12-Volt, Standard Equipment	0/0	0
CIGAR LIGHTER Includes Ash Cup	1/0	1
HORN, ELECTRIC (2) Disc Style	1/0	1
BATTERY TERMINALS Sealed	2/0	2
ALTERNATOR {Leece-Neville AVI160P2013} Brush Type; 12 Volt 160 Amp. Capacity, Pad Mount, with Remote Sense	0/0	0
BODY BUILDER WIRING Back of Standard or Sleeper Cab at Left Frame or Under Extended or Crew Cab at Left Frame; Includes Sealed Connectors for Tail/Amber Turn/Marker/ Backup/Accessory Power/Ground and Sealed Connector for Stop/Turn	2/0	2
ELECTRIC TRAILER BRAKE/LIGHTS Accommodation Package to Rear of Frame; for Combined Trailer Stop, Tail, Turn, Marker Light Circuits; Includes Electric Trailer Brake Accommodation Package with Cab Connections for Mounting Customer Installed Electric Brake Unit, Less Trailer Socket	0/2	2
BATTERY SYSTEM {Fleetrite} Maintenance-Free, (3) 12-Volt 2850CCA Total	43/32	75
RADIO AM/FM/WB/Clock/Bluetooth/USB Input/3.5MM Auxiliary Input, MP3, Apple Device Play & Control, Bluetooth for Phone & Music	4/0	4
SPEAKERS (2) 6.5" Dual Cone Mounted in Both Doors, (2) 5.25" Dual Cone Mounted in Both B-Pillars	6/2	8
BACK-UP ALARM Electric, 102 dBA	0/3	3
TRAILER AUXILIARY FEED CIRCUIT for Electric Trailer Brake Accommodation/Air Trailer ABS; with 30 Amp Fuse and Relay, Controlled by Ignition Switch	1/0	1
AUXILIARY HARNESS 5.0' for Auxiliary Front Head Lights and Turn Signals for Front Plow Applications	3/0	3
WINDSHIELD WIPER SPD CONTROL Force Wipers to Slowest Intermittent Speed When Park Brake Set and Wipers Left on for a Predetermined Time	0/0	0
RUNNING LIGHT (2) Daytime	0/0	0
CLEARANCE/MARKER LIGHTS (5) {Truck Lite} Amber LED Lights, Flush Mounted on Cab or Sunshade	0/0	0
TEST EXTERIOR LIGHTS Pre-Trip Inspection will Cycle all Exterior Lamps Except Back-up Lights	0/0	0
STARTING MOTOR {Delco Remy 38MT Type 300} 12 Volt; less Thermal Over-Crank Protection	8/1	9
COURTESY LIGHT (4) Mounted In Front & Rear Map Pocket Left and Right Side	2/0	2
INDICATOR, LOW COOLANT LEVEL with Audible Alarm	0/0	0

<u>Description</u>	<u>F/R Wt</u> (lbs)	<u>Tot Wt</u> (lbs)
ALARM, PARKING BRAKE Electric Horn Sounds in Repetitive Manner When Vehicle Park Brake is "NOT" Set, with Ignition "OFF" and any Door Opened	0/0	0
CIRCUIT BREAKERS Manual-Reset (Main Panel) SAE Type III with Trip Indicators, Replaces All Fuses	0/0	0
BATTERY BOX Steel with Plastic Cover, 30" Wide, 2, 3 or 4 Battery Capacity, Mounted Left Side Under Cab	0/0	0
TURN SIGNALS, FRONT Includes LED Side Turn Lights Mounted on Fender	0/0	0
BATTERY DISCONNECT SWITCH 300 Amp; Cab Mounted, Disconnects Charging Circuits; Locks with Padlock	2/0	2
HORN, AIR Black, Single Trumpet, with Lanyard Pull Cord	3/0	3
FENDER EXTENSIONS Rubber	6/0	6
LOGOS EXTERIOR Model Badges	0/0	0
LOGOS EXTERIOR, ENGINE Badges	0/0	0
HOOD, HATCH (01) for Servicing	5/0	5
INSULATION, UNDER HOOD for Sound Abatement	10/0	10
GRILLE Stationary, Chrome	0/0	0
INSULATION, SPLASH PANELS for Sound Abatement	2/0	2
BUG SCREEN Mounted Behind Grille	5/0	5
FRONT END Tilting, Fiberglass, with Three Piece Construction; for WorkStar/HV	0/0	0
CHASSIS COATING Corrosion Resistant E-Coat Primer Coating for Single Frame Rails	0/0	0
PAINT SCHEMATIC, PT-1 Single Color, Design 100	0/0	0
<u>Includes</u>		
: PAINT SCHEMATIC ID LETTERS "WK"		
PAINT TYPE Base Coat/Clear Coat, 1-2 Tone	0/0	0
PAINT CLASS Single Custom Color	0/0	0
KEYS - ALL ALIKE Fleet - Includes Ignition and Cab Door Keys	0/0	0
LABEL, DEF "DEF ONLY"	0/0	0
PROMOTIONAL PACKAGE Government Silver Package	0/0	0
KEYS - ALL ALIKE, ID I-1624 Compatible with Z-250	0/0	0
CLUTCH Omit Item (Clutch & Control)	-54/-9	-63
ANTI-FREEZE Red, Extended Life Coolant; To -40 Degrees F/ -40 Degrees C, Freeze Protection	0/0	0
BLOCK HEATER, ENGINE 120V/1000W, for Cummins ISB/B6.7/ISL/L9 Engines	3/0	3
PTO EFFECTS, ENGINE FRONT Less PTO Unit, Includes Adapter Plate on Engine Front Mounted	10/0	10
ENGINE, DIESEL {Cummins L9 300} EPA 2017, 300HP @ 2000 RPM, 860 lb-ft Torque @ 1300 RPM, 2200 RPM Governed Speed, 300 Peak HP (Max)	561/3	564
FAN DRIVE {Horton Drivemaster} Direct Drive Type, Two Speed with Residual Torque Device for Disengaged Fan Speed	0/0	0
RADIATOR Cross Flow, Series System; 1228 SqIn Aluminum Radiator Core with Internal Water to Oil Transmission Cooler and 1167 In Charge Air Cooler	22/-4	18

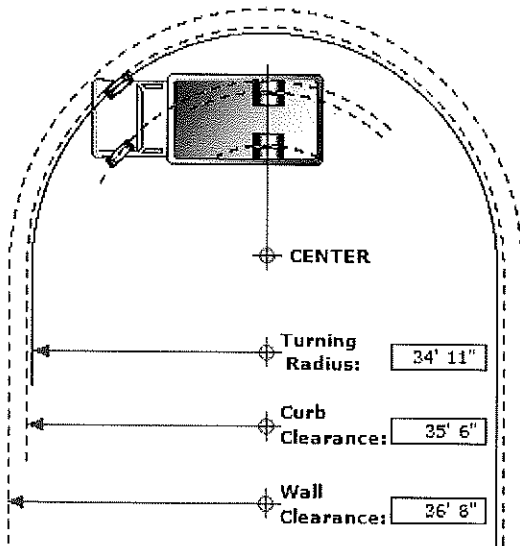
<u>Description</u>	<u>F/R Wt</u> (lbs)	<u>Tot Wt</u> (lbs)
AIR CLEANER Dual Element, with Integral Snow Valve and In-Cab Control	6/0	6
FEDERAL EMISSIONS {Cummins L9} EPA, OBD and GHG Certified for Calendar Year 2018	0/0	0
THROTTLE, HAND CONTROL Engine Speed Control for PTO; Electronic, Stationary Pre-Set, Two Speed Settings; Mounted on Steering Wheel	0/0	0
ACCESSORY WIRING, SPECIAL for Road Speed Wire Coiled Under Instrument Panel for Customer Use	0/0	0
HOSE CLAMPS, RADIATOR HOSES {R.G. Ray Mini Flex Seal} Coil Spring/"T"-Bolt Type, for Radiator Hoses over 1" I.D.	0/0	0
EMISSION COMPLIANCE Low NOx Idle Engine, Complies with California Clean Air Regulations; Includes "Certified Clean Idle" Decal located on Driver Door	0/0	0
ENGINE CONTROL, REMOTE MOUNTED Provision for; Includes Wiring for Body Builder Installation of PTO Controls; with Ignition Switch Control for Cummins ISB/B6.7 or ISL/L9 Engines	0/0	0
TRANSMISSION, AUTOMATIC {Allison 3500 RDS} 5th Generation Controls, Wide Ratio, 5-Speed with Overdrive, with PTO Provision, Less Retarder, Includes Oil Level Sensor, with 80,000-lb GVW and GCW Max, On/Off Highway	197/53	250
TRANSMISSION SHIFT CONTROL for Column Mounted Stalk Shifter	0/0	0
TRANSMISSION DIPSTICK Relocated to Right Side of Transmission	0/0	0
TRANSMISSION COOLER HOSES Stainless Steel	0/0	0
TRANSMISSION OIL Synthetic; 29 thru 42 Pints	0/0	0
ALLISON SPARE INPUT/OUTPUT for Rugged Duty Series (RDS); General Purpose Trucks, Construction	0/0	0
TRANSMISSION TCM LOCATION Located Inside Cab	0/0	0
SHIFT CONTROL PARAMETERS Allison 3000 or 4000 Series Transmissions, 5th Generation Controls, Performance Programming	0/0	0
PTO CONTROL, DASH MOUNTED For Customer Provided PTO; Includes Switch, Electric/Air Solenoid, Piping and Wiring	5/0	5
PTO LOCATION Dual, Left and Right Side of Transmission	0/0	0
AXLE, REAR, SINGLE {Meritor RS-23-160} Single Reduction, 23,000-lb Capacity, Driver Controlled Locking Differential, 200 Wheel Ends . Gear Ratio: 4.56	0/230	230
SUSPENSION, RR, SPRING, SINGLE 31,000-lb Capacity, Vari-Rate Springs, with 4500-lb Capacity Auxiliary Multileaf Springs	0/177	177
AXLE, REAR, LUBE {EmGard FE-75W-90} Synthetic Oil; 30 thru 39.99 Pints	0/0	0
DEF TANK 9.5 U.S. Gal. 35.9L Capacity, Frame Mounted Outside Left Rail, Back of Cab	-1/24	23
FUEL/WATER SEPARATOR {Racor 400 Series,} with Primer Pump, Includes Water-in-Fuel Sensor	0/0	0
LOCATION FUEL/WATER SEPARATOR Mounted Inside Left Rail, 24" Back of Cab	0/0	0
FUEL TANK Top Draw, Non-Polished Aluminum, 26" Dia, 70 US Gal (265L), Mounted Left Side, Back of Cab	-43/49	6
CAB Conventional 6-Man Crew Cab	277/177	354
AIR CONDITIONER with Integral Heater & Defroster	55/1	56
GAUGE CLUSTER Base Level; English with English Speedometer and Tachometer, for Air Brake Chassis, Includes Engine Coolant Temperature, Primary and Secondary Air Pressure, Fuel and DEF Gauges, Oil Pressure Gauge, Includes 3 Inch Monochromatic Text Display	0/0	0

<u>Description</u>	<u>F/R Wt</u> (lbs)	<u>Tot Wt</u> (lbs)
GAUGE, OIL TEMP, AUTO TRANS for Allison Transmission	1/0	1
GAUGE, AIR CLEANER RESTRICTION {Filter-Minder} with Black Bezel Mounted in Instrument Panel	2/0	2
IP CLUSTER DISPLAY On Board Diagnostics Display of Fault Codes in Gauge Cluster	0/0	0
GAUGE, VOLTMETER Auxiliary Gauge, Located in Center Panel. Standard Cluster Also Includes Digital Voltage Readout	0/0	0
SEAT, DRIVER {National 2000 195} Air Suspension, High Back with Integral Headrest, Cloth, Isolator, 3 Chamber Lumbar, 2 Position Front Cushion Adjust, -3 to +14 Degree Back Angle Adjust, Cushion and Back Bolsters	26/9	35
SEAT, PASSENGER {National} Air-Suspension, High Back with Integral Headrest, Cloth, Isolated, 1 Chamber Lumbar, 2 Position Front Cushion Adjustment, -3 to +14 Degree Seat Back Adjustment	49/30	79
GRAB HANDLE Chrome; Towel Bar Type with Anti-Slip Rubber Inserts; for Cab Entry Mounted Left Side Only at "B" Pillar	3/0	3
SEAT, REAR {National} BENCH; Full Width; Cloth, with Fixed Back and Two Integral Outboard Headrests	57/37	94
MIRRORS (2) Aero; Pedestal, Power Adjust, Heated Heads, Turn Signals, Black Heads and Arms, 6.3" x 13.82" Flat Glass, 6.38" x 6.18" Convex Glass Both Sides	0/0	0
SEAT BELT All Orange; 4 to 6	0/0	0
CAB INTERIOR TRIM Classic, for Crew Cab	0/0	0
<u>Includes</u>		
: CONSOLE, OVERHEAD Molded Plastic with Dual Storage Pockets, Retainer Nets and CB Radio Pocket; Located Above Driver and Passenger		
: DOME LIGHT, CAB Door Activated and Push On-Off at Light Lens, Timed Theater Dimming, Integral to Overhead Console, Center Mounted		
: SUN VISOR (2) Padded Vinyl; 2 Moveable (Front-to-Side) Primary Visors, Driver Side with Toll Ticket Strap		
SEAT BELT COMFORT CLIP	0/0	0
ARM REST, RIGHT, DRIVER SEAT	3/0	3
CAB SOUND INSULATION Includes Dash Insulator and Engine Cover Insulator	12/0	12
HOSE CLAMPS, HEATER HOSE {Breeze} Belleville Washer Type	0/0	0
WINDOW, POWER (4) And Power Door Locks, Front and Rear Doors, Left and Right, Includes Express Down Feature	10/0	10
HOURLMETER, PTO for Customer Provided PTO; with Indicator Light and Hourmeter in Gauge Cluster Includes Return Wire for PTO Feedback Switch	2/0	2
FRESH AIR FILTER Attached to Air Intake Cover on Cowl Tray in Front of Windshield Under Hood	0/0	0
CAB REAR SUSPENSION Air Bag Type	0/0	0
INSTRUMENT PANEL Wing Panel	0/0	0
WINDSHIELD WIPER BLADES Snow Type	2/0	2
WINDSHIELD WASHER RESERVOIR Mounted Under Cab with Remote Fill Mounted Behind Cab Drivers Side	0/0	0
ACCESS, CAB {Bustin} Driver & Passenger Sides, Two Aluminum, Self-Cleaning Steps Per Door, For Use with Crew Cabs	55/36	91
WHEEL, SPARE, DISC {Accuride 29300} 22.5x9.00 Rims, Powder Coat Steel, 10-Stud, 285.75mm BC, Hub-Piloted	0/108	108

Description

	<u>F/R Wt</u> (lbs)	<u>Tot Wt</u> (lbs)
WHEELS, FRONT {Accuride 29300} DISC; 22.5x9.00 Rims, Powder Coat Steel, 5-Hand Hole, 10-Stud, 285.75mm BC, Hub-Piloted, Flanged Nut, with Steel Hubs	72/0	72
WHEELS, REAR {Accuride 29169} DUAL DISC; 22.5x8.25 Rims, Powder Coat Steel, 5-Hand Hole, 10-Stud, 285.75mm BC, Hub-Piloted, Flanged Nut, with .472" Thick Increased Capacity Disc and Steel Hubs	0/24	24
TIRE, SPARE Equal to Model Standard	0/0	0
BDY INTG, REMOTE POWER MODULE (2) Mounted Inside Cab behind Driver Seat; Up to 6 Outputs & 6 Inputs each, Max. 20 amp. per Channel, Max. 80 amp Total (Includes 2 Switch Packs with Latched Switches)	0/0	0
BDY INTG, SWITCH MOMNTRY 3POS Rocker, Backlit, with "ON" Indicator Mounted on Dash, Latching Software, for 2; Auxiliary Load 20 amp. Maximum; Power Available Only in "Ignition" or "Accessory" Position, Output Also Controlled by a Customer Remote Mounted Switch (requires 2 Remote Power Module inputs & 2 outputs)	0/0	0
BDY INTG, DASH IND LT TRICOLOR (3) for Optional Usage Customer to Program	0/0	0
(4) TIRE, REAR 11R22.5 Load Range H HDC1 (CONTINENTAL), 488 rev/mile, 75 MPH, Drive	0/36	36
(3) TIRE, FRONT 315/80R22.5 Load Range L HSC1 (CONTINENTAL), 484 rev/mile, 68 MPH, All-Position	123/0	123
MISCELLANEOUS stainless steel oil pan	0/0	0
Cab schematic 100WK		
Location 1: 6M24, Blue (Custom)		
Chassis schematic N/A		
Services Section:		
WARRANTY Standard for HV507, HV50B, HV607 Models, Effective with Vehicles Built July 1, 2017 or Later, CTS-2025A	0/0	0
Total Component Weight:	8693/5146	13839
furnish and install battery disconnect switch, lockable, not floor located	0/0	0
KTB liquid tire balance	0/0	0
rear spare wheel and tire, 11R22.5 HDC1	0/0	0
right side cab mounted grab handle	0/0	0
	0/0	0
USB link interface and cables	0/0	0
stainless steel oil pan	0/0	0
Total Goods Purchased:	0/0	0

The weight calculations included in this proposal are an estimate of future vehicle weight. The actual weight as manufactured may be different from the estimated weight. Navistar, Inc. shall not be liable for any consequences resulting from any differences between the estimated weight of a vehicle and the actual weight.



Series: HV
Model: HV507
Description: HV507 SFA
Model Year: 2019

Calculation Factors

Wheelbase: 228
Front Axle: 0002ARZ
Description: AXLE, FRONT NON-DRIVING, {Meritor MFS-18-133A} Wide Track, I-Beam Type, 18,000-lb Capacity
Front Wheel: 0027DUL
Description: WHEELS, FRONT, {Accuride 29300} DISC; 22.5x9.00 Rims, Powder Coat Steel, 5-Hand Hole, 10-Stud, 285.75mm BC, Hub-Piloted, Flanged Nut, with Steel Hubs
Front Tire: 07792545419
Description: TIRES, 315/80R22.5 Load Range L HSC1 (CONTINENTAL), 484 rev/mile, 68 MPH, All-Position
Steering Gear: 0005PTB
Description: STEERING GEAR, (2) {Sheppard M100/M80} Dual Power

Turning Radius StatisticsGeneral Information

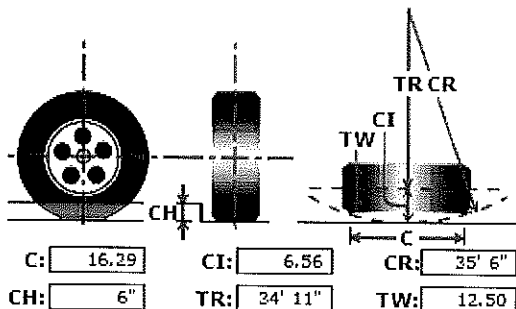
Inside Turn Angle: 40 Degrees
Radial Overhang: 21

Axle Information

KingPin Inclination: 6.25 Degrees
KingPin Center: 71

Turning Radius - Curb View

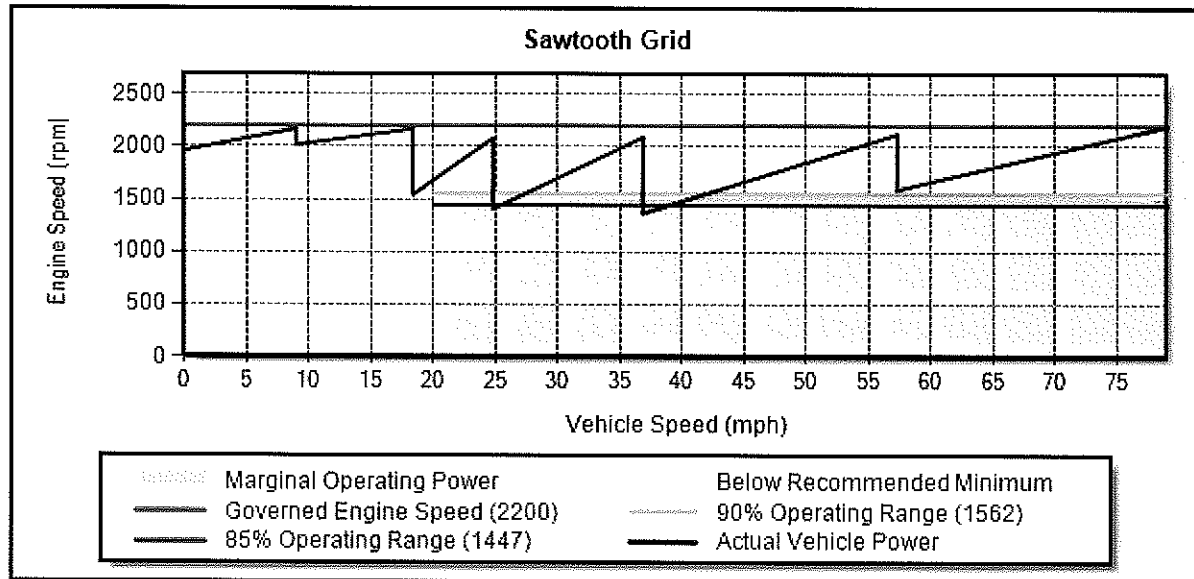
C - Curb Contact Length: 16.29
CI - Curb Clearance Increment: 6.56
CR - Curb Clearance Radius: 35'6"
CH - Curb Height: 6"
TR - Turning Radius: 34'11"
TW - Tire Width: 12.50



* All Measurements are in inches, unless otherwise specified.

This information is based on engineering information available at this time. Actual figures may vary. Navistar, Inc. cannot accept liability for consequences due to this variance.

ENGINE/TRANSMISSION MATCHING



Sawtooth Details

Gear	Trans Ratio	Upshift Power Avail		Govern Power Avail		Peak Power Comparison			Warn Msg
		Veh Spd (MPH)	Eng Spd (RPM)	Veh Spd (MPH)	Eng Spd (RPM)	Gear Step (%)	85% Range (%)	90% Range (%)	
1C	4.59	0.0	1963	9.0	2168	N/A	52	41	
2C	2.26	9.0	2020	18.4	2170	N/A	52	41	
2L	2.26	18.4	1546	24.8	2081	N/A	52	41	
3L	1.53	24.8	1409	36.9	2095	N/A	52	41	
4L	1.00	36.9	1369	57.3	2125	N/A	52	41	
5L	0.75	57.3	1594	79.1	2200	N/A	52	41	

@ - WHEELSLIP CAN OCCUR AT THE GRADE SHOWN. THE VEHICLE IS CAPABLE OF INCREASED GRADEABILITY IF MORE WEIGHT IS PLACED ON THE DRIVE AXLES.

STEADY STATE PERFORMANCE

Performance Results	Gear	Veh Spd (mph)	Eng Spd (rpm)	Fuel Econ (mpg)	Grade (%)	Notes
LEVEL ROAD MAXIMUM SPEED	5L	80.0	2225	6.33	0.00	
HI GEAR SPEED @ RATED RPM	5L	79.1	2200	6.37	0.43	
55.0 MPH STEADY-STATE	5L	55.0	1530	9.93	2.28	
TYPICAL OPERATING SPEED	5L	65.0	1808	8.36	1.81	- Calculated Grade Ability/Fuel Economy

VEHICLE ORDER CODING ERRORS MAY RESULT IF THE "LEVEL ROAD MAX SPEED" VALUE EXCEEDS THE "HI GEAR SPEED @ RATED RPM" AND IS USED AS THE ENGINE PROGRAMMABLE VEHICLE SPEED LIMIT.

IF THE RESULTS CONTAIN "-----", VEHICLE CANNOT ATTAIN THAT SPEED.

IF THE RESULTS CONTAIN "*****", THE ENGINE USED DOES NOT HAVE A FUEL MAP. FUEL ECONOMY CANNOT BE PREDICTED.

Recommendations / General Information

IDLE FUEL RATE : 0.76 GALS/HR @ 700.0 RPM

TORQUE CONVERTER : TC-418 STALL RATIO: 1.98

Fuel Economy Route: Normal Route - City, Suburban, and Highway

Key Fuel Economy Information	City	Suburban	Highway	Notes
MILES PER GALLON	6.54	9.51	9.43	
AVERAGE MPH	19.0	39.9	54.6	
MISSION MINUTES	29.76	51.94	173.34	

IF THE RESULTS CONTAIN "*****", THE ENGINE USED DOES NOT HAVE A FUEL MAP. FUEL ECONOMY CANNOT BE PREDICTED.

GRADEABILITY PERFORMANCE

Enroute - Full Throttle Upshift Performance

Gear	Trans Ratio	Veh Spd (mph)	Eng Spd (rpm)	Whl Pwr (hp)	Grade (%)	Warn Notes Msg
1C	4.59	0.0	1963	0.00	41.28	@ STALL
		5.2	2038	185.75	35.62	70% EFF
		6.8	2088	208.95	30.28	80% EFF
		9.0	2168	221.40	23.46	
2C	2.26	9.0	2020	169.36	17.57	
2L	2.26	18.4	2170	222.75	10.88	
		18.4	1546	226.38	11.07	
3L	1.53	24.8	2081	260.32	9.24	
		24.8	1409	206.57	7.14	
4L	1.00	36.9	2095	259.24	5.67	
		36.9	1369	200.20	4.13	##
5L	0.75	57.3	2125	254.44	2.63	
		57.3	1594	229.09	2.20	
		74.4	2069	254.22	1.00	
		78.5	2184	242.96	0.50	
		79.1	2200	241.21	0.43	RATED RPM
		80.0	2225	211.44	0.00	LEVEL ROAD

STARTING / TOP GEAR PERFORMANCE

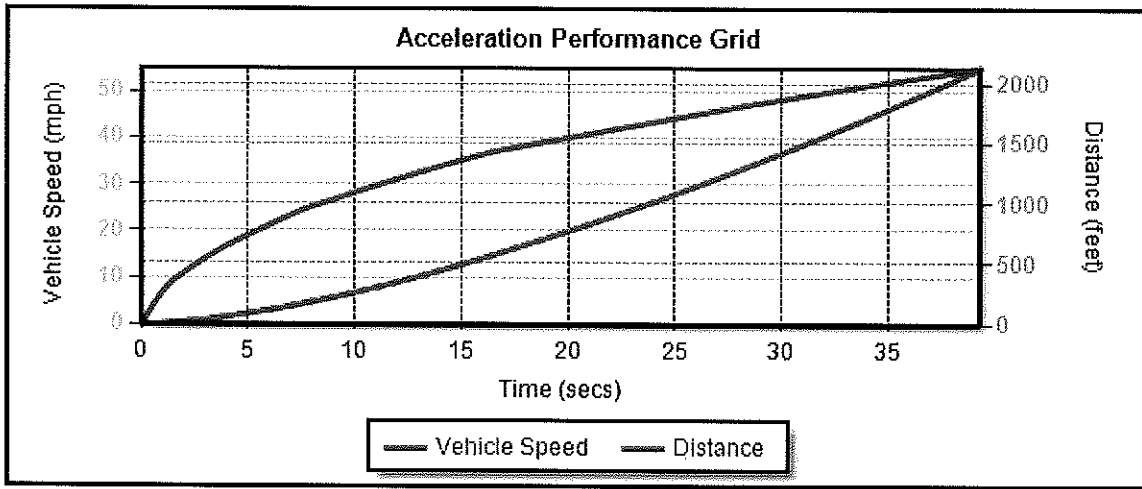
Gear	Trans Ratio	Veh Spd (mph)	Eng Spd (rpm)	Whl Pwr (hp)	Grade (%)	Warn Notes Msg
1C	4.59	0.0		0.00	41.28	@ STALL
		6.8		208.95	30.28	80% EFF - Calculated Start Ability

@ - WHEELSLIP CAN OCCUR AT THE GRADE SHOWN. THE VEHICLE IS CAPABLE OF INCREASED GRADEABILITY IF MORE WEIGHT IS PLACED ON THE DRIVE AXLES.

THE TRANSMISSION WAS SIMULATED IN PERFORMANCE OPERATING MODE.

ACCELERATION PERFORMANCE RESULTS

Acceleration Performance Grid



Acceleration Performance: TIME TO ACCELERATE ON A GRADE TO 55.0 (MPH) IS 39.35 (SECS)

Acceleration Performance Details

Gear	Time (secs)	Distance (feet)	Speed (mph)	Notes
1C	0.14	0.1	1.0	
	0.29	0.4	2.0	
	0.43	0.9	3.0	
	0.56	1.6	4.0	
	0.71	2.6	5.0	
	0.86	3.8	6.0	
	1.03	5.4	7.0	
	1.22	7.5	8.0	
	1.44	10.2	9.0	
	1.44	10.3	9.0	
2C	1.73	14.4	10.0	
	2.03	19.0	11.0	
	2.34	24.2	12.0	
	2.66	30.1	13.0	
	3.00	36.8	14.0	
	3.36	44.4	15.0	
	3.73	53.0	16.0	
	4.13	62.6	17.0	
	4.55	73.4	18.0	
	4.73	78.2	18.4	
2L	5.18	90.7	19.4	
	5.63	104.0	20.4	
	6.09	118.1	21.4	
	6.56	133.2	22.4	
	7.05	149.5	23.4	
	7.55	167.4	24.4	
	7.76	174.8	24.8	
	8.43	199.8	25.8	
	9.11	225.8	26.8	
	9.78	252.9	27.8	
3L	10.46	281.2	28.8	
	11.15	310.7	29.8	

Gear	Time (secs)	Distance (feet)	Speed (mph)	Notes
4L	11.84	341.5	30.8	
	12.54	373.7	31.8	
	13.26	407.7	32.8	
	13.99	443.5	33.8	
	14.74	481.4	34.8	
	15.52	521.8	35.8	
	16.34	565.4	36.8	
	16.41	569.0	36.9	
	17.55	631.9	37.9	
	18.71	696.8	38.9	
	19.87	763.8	39.9	
	21.03	832.9	40.9	
	22.21	904.2	41.9	
	23.39	977.7	42.9	
	24.58	1053.6	43.9	
	25.79	1132.1	44.9	
	27.01	1213.6	45.9	
	28.25	1298.0	46.9	
	29.50	1385.4	47.9	
	30.78	1476.1	48.9	
	32.09	1570.9	49.9	
	33.43	1670.1	50.9	
	34.81	1774.0	51.9	
	36.23	1883.1	52.9	
	37.69	1997.5	53.9	
	39.21	2118.9	54.9	
	39.35	2130.0	55.0	

REQUIRED TCAPE INFORMATION

TCAPE Factors For Vehicle

Selected Rear Axle Gear Ratio(s):	4.56
Engine Fan Type:	VISCOUS
Parked PTO:	NO
Enroute PTO:	NO
ID Wheel Slip Conditions:	Yes
Road Governor/Cruise Ctrl:	No
Road Surface Type:	TYPICAL
Fuel Economy Route:	Normal Route - City, Suburban, and Highway
Vehicle Vocation:	MODERATE ON/OFF HIGHWAY
Acceleration Grade (%):	0.0
Frontal Area (FT ²):	76
Speed Limit on Route (MPH):	61.0
Relative Drag Coefficient:	85
Alternator (A):	40
Steering Gear (HP):	2.60
Air Conditioner (HP):	3.20
Vehicle Width (IN):	96
Vehicle Height (IN):	110
Weight on Drive Axle (LBF):	23000
Acceleration Vehicle Spd (MPH):	55.0
Air Compressor (HP):	2.20
TIRE, FRONT	2 - RADIAL LOWPROFILE
TIRE, REAR	4 - RADIAL NORMAL

Components

0002ARZ	AXLE, FRONT NON-DRIVING {Meritor MFS-18-133A} Wide Track, I-Beam Type, 18,000-lb Capacity
0004SPA	AIR COMPRESSOR {Cummins} 18.7 CFM Capacity
0005PTB	STEERING GEAR (2) {Sheppard M100/M80} Dual Power
0008GXD	ALTERNATOR {Leece-Neville AVI160P2013} Brush Type; 12 Volt 160 Amp. Capacity, Pad Mount, with Remote Sense
0012EHU	ENGINE, DIESEL {Cummins L9 300} EPA 2017, 300HP @ 2000 RPM, 860 lb-ft Torque @ 1300 RPM, 2200 RPM Governed Speed, 300 Peak HP (Max)
0012THT	FAN DRIVE {Horton Drivemaster} Direct Drive Type, Two Speed with Residual Torque Device for Disengaged Fan Speed
0013AVG	TRANSMISSION, AUTOMATIC {Allison 3500 RDS} 5th Generation Controls, Wide Ratio, 5-Speed with Overdrive, with PTO Provision, Less Retarder, Includes Oil Level Sensor, with 80,000-lb GVW and GCW Max, On/Off Highway
0014ARB	AXLE, REAR, SINGLE {Meritor RS-23-160} Single Reduction, 23,000-lb Capacity, Driver Controlled Locking Differential, 200 Wheel Ends
0016196	CAB Conventional 6-Man Crew Cab
0016BAM	AIR CONDITIONER with Integral Heater & Defroster
07382135420	TIRE, REAR 11R22.5 Load Range H HDC1 (CONTINENTAL), 488 rev/mile, 75 MPH, Drive 11R22.5 Load Range H HDC1 (CONTINENTAL), 488 rev/mile, 75 MPH, Drive
07792545419	TIRE, FRONT 315/80R22.5 Load Range L HSC1 (CONTINENTAL), 484 rev/mile, 68 MPH, All-Position 315/80R22.5 Load Range L HSC1 (CONTINENTAL), 484 rev/mile, 68 MPH, All-Position

TCAPE HAS BEEN DESIGNED TO GIVE ECONOMY AND PERFORMANCE PREDICTIONS WHICH HAVE BEEN SHOWN TO BE TYPICAL FOR MOST OPERATIONS. HOWEVER, DUE TO OPERATING CONDITIONS, DRIVER INFLUENCES, AND OTHER FACTORS, YOUR RESULTS MAY VARY FROM THOSE PREDICTED. ALSO, BECAUSE OF FUEL MAPPING PROCEDURES USED BY VARIOUS ENGINE MANUFACTURERS, COMPARISONS OF FUEL ECONOMY RESULTS FOR DIFFERENT BRANDS OF ENGINES MAY VARY FROM THOSE SHOWN.

NAVISTAR, INC. SHALL NOT BE LIABLE FOR ANY LOSS OF PROFITS, LOSS OF USE, INTERRUPTION OF BUSINESS OR INDIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES OF ANY KIND THAT ARE INCURRED BY DEALER OR BY DEALER'S CUSTOMERS AS A RESULT OF RELIANCE ON TCAPE, WHETHER THE CLAIM IS IN CONTRACT, TORT (INCLUDING NEGLIGENCE), STRICT LIABILITY OR OTHERWISE.