

January 27, 2010

Rotary Snow Plow Acquisition
REQUEST FOR BIDS
RFB 10-1716

Vendor

The Muskegon County Board of Commissioners invites your bid on Rotary Snow Plow Acquisition for the Muskegon County Airport. A set of conditions and specifications/requirements are enclosed.

Bids are due in the Muskegon County Purchasing Office, Central Services Building, 141 East Apple Avenue, Muskegon, MI 49442, no later than 3:00 PM prevailing time, Wednesday, February 10, 2010.

The time of receipt shall be determined by the time clock stamp in the Purchasing Office. Bidders are responsible for insuring that their bids are stamped by Purchasing Office personnel by the deadline indicated.

No late bids will be accepted.

Mr. Joseph Siedenstrang
Accounting Manager

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ROTARY SNOW PLOW ACQUISITION
REQUEST FOR BIDS
RFB 10-1716

The Muskegon County Board of Commissioners invites your bid on Rotary Snow Plow Acquisition.

The project consists of furnishing all material and equipment for the following:

Acquisition of Rotary Snow Plow consisting of one (1) 5,000 ton per hour rotary snow plow (snow blower) and multi-use carrier vehicle.

Equipment shall include all necessary attachments, accessories and appurtenances.

Bid request forms are available in the Muskegon County Purchasing Office, Central Services Building, 141 East Apple Avenue, Muskegon, MI 49442 or the Muskegon County Purchasing website at www.co.muskegon.mi.us/financeandmgt/pur_cs.htm. Bids are due in the Purchasing Office, no later than 3:00 PM, prevailing time, Wednesday, February 10, 2010.

Equipment acquisition will be financed and paid for using federal, state and local funds received by the County of Muskegon, Michigan.

No late bids will be accepted. The Board reserves the right to accept or reject any or all bids, reserves the right to waive formalities and to take such action as it deems necessary in the best interest of the County of Muskegon. The County of Muskegon operates on an equal opportunity basis in its bidding policy (Title VII of Civil Rights Act of 1964, Equal Opportunity Clause, Executive Order 11246, Chapter 60, Subpart A, 60-I.4, Revised Order No. 4). Bidding is open to all interested parties, in compliance with national, state and local laws.

The project shall be completed within 180 days from date of Purchase Order.

Joseph Siedenstrang
Accounting Manager

BID CERTIFICATION / NON-COLLUSION AFFIDAVIT

I certify that this bid is made without prior understanding, agreement, or connection with any corporation, firm or person submitting a bid for the same materials, supplies, equipment or service, that it meets or exceeds all the specifications contained herein, and is in all respects fair and without collusion or fraud. I understand collusive bidding is a violation of state and federal law, and can result in fines, prison sentences, and civil damage awards. I agree to abide by all conditions of this bid, all specifications as stated, all bid prices, and certify that I am authorized to sign for the bidder.

Vendor: _____

Street Address: _____

City/State/Zip Code: _____

Phone No.: _____

Fax No.: _____

E-mail: _____

Web Site: _____

Signature: _____

Signer's Name Printed: _____

Title: _____

Date Certified: _____

BID SUMMARY

All cost (including shipping, handling and all other costs) must be included in the total bid price.

Bidders are to submit prices on the lines (spaces) provided below. Every line (space) must contain a figure, zero (0) or line (-). Failure to complete the bid summary as stated above shall be cause for rejection of bid.

Item No.	Description	Quantity	Unit	Unit Price	Total Amount
1	Rotary Plow including Carrier Vehicle, As Specified	1	Each	_____ _____	_____ _____
TOTAL BID:					

Please initial below acknowledging receipt of any addendums (give number and date of each). If none were received, please indicate this as well.

Addendum Number	Addendum Date	Initials
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Company Name _____

Signature _____

Printed Name _____

BID CONDITIONS/INSTRUCTIONS TO BIDDERS

These conditions are an integral part of this bid, and the vendor must comply with them.

1. **Bid Submittals**

Vendor must bid on this form and as requested. **Vendor must submit two (2) copies of Bid Summary along with two copies of the Buy American Certificate, Notice to Bidders forms for each plow type.**

Vendor should make copy of bid for his or her file.

The vendor's name and address must appear on the outside of the envelope. The bid must be sealed.

The vendor must place the attached sticker in the center of the bid envelope. If the bid was downloaded from the internet then, the vendor must clearly write the bid name and number on the outside of the envelope along with the vendor's business name.

2. All cost (including shipping, handling and all other costs) must be included in the total bid price as stated on the Bid Summary page.

Bidders are to submit prices on the lines (spaces) provided on the Bid Summary page(s). Every line (space) must contain a numeric figure, zero (0) or line (-). Failure to complete the bid summary as stated above shall be cause for rejection of bid.

3. **Delivery Date**

The delivery time or completion date, as stated in the bid form, shall be the time required to deliver and complete item(s) after the receipt of the order or award of the contract. Where multiple items appear on a bid request, the bidder/offeror shall, unless otherwise stated by the County, show the delivery time for each item separately.

State anticipated delivery date _____

All prices must be FOB Destination, unloaded inside and assembled unless otherwise indicated.

4. **Invoices and Payment Terms**

Invoices are to be mailed to the County department on the resulting purchase order. All invoices must include the purchase order number, federal grant number and state contract number. Failure to comply may result in delayed payments. The County will forward invoices to the Michigan Department of Transportation (MDOT) for payment in accordance with MDOT published procedures. The payment term shall begin on the date the merchandise is inspected, delivered and accepted by the County and the correct invoice is received in the office specified on the purchase order.

5. State the maximum time this bid will be in force _____
(Minimum 180 Days)

6. **Specification Inquiries**

If there are any questions concerning the specifications contained in this Bid Request, please contact (Mr. John Stroo, Prein&Newhof, Project Engineer) at (616-364-8491).

7. Bid Procedure Inquiries
If there are any questions regarding bid procedures, please contact the Purchasing Office at (231) 724-6281.
8. State manufacturer's name and number where requested.
9. Brochures and Literature
Enclose brochure(s) with bid.
10. Vendor Samples
Samples of items when required, must be furnished free of expense to the County and upon request, be returned to the Vendor at the Vendor's expense. Samples of selected items may be retained for comparison purposes.
11. Commission Privilege
The Board of Commissioners reserves the right to accept or reject any or all bids in whole or in part, reserves all rights granted to it by law, reserves the right to waive formalities and to take such action as it deems necessary in the best interest of the County of Muskegon.
12. Legal Requirements
Federal, State, County and local ordinances, rules and regulations, and policies shall govern development, submittal and evaluation of bid and disputes about bids. Lack of knowledge by a vendor about applicable law is not a defense.
13. Bidder/Offeror Representation
Each bidder/offeror must sign the bid with his/her usual signature and shall give his/her full business address on the form provided in this bid.

Bids by partnership shall be signed with the partnership name by one of the members or by an authorized representative. Bids by corporations shall be signed with the name of the corporation followed by the signature and designation of the president, secretary or other person authorized to bind it in the matter.
14. Subcontracting
No portion of this bid may be subcontracted without the prior written approval by the County. It may be in the best interest of the awardee to subcontract some parts of any given job; however, the contractor will be held responsible by the County for the quality, delivery and all terms and conditions of this bid.
15. Assignment
Any purchase order awarded shall not be assignable by the vendor without the express written approval of the County and shall not become an asset in any bankruptcy, receivership or guardianship proceedings.
16. Civil Rights
A. The Vendor assures that in accordance with General Provision, Section 9 titled "Airport and Airway Improvement Act of 1982, Section 520, General Civil Rights Provisions, 49 U.S.C. 47123", Title VI of the Civil Rights Act of 1964 (42 U.S.C. 2000d et seq.), Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. 794), Title IX of the Education Amendment of 1972, as amended (20 U.S.C. 1681-1683 and 1685-1686), the Age

Discrimination Act of 1975, as amended (42 U.S.C. 6101 et seq.), the Regulations issued thereunder by the U.S. Department of Health and Human Services (45 CFR Parts 80, 84, 86, and 91), the Michigan Handicapper's Civil Rights Act (1976, P.A. 220), and the Michigan Civil Rights Act (1976, P.A. 453), no individual shall, on the ground of race, creed, age, color, national origin or ancestry, religion, sex, marital status, or handicap be excluded from participation, be denied the benefit of, or be otherwise subjected to discrimination under any program or activity provided by this Vendor.

Assurance is given to County that good faith efforts will be made to identify and encourage the participation of minority, women and handicapper owned businesses in contract solicitations. The vendor shall incorporate language in all contracts awarded: (1) prohibiting discrimination against minority, women, and handicapper owned business in subcontracting; and (2) making discrimination a material breach of contract.

B. The Vendor assures that it meets the requirements of the Americans with Disabilities Act, Public Law 101-336, enacted July 26, 1990.

C. The Vendor assures that it meets the requirements of the Drug Free Workplace Act of 1988, 34 CFR Part 85, Subpart F.

17. Rejection of Bid

Bids may be considered irregular and may be rejected if they show omissions, alterations of form, additions not called for, conditions, limitations or other irregularities of any kind. The County reserves the right to waive minor technicalities or irregularities of bid. The County reserves the right to reject all bids based on available funding.

18. Award

The County shall award to the overall lowest responsible and responsive vendor complying with the provisions of the bid. The following criteria may be considered by the County in selecting the most advantageous bid: a) Ability to perform the service required within the specified time; b) Conformance to specification; c) The quality of performance in previous contracts; d) Financial ability to perform the contract; e) Item pricing; f) vendor references.

The County reserves the right to award the bid in whole or in part based on available funds. Award of partial bid will be at the County's sole discretion and will be made by deleting whole units of equipment. Unit prices for each piece of equipment shall include all costs associated with that piece of equipment as specified. No adjustment to per each unit prices will be considered based on partial award.

19. Bidder/Offeror Qualifications

No bid shall be accepted from and no contract will be awarded to any person, firm or corporation that is in arrears to the County upon debt or contract that is a defaulter, as surety or otherwise, upon any obligation to the County, or that is deemed irresponsible or unreliable by the County. If requested, bidders/offers shall be required to submit satisfactory evidence that they have a practical knowledge of the particular supply/service bid and that they have the necessary financial resources to provide the proposed supply/service as described in the Specifications.

20. Vendor/Bidder Complaints or Protests

The County of Muskegon has established administrative procedures for handling vendor's

complaints in a fair and timely manner. Vendors should observe the following steps in order to file complaints:

Step 1

The vendor must contact the Accounting Manager within seven (7) days of the incident about which he or she has a complaint. The Accounting Manager may request the vendor to present the complaint in writing if it is serious and/or the vendor is requesting a delay of the purchase award.

The Accounting Manager will investigate the complaint and review all findings with the County Administrator. The Accounting Manager will reply verbally or in writing to the vendor after discussion with the County Administrator.

Step 2

If the vendor is dissatisfied with the Accounting Manager's reply, an appeal must be made in writing within seven (7) days to the County Administrator or the Muskegon County Board of Commissioners.

21. Material Safety Data Sheet

Each vendor shall provide the County of Muskegon with a complete copy of the U.S. Department of Occupational Safety and Health Administration, Material Safety Data Sheet, (Form OSHA-20) for each product you are using on this project, if hazardous materials are being used.

22. Errors/Omissions/Discrepancies

Any errors, omissions or discrepancies in the specifications discovered by a prospective contractor and/or service provider shall be brought to the attention of the Accounting Manager as soon after discovery as possible. Further, the contractor and/or services provider shall not be allowed to take advantage of errors, omissions or discrepancies in the specifications.

23. Bid Opening

Bids will be opened and read publicly in the Central Services Building, 141 East Apple Avenue, Muskegon, MI at 3:00 PM, prevailing time, February 10, 2010.

No bid award will be made at the time of the opening.

24. Telegraphic/Electronic Bid Submittal

Telegraphic and/or bid offers sent by electronic devices (e.g. facsimile machines or electronic mail) are **not** acceptable and will be rejected upon receipt. Proposing firms will be expected to allow adequate time for delivery of their bid either by airfreight, postal service, or other means.

25. Bid Changes

No late bids will be accepted.

Bids, amendments thereto, or withdrawal requests received after the time advertised for bid opening will be void regardless of when they were mailed.

26. Purchase Order

A purchase order will be issued to the successful vendor after the bid has been awarded by

the Board. The County of Muskegon shall not be responsible for any goods delivered or services performed without a purchase order issued and signed by the Accounting Manager or an authorized representative.

27. Bid Results

Vendors submitting bids who wish to know the results before the award is made, may visit the website at <http://www.co.muskegon.mi.us/financeandmgt/bidtabulations.cfm> , call the Muskegon County Purchasing Office at (231) 724-6281, or visit the office. After the award is made, the bid results will be posted on the Muskegon County Purchasing website.

28. Taxes

Sales Tax: For purchases made directly by the County of Muskegon, the County is exempt from State and Local Sales Tax. Prices shall not include such taxes. Exemption Certificates for County Sales Tax will be furnished upon request.

Federal Excise Tax: The County of Muskegon may be exempt from Federal Excise Tax, or such taxes may be reimbursable, if articles purchased under this contract are used for the County's exclusive use. Certificates exclusive use is for the purposes of substantiating a tax-free, or tax-reimbursable sale will be sent to the contractor upon request. If a sale is tax exempt or tax reimbursable under the Internal Revenue Codes, prices shall not include the Federal Excise Tax.

The County's Tax Exempt Certification is available for bidder viewing upon request. http://www.co.muskegon.mi.us/financeandmgt/pur_forms.htm
The County's Federal ID # is 38-6006063.

29. Pronouns

For the benefit of brevity, when the pronouns "he" or "his"/ "she" or "her" are used, it is not intended to denote the gender of any person.

30. Exceptions

The bidder shall furnish a statement on company letterhead giving a complete description of all exceptions to the terms, conditions and specifications. Failure to furnish the statement will mean that the bidder agrees to meet all requirements of the terms, conditions and specifications.

31. Brand Names

Unless otherwise specified, manufacturer's names, trade names, information and/or catalog numbers listed in the specifications are intended only to identify the quality and characteristics desired. They are not intended to limit competition. The vendor may offer any equivalent product which meets or exceeds the specifications. If bids are based on equivalent products, the quote must: a) indicate the alternate manufacturer's name and catalog number; b) include complete descriptive literature and/or specifications; c) include proof that the proposed equivalent will meet the specifications. The County reserves the right to be the sole judge of what is equal and acceptable to meet its needs in all respects. If bidder fails to name a substitute, goods identical to the specified standard must be furnished.

32. Ownership and Use of Documents

a. All documents prepared in connection with this agreement will become the property

of the County whether any project related to this agreement is executed or not.

- b. The vendor will retain all of its records and supporting documentation relating to this agreement, and not delivered to the County, for a period of three years, except that in the event the vendor goes out of business during that period, it will turn over to the County all of its records relating to the project for retention by the County.
33. Termination for Convenience
Muskegon County may terminate a contract, in whole or in part, whenever the County determines that such termination is in the best interest of the County, without showing cause, upon giving notice to the vendor. Muskegon County shall pay all reasonable costs incurred by the vendor up to the date of termination. However, in no event shall the vendor be paid any amount which exceeds the price bid for the work performed. The vendor will not be reimbursed for any profits which may have been earned up to the date of termination.
34. Termination for Default
When the vendor has not performed or has unsatisfactorily performed the contract or in the event any of the provisions of the purchase order are violated, the County may serve written notice of its intention to terminate the contract and/or purchase order for default. Upon termination for default, payment will be withheld at the discretion of Muskegon County. Failure on the part of a vendor to fulfill the contractual obligations shall be considered just cause for termination of the contract. The vendor will be paid for work satisfactorily performed prior to termination less any excess costs incurred by the County in procuring and completing the work.
35. Termination Due to Unavailability of Funds in Succeeding Fiscal Years
When funds are not appropriated or otherwise made available to support continuation of performance in a subsequent fiscal year, the contract shall be canceled and the vendor shall be reimbursed for a reasonable value of any non-recurring costs incurred, but not amortized in the price of the supplies or services delivered under the contract.
36. Rights and Remedies of County for Default
If any item furnished by the vendor fails to conform to specifications, or to the sample submitted by the vendor, the County may reject it. Upon rejection, the vendor must promptly reclaim and remove such item without expense to the County, and shall immediately replace all such rejected items with others conforming to such specification and samples. If the vendor fails to do so, the County has the right to purchase in the open market a corresponding quantity of any such items and to deduct from any monies due the vendor the difference between the prices named in the purchase order and the actual cost to the County. If the vendor fails to make prompt delivery of any item, the County has the right to purchase such item in the open market and to deduct from any monies due the vendor the difference between the prices named in the purchase order and the actual replacement cost to the County. The rights and remedies of the County identified above are in addition to any other rights and remedies provided by law or under the purchase order.
37. Avoidance of Conflict of Interest and Confidentiality
The vendor may provide consultation services to other government organizations in Michigan and elsewhere. In order to preserve the trust and confidence of their client, the contractor adheres to a set of principles that enables them to perform their work in a manner that is free of real or perceived conflicts of interests. These principles are as follows:

- a. Vendor will not discuss, distribute or use in any way the data or information acquired in the course of providing services to Muskegon County without prior approval by the county.
- b. Vendor will not undertake a specific activity which may be viewed as adverse to the interests of another client without obtaining the agreement of both parties.
- c. Vendor states that no County officer or employee, nor any business entity in which they have an interest: a) Has an interest in the contract awarded; b) Has been employed or retained to solicit or aid in the procuring of the resulting contract; c) Will be employed in the performance of such contract without immediate disclosure of such fact to the County.

41. Bid conditions/instructions to bidders, specifications/requirements may become part of a contract for this product/service.

42. Freedom of Information Act

Bids will be available for public inspection after the award announcement, except to the extent that a bidder designates trade secrets or other proprietary data to be confidential. Material designated as confidential must be readily separable from the remainder of the bid to facilitate public inspection of the non-confidential portion of the bid. A bidder's designation of material as confidential will not necessarily be conclusive and the bidder may be required to provide justification why such material should not be disclosed, on request, under the Michigan Freedom of Information Act.

43. Debarment

If a bidder is presently debarred, suspended, proposed for debarment, declared ineligible, or otherwise excluded from doing business with any government agency which prohibits your firm from participating in any procurement, the bidder must provide the County with that information as part of its response to this solicitation. Failure to fully and truthfully provide the information required, may result in the disqualification of your bid from consideration or termination of the purchase order, once awarded.

44. Bidder Registration

If the successful bidder is not registered with the County of Muskegon as a vendor, the bidder will be required to complete a vendor registration in order to be awarded the bid. If the awarded bidder does not submit the completed registration to the Purchasing Office within 48 hours of its being notified of the award, the County may determine that the bidder shall be deemed not responsive and not be considered for an award.

If the vendor is a DBE (Disadvantaged Business Enterprise), the vendor is encouraged to complete the Unified Certification Application and become a certified vendor with the County of Muskegon.

GENERAL PROVISIONS

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Section 1: Guarantee

The BIDDER must guarantee in writing that for a period of one year from the date of delivery, he will, at his own expense and without expense to the SPONSOR, replace all failed parts and make all repairs that may be necessary and required by reason of defective design, workmanship or material in any part of the assembly of the equipment here in specified. In addition, the BIDDER must guarantee, in writing, that he will maintain spare parts in support of any equipment herein specified, that may be purchased as a result of this proposal and will make them available for purchase for a period of not less than ten (10) years from the date of delivery.

Section 2: Design, Construction and Materials

The equipment and accessory design shall be of the best engineering practices and shall permit accessibility for use, maintenance and service. All components shall be free of hazardous protrusions, sharp edges, cracks or other elements, which might cause injury to personnel or equipment. All oil, hydraulic and air tubing lines and electrical wiring shall be located in protective positions properly attached to the frame of body structure and shall have a protective loom or grommet at each point where they pass through structural members, except where a through-frame connector is necessary. The vehicle shall be constructed so that no part can work loose in service. The vehicle shall be built to withstand the strains, jars, vibrations and other conditions incident to service intended. Design of the vehicle shall produce the necessary clearances to permit satisfactory use of all drive wheels when traveling adverse terrain. Materials shall be of the best quality used for the purpose in commercial practice. Materials shall be free from all defects and imperfections that might affect the serviceability of the finished product.

Section 3: Standardization

All components, sub-assemblies, equipment and accessories not originally manufactured by the BIDDER must be installed by or in strict conformance with the standard installation and use requirements of the manufacturer of such items. Any modifications to these standard installation and use requirements must be evidenced by the written concurrence of the manufacturer of such components, sub-assemblies, equipment or accessories. Documentation of concurrence must be submitted when required, in writing, by the SPONSOR. BIDDER must state the basic model number, which the equipment is listed or referred to in a publication of recognized standing in the industry. In addition, the BIDDER must submit all available specifications, data and descriptive literature covering the equipment proposed in response to the proposal.

Section 4: Identification Plates

Identification plates of sufficient size to be easily read must be conspicuously displayed and securely fastened on the engine, chassis controls, compartments, valves and all other components showing all information necessary for the proper identification and/or operation of these units. Similarly, identification plates or other suitable methods indicating operational parameters for pressure, temperature, tachometer and other similar critical operation indicators are required.

Section 5: Certifications

The successful BIDDER will be required, prior to acceptance of and payment for the delivered equipment to provide, upon the written request of the SPONSOR, a "Certification of Suitability" for all driveline and power train components not manufactured by the BIDDER. The manufacturer's published rating shall not be raised to conform to the inherent requirements of this procurement, and

shall be at least equal to the load imposed, with adequate safety factor applied, at normal maximum operational configuration and conditions. This requirement extends to, but not limited to, the following components: engine, transmission, transfer case, drive shaft, axles, lockouts, suspension system, hydraulic system, braking system, generator, air compressor, steering mechanism and other similar components, if supplied as a part of the Contract.

Section 6: Compliance with Regulatory Requirements

If the procurement specified is a vehicle as defined by the State of Michigan Motor Vehicle Code, it is required that the vehicle as delivered complies with the Michigan Motor Vehicle Code for operation on the public highway. The successful BIDDER shall furnish the SPONSOR with a “Manufacturer’s Statement of Origin” and notarized “Bill of Sale” in conformance with the State of Michigan Motor Vehicle Code and other documents if necessary to obtain a State of Michigan Motor Vehicle Certificate of Title. It is also required that all equipment or components, whether furnished as a complete unit, an individual item, or an individual item within a complete unit, conform to all applicable Occupational Safety and Health Standards Act Regulatory Requirements and other applicable state and federal regulatory requirements.

Section 7: Compliance with Federally Assisted Contracts Regulatory Requirements

The work in this contract is included in an Airport Improvement Program Project which is being undertaken and accomplished by the SPONSOR in accordance with the terms and conditions of a grant agreement between the SPONSOR and the United States, and the Airport and Airway Improvement Act of 1982 and FAR Part 152 (14 CFR Part 152), pursuant to which the United States has agreed to pay a certain percentage of the costs under that Act. The United States is not a party to this contract and no reference in this contract to the Federal Aviation Administration or any representative thereof, or to any rights granted to the FAA or any representative thereof, or the United States, by the contract, makes the United States a party to this contract.

Section 8: Non-Construction Contract, Civil Rights Act of 1964, Title VI, 49 CFR Part 21, Contractual Requirements

During the performance of this contract, the contractor, for itself, its assignees and successors in interest (hereinafter referred to as the “contractor”) agrees as follows:

1.1 Compliance with Regulations. The contractor shall comply with the Regulations relative to nondiscrimination in federally assisted programs of the Department of Transportation (hereinafter, “DOT”) Title 49, Code of Federal Regulations, Part 21, as they may be amended from time to time (hereinafter referred to as the Regulations), which are herein incorporated by reference and made a part of this contract.

1.2 Nondiscrimination. The contractor, with regard to the work performed by it during the contract, shall not discriminate on the grounds of race, color, or national origin in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The contractor shall not participate either directly or indirectly in the discrimination prohibited by section 21.5 of the Regulations, including employment practices when the contract covers a program set forth in Appendix B of the Regulations.

1.3 Solicitations for Subcontracts, Including Procurements of Materials and Equipment. In all solicitations either by competitive bidding or negotiation made by the contractor for work to be performed under a subcontract, including procurements of materials or leases of equipment, each potential subcontractor or suppliers shall be notified by the contractor of the contractor’s obligations

under this contract and the Regulations relative to nondiscrimination on the grounds of race, color, or national origin.

1.4 Information and Reports. The contractor shall provide all information and reports requirement by the Regulations or directives issued pursuant thereto and shall permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the Sponsor or the Federal Aviation Administration (FAA) to be pertinent to ascertain compliance with such Regulations, orders, and instructions. Where any information required of a contractor is in the exclusive possession of another who fails or refuses to furnish this information, the contractor shall so certify to the sponsor or the FAA, as appropriate, and shall set forth what efforts it has made to obtain the information.

1.5 Sanctions for Noncompliance. In the event of the contractor's noncompliance with the nondiscrimination provisions of this contract, the sponsor shall impose such contract sanctions as it or the FAA may determine to be appropriate, including, but not limited to:

- a. Withholding of payments to the contractor under the contract until the contractor complies, and/or
- b. Cancellation, termination, or suspension of the contract, in whole or in part.

1.6 Incorporation of Provisions. The contractor shall include the provisions of paragraphs 1 through 5 in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Regulations or directives issued pursuant thereto. The contractor shall take such action with respect to any subcontract or procurement as the sponsor or the FAA may direct as a means of enforcing such provisions including sanctions for noncompliance. Provided, however, that in the event a contractor becomes involved in, or is threatened with, litigation with a subcontractor or supplier as a result of such direction, the contractor may request the Sponsor to enter into such litigation to protect the interests of the sponsor and, in addition, the contractor may request the United States to enter into such litigation to protect the interests of the United States.

Reference

49 CFR Part 21
AC 150/5100-15

Section 9: Airport and Airway Improvement Act of 1982, Section 520, General Civil Rights Provisions, 49 U.S.C. 47123

The contractor assures that it will comply with pertinent statutes, Executive orders and such rules as are promulgated to assure that no person shall, on the grounds of race, creed, color, national origin, sex, age, or handicap be excluded from participating in any activity conducted with or benefiting from Federal assistance. This provision obligates the tenant/concessionaire/ lessee or its transferee for the period during which Federal assistance is extended to the airport a program, except where Federal assistance is to provide, or is in the form of personal property or real property or interest therein or structures or improvements thereon. In these cases the provision obligates the party or any transferee for the longer of the following periods: (1) the period during which the property is used by the airport sponsor or any transferee for a purpose for which Federal assistance is extended, or for another purpose involving the provision of similar services or benefits or (b) the period during which the airport sponsor or any transferee retains ownership or possession of the property. In the case of contractors, this provision binds the contractors from the bid solicitation period through the completion of the contract. This provision is in addition to that required of Title VI of the Civil Rights Act of 1964.

Reference

Airport and Airway Improvement Act of 1982, Section 520
Title 49 47123
AC 150/5100-15, Para 10.c.

Section 10: Access to Records and Reports, 49 CFR Part 18.36(i)

The Contractor shall maintain an acceptable cost accounting system. The Contractor agrees to provide the Sponsor, the Federal Aviation Administration and the Comptroller General of the United States or any of their duly authorized representative's access to any books, documents, papers, and records of the contractor which are directly pertinent to the specific contract for the purpose of making audit, examination, excerpts and transcriptions. The Contractor agrees to maintain all books, records and reports required under this contract for a period of not less than three years after final payment is made and all pending matters are closed.

Reference

49 CFR Part 18.36(i)
FAA Order 5100.38

Section 11: Rights to Inventions, 49 CFR Part 18.36(i)(8)

All rights to inventions and materials generated under this contract are subject to regulations issued by the FAA and the Sponsor of the Federal grant under which this contract is executed.

Reference

49 CFR Part 18.36(i)(8)
FAA Order 5100.38

Section 12: Disadvantaged Business Enterprises, 49 CFR Part 26

Contract Assurance (§26.13) – The contractor or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of DOT assisted

contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy, as the recipient deems appropriate.

Prompt Payment (§26.29) – The prime contractor agrees to pay each subcontractor under this prime contract for satisfactory performance of its contract no later than ten days from the receipt of each payment the prime contractor receives from the Sponsor or the Sponsor’s Agent. The prime contractor agrees further to return retainage payments to each subcontractor within ten days after the subcontractor’s work is satisfactorily completed. Any delay or postponement of payment from the above referenced time frame may occur only for good cause following written approval of the Sponsor of the Sponsor’s Agent. This clause applies to both DBE and non-DBE subcontractors.

Reference

49 CFR Part 26

Section 13: Lobbying and Influencing Federal Employees, 49 CFR Part 20, Appendix A

(1) No Federal appropriated funds shall be paid, by or on behalf of the contractor, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the making of any Federal grant and the amendment or modification of any Federal grant.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with any Federal grant, the contractor shall complete and submit Standard Form-LLL, “Disclosure of Lobby Activities,” in accordance with its instructions.

Reference

49 CFR Part 20, Appendix A

Section 14: Trade Restriction Clause, 49 CFR Part 30

The contractor or subcontractor, by submission of an offer and/or execution of a contract, certifies that it:

- a. is not owned or controlled by one or more citizens of a foreign country included in the list of countries that discriminate against U.S. firms published by the Office of the United States Trade Representative (USTR);
- b. has not knowingly entered into any contract or subcontract for this project with a person that is a citizen or national of a foreign country on said list, or is owned or controlled directly or indirectly by one or more citizens or nationals of a foreign country on said list;
- c. has not procured any product nor subcontracted for the supply of any product for use on the project that is produced in a foreign country on said list.

Unless the restrictions of this clause are waived by the Secretary of Transportation in accordance with 49 CFR 30.17, no contract shall be awarded to a contractor or subcontractor who is unable to certify to the above. If the contractor knowingly procures or subcontracts for the supply of any product or service of a foreign country on said list for use on the project, the Federal Aviation Administration may direct through the Sponsor cancellation of the contract at no cost to the Government.

Further, the contractor agrees that, if awarded a contract resulting from this solicitation, it will incorporate this provision for certification without modification in each contract and in all lower tier subcontracts. The contractor may rely on the certification of a prospective subcontractor unless it has knowledge that the certification is erroneous.

The contractor shall provide immediate written notice to the sponsor if the contractor learns that its certification or that of a subcontractor was erroneous when submitted or has become erroneous by reason of changed circumstances. The subcontractor agrees to provide written notice to the contractor if at any time it learns that its certification was erroneous by reason of changed circumstances.

This certification is a material representation of fact upon which reliance was placed when making the award. If it is later determined that the contractor or subcontractor knowingly rendered an erroneous certification, the Federal Aviation Administration may direct through the Sponsor cancellation of the contract or subcontract for default at no cost to the Government.

Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render, in good faith, the certification required by this provision. The knowledge and information of a contractor is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

This certification concerns a matter within the jurisdiction of an agency of the United States of America and the making of a false, fictitious, or fraudulent certification may render the maker subject to prosecution under Title 18, United States Code, Section 1001.

Reference

49 CFR Part 30.13
FAA Order 5100.38

Section 15: Termination of Contract, 49 CFR Part 18.36(i)(2)

- a. The Sponsor may, by written notice, terminate this contract in whole or in part at any time, either for the Sponsor's convenience or because of failure to fulfill the contract obligations. Upon receipt of such notice services shall be immediately discontinued (unless the notice directs otherwise) and all materials as may have been accumulated in performing this contract, whether completed or in progress, delivered to the Sponsor.
- b. If the termination is for the convenience of the Sponsor, an equitable adjustment in the contract price shall be made, but no amount shall be allowed for anticipated profit on unperformed services.
- c. If the termination is due to failure to fulfill the contractor's obligations, the Sponsor may take over the work and prosecute the same to completion by contract or otherwise. In such case, the

contractor shall be liable to the Sponsor for any additional cost occasioned to the Sponsor thereby.

- d. If, after notice of termination for failure to fulfill contract obligations, it is determined that the contractor had not so failed, the termination shall be deemed to have been effected for the convenience of the Sponsor. In such event, adjustment in the contract price shall be made as provided in paragraph b. of this clause.
- e. The rights and remedies of the Sponsor provided in this clause are in addition to any other rights and remedies provided by law or under this contract.

Reference

49 CFR Part 18.36(i)(2)
FAA Order 5100.38

Section 16: Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion, 49 CFR Part 29

The bidder/offeror certifies, by submission of this proposal or acceptance of this contract, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency. It further agrees by submitting this proposal that it will include this clause without modification in all lower tier transactions, solicitations, proposals, contracts, and subcontracts. Where the bidder/offeror/contractor or any lower tier participant is unable to certify to this statement, it shall attach an explanation to this solicitation/proposal.

Reference

49 CFR Part 29
FAA Order 5100.38

Section 17: Breach of Contract Terms, 49 CFR Part 18.36

Any violation or breach of terms of this contract on the part of the contractor or their subcontractors may result in the suspension or termination of this contract or such other action that may be necessary to enforce the rights of the parties of this agreement.

The duties and obligations imposed by the Contract Documents and the rights and remedies available there under shall be in addition to and not a limitation of any duties, obligations, rights and remedies otherwise imposed or available by law.

Reference

49 CFR Part 18.36

Section 18: Energy Conservation Requirements

The contractor agrees to comply with mandatory standards and policies relating to energy efficiency that are contained in the state energy conservation plan issued in compliance with the Energy Policy and Conservation Act (Public Law 94-163).

Reference

49 CFR Part 18.36
Public Law 94-163

Section 19: Clean Air and Water Pollution Control

Contractors and subcontractors agree:

- a. That any facility to be used in the performance of the contract or subcontract or to benefit from the contract is not listed on the Environmental Protection Agency (EPA) List of Violating Facilities;
- b. To comply with all the requirements of Section 114 of the Clean Air Act, as amended, 42 U.S.C. 1857 et seq. and Section 308 of the Federal Water Pollution Control Act, as amended, 33 U.S.C.

1251 et seq. relating to inspection, monitoring, entry, reports, and information, as well as all other requirements specified in Section 114 and Section 308 of the Acts, respectively, and all other regulations and guidelines issued there under;

- c. That, as a condition for the award of this contract, the contractor or subcontractor will notify the awarding official of the receipt of any communication from the EPA indicating that a facility to be used for the performance of or benefit from the contract is under consideration to be listed on the EPA List of Violating Facilities;
- d. To include or cause to be included in any construction contract or subcontract which exceeds \$100,000 the aforementioned criteria and requirements.

Reference

49 CFR Part 18.36(i)(12)
Section 306 of the Clean Air Act
Section 508 of the Clean Water Act

Section 20: Buy American Preferences – 49 U.S.C. Chapter 501, Subtitle VII – Aviation Programs, Part E – Miscellaneous

The Aviation Safety and Capacity Expansion Act of 1990 is applicable to this procurement and provides that preference be given to steel and manufactured products produced in the United States, if the cost of its components mined, produced or manufactured in the United States exceeds 60 percent of the cost of all its components and final assembly has taken place in the United States. Components of foreign origin of the same class or kind as the products, determined by the U.S. Department of Transportation, under the Aviation Safety and Capacity Expansion Act of 1990, not produced in the United States in sufficient and reasonably available quantities and of a satisfactory quality, shall be treated as domestic.

The Secretary of Transportation may waive the obligation to appropriate funding for a project only if steel and manufactured goods used in the project are provided in the United States. If the Secretary finds that applying this obligation would be inconsistent with the public interest; the steel and goods produced in the United States are not produced in a sufficient and reasonably available amount or are not of a satisfactory quality; when procuring equipment the cost of components and subcomponents produced in the United States is more than sixty (60) percent of the cost of all components of the equipment and final assembly of the equipment has occurred in the United States; or including domestic material will increase the cost of the overall project by more than twenty-five (25) percent. Labor costs involved in final assembly are not included in calculating the cost of components.

Use of domestic products (Prohibition against fraudulent use of “Made in America” labels): A person shall not intentionally affix a label bearing the inscription of “Made in America”, or any inscription with that meaning, to a product sold in or shipped to the United States, if that product is not a domestic product.

Purchase of American made equipment and products: It is the sense of Congress that any recipient of a Federal Grant should purchase, when available and cost-effective, American made equipment and products when expending grant monies.

Restricting contract awards because of discrimination against United States goods or services: A person or enterprise domiciled or operating under the laws of a foreign country may not make a contract or subcontract using grant monies if the government of that country unfairly maintains, in

government procurement, a significant and persistent pattern of discrimination against United States goods or services that results in identifiable harm to United States businesses.

Contract preference for domestic firms: By definition a “Domestic Firm” means a business entity incorporated, and conducting business, in the United States. By definition a “Foreign Firm” means a business entity not described as a “Domestic Firm”. Subject to contract preference for domestic firms, the administrator of the Federal Aviation Administration (FAA) may make, with a domestic firm, a contract related to a grant made under competitive procedures with a foreign firm if the administrator decides, and the Secretary of Commerce and the United States trade representative concur, that the public interest requires making the contract with the domestic firm, considering United States international obligations and trade relations; the difference between the bids submitted by the foreign firm and the domestic firm is not more than six (6) percent; the final product of the domestic firm will be assembled completely in the United States; and at least fifty-one (51) percent of the final product of the domestic firm will be produced in the United States.

The successful BIDDER will be required to assure that only domestic steel and manufactured products will be used by the contractor, sub-contractors, material men and suppliers in the performance of this contract, except those:

1. That the U.S. Department of Transportation has determined, under the Aviation Safety and Capacity Expansion Act of 1990, are not produced in the United States in sufficient and reasonably available quantities and of a satisfactory quality;
2. That the U.S. Department of Transportation has determined, under the Aviation Safety and Capacity Expansion Act of 1990, that domestic preference would be inconsistent with the public interest; or
3. That inclusion of domestic material will increase that cost of the overall project contract by more than 25 percent.

BUY AMERICAN CERTIFICATE

By submitting this proposal package, except for those items listed by the BIDDER below, the BIDDER certifies that steel and each manufactured product, is produced in the United States (as defined in the above clauses A and B, Buy American-Steel and Manufactured Products for Construction Contracts) and that components of unknown origin are considered to have been produced or manufactured outside of the United States.

Should the successful BIDDER propose to use any products not produced in America, this list should be submitted to the MIDOT, Bureau of Aeronautics and Freight Services contact person within ten (10) working days after the bid opening date.

BIDDERS may obtain from the MIDOT, Bureau of Aeronautics and Freight Services a list of articles, materials, and supplies exempted from this provision.

PRODUCT	COUNTRY OF ORIGIN

If any products are submitted, the successful BIDDER should also attach a complete rationale for using products not produced in America. These materials may not be incorporated into the project until approval has been received from the Federal Aviation Administration. Failure to receive approval from the Federal Aviation Administration will not relieve the contractor from completing the job as specified at the contract unit price. The County of Muskegon is tax-exempt and does not pay sales tax.

**NOTICE TO BIDDERS
ROTARY PLOW**

BID OPENING OF FEBRUARY 10, 2010

1. Is the Rotary Plow Vehicle Chassis 100% American made? Yes No

2. Is the Front Mounted Rotary Plow (Snow Blower) 100% American made? Yes No

3. Is the Rotary Plow Vehicle Chassis Final Assembly Performed in the United States? Yes No

4. Is the Front Mounted Rotary Plow (Snow Blower) Final Assembly Performed in the United States? Yes No

5. What is the content of American made products for the Rotary Plow Vehicle Chassis? _____%

6. What is the total content of American made products for the Rotary Plow (Snow Blower)? _____%

Remarks: (Bidder may enter explanations or expand on the above answers. Attach additional sheets as necessary.)

This section does not apply if compelling national security considerations require that it does not apply; or the trade representative decides that making the contract would violate the multilateral trade agreements or an international agreement to which the United States is a party.

Reference

49 USC Chapter 501-Buy American Preference

Section 21: Delivery

The fully assembled and operational vehicle, including all equipment and accessories shall be delivered within one hundred eighty (180) calendar days from the date of the *Notice to Proceed* to the following location:

MUSKEGON COUNTY AIRPORT
SRE FACILITY
99 SINCLAIR DRIVE
MUSKEGON, MI 49441

All arrangements for common carrier shipping shall be made by the Contractor, the cost of which shall be prepaid by the Contractor and included into the per each unit price for each vehicle as bid. The Bidder shall obtain the Sponsor's approval for the proposed shipment prior to delivery. Failure to deliver all vehicles within the specific time will be considered cause for

APPENDIX A

Prohibition of Discrimination in State Contracts

In connection with the performance of work under this contract; the contractor agrees as follows:

1. In accordance with Act No. 453, Public Acts of 1976, the contractor hereby agrees not to discriminate against an employee or applicant for employment with respect to hire, tenure, terms, conditions, or privileges of employment, or a matter directly or indirectly related to employment, because of race, color, religion, national origin, age, sex, height, weight, or marital status. Further, in accordance with Act No. 220, Public Acts of 1976 as amended by Act No. 478, Public Acts of 1980 the contractor hereby agrees not to discriminate against an employee or applicants for employment with respect to hire, tenure, terms, conditions, or privileges of employment, or a matter directly or indirectly related to employment, because of a disability that is unrelated to the individual's ability to perform the duties of a particular job or position. A breach of the above covenants shall be regarded as a material breach of this contract.
2. The contractor hereby agrees that any and all subcontractors to this contract, whereby a portion of the work set forth in this contract is to be performed, shall contain a covenant the same as hereinbefore set forth in Section 1 of this Appendix.
3. The contractor will take affirmative action to insure that applicants for employment and employees are treated without regard to their race, color, religion, national origin, age, sex, height, weight, marital status or a disability that is unrelated to the individual's ability to perform the duties of a particular job or position, such action shall include, but not be limited to the following: employment, upgrading, demotion or transfer; recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship.
4. The contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, national origin, age, sex, height, weight, marital status or disability that is unrelated to the individual's ability to perform the duties of a particular job or position.
5. The contractor or his collective bargaining representative will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice advising the said labor union or workers' representative of the contractor's commitments under this appendix.
6. The contractor will comply with all relevant published rules, regulations, directives, and orders of the Michigan Civil Rights Commission which may be in effect prior to the taking of bids for any individual state project.
7. The contractor will furnish and file compliance reports within such time and upon such forms as provided by the Michigan Civil Rights Commission, said forms may also elicit information as to the practices, policies, program, and employment statistics of each subcontractor as well as the contractor himself, and said contractor will permit access to his books, records, and accounts by the Michigan Civil Rights Commission, and/or its agent, for purposes of investigation to ascertain compliance with this contract and relevant with rules, regulations, and orders of the Michigan Civil Rights Commission.

8. In the event that the Civil Rights Commission finds, after a hearing held pursuant to its rules, that a contractor has not complied with the contractual obligations under this agreement, the Civil Rights Commission may, as part of its order based upon such findings, certify said findings to the Administrative Board of the State of Michigan, which Administrative Board may order the cancellation of the contract found to have been violated, and/or declare the contractor ineligible for future contracts with the state and its political and civil subdivisions, departments, and officers, and including the governing boards of institutions of higher education, until the contractor complies with said order of the Civil Rights Commission. Notice of said declaration of future ineligibility may be given to any or all of the persons with whom the contractor is declared ineligible to contract as a contracting party in future contracts. In any case before the Civil Rights Commission in which cancellation of an existing contract is a possibility, the contracting agency shall be notified of such possible remedy and shall be given the option by the Civil Rights Commission to participate in such proceedings.
9. The contract will include, or incorporate by reference, the provisions of the foregoing paragraphs (1) through (8) in every subcontract or purchase order unless exempted by the rules, regulations or orders of the Michigan Civil Rights Commission, and will provide in every subcontract or purchase order that said provisions will be binding upon each subcontractor or seller.

The Civil Rights Commission referred to is the Michigan Civil Rights Commission.

PART VI –TECHNICAL SPECIFICATIONS

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1. GENERAL

These specifications contemplate the furnishing and delivery of one (1) NEW ALL-WHEEL DRIVE, TWO ENGINE DESIGN, TWO STAGE, ROTARY SNOW BLOWER, and indicate in general the type, size, and quality desired.

This vehicle shall be all wheel drive and must be designed and manufactured in the United States, for the specific purpose of snow removal, with a minimum 50,000 lb. GVW rating, approximate wheel base of 164", and 5,000 TPH snow removal capacity. The configuration shall be front mounted attachments, forward mounted cab design with near center steering, auxiliary power unit between operator cab and rear mounted carrier engine. This vehicle shall comply with all applicable FMCSR and FMVSS quality/safety standards, and requirements of the FAA Advisory Circular 150/5220-20.

As required by FAA AC 150-5220, 1992, Page 33, Chapter 7, Item 44 General: The manufacturer shall be responsible for conducting tests to ensure that its snow and ice control equipment meets the operation and performance requirements it advertises. Certified records of these compliance tests shall be submitted by the manufacturer with each response to an invitation to bid. Equipment tests shall be conducted on standard production models and not on specially constructed prototypes.

All parts and components of this unit shall be engineered and classified as HEAVY DUTY, and shall be of the size, material, and strength to sustain the maximum load limits and severe operating conditions encountered in snow removal, while resulting in minimum wear and failure.

These specifications require the doing of all things necessary or proper for, or incidental to the furnishing of said unit. All items of design and equipment not listed in these specifications, but involved in carrying out their intent, are required to be furnished by the bidder, the same as if these items were specifically mentioned and described in these specifications.

2. PROTOTYPES AND EXPERIENCE

The airport sponsor requires this specified piece of equipment in order to maintain the airfield during large and small snow events. It will be a central and critical element in the fleet and in the effort to accomplish the airport's published snow plan. Experience building machines of this nature is mandatory as is a track record of recent manufacture and in-service record for machines comparable and similar to that specified. Therefore, location and contact lists are required in the bid package to enable the airport sponsor to contact at least 10 airports that have taken delivery of similar equipment from the bidder within the last two years, all to have 2010 EPA emission compliant drive engines. Bids received without including such location and contact list will be considered non responsive and will not be considered.

These specifications contemplate the furnishing and delivery of one (1) NEW ALL-WHEEL DRIVE, CARRIER CHASSIS, and indicate in general the type, size, and quality desired.

This vehicle shall be all wheel drive and must be designed and manufactured in the United States, for the specific purpose of snow removal, with a minimum 50,000 lb. GVW rating, and approximate wheel base of 164. The configuration shall allow for front mounted attachments, forward mounted cab design with near center steering, auxiliary power unit (if required for application) between operator cab and rear mounted carrier engine. This vehicle shall comply with all applicable FMCSR and FMVSS quality/safety standards, and requirements of the FAA Advisory Circular 150/5220-20.

All parts and components of this unit shall be engineered and classified as HEAVY DUTY, and shall be of the size, material, and strength to sustain the maximum load limits and severe operating

conditions encountered in snow removal, while resulting in minimum wear and failure.

These specifications require the doing of all things necessary or proper for, or incidental to the furnishing of said unit. All items of design and equipment not listed in these specifications, but involved in carrying out their intent, are required to be furnished by the bidder, the same as if these items were specifically mentioned and described in these specifications.

3. TYPE & SIZE

This unit shall be designed for one man operation, and have a fully enclosed, thermally and acoustically insulated, aluminum and glass cab mounted center frame, as far forward as good engineering practices will permit. The operator shall be near center cab positioned for visibility in high speed snow removal operations. This truck shall have a gross vehicle weight rating of not less than 50,000 pounds at the hubs.

The front attachment to front axle dimension shall be kept as close as possible. This cab location and the axle to attachment dimension are necessary in order to have the operator as far forward as good engineering practices will permit, allowing greater visibility and maneuverability while clearing debris from runways and taxiways.

4. CHASSIS

4.1. CHASSIS

The chassis shall be designed to permit easy and safe mounting and dismounting of the unit for operators and service personnel. All sheet metal, cowling, steps and fenders shall be free of sharp edges and protrusions, and include ample supports and bracing to prevent distortion and cracking. All steps or walkways shall be raised lug or expanded metal type construction. Grab bars shall be installed as required for safe mounting and dismounting by personnel. This shall include a minimum 1-inch diameter vertical grab bar behind each door, to include round tactile material for improved grip. The inside of each door shall include a minimum 1-foot grab handle positioned under the window. It shall be made of minimum 1-inch diameter material, round only (no sharp edges or corners) for safety.

The carrier engine access cover shall be a fiberglass tilting type with an air over hydraulic assist system installed on the vehicle, controlled from the rear bumper area. Hoist shall operate on system air pressure by means of push to operate controls. Hood lift shall include a minimum of two (2) hydraulic cylinders to avoid deformation of engine cover, one on left and one on right, mounted under the hood for cosmetic reasons. Lowering shall be accomplished by means of an orifice release to provide a slow and safe lowering of the hood. Two guides shall be mounted below the leading edge of the hood one left and one right, to self align hood as it lowers. Rollers or other appendages on the hood shall lower to the outside of these guides. A comprehensive lubrication data plate shall be affixed to the rear engine enclosure.

For maneuverability around shop areas, angle of departure shall be no less than 20°.

4.2. FRAME

The frame shall be of Grade 8 bolted construction, with heat treated, 120,000 psi yield strength, single channel carbon manganese steel rails, connected by an adequate number of cross members to resist frame distortion from the lateral stress expected in this application. Minimum bar size shall be 12.375" X 3.875" X .375", with minimum 2,818,000 inch pound RBM per rail. The frame shall be the industry standard 34" width. There shall be two (2) tow hooks mounted on the rear of the vehicle. FRAME LINERS, WRAPPERS, FISHPLATING, AND BOLT-ON

EXTENSIONS ARE NOT ACCEPTABLE.

A straight, full width rear bumper is required to protect the rear of the vehicle. Bumper shall be approximately 12 inches in height to offer ample protection at rear of the vehicle. For maneuverability, the unit shall have an angle of departure of no less than 20°.

Mud flaps shall be provided behind both axles and in front of rear axle to avoid snow and debris on truck.

A pintle hitch shall be installed with 6,000 pounds vertical capacity and 30,000 pounds pulling capacity. An aluminum toolbox shall be affixed to the chassis frame.

5. ENGINE SYSTEM

5.1. ENGINE

The engine shall be of the four stroke diesel type, six (6) cylinder, minimum 13 liter nominal displacement, developing a minimum of 335 horsepower at 2100 RPM, Caterpillar, and shall be equipped with latest diesel electronic control and engine management system to be 2010 EPA emission compliant for on-road engines. The engine shall be provided with full flow, replaceable oil filters, heated fuel water separator, engine manufacturer's standard fuel filtration system, and emergency (power derate) system with light and buzzer, in event of high water temperature and/or low oil pressure. Automatic measured shot ether starting aid with thermostatic control shall be provided. An engine coolant heater shall be provided, 1500 watt minimum, and also an engine oil pan heater. Starter shall be Delco. Engine shall have a front engine PTO flange for mounting a front mounted hydraulic pump to be driven directly off the crankshaft.

The chassis engine shall be equipped with cruise control and provision for high idle settings. Controls shall be in the cab for these functions.

A dry type two stage air cleaner is required with provisions for modification of air intake, offering both outside of hood and under hood air intake as required by seasonal and local conditions to assure that engine manufacturer's intake air temperature limitations can be met. Chassis engine air intake filter canister (s) shall be located under the chassis engine hood on stand away brackets. The engine shall be equipped with a Turbo II engine air intake particular filter. Provisions shall be included for draining all engine fluids from one location.

A stainless steel exhaust guard shall cover the vertical muffler to protect crew from burns.

5.2. COOLING SYSTEM

The cooling system shall consist of a HEAVY DUTY radiator, horizontal flow for maximum cooling with the top & bottom tanks, and side members bolted together to form a rigid frame. The tanks shall be steel and the core shall be constructed of copper and brass. Sturdy steel support rods (minimum ½ inch diameter) between radiator and frame, complete with rubber vibration isolating pucks at frame end are required. There shall be at least one support bracket on left and right of radiator, providing stability for the cooling package. ALUMINUM RADIATORS WILL NOT BE ACCEPTABLE.

A transmission cooler shall be located integral to the radiator. A thermostatically controlled, air operated disconnect type suction fan shall be provided. Air flow shall be parallel type with charge air cooling system mounted above liquid coolant system. Radiator shroud is required to properly direct air flow through cooling system. A fan ring is also required, made of flexible rubber material and mounted to brackets attached to the engine itself. Normal operational engine

movement shall carry both the fan and the flexible fan ring with it. The engine cooling system shall be filled with permanent type antifreeze protecting the system to -40° F. A spin on coolant filter and silicone radiator and heater hoses shall be provided. A 1500 watt AC coolant heater shall be provided.

Fan belt shall be serpentine type. Engine shall be equipped with an automatic belt tensioning device.

5.3. CHASSIS ENGINE COOLING SYSTEM CERTIFICATION

Certification and proof of chassis engine cooling tests are required in the bid package. Certification shall include a dated, signed letter from the engine manufacturer indicating approval of the installation as bid. Certification shall prove suitable cooling capacity in ambient temperatures up to 115° F when operated at maximum horsepower. Certification shall be for horsepower equal to or greater to the horsepower required within this specification.

Lack of proper certification proof in the bid will be considered reason to reject any proposed unit as an untested and unreliable prototype.

5.4. FUEL SYSTEM

Twin fuel tanks shall have a minimum total capacity of 250 gallons. The tanks shall be constructed of heavy gauge steel and be properly fastened to the frame. A four inch diameter filler neck with chain connected cap and brass tank drain plugs shall be provided. Fuel tanks shall be interconnected to allow equalized fuel level in both tanks. Provisions shall be included for filling both fuel tanks from one side of the truck. A Racor 490 heated fuel/water separator (or equal) shall be installed in the supply line to the engine fuel injectors.

6. TRANSMISSION

6.1. TRANSMISSION

The transmission shall be Allison Gen IV series (or equal) four-speed automatic, with a low gear ratio of 3.51:1, and shall be supplied with the appropriate torque converter for this application. Shifting shall be accomplished via a shift control within easy reach of the operator. A low transmission oil level sensor system shall be included in the electronic transmission. Touch pad control shall be located near driver, enabling operator to shift gears with left hand. A dedicated back up connection shall be provided between touch pad shifter and vehicle electronic system external to the J1939 data bus connection to allow operator to shift into gear during fault mode or if main J1939 data bus fails. This back up connection is essential for emergency egress from active runways. A low transmission oil sensor shall be included with indicator in the cab.

6.2. TRANSFER CASE

The transfer case shall be an automatic locking and unlocking type which proportions torque to both front and rear axles without the need for driver intervention. The transfer case shall be the two-speed type. The hi-low range selection shall be electric over air actuated and operated from the cab and equipped with Smart Shift[®] (or equal) to eliminate range shifting at excessive speeds. Switch shall be stage bump type, moving the shift from low to high or high to low. For vehicle and equipment protection, if the shift is not completed by the electric/air system within one minute, the system shall cease attempts at range shift and notify the operator of the failure by flashing light at the control switch. Operating range of the transfer case shall be displayed on the main dash LCD screen. The transfer case shall have a torque transmission capacity exceeding the maximum torque developed by the engine and transmission, and shall be approved for the application and be manufactured by the chassis builder.

6.3. AXLES

The rear axle shall be of the full floating, torsion flow type with a single reduction spiral bevel gear design, minimum 23,000 pound GVW hub and brake rating, minimum 10" ground clearance, capable of withstanding the loads of the unit being bid. A driver controlled traction differential unit is required in the rear axle.

The front axle shall be of the drive/steer type, and of the full floating, torsion flow type with a single reduction spiral bevel gear design, minimum 27,000 pound GVW hub and brake rating, minimum 10" ground clearance, capable of withstanding the loads of the unit being bid. A driver controlled traction differential unit is required in the front axle. Shock absorbers shall be provided for the front axle only.

For extended life, the steering-drive wheel ends shall be bolted to and removable from the center section of the axle housing. The Cardan drive type joints shall be totally enclosed within a sealed ball and socket to protect the moving parts of the axle and steering joints from dirt and slush. The trunnion pins shall be supported by pre-loaded tapered roller bearings to insure long life and smooth steering at all cramp angles.

Double reduction type axles and hubs will not be accepted.

7. FOUR WHEEL STEERING SYSTEM

Front axle steering shall be Sheppard integral hydraulic power assist gear type. The steering gear shall be rated for heavy duty service. Four wheel steering shall be electronically coordinated through the standard steering wheel. A selector switch within easy reach of the operator shall provide the option of front steer only, crab steer, or coordinated front/rear steer. Additionally, a single axis joystick shall be provided for controlling rear steer only.

The system shall include safety provisions for dampening of all wheel steer effects at higher speeds, but it shall also allow full operation while the vehicle is moving at lower speeds. An indicator shall be provided in the cab to display mode selected and rear wheel position. Also for safety, there shall be a mechanical linkage maintained at all times between the steering wheel in the cab and the front axle to assure the ability to control the vehicle in the event of hydraulic or electrical system failure. Safety dampening of all wheel steer effects shall be related to vehicle speed and all wheel steer be available in both transfer case speed ranges.

Due to the conditions under which the vehicle will be operated the ability of this equipment to operate safely at all speeds while maximizing maneuverability, and provide the operator the ability to select the desired mode of operation "on the go" an electronically controlled rear axle steering system which operates in conjunction with the mechanically controlled front wheel steering system is required. This system must consist of the following components and operating features.

The all wheel steering system consists of the following major components:

- The vehicle's original front steering system
- A driving, steerable rear axle
- Various hydraulic control valves, wheel position sensors, speed sensor and a steering cylinder located on the rear axle.
- ECU (electronic control unit) and control panel (located in the cab)

OTHER REQUIRED FEATURES

- All of the all wheel steering system controls are to be located in the cab easily accessible to the operator.

- The all wheel steering system must be preprogrammed with multiple steering modes for improved maneuverability.
 - The driver must have the option to select one of the following modes of operation “on the go” based on the driving conditions at hand.
- 7.1. Front Steer.** When in the front mode the vehicle behaves like a conventionally steered vehicle. In this mode, the axle lock remains in the locked position and the rear axle does not steer. Use this mode when enhanced maneuverability is not needed or during operation at speeds greater than 30 mph, such as highway travel or straight ahead high speed brooming (alternate use) operations.
- 7.2. Coordinated Steer.** This mode gives the operator the tightest turning radius of any of the available modes. When the front axle is steered, the rear axle turns in the opposite direction of the front, which reduces the turning radius and enhances maneuverability. This mode also has a deadband feature. Deadband allows the vehicle front axle to be turned a predetermined number of degrees in either direction before the rear axle steers. The deadband varies according to the speed of the vehicle. The rear axle lock remains engaged (locked) when the front axle is within the deadband range. The diameter of the turning radius measured at the front axle tire can not exceed 243 inches.
- 7.3. Crab Steer.** When the front axle is steered, the rear axle steers in the same direction as the front axle. This makes the vehicle travel in a diagonal motion, sometimes called “crab walking”. This mode can be useful for parallel parking or for counteracting side forces applied to a vehicle, such as during low speed snow blowing or brooming operations. This mode also has a speed controlled variable deadband.
- 7.4. Joystick or Manual Rear Steer.** When in this mode, the rear axle is controlled only by the joystick, independently of the front wheel position. Use this mode only during low speed operation. This mode is particularly useful when backing the vehicle or when the vehicle is brooming large amounts of snow and more broom angle is desired. The hydraulic locks remain operational; however, the mechanical lock is disengaged (unlocked) at all times when in this mode.
- 7.5. Switching Between Modes.** The mode switch may be moved at any time; however, the ECU will not switch modes unless the front axle crosses center. If the front axle does not cross center the system remains in the previous mode until the front axle crosses center. The rear wheels must be in the straight-ahead position before the mode change occurs.
- 7.6. Rear Wheel Position Gauge.** The system must include a rear wheel position gauge which performs the following three functions:
- *Calibration Indicator:* The LED bar graph on the display gauge is used for calibrating the wheel position sensors. The LED bar graph display shows the position of the angle sensors for adjustment purposes.
 - *Rear Wheel Position Indicator:* The LED (light emitting diode) bar graph display shows the operator the position of the rear wheels. When the rear wheels are in the straight-ahead position, the center green LED will be on. When the rear wheels are turning left, the LED bar graph sweeps from center to the left in proportion to the rear wheel angle. When the rear wheels are turning right, the LED bar graph shall sweep from center to the right, in proportion to the rear wheel angle.
 - *Error Code Display:* The error code display is used in troubleshooting. If an error is detected by the ECU (electronic control unit), it signals the operator. This display is also used during system start-up to display the current CPU (central processing

unit) software revision level.

7.7. Mode Lights. The mode light feature consists of four lights

The FRONT mode light is lit when the all wheel steering ECU is operating in the front steer mode and the three position mode switch is in the front steer (center) position.

The AXLE LOCKED mode light is lit when the rear axle is mechanically locked in the straight-ahead position. This light also comes on when the all wheel steering ECU detects a system problem and an error code is displayed on the rear wheel position gauge.

The COORD mode light is lit when the all wheel steering mode switch is in the coordinated steer mode position and the ECU is operating in coordinated steer mode.

The CRAB/JOYSTICK mode light is lit when the three position mode switch is in the rear steer position and the ECU is operating in the rear steer mode.

7.8. Managers Switch. A key switch must be provided which will allow supervisory personnel to “lockout” or “enable” operation of the all wheel steer system. This switch is included to insure that only those operators who are qualified to operate the vehicle all wheel steering system are permitted to do so.

8. Springs

The unit shall have alloy steel springs of the semi-elliptical type, with minimum 27,000 lb. front and minimum 23,000 lb. rear ratings. The front springs shall be so designed and engineered as to provide reserve carrying support with blower head raised in the transport mode. The spring hangers, pins and supports shall be heavy duty to give long life. The pins shall be of the grease type with substantial bronze bushings.

9. BRAKES

The service brakes shall be fully air actuated, drum and shoe type with a minimum 15.7 CFM air compressor and documented to conform to FMVSS 121, S-cam type front and rear. The parking brakes shall be spring actuated, air released at the rear service brake air chambers with the air switch mounted within the cab and in easy reach of the operator. An electronic anti-lock brake system is required, 4S-4M. The air system for this unit shall be equipped with frame mounted, heated Bendix AD-9, or approved equal, air drier system. A quick disconnect coupler on the right side of the vehicle shall allow introduction of shop air into air system upstream of the air dryer for filling on board truck system with air. Remote cable drains shall be provided for each air tank. DISC BRAKES AND DRIVELINE BRAKES ARE NOT ACCEPTABLE.

10. WHEELS & TIRES

This unit shall be equipped with proper sized wheels and tires for the GVW rating of the unit being bid. Single wheels shall be furnished for the front and rear axles. The wheels shall be of the steel disc type with an 11-1/4" bolt circle. The tires shall be Michelin 395/85R20 XZL or equal. One spare tire and wheel assembly shall be provided with the new chassis for each axle, two assemblies total.

11. CAB

This unit shall have a fully enclosed, thermally and acoustically insulated (85 db as measured 6" from the drivers ear at full engine RPM), aluminum and glass cab. Fiberglass components shall be used where shaping will assist in snow and air flow around the vehicle to avoid snow build up on the unit during operation. This shall include the roof and front cowling. A visor above the windshield outside the cab is required to shield from falling snow and to assist in shading the operator from sun glare. The cab shall be mounted center frame and as far forward as good engineering practices will permit. The operator shall be positioned slightly right of center. Minimum cab height shall be 132" as measured from the ground to the top of the cab.

The cab of this unit shall be provided as follows:

1. A tilt/telescoping steering column.
2. A single piece heated panoramic windshield with reverse slope, minimum 2,500 square inches. Side windows shall be power roll down type, one on each side of cab in each door, 5-1/2 square feet each. Rear window shall be minimum 3 sq. ft, stationary type.
3. Rear corners of cab shall include sight windows for visibility of processed runway surface, approximately 320 square inches each.
4. Two peep windows, 340 square inches each, required in cab front fascia below windshield to assist operator in monitoring working head and casters.
5. All windows shall be tinted safety glass, DOT approved and stamped.
6. Minimum four (4) electric variable speed wiper(s), heated type wipers, providing operator absolute, clear line of vision, providing a minimum of 80% swept surface of the windshield. Wipers shall be mounted above the windshield to assist in snow shedding. If parking in a vertical position, wipers shall park within 3 inches of windshield corner posts, or outside of a 90° arc centered on the operator's eye position looking forward. Side window wipers shall be provided with individual controls.
7. Six quart reservoir for wet arm wipers required. System shall include an automated sequence which soaks the windshield and performs wiper sweep with the press of a single button, minimizing dry wipe.
8. A windshield deluge system is required to maintain operator visibility during snow removal operations. As a minimum, the system shall consist of a 4 gpm pump, a 20 gallon reservoir, discharge nozzles above the front windshield (2), discharge nozzle above each side window (1), discharge nozzle above left and right rear view mirrors, and the associated plumbing to make a functional system. The reservoir shall include a site glass near the fill point. Fill point shall be conveniently located below cab door height for easy refill. Discharge shall be controlled by a dash mounted switch in conjunction with wiper controls.
9. High output, fresh air type heater/defroster with multispeed fan motor, mounted behind the operator to minimize visibility obstructions to the front. Cab heater with defroster shall be capable of maintaining a 50° F inside temperature at sea level when the ambient temperature is -40° F. Air flow of 380 CFM minimum required. The HVAC system shall include air conditioning to cool the cab in warm weather and assist with dehumidifying during cab defrost.
10. A screened, louvered vent is required near cab rear for fresh air intake into Heater/ventilation unit. The heater/ventilation system to be digitally controlled, set-it-and-forget-it style with digital settings up to 95° Fahrenheit. Climate control shall include auto mode for fan to provide rapid warm up of cab with automatic throttling down of fan as requested temperature is reached. Vent controls shall be provided from panel selection including defrost mode dictating outside air intake

- for maximum drying effect.
11. Cab doors shall be provided with full length stainless steel piano type hinges. Hinges shall be bolted to the door and bolted to the cab frame. Hinges shall not be welded to doors and/or cab. Interior lower panels of doors shall include a nonmetallic liner to assist in sound absorption. Side sight peep windows required in each door, 70 square inches each. Glass pane in each skin of door required. When the door is opened and the chassis in-gear, the chassis horn shall sound.
 12. Cigarette lighter and additional 12 volt power outlet
 13. Dual, heated, motorized West Coast type mirrors operated from the operator position in the cab.
 14. Self canceling turn signals with hazard switch.
 15. Key type starter switch for chassis with keyless rotary switch start for blower engine. Integrated safety checks shall prevent starting when an unsafe condition is detected on either engine. Real time feedback to the message center will report what condition is preventing the system from attempting an engine start.
 16. Coat hooks.
 17. Cup holders (two) shall be located front center of cab.
 18. The operator seat shall be National Standard Plus, heated, air ride, fully adjustable in the horizontal and vertical positions with high back, air assist, arm rests, lumbar support, cloth covered, load adjustable and furnished with 3 point type safety belts. Adjustable arm rest shall contain joystick for implement control. Arm rest control shall include a vertical stow feature to facilitate easy egress/ingress of operator. A detent shall lock arm rest in the stowed position, with release control provided for operator.
 19. A second National Standard plus seat shall be provided to the left of the driver. It shall also be equipped with three point type safety belts. It shall not have arm rests.
 20. Emergency E-Stop required in above panel to immediately shut down blower engine and use engine compression to assist in slowing down impeller and ribbon in emergency situations. E-stop to be resettable from inside cab. E-stop shall be located in prominent position directly in front of and above the operator.
 21. All digitally controlled electrical circuits shall be protected by solid state circuitry and logic. Power supplies to control modules shall be protected by manual reset circuit breakers. Master wiring circuitry boxes shall be mounted behind operator. Manual reset circuit breakers controlling all analog circuits shall be easily accessible.
 22. The interior of cab shall be fully insulated. The floor of the cab shall be insulated with thermal-acoustical sound barrier floor mat.
 23. Master connection point for radios in control console above windshield near center of cab.
 24. Electric horn
 25. Multiple access panels in upper console to allow easy access to switch and wiring connections
 26. AM/FM/Weather band radio
 27. Digital clock in the Command Zone screen.

Instrumentation shall be centered on a color liquid crystal display mounted to the tilt/telescoping steering wheel. In general and to provide clear information, chassis engine information shall be grouped at top of screen with blower engine information displayed grouped at bottom of screen.

Available information shall include:

1. Speedometer/odometer
2. Tachometer and hour meter. Hour meter to register when engine is running only.
3. Voltmeter.

4. Air pressure gauge (dual system, physical gauge required)
5. Time of day
6. Blower Ribbon speed
7. Fuel level with low level indicated by color (12% remaining gauge shall be yellow for caution; at 6% level, gauge to be red for urgent situation)

Warning Icons required for:

8. Low Air Pressure
9. ABS Fail
10. ABS Communication Lost
11. Engine Stop
12. Engine fail warning
13. Low voltage
14. Engine overheat
15. Engine low oil pressure
16. Engine air intake restriction
17. Transmission overheat
18. Transmission fail
19. Engine communication lost
20. Control system node communication lost
21. Transmission Communication lost
22. Hydraulic fluid temperature
23. Hydraulic fluid level
24. Parking brake applied
25. Transmission range
26. Traction lock engaged
27. Windshield washer fluid low level indicator
28. Joystick status (active/inactive/fault-failure)
29. Blower ribbon engaged/disengaged
30. Message center for fault messages affecting operation.

A summary of fault messages with most probable resolutions shall be provided in the service manuals required elsewhere in this specification.

Multiple selections of display shall be provided for operation and maintenance. Fault codes shall be “notify of failure” with operator attention drawn to the area of fault. Display of ground speed and blower engine RPM required. Display shall include selectors to page through digitally displayed instrumentation for maintenance and routine preflight check list procedures. As a safety feature, to prevent operator skimming of instrumentation during operations, screen selection apparatus shall become non functional at approximately 2 mph with the screen display reverting to operating mode information.

12. ELECTRICAL & LIGHTING

12.1. ELECTRICAL & LIGHTING

Electrical system shall be multiplex technology for efficiency and maximization of control parameters. All lighting on this vehicle shall conform to FMVSS. All lighting shall be 12 volts, and shall include, but not be limited to, the following:

1. Two (2) fender mounted halogen headlights w/ integral turn signals per FMVSS.
2. Tail, stop, clearance, back up alarm Preco 1040 (or equal) with auto adjustment for noise level, and backup lights per FMVSS (minimum two).
3. Two Whelen 800 Amber strobe beacons, one mounted on or near the top of the cab and one on the rear engine enclosure, visible 360 degrees in the horizontal plane, with

- a single dash mounted switch to activate both beacon.
4. Two High Intensity Discharge (HID) cab roof-mounted headlights shining toward the front of the vehicle.
 5. Two halogen chassis-mounted headlights in front of the vehicle
 6. A sealed beam spotlight or remote controlled spot light on both the left and right sides of the cab roof or windshield, operator adjustable type from inside the truck cab, similar to NP 130 NightProbe, as manufactured by Code 3, Inc. (www.code3psi.com), or an approved equal.
 7. Two High Intensity Discharge (HID) rear headlights mounted at the rear of the vehicle, as high as practical.
 8. Cab dome light.
 9. Variable intensity instrument lighting, push button control with ramp up through approximately 16 steps.
 10. Weatherproof wiring shall be SLX nomenclature type, insulated and numbered, required circuit breakers for analog circuits shall be located in an easily accessible weatherproof electrical panel.
 11. Two (2) headlights with high/low beam and integral turn signals mounted on a light bar near front outside corners of cab near leading edge. Light bar shall be vertical and made of round material to allow infinite positioning and aiming of auxiliary lighting as specified. Deutsch type sealed connector required at each light bar to pass electrical connections through cab shell.
 12. One (1) 12-volt, 200-amp minimum alternator with built-in regulator.
 13. Four (4) 12-volt, maintenance free batteries with a total 3800 cold cranking amperes. Batteries to be installed in a separate frame mounted compartment with corrosion resistant interior.
 14. Master electrical disconnect switch located within easy reach of the operator.
 15. On board 110/12 volt trickle charger required, 1.5 amp minimum.
 16. Two multipurpose type work lights to be mounted under chassis engine hood with individual on/off switches and overriding switch for pair.
 17. High intensity discharge lights (HID) on the front light bars.
 18. One extra circuit breaker for owner installed equipment

12.2. RADIOS

Suppression of the electrical system, sufficient to assure positive operation of all radio equipment shall be furnished. All computerized components must be appropriately shielded to eliminate any potential interference from using two-way radio equipment from inside the vehicle. The following radio shall be supplied and mounted securely in the cab of the vehicle:

ICOM IC-A110 VHF Air Band Transceiver, including microphone and exterior (cab roof) mounted antenna.

All radios shall be installed, with location approved by the Sponsor, and include antennas and microphones and all appurtenances to complete the installation, ready for operation

13. AUXILIARY ENGINE

13.1. AUXILIARY ENGINE

The auxiliary engine shall be of the four stroke diesel type, six (6) cylinder, developing a minimum of 700 horsepower at 2100 RPM, Caterpillar C-18 minimum. The engine shall be a Tier 3 class engine for EPA emission levels. A doghouse or other protective enclosure of fiberglass construction shall be provided for the engine installation. Doors for maintenance

access to the auxiliary engine shall be removable and held in place by rubber retainers to avoid rattling of the doors. When removed, full access to the sides of the engine shall be provided from the required catwalks on both sides of the engine. The auxiliary engine shall have an electronic control system, and have the same protection (power derate) systems and instrumentation as required for the vehicle engine, plus an intake air warning system for high intake vacuum. The engine shall have a 1500 watt minimum coolant block heater and an engine oil pan heater. The engine installation shall also include 12 volt start (Delco 50MT), automatic shot, thermally locked ether starting aid, muffler(s) approved for the application by the engine manufacturer, an air restriction indicator, and an automatic inside/outside air intake system.

Auxiliary engine cooling system shall include a HEAVY DUTY vertical flow radiator, with the top & bottom tanks, and side members bolted together to form a rigid frame. The tanks shall be steel and the core shall be constructed of copper and brass, 1300 sq in minimum. Thermostatically controlled fan clutch is required. ALUMINUM RADIATORS ARE NOT ACCEPTABLE. A spin-on coolant filter and silicone radiator hoses are required. Provisions shall be provided for draining all engine fluids from one convenient location.

RPM control shall be by means of electric switch convenient to the operator to bump or ramp up and ramp down engine RPM.

13.2. BLOWER ENGINE COOLING SYSTEM CERTIFICATION

Certification and proof of the blower engine cooling tests are required in the bid package. Certification shall include a dated, signed letter from the engine manufacturer indicating approval of the installation as bid. Certification shall include the ambient temperature in which the engine can work at maximum power output, perform reliably, and stabilize at a temperature acceptable to the engine manufacturer. Certification shall be for horsepower equal to or greater to the horsepower required within this specification.

Lack of proper certification proof in the bid will be considered reason to reject any proposed unit as an untested and unreliable prototype.

14. QUICK HITCH

The vehicle shall be equipped with a quick hitch device to allow the use of the snow blower head or optional attachment. The truck portion of the hitch shall be the parallel, lift to attach type, activated by two double acting cylinders. The upper horizontal sections of the hitch shall be a heavy walled tube of at least 3/8" wall to act as the receptacle for the head portion of the hitch. All bearing surfaces shall be equipped with grease fittings.

The attachment portion of the hitch shall have two flame cut curved arms that will hook into the upper receptacle and rest on an angle iron pocket on the lower receptacle. The attachment part of the hitch shall lock by means of a 2-1/2" x 1/2" wall tube. This locking tube shall slide through the lower receptacles and lock in place by means of a snap pin. The locking tube shall be equipped with a grab handle.

Mating, except for locking, shall be accomplished hydraulically and operated from inside the cab. There shall be no hydraulic lines inside the cab. The hitch hydraulics shall be powered by a chassis engine driven hydraulic pump, and shall be capable of lifting the entire blower head off the ground.

15. TWO-STAGE ROTARY SNOW BLOWER

15.1. TWO-STAGE ROTARY SNOW BLOWER

The rotary snow blower shall be a two-stage unit including an auger or ribbon, and a separate

impeller to effectively feed and displace snow and/or ice. The blower unit shall be designed to withstand hard usage, and cold climates. The materials, parts and construction techniques shall conform to the best engineering practices. It shall have a minimum capacity of 5,000 tons per hour with a casting distance as measured from the blower to the point of maximum deposition under a no-wind condition of 75 feet minimum. For operational flexibility, a second gear ratio shall be provided to provide a longer cast distance. The performance specifications are based on snow with a unit weight of 25 pounds per cubic foot.

The blower shall be a helical ribbon auger first stage with a second stage impeller. The first-stage ribbon shall act to cut and feed snow to the second stage impeller which shall force the snow out of a snow casting chute.

Rotary-head box shall be fabricated of heavy gauge, high wear, welded alloy steel with 3/8 inch side plates and 3/16 inch moldboard suitable for the type of expected service and formed to the contour of the ribbon reel conveyor. Provisions on the box shall be made for vehicle mounts, carbide skid pads and caster brackets, scraper blades and associated hardware, drives, and controls.

15.2. HELICAL RIBBON

The helical, ribbon with serrated ribbons shall have a minimum diameter of 52 inches and have a minimum of two bearing supports, one at each end of the reel, and be driven from both ends. Single motor drive is unacceptable. Likewise, open prop shaft drive within the path of snow flow is unacceptable. If the dual motor drive is provided at the center, driving outward, prop shaft and/or drive mechanism must be in an enclosed case. Dual motor drive is essential for reliability and performance. Single motor drive is unacceptable. The ribbon flights on each reel shall be two removable halves and mounted on the reel shaft by the necessary number of mounts with flat head fasteners. The ribbons shall be made from ASTM A572 GR 50 steel with a minimum thickness of 1/2 inch. The reel shall be constructed with a curb ring for protection to any exposed parts of the reel. A minimum of clearance shall exist between the rotary head box and the reel to reduce snow plowing and carryover. The cutting width shall be not less than 102 inches. Cutting edge shall be multi-section. Reel speed shall be selectable by the seated operator for variable snow and operating conditions without varying the impeller speed and cast distance.

The reel shall be driven hydrostatically and be reversible from the cab to aid in disgorging excessive or clogged snow from the head b by means of momentary electric rocker switch convenient to the operator. Pump shall be electronically controlled, 180CC displacement. Hydrostatic relief shall be provided to protect the system should ingestion of foreign objects occur. A low oil level/high oil temperature warning system shall alert the operator in the cab to abnormal conditions. A manual shut off valve shall be provided at the outlet of the hydraulic oil reservoir.

15.3. IMPELLER SYSTEM

The impeller system shall have a minimum diameter of 59 inches with a minimum depth of 21 inches. It shall be designed to be consistent with the capacity of the in-putting reel. The opening, blade diameter and speed ratio shall ensure proper snow flow and discharge to the casting chute. The five impeller blades must be replaceable and be attached with countersunk fasteners. All blades shall be constructed and balanced to be resistant to vibration and shock damage caused by high speed ingestion of foreign objects. The impeller shall be driven by direct mechanical means and shall have swing-bolts to facilitate quicker attachment.

The blower drive shall include a full torque 3-plate PTO 14 inch clutch, controlled from the cab, for blower drive engagement. Clutch engagement shall be electric over hydraulic actuation and

offer protection against engaging clutch when blower engine is over 800 rpm. Clutch engage selection shall automatically engage ribbon drive in forward direction. For safety, the clutch/ribbon engage button shall be illuminated GREEN when activated and the ribbon status icon on the LCD will clearly indicate ribbon status as a visual reminders to operator of the status. Clutch shall automatically disengage if engine is shut off to avoid attempts at start up with impeller engaged.

A hydraulic pressure relief block shall be provided to relieve system pressure allowing safe, easy connection of ribbon and chute hydraulic hoses.

A two-speed reduction gear system shall be provided between the blower engine and the impeller to provide proper torque and speed at the impeller while allowing the engine to operate at the RPM providing maximum efficiency. An electronically controlled lock out system shall automatically assure that gear change is made only with clutch disengaged and shaft movement at low enough speeds to avoid damage to gear system. Shift shall be by means of electric over hydraulic control. Switch shall be stage bump type, moving the shift from low to neutral to high or high to neutral to low in two bumps, one for each shaft movement. For vehicle and equipment protection, if the shift is not completed by the electric/air system within one minute, the system shall cease attempts at range shift and notify the operator of the failure by flashing light at the control switch. Operating range of the transfer case shall be displayed on the main dash LCD screen.

The gear box shall include helical gears with pressurized lubrication system. CHAIN TYPE DROP BOXES ARE NOT ACCEPTABLE. Driveline shall be Spicer 1710 Series or equal. Shear bolts shall be provided in the impeller drive train to minimize damage should ingestion of foreign objects occur. The shear bolts shall be accessible and replaceable from behind the intake face of the blower to eliminate removing snow from the blower intake to replace the bolts.

The snow casting assembly shall consist of a controllable chute, impeller or turbine snow collector and a control system. The system shall be designed to accept the maximum output volume of the impeller assembly, with an interior free from sharp bends or obstructions. The impeller housing shall be built of 3/8 inch steel, and the snow casting assembly shall be built of 1/4 inch steel.

15.4. SPOTCASTING/LOADING CHUTE

The blower shall be equipped with a precision spot casting/loading chute assembly designed specifically for use on the supplied blower head, and able to withstand the normal stresses imposed by the high discharge rates typical of this application. The assembly shall be of all steel construction, and consist of a hydraulically operated rotating base section, extendable chute, and flipper to direct snow into a truck body or beyond runway and taxiway intersections or other obstacles. The chute must rotate a minimum of 240°, 120° to each side of center, in the horizontal plane, and shall be fully controlled from within the cab via electric over hydraulic controls. Discharge chute to be in full view of the operator.

15.5. SNOW BLOWER LIFT AND WEIGHT TRANSFER SYSTEM

The rotary head assembly shall have a provision for raising the head from the pavement. The hydraulic lift mechanism shall be fully operable from the control cab, with hydraulic pump driven by the chassis engine. Minimum ground clearance shall be 8 inches under the leading edge when rotary head is at maximum height. Rotary head drive system shall not bind, rub or vibrate excessively when head is raised to maximum height and shall be able to travel a minimum of 2" below ground level with positive down pressure to clean out surface depressions. A vertical float position shall be included in the control system.

To maximize traction in the work mode, the blower shall be equipped with a weight transfer system that automatically maintains 60 % of the blower head weight on the front axle of the chassis. This shall be accomplished hydraulically by sensing the system pressure and continually adjusting the pressure via electronically controlled hydraulic metering valves.

A minimum of two (2) 18" rubber tired caster wheels shall be provided on the blower head capable of swiveling 360° for backing. The tires shall have a minimum load capacity of 2300 lbs. each at 130 psi inflation, and be rated for 30 MPH service at full load. One (1) complete spare caster tire/wheel assembly shall be provided.

15.6. SPARE COMPONENTS

The following spare components shall be provided;

- One complete set of filters
- One set of impellor shaft shear pins
- One set of abrasion resistant skid shoes
- One set of Carbide cutting edges for snow blower head
- One set of caster wheels and tires (caster not required)

1. ON-BOARD DIAGNOSTICS AND ELECTRONIC CONTROL SYSTEM

16. ON-BOARD DIAGNOSTICS AND ELECTRONIC CONTROL SYSTEM

Functional control of vehicle shall be centered on an electronic control system utilizing J1939 data bus. Reliability and precision operation of the unit requires heavy reliance on solid state circuitry and components and minimized reliance on traditional multipin "physical switch" type relays. Electronic control systems shall include on board diagnostic assistance and other features to simplify the operation, troubleshooting, and repair of the unit. Proprietary engine and Allison transmission data and troubleshooting readout not required. A laptop computer shall be provided with chassis Command Zone software loaded and a cable and key system.

16.1. ECU's, VIMS, Power Modules and Direct Current Controllers

Electronic control modules shall be of the highest reliability and durability for use in mobile equipment. System shall comply with the following:

1. High amp manual resettable circuit breaker protection is required upstream from the electronic control modules;
2. Y's from the data bus to the modules shall be physically labeled in the vehicle for ease of maintenance and troubleshooting;
3. Control boxes shall include a dual external LED tattletale, one LED displaying constant illumination indicating power supply, and one LED displaying a "heartbeat" indicating internal proper function;
4. A timer module shall serve to keep electronic modules live for 5 hours after last cycle of door switches indicating egress from vehicle. This unit shall maintain heartbeats and power indicators at modules and their function without the key switch on. After 5 hour period without a change of status in door switches, unit shall automatically shut down

- completely.
5. Data bus terminal resistors shall be EXTERNAL to control modules for ease and economy of replacement. Terminal resistors within the control boxes shall NOT be used as part of the electronic system structure;
 6. Certifications of testing and durability of electronic modules
 - a. EMI-RFI (meeting mil-spec of 150 volts/meter)
 - b. Salt spray survival for 1,000 hours minimum (ASTM B117)
 - c. Water immersion
 - d. High temperature tested at 125% overload for 100 hours, minimum;
 - e. Vibration tested to 50 g's
 7. VIM shall be capable of 245 amp sustained output capacity to provide engineered margin of safety;
 8. VIM shall be overload and reverse polarity protected with self diagnostic capabilities;
 9. Field Effect Transistors (FETs) shall provide power output to electrical functions, acting as a solid state relay and circuit breaker in one;
 10. FETs shall shut off automatically in the event of short to ground, cycling on and off to test itself for proper function to avoid damage while allowing search and repair of fault;
 11. Individual FET ratings and over-current protection to be programmed to values of 1 to 15 amps depending on task assignment;

16.2. On Board Diagnostics Features and Performance

Electronic control system shall include and enable diagnosis of system and function by means of the LCD dash display. System shall include the following at a minimum:

1. Message area on LCD to display error message to operator as any system function fails. Available during operation on operations screen;
2. Error message toggle if more than one failure is present;
3. Password registration with chassis OEM's Service Department;
4. Memory retention of failures until cleared by maintenance personnel with password access; Real time operational indicator of system function on diagnostics/maintenance screens

17. QUALITY/SAFETY STANDARDS

17.1. VEHICLE DESIGN PRINCIPLES

The vehicle design shall provide for removal of snow with maximum maneuverability and versatility, visibility, ease of operation, safety, reliability and accessibility for repairs and maintenance.

17.2. RESPONSIBILITY OF CONTRACTORS AND SUPPLIERS

The contractor must assume complete responsibility for all component parts of the entire vehicle, even though portions may be sub-contracted. This responsibility shall include design, construction, inspection, performance testing and servicing. It shall be the contractor's responsibility to remain capable of furnishing parts and technical assistance to the SPONSOR for the normal life of the vehicle, being twenty (20) years. The contractor shall also be responsible for assuring that the vehicle meets the specified criteria. All components shall have the manufacturer's approval and recommendation for the intended service and the manufacturer's rating shall not be exceeded by the actual loads imposed. The contractor shall supply operators, parts and service manuals. If the contractor is not able to assume the abovementioned responsibilities, for whatever reason, he must tabulate all exceptions to the responsibility requirements of these specifications in the proposal along with the bid.

17.3. PREPARATION AND SHIPMENT

The vehicle and its accessories shall be packed in such a manner as to prevent pilferage and ensure safe delivery to the Muskegon County Airport. Deliver shall be by lowboy trailer, for all movement of the vehicle, at the expenses of the manufacturer or supplier.

17.4. DYNAMOMETER

The unit is to be delivered with a chassis dynamometer test report verifying proper operation and power output of chassis engine and drive train. Dynamometer test shall require engine & chassis to be run for at least 20 minutes and shall show run up to full power output with chassis mph to 45 mph minimum, and to at least 90% of maximum horsepower output. The dynamometer test shall be done at the manufacturer's plant facility on the newly built chassis, not off-site by a third party. Test report to include truck serial number. A sample of chassis dynamometer testing is to be provided in the bid package. This sample shall verify that such testing is standard practice for the manufacturer. A special procedure to satisfy this requirement for this procurement only does not demonstrate the quality procedures and standards desired by the purchaser.

17.5. QUALITY/SAFETY STANDARDS

Each bid must include the vehicle (chassis) manufacturer's certification that the vehicle (chassis) meets or exceeds the following requirements based on documented test results. Documented test results shall be provided upon request.

- FMVSS 571-103 Windshield defrosting and defogging systems, in accordance with JI944, J198
- FMVSS 571-121 Air brake systems
- FMVSS 571-207 Seating systems
- FMVSS 571-210 Seat belt assembly
- 40 CFR CH.1 Pass by noise levels (in accordance with SAE J366).
- FMCSR 393.94 Vehicle interior noise levels.
- FMVSS 571-101 Controls and displays
- FMVSS 571-108 Lamps, reflective devices and associated equipment
- FMVSS 571-120 Tire selection and rims for motor vehicles other than passenger cars.
- FMVSS 571-206 Door locks and door retention components
- FMVSS 271-209 Seat belt assemblies
- FMCSR 393-65 Fuel systems and fuel tanks.
- FMCSR 205 Glazing for windows.
- FMCSR 302 Flammability of interior materials

17.6. EPA EMISSION STANDARDS

Because of the critical nature of this machinery, it is essential that the complete unit and all components be manufactured and with engine components that comply with the most recent United States Environmental Protection Agency standards for heavy duty highway type diesel engines. These EPA standards were published in 2010. The engine must be new and unused. To this end, the purchaser reserves the right to compare serial numbers of engines with the current production records of the component manufacturers. Any engine found to be non-compliant with these highway standards will be rejected and delivery will be rejected. Experience building and distributing machines with engines meeting these standards is mandatory as is a track record of recent manufacture and in-service record for machines comparable and similar to that specified. Therefore, location and contact lists are required in the bid package to enable the airport sponsor to contact at least 5 airports that have taken delivery of similar equipment from the bidder within the last three years. Bids received without including such location and contact list will be considered non responsive and will not be considered.

17.7. RADIO INTERFERENCE:

Tests for radio interference suppression shall be conducted on the vehicle. All testing equipment, instruments, personnel making the test, the test location (which shall be reasonably free from radiated and conducted interference) and other necessary facilities shall be furnished by the contractor. Independent test certifications shall be acceptable for this type of vehicle and should accompany the delivered vehicle. The acceptance of the test certification in no way reduces the responsibility of the contractor to eliminate radio interference.

17.8. SERVICE AND INSPECTION

In the interest of prompt service, and when or if such service is required, the manufacturer must have an authorized dealer with trained service personnel and readily available parts within 300 miles of Muskegon, Michigan to be able to respond to next day service. This service facility must make available factory trained mechanics that are completely trained in the delivery in-service, service, and maintenance of the unit offered and must be equipped to offer prompt service on the unit at the in-service location. These mechanics must hold current and valid certifications from the manufacturer. All bidders must be capable of servicing the entire unit including the chassis, and any auxiliary equipment provided thereon. After delivery the contractor shall arrange for a service representative to perform a complete service inspection at six months from the date of SPONSOR acceptance. The service inspection shall consist of an in-depth evaluation of all interface systems and components and be coordinated with the airport SPONSOR. A special checklist for the inspection shall be provided to properly record all phases of the inspection.

17.9. ALIGNMENT

The vehicle is to be delivered with a wheel alignment report verifying proper alignment and set up of all steering axles, both left and right side. The alignment procedure shall be done at the manufacturer's plant facility on the newly built chassis, not off-site by a third party. Report shall show camber, caster and toe-in before and after adjustment against acceptable product limits. A sample of such alignment report is to be provided in the bid package. This sample shall verify that such testing is standard practice for the manufacturer. A special procedure to satisfy this requirement for this procurement only does not demonstrate the quality procedures and standards desired by the purchaser.

18. MISCELLANEOUS DETAILS

18.1. RUSTPROOFING AND CORROSION PROTECTION

All parts of the vehicle and auxiliary equipment shall be cleaned, treated and primed prior to assembly. After the vehicle is completely assembled, except for bright trim parts, if provided, the entire unit shall be puttied, water sanded, and two coats of corrosion inhibitive primer applied. The complete vehicle (moldings, fenders, doors, panel wells, underside of cab floor, etc.) shall be treated with Ziebart rust proofing protection or an approved equal.

18.2. PAINT

Vehicle shall be painted the specified color with lead-free and chromate-free baked polyurethane enamel finish. Finish paint shall be applied in not less than two coats. The finished paint shall be free from "orange peel", pebble finish, runs or other imperfections. The vehicle color shall be FAA approved. Chrome yellow acrylic meeting the requirements of FAA Advisory Circular 150/5210-5B. Surfaces of the hood that face the operator shall be painted flat black to reduce glare. Vehicle lettering and logo, coordinated with the Airport Sponsor, shall be provided by the contractor on each side and top, as large as practical. Decal must be one piece and applied professionally. No decal shall be placed on the vehicle until the airport sponsor has approved its design.

18.3. NAME PLATES AND INSTRUCTION PLATES:

All nameplates and instruction plates shall be metal or plastic, which weathering will not degrade. The information shall be engraved, stamped or etched on each plate. If metal, they shall be made of non-corrosive material, chrome plated or nickel silvered. All plates shall be attached with screws, bolts or rivets. Each plate shall be mounted in a conspicuous place. Nameplates shall show make, model, serial number and other such data as to positively identify the item. Information plates shall be in English and provide important instructions to be followed in operating or servicing the vehicle or equipment. The information plate shall include warnings or cautions and shall be so located and be of sufficient size to be readily seen under normal operating and/or servicing condition

18.4. TECHNICAL PUBLICATIONS:

The contractor shall furnish one CD and one printed set plus internet access to parts books, or two printed sets if CDs or internet access to parts books is not available, of the following publications in accordance with standard commercial practices applicable to the vehicle furnished under this contract, complete with auxiliary equipment. Manuals shall be printed in English. Engine manuals shall be provided for the carrier and blower/accessory engine separately unless one manual covers both engines. Each set shall be composed of one copy each of:

1. Operator's Manual with lubrication charts
2. Parts Manual
3. Maintenance and Service Manual

18.4.1. Technical Publications Contents: The Operator's Manual, Parts Manual and Maintenance/Service Manual shall cover the complete vehicle and shall be in accordance with the following: Operating instructions shall include all information required for operation of the vehicle and main equipment, special attachments and auxiliary equipment under the expected climatic conditions. Location and function of all controls and instruments shall be covered by illustrations and descriptions.

These instructions shall also include, but not be limited to the following:

1. Complete description of the vehicle and special equipment
2. Preparation for use of the vehicle upon receipt
3. Operator daily maintenance and mission readiness checks
4. Periodic operator inspection/maintenance

18.4.2. Parts List: The parts list shall include illustrations and exploded views necessary for the proper identification of all parts, assemblies, sub-assemblies and special equipment. Assemblies or components shall be shown in illustrations and be identified by reference numbers, which correspond to the reference numbers in the parts list. The size, thread dimensions and special characteristics shall be given on all non-standard nuts, bolts, washers, grease fittings and similar items. The parts identification manual shall show the description and quantity of each item used per vehicle, and shall contain a numerical index.

18.4.3. Maintenance/Service Manual: Maintenance/Service Manual: The repair and overhaul instructions shall be factual, specific, concise and clearly worded so as to be readily understood by a qualified mechanic with no previous experience on the equipment being purchased. The instructions shall cover such typical maintenance and repair operations as troubleshooting, adjustment procedures, minor and major repairs and overhaul, removal and replacement of units, assemblies and sub-assemblies, and

complete instructions for disassembly and reassembly of components. The instructions shall also include data listing tolerances, specifications and capacities. Illustrations, wiring diagrams and exploded views shall be used to clarify text and should appear as close to the related text as possible. Special tools required for the repair and overhaul of the equipment shall be listed and illustrated. The service manual shall contain an alphabetical subject index.

The successful bidder shall provide the following product documentation and support information: Two complete sets of manuals, operators, parts, and service plus internet access to parts books.

19. TRAINING

The contractor shall arrange for a service representative to conduct an operator's training course to demonstrate the equipment and a mechanic's service training, each lasting at least eight (8) hours at the customer's location. Training may be conducted with the use of videotape programs, operator's, parts and service manuals and hands-on demonstration relative to the correct operation and maintenance of the vehicle. The functioning of the engine, power train, hydraulic system, brakes, steering, lighting system, snow blower, controls and instruments shall be demonstrated. The contractor shall include in his bid provision to provide a minimum of eight (8) hours of vehicle mechanic training at the manufacturing facility. The bid shall include air transportation, lodging and meals for one mechanic at the vehicle manufacturer's facility. Training shall be coordinated with the airport SPONSOR.

20. WARRANTY

The contractor must supply a warranty statement that will include the following as a minimum:

1. Manufacturer's obligations
2. Duration of warranty period
3. Warranty procedure
4. Disclaimers

As a minimum, the contractor's warranty shall extend for two years on the entire vehicle, including all equipment or trade accessories (except tires, storage batteries, electric lamps and other devices subject to normal deterioration) supplied by the contractor and shall extend for a minimum of two (2) full years on the frame and cross members. The engines and transmission shall be included in a full power train warranty for a minimum period of five (5) years. The snow blower and hydraulic control systems shall be included in a minimum two (2) years warranty. Parts developing defects within one year after making delivery of such vehicle to the original purchaser must be returned to the contractor with transportation charges prepaid and which on the examination by the manufacturer, shall disclose to his satisfaction to have been thus defective.

21. INSURANCE

To protect the purchaser from potential involvement in litigation, the chassis manufacturer for this contract shall be adequately covered with liability insurance. The manufacturer shall carry commercial general liability insurance including coverage for the products-completed operations exposure, with limits of not less than \$5,000,000 per occurrence and in the annual aggregate for all damage arising out of bodily injury and property damage. The insurance shall be issued by an insurance company with a current A.M. Best rating of A- or higher. A Certificate of Insurance showing that this minimum amount of coverage is currently in force shall be included in the bid package for the bid to be considered.

22. MANUFACTURER STABILITY

In the interest of continued and reliable service, parts, and technical support, equipment manufacturer shall have exhibited a consecutive history of financial stability and manufacture of similar equipment over a minimum of the past ten years. Documentation shall be provided in the bid package to verify such continuous business activity, such as location and contact lists (minimum 10 users), financial statements, and annual reports. In the interest of process and quality control, the chassis manufacturer shall be ISO9001 certified. Because of the critical nature of the product and its application, the burden of proof for this requirement lays with the bidder and/or suppliers.

23. COMPONENT SOURCING

Because of the critical nature of this machinery, it is essential that the complete unit and all components be newly manufactured and unused. To this end, the purchaser reserves the right to compare serial numbers of engines, transmissions, transfer cases and axles with the current production records of the component manufacturers. Any component found to be used, or not of current production will be rejected. The contractor (bidder) will replace the component in question with an appropriate and acceptable new replacement component at his own expense.

24. CHASSIS MANUFACTURER CERTIFICATION

Chassis manufacturer shall be ISO 9001 certified for the production of heavy trucks. Claims of self-certification programs are self-serving and are not acceptable for this procurement activity. Third party verification is required given the import and scope of the equipment and the purchaser's equipment procurement program. Certification documentation of chassis manufacturer compliance with 9001 FROM A THIRD PARTY is required in the bid package. Bids not including this documentation will be deemed not acceptable.

REFERENCES

The vendor must furnish at least five (5) references from persons who can attest to the quality of similar equipment delivered within the last five (5) years:

1. Company Name: _____
 Street Address: _____
 City/State/Zip Code: _____
 Contact Person: _____
 Delivery Date: _____
 Phone No.: _____

2. Company Name: _____
 Street Address: _____
 City/State/Zip Code: _____
 Contact Person: _____
 Delivery Date: _____
 Phone No.: _____

3. Company Name: _____
 Street Address: _____
 City/State/Zip Code: _____
 Contact Person: _____
 Delivery Date: _____
 Phone No.: _____

4. Company Name: _____
Street Address: _____
City/State/Zip Code: _____
Contact Person: _____
Delivery Date: _____
Phone No.: _____

5. Company Name: _____
Street Address: _____
City/State/Zip Code: _____
Contact Person: _____
Delivery Date: _____
Phone No.: _____