

January 27, 2010

Intermediate Plow Acquisition
REQUEST FOR BIDS
RFB 10-1717

Vendor

The Muskegon County Board of Commissioners invites your bid on Intermediate 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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INTERMEDIATE PLOW ACQUISITION
REQUEST FOR BIDS
RFB 10-1717

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

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

Acquisition of Intermediate Plow vehicle consisting of two (2) intermediate front displacement plows and carrier vehicles including dump boxes, underbody plows and one with a material spreader system and hopper.

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	Intermediate Displacement Plow including Carrier Vehicle, Underbody Plow, Dump Box and Material Spreader System with Hopper, As Specified	1	Each	_____	_____
2	Intermediate Displacement Plow including Carrier Vehicle, Underbody Plow, and Dump Box, 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
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

By signing below, the Bidder acknowledges all of the requirements of the .

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.

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.

36. 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.

37. 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.

38. 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.

39. 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.

40. 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 is 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
INTERMEDIATE DISPLACEMENT PLOW**

BID OPENING OF FEBRUARY 10, 2010

- | | | | |
|-----|---|------------------------------|-----------------------------|
| 1. | Is the Vehicle Chassis for the Intermediate Displacement Plow 100% American made? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 2. | Is the Intermediate Displacement Plow Vehicle Chassis Final Assembly Performed in the United States? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 3. | Is the Front Mounted Displacement Plow System 100% American made? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 4. | Is the Front Mounted Displacement Plow Final Assembly Performed in the United States? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 5. | Is the Underbody Displacement Plow System 100% American made? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 6. | Is the Underbody Displacement Plow System Final Assembly Performed in the United States? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 7. | Is the Material Spreader and Hopper system 100% American made? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 8. | Is the Material Spreader and Hopper system Final Assembly Performed in the United States? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 9. | Is the Dump Box 100% American made? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 10. | Is the Dump Box Final Assembly Performed in the United States? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 11. | What is the content of American made products for the Intermediate Displacement Plow Vehicle Chassis? | _____ % | |
| 12. | What is the total content of American made products for the Intermediate Displacement Plows? | _____ % | |

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.

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Section 1: Introduction

- 1.1 **Scope:** This specification contemplates furnishing and delivering two new, unused, complete, fully operational, current production models, four wheel drive/all wheel drive, diesel powered, intermediate capacity airport plows of heavy duty design and of sufficient capability to perform runway snow removal as required by the Muskegon County Airport's Snow and Ice Control Plan.
- 1.2 **General:** These specifications require all necessary items for the proper operation of the unit as a whole. All items that comprise a complete assembly may not be completely described herein. However, all units comprising the assembled vehicle or equipment shall be designed for heavy duty operation and be compatible with each other in regard to compatibility, power, strength, capability and conformance with the stipulated performance and other requirements, the same as if these items were specifically mentioned and described in these specifications.
- A. **General Provisions:** General Provisions contain certain general requirements that are, unless superseded by conflicting requirements of these technical specifications, applicable and binding to this contract.
- B. **Prototype Vehicle:** Prototype vehicles will not be accepted as complying with this specification. A prototype vehicle is defined as one that has not been developed, tested and established in production by the manufacturer without either a record of certifiable test results or supporting manuals. To be considered acceptable, the Offerer must demonstrate experience in the design and manufacture of the specified vehicle by submitting references as stipulated in the References Section of the proposal. Vendor shall provide documentation of a current model in production meeting operational standards and testing contained in FAA Advisory Circular 150/5520-20. The SPONSOR must be able to view the same current production model as bid within five (5) days after bid opening. Costs to bring the current production model to the Muskegon County Airport or to bring two airport personnel to the current production model shall be at the offerer's expense. The SPONSOR may waive any and all informalities, as it may be most advantageous to the SPONSOR, and solely reserves determination of a prototype or acceptable vehicle.

Section 2: Requirement Guidelines

- 2.1 **General Vehicle Description:** Intermediate Airport Plows shall consist essentially of an all wheel drive, diesel powered, front mounted engine, 4 x 4 transmission, truck type chassis with an enclosed, heated and air conditioned, insulated cab for all weather use. This vehicle shall be designed and manufactured for the purpose of municipal snow removal. The configuration shall allow for front mounted and underbody mounted plows with dump boxes (or flat beds) and material spreader and hopper attachments. This vehicle shall comply with all applicable FMSCR and FMVSS quality/safety standards, and requirements of the FAA Advisory Circular 150/5220-20.
- 2.2 **Materials:** Materials not specifically covered by this specification or applicable reference specifications or standards shall be of the best quality used in commercial practice for the specified vehicle fabrication. 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 specified and the severe operating conditions encountered in snow removal, while resulting in minimum wear and failure.

- A. Dissimilar Metals: The use of dissimilar metals in contact with each other shall be avoided. Metal plating or coating of dissimilar base metals to provide suitable abutting surfaces and the use of dissimilar metals separated by suitable insulating material will be required.
- B. Protective Treatment: Materials that are subject to deterioration when exposed to weather and operational conditions normally encountered during service shall be protected against such deterioration in a manner that will in no way prevent compliance with the performance requirements of this vehicle. Protective coatings that are known to crack, chip or scale with age or extreme climatic conditions shall not be used. Rust proofing of commercial vehicles shall be accomplished in compliance with Federal Specification 297 D.
- C. Non-Metallic Material: The use of proven non-metallic materials is permitted in lieu of metal to reduce weight, lower cost or reduce maintenance and if it will not conflict with governmental requirements, degrade performance, compromise safety or increase long-term operations or maintenance costs.

2.3 **Design:** The design of the intermediate plow shall be in accordance with the best engineering practices to provide safe one person operation and to meet specified performance requirements. This unit shall have a fully enclosed, thermally and acoustically insulated, metal and glass cab mounted behind the engine compartment. The operator shall be in the American standard left side operating position for optimal vehicle operation. The vehicle and equipment shall be so constructed that no parts will work loose in service and all liquids, coolants and lubricants will neither spill nor leak under operational conditions. All component parts shall be new and of the latest design and highest quality. Component parts shall be of sufficient size, material, and strength as to properly sustain the maximum allowable loads imposed upon them with a maximum working efficiency and minimum wear during operation. All parts shall be built to withstand the strains, shocks, vibrations, and other detrimental conditions relative to operation, shipping and storage, with minimum time lost for maintenance, repair and servicing. The equipment design and accessory installations shall permit accessibility for use, maintenance and service. All components and assemblies 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 clipped to the frame or body structure, and shall have protective loops or grommets at each point where they pass through structural members, except where a through-frame connector is necessary.

2.4 **Maintainability:** The vehicle shall be designed to use the fewest number of different parts consistent with the specified performance:

- A. Limit the amount of special training required for an experienced mechanic to locate trouble sources, disassemble, perform maintenance, reassemble and perform routine servicing. Where practical, parts and components shall be located or positioned for rapid and simple inspection and recognition of excessive wear or potential failure.
- B. Permit routine operational adjustments, servicing and daily preventative maintenance by personnel wearing heavy gloves or mittens and bulky clothing with minimum disturbance to other equipment parts or components. Locking devices, controls and fasteners, which can be easily over-torqued by operators lacking tactile sensitivity due

to heavy gloves or numbness, shall not be used. Frequently serviced parts and components shall be located for convenient access unless performance shall be appreciably degraded by the accessible location. If physical or visual interference between items cannot be avoided due to functional or operational requisites, the item predicted to require the most maintenance shall be located for best accessibility.

- C. Permit maintenance with general tools and equipment normally available commercially. Use of special purpose tools and equipment shall be subject to approval by the SPONSOR. Number of tools and variety of spare parts required for maintenance shall be reduced by such design practices as reducing the variety of bolt-head sizes, light bulb sizes, wire gages, tubing and pipe sizes consistent with safety and performance requirements. Any special purpose tool required for routine servicing of the chassis and attachments or auxiliary equipment shall be provided with the bid vehicle and included in the bid price.
- D. Disconnect plugs, receptacles, junction boxes, bus bars and multiple line connectors shall be used in the electrical systems, as shall readily detachable and attachable fittings in hydraulic and pneumatic systems, as applicable, with all disconnect points clearly indicated. Pilots, guides, slides, carriages or other features shall be included where such provisions will add significantly to the ease of removal and installation or attachment of components or parts. Quick disconnect fastenings shall be used on cover plates which must be removed for part adjustment or removal.
- E. Operate when lubricated with standard commercial lubricants. Whenever practicable, lubricated for life components or components not requiring lubrication shall be used. Grease and oil seals shall be designed and located to provide accessibility for inspection, servicing and replacement. Panels that must be opened for access to lubrication points shall be hinged. Lubrication fittings shall be located in accessible, protected positions. Extended fittings shall be provided to lubricate parts or assemblies that are not readily accessible for direct lubrication or which are likely to be overlooked because of inaccessibility. All filler caps shall be attached to the filler neck with a safety chain to prevent loss.
- F. Drains, filler plugs, grease fittings, hydraulic lines, bleeders and check points shall be located so that they are readily accessible and do not require special tools for proper servicing.

2.5 **Foolproofness:** Whenever consistent with performance requirements, each major component part shall be so designed that it can be installed only in its proper operating position.

2.6 **Fastening Devices:** All screws, pins, bolts and similar parts shall be installed with adequate means to prevent loss of proper tightness and adjustment. When subject to removal, replacement or adjustment, attaching hardware for any components shall be easily removable and shall not be swaged, peened, staked or otherwise permanently deformed. Sheet metal screws shall not be used.

2.7 **Insulation and Waterproofing:** Insulation shall be fire and water resistant and of a type that will not pack or settle. Provisions shall be made to drain any water between the walls by gravity flow. All insulated areas exposed to abrasion or damage shall be protected. All components shall be so designed and protected that their normal functioning will not be impaired by heavy rain, road splash, and formation of condensation or ice and snow build up.

- 2.8 **Safety Features:** All space which is occupied or in which work is performed during operation, servicing and maintenance of the vehicle shall be free from hazardous protrusions, edges, cracks or other elements, which might cause injury to personnel. Safety features, such as steps with anti-skid tread, anti-skid deck-plates, handrails and guards shall be provided at all points where the protection of personnel is in question. Entrances and exits from the cab shall not be obstructed by component or equipment location. All rotating or reciprocating parts and all parts subject to high operation temperatures, are electrically energized, or are of such nature or so located as to be a hazard to the safety of operating and maintenance personnel, shall be insulated, enclosed or guarded.
- 2.9 **Visibility Requirements:** The design and arrangement of the cab and components shall optimize visibility for control of the vehicle for performance of snow removal operations and allow 360 degree visibility from the operator's seat. Only the material hopper and dump box attachments will be allowed to obstruct the operators view.
- 2.10 **Instruments and Warning Lights:** All instruments and warning lights required for, and consistent with, the safe, efficient operation of the vehicle shall be provided. Instruments shall be used, where practical, in lieu of warning lights. All instruments and warning lights shall be displayed in a panel or panels, located below eye level, in such a way that they will be most useful, convenient and visible to the driver. The panel(s) shall either be hinged for back access or removable by the use of quick disconnect fittings for all electrical, air and hydraulic circuits. All instruments and controls shall be illuminated, with backlighting to be used where practical.
- 2.11 **Accessibility of Controls:** The cab shall have all the necessary controls within easy reach of the driver for the full operation of the vehicle, including components. Operation of all radios specified by the purchaser shall be from inside the cab and shall be mounted to permit quick servicing or replacement, together with ease of operation by the driver.
- 2.12 **Back Up Warning Alarm:** An electronic back up audible warning device meeting current safety standards is required. This device shall be activated automatically when the transmission is shifted into reverse.
- 2.13 **Performance:** The vehicle shall be powered by a diesel engine capable of developing sufficient power under operating conditions to achieve the required performance characteristics in accordance with these specifications.
- 2.14 **Environmental Conditions:** The vehicle shall be capable of withstanding, without detrimental effect to subsequent operation, ambient temperature ranging from -40 degrees to 100 degrees Fahrenheit, and relative humidity up to 100 percent, as well as driven snow, sleet or rain. A full winterization system is required, to provide operation at -40 degrees Fahrenheit without damage due to freeze up.
- 2.15 **Mobility and Versatility:** The fully loaded and equipped vehicles shall be capable of meeting the following requirements in daily operation:
- A. Fully equipped intermediate plow units, loaded to GVW and with front plow in transport position, will be capable of maintaining a continuous forward speed of not less than 45 miles per hour, on dry level pavement, and negotiating a four (4) percent grade at 40 miles per hour, without loss of power.

- B. Units shall have a demonstrable capacity of displacing 1 inch of snow (density of 25 pounds per cubic foot) with the front mounted plow at speeds of 10 to 40 MPH.
- C. Units shall start and perform normal operations at an ambient temperature of -40 degrees F and shall be capable of dry sweeping performance at 100 degrees F.
- D. Units shall be minimum 37,000 lbs gross vehicle weight (GVW) capable of being outfitted with underbody plows, dump box (or flat bed) and material spreader with 5 CYD capacity hopper. The entire snow handling assembly, including, but not limited to plows, material spreader and dump box shall be equipped so as to allow full control of all normal operating functions and monitoring of essential parameters by a single operator using minimum controls from the cab of the vehicle.

Section 3: Chassis Component and Design

Vehicle Chassis: The vehicle chassis, complete with cab, shall be a current production model of the manufacturer. Parts and accessories necessary for the safe operation of the vehicle shall be provided as required by, and shall conform to, federal, state and local regulations that may be applicable to this type of vehicle at the time of its manufacture. The rating of the chassis shall equal or exceed the actual gross weight at the time of its manufacture. The rating of the chassis shall equal or exceed the actual gross weight of the fully equipped vehicle.

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 with rough 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 (or steel) tilting type with an air over hydraulic assist system installed on the vehicle. 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, or nitrogen charged shocks to assist in one man lifting of the hood. 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 cover easily visible from the ground.

3.1 Vehicle Dimensions and Clearances:

- Overall Width: The maximum overall width of the vehicle, without attachments shall not exceed 108 inches.
- Wheelbase: The wheelbase shall not exceed 180 inches.
- Cab to rear axle distance: The distance from the rear outside wall of the cab to the center of the rear axle shall be between 90 and 108 inches.
- Overall Length: The maximum length of the vehicle without attachments shall not exceed 25 feet.
- Overall Height: The overall static height, excluding lights, antennas and exhaust stacks shall not exceed 144 inches.
- Ground Clearance: Minimum bottom of frame to ground clearance shall be 24 inches.
- Vehicle Turning Radius: Vehicle turning radius shall not exceed 40 feet.

3.2 **Frame:**

- Frame shall be a minimum 10.125” x 3.580” x 0.312” steel frame with C-Channel outer frame reinforcement per rail, 480” maximum OAL or a single formed channel with a section modulus equivalent to or greater than the combined section modulus of the specified sections and have a minimum 2,818,000 inch pound RBM.
- Minimum 10.813” x 3.892” x 0.312” C-Channel outer frame reinforcement, 480” maximum OAL
- Min. 20” integral front frame extension with the continuous C-channel reinforcement
- Frame shall include a front cross member to support a mounting flange to accommodate attachments such as a hydraulic pump.
- All frame members shall be heat treated alloy steel with a minimum 120,000 PSI yield strength.
- Other reinforced sections including stackable frames, sub-frames and step frames will not be accepted.
- Frame construction shall be bolted type with grade 8 flanged fasteners throughout the frame and cross member system. Non-serviceable fasteners such as “Huck” bolts are considered unacceptable. Liners, wrappers, or fish-plating will not be accepted.
- Outside of frame rails above the front driving axle and below the fender shall be clean and free of mounted equipment that may be damaged by snow, ice, sand, or material buildup. This specifically includes, but is not limited to, fuel filter, fuel/water separator, oil coolers, coolant filters, coolant hoses, oil lines, and other such sensitive systems.
- Two towing shackles or hooks shall be attached directly to the frame rails at the rear of the vehicle.

- 3.3 **Load Rating:** The functional load rating of the frame shall equal or exceed the actual gross vehicle weight (GVW). The gross vehicle weight rating, including complete chassis, cab with attachments, accessories, and equipment; including a full complement of fuel, lubricant, and coolant; a 430-pound allowance for operating personnel and a full dump box or material hopper shall be a minimum of 37,000 lbs. The frame shall not be altered in any manner that will reduce its load rating. The gross vehicle weight rating shall not exceed the sum of the axle ratings used. The manufacturer’s advertised gross vehicle weight rating shall not be arbitrarily raised to meet the requirements of this specification.

Section 4: Engine and Components

4.1 **Engine:**

- Internal combustion, four cycle, six cylinder diesel engine with a minimum 285 horsepower at 2,200 rpm
- Engine shall operate on commercial grade fuel
- Hand control throttle engine speed control mounted on steering wheel with electronic, stationary and variable speed settings
- Remote mounted engine control provision for PTO control operations
- Engine emissions to met Federal 2010 standards
- 12 volt starting motor with gear reduction and thermal over-crank protection
- Cold weather starting aid and engine preheating devices
- 120 volt/1250 watt block heater socket receptacle type; mounted below left (driver's) door including Y cord from standard socket location with provision in oil pan for installation of oil pan heater for extended life coated oil pan
- Electric grid heater for intake manifold with engine ECM control
- PTO engine front shall include adaptor plate mounted on front of engine
- Single element air cleaner, with integral snow valve and in-cab control
- Air cleaner restriction gauge mounted on air cleaner
- Wet type cylinder sleeves
- Electronic control engine management system including key operated integral engine shutdown system
- Two speed direct drive fan with residual torque device for disengaged fan speed, fan nylon, fan optimized position
- Provision for setting high idle in the cab
- Electronic cruise control with steering mounted operator controls
- Magnetic system plugs

4.2 **Engine Cooling System and Winterization:**

- The engine's cooling system shall be of the liquid type
- Coolant temperature control of the engine shall be consistent with the engine manufacturer's recommendation when operating under the intended service and conditions, without overheating.
- Engine coolant shall be for extended life coolant for operation in -40° F (-40° C) ambient temperature minimum.
- Radiator shall be a cross flow series system with a minimum 1,500 square inch aluminum radiator core and a minimum 800 square inch charge air cooler
- The engine(s) cooling system shall be certified as suitable for use in this vehicle by the engine manufacturer.
- Premium rubber radiator hoses
- Hose clamps shall be thermoplastic coolant hose clamps
- Coolant system shall include a deaeration system with purge tank

4.3 **Fuel System:** The fuel system shall include, but not be limited to, injector, fuel pumps, fuel filter, fuel pre-filter, piping, valves, fittings, fuel lines and all other necessary accessories to make a complete system. The fuel system shall be equipped with:

- 50 gallon steel fuel tank with filler pipe opening in an accessible exterior location on side of the vehicle
- Tank cap shall be a twist on style cap with chain.
- If climbing is required to fill the fuel tank, steps and a platform for the operator to stand on while fueling, is required

- Reinforced nylon fuel hose
 - Fuel filter to include fuel/water separator
 - Fuel filter and fuel/water separator shall be in a single assembly mounted on the engine including water-in-fuel sensor
 - The fuel tank(s) shall be mounted so that they will not be damaged by distortion of the chassis and will not be affected by heat from the engine or exhaust.
- 4.4 **Governor**: An engine governor, which will not adversely affect engine performance, shall be provided. The engine governor shall be set to limit engine speed so that it shall not exceed the maximum RPM recommended by the engine or driveline component manufacturers. Governor shall be compatible with engine.
- 4.5 **Lubricating System**: The engine, transmission and chassis lubricating systems shall be the manufacturer's current standard type conforming to the following:
- Pressure system lubrication with full-flow filter including spin-on replacement element
 - Oil pressure and coolant temperature gauges
 - Low oil pressure power de-rate or emergency shutdown system
 - The transmission shall operate efficiently and without detrimental affect to any components when lubricated with standard commercially available lubricants in accordance with recommendations of the transmission manufacturer.
 - All moving parts requiring lubrication shall have means provided for such lubrication. Where the use of high lubricating pressure may damage grease seals or other parts, a suitable pressure release device will be provided.
 - Pressure lubrication fittings shall not be provided where normal use would damage grease seals or other parts. Prior to delivery, the vehicle shall be serviced with lubricants and hydraulic fluids suitable for use in the temperature ranges where the vehicle is to be placed in service.
 - Hoses shall be installed on oil pans to assist in changing oil if a straight drop is not provided.
- 4.6 **Exhaust System**: The vehicle shall be equipped with an exhaust system that complies with the 2010 federal emissions standards. In addition, the exhaust system shall comply with the following:
- The tail pipe shall be extended to a height at or above the roof of the cab and be of such a size as to prevent backpressure in excess of that recommended by the engine manufacturer.
 - The tail pipe shall be so located as to prevent entrance of exhaust gases into the cab under all conditions of operation.
 - The exhaust exit design shall also avoid the recirculation of exhaust gases into the engine air intakes.
 - The muffler shall be aluminized stainless steel or ceramic coated with a stainless steel exhaust guard covering the vertical muffler as a matter of safety to protect personnel from burns.
 - Exhaust system shall be designed and manufactured to prevent rain or slush from entering the tail pipe.
- 4.7 **Filters**: One (1) extra set of filters for all engine, cooling, lubrication and exhaust systems shall be provided.

Section 5: Driveline and Controls

5.1 **Transmission:** The transmission shall be a continuous four wheel drive, automatic drive system with a minimum of 5 speeds plus overdrive and an 80,000 GVW & GCW max. Transmission shall also include the following:

- All transmission parts and accessories shall be manufactured by, supplied by or certified for use with transmission by transmission manufacturer
- Transmission fluid/oil level sensor
- PTO provision less retarder
- Transmission filter mounted on transmission
- Automatic shift control parameters set to performance programming in primary operation and economy programming in secondary operation
- Spare input/output for rugged duty cycle
- Transmission ECM located inside cab
- Magnetic plugs
- Transmission shall be matched to the operating characteristics of the engine and shall have suitable load ranges to accommodate expected operating conditions.
- Transmission control shall include a range selector lever or push button control with reverse, neutral and forward positions all clearly identified.
- The transmission manufacturer shall certify the continuous drive transmission as suitable for use in this vehicle.
- A dedicated back up connection shall be provided between the shifter and vehicle electronic system to allow the operator to shift into gear during fault mode or if the main data bus fails.
- Automatic transmission cooler suitable for and compatible with transmission without modifications to the transmission

5.2 **Transfer Case:** The transfer case shall provide positive drive to the front and rear axles and shall be of a two-speed type with automatic locking differential or driver controlled traction control as required to meet the specified performance requirements while compensating for difference in travel between front and rear wheels. The transfer case may be a unit integral with the transmission or a separate unit mounted independently and shall be certified as suitable for use in this vehicle by the transfer case manufacturer. The transfer case shall include the following:

- Transfer case shall have a minimum 100,000 lb-ft total capacity without PTO provision.
- Proportionally distributed torque split 50/50 to the front and rear axles when locked
- The hi-low range selection shall be accomplished mechanically to assure positive shifting.
- Electric over air control
- All wheel drive indicator light on instrument panel. Indicator light to be on when all wheel drive is engaged.
- Automatic differential with push button cab control to transfer between two wheel (rear) and four wheel drive

5.3 **Axles and Suspension:** The axles furnished shall be certified as being suitable for use in this vehicle by the axle manufacturer, and designed for specified tire mounting. Axle manufacturer's published rating shall not be raised to conform to the requirements of this specification and shall be at least equal to the load imposed at ground level when the vehicle is loaded to its gross vehicle weight.

5.3.1 **Front**

- Single reduction, drive/steer axle with a minimum 16,000 lbs hub and brake rating
- Front axle driver controlled differential shall be of the type to prevent potential damage while turning the steering axle when locked
- Magnetic drain plug for axle
- Parabolic, taper leaf suspension with a minimum 16,000 lbs capacity
- 16,000 lbs capacity shock absorbers
- Maintenance free spring pins with rubber bushings
- Positive drive is required to each wheel is required and shall be achieved by use of torque proportioning differentials, drive selectable differential locks, or automatic devices

5.3.2 **Rear**

- Single reduction, driving axle with a minimum of 23,000 lbs hub and brake rating
- Driver controlled locking differential
- Gear ratio: 6:14
- Positive drive is required and shall be achieved by use of torque proportioning differentials, drive selectable differential locks, or automatic devices
- Magnetic drain plug for axle
- Single spring, variable rate suspension with a minimum 31,000 lbs capacity including 4,500 lb multiuse auxiliary capacity

5.4 **Steering Mechanism:** The vehicle shall be equipped with an integral power assist steering mechanism operable from the driver's seat, with manual steering capabilities without engine power sufficient to bring the fully loaded vehicle to a safe stop. Steering components shall be installed in a manner to protect them from damage.

- Front axle steering shall be Sheppard or Ross integral power assist gear type or an approved equal. The steering gear shall be rated for heavy duty service.
- 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.
- Minimum 18" diameter steering wheel (black in color)

5.5 **Braking System:** An electronic anti-lock braking system (ABS) that meets the applicable FHWA requirements for similar type vehicles shall be furnished complete with all necessary equipment to safely control the fully equipped and loaded or unloaded vehicle under all operating conditions. Service brakes shall be foot operated, heavy duty, full air actuated, dual circuit brakes and shall, as a minimum, include the following

- Air brake ABS with full wheel control and four (4) channel system
- Air compressor powered from the vehicle engine
- Air compressor cooled by engine coolant system and lubricated by the engine oil supply
- Compressor inlet connected to engine induction system
- Minimum compressor capacity of 12.5 cubic feet per minute
- Air dryer and cleaner for compressor intake
- Air cam front brakes, S-cam; 16.5"x 6.0"; including Twenty-four (24) sq. in. long stroke brake chamber

- Air cam rear brakes, S-cam; 16.5”x 7.0”); including Thirty (30) sq. in. long stroke brake chamber and spring actuated brake chamber
- Brake shoes
- Twist type drain valve
- Color and size coded nylon brake lines
- Dust shields for front and rear breaks
- Front and rear automatic slack adjusters
- Air pressure gauges (Air 1 and Air 2) located in instrument panel
- Parking brake valve controlled by yellow knob, located on instrument panel
- Quick release valve on rear axle for parking break
- Spring break modulator valve
- Two air tanks mounted under cab outside left rail on step bracket with minimum 24” ground clearance
- Automatic drain valve with heater for air tanks

5.6 **Wheel and Tire Assembly:** The vehicle shall be supplied with front and rear wheels. All tires, including spares, shall be first line commercial grade, tubeless type, traction tread, 315/80 R 22.5 Steel Belted Radial Tires, minimum 20 ply rating. Rim shall conform to the hub for proper weight distribution and even tire wear. A spare tire and rim shall be supplied for each type of wheel rim furnished. If both front and rear wheel rims are identical, two spare tires and rims shall be supplied. Universal mount rims are not acceptable.

- Front disc wheels to be 22.5” painted steel, 2 hand hole, 10 stub hub piloted, flanged nut, metric mount, 8.25 DC rims; with steel hubs
- Rear dual disc wheels to be 22.5” painted steel, 2 hand hole, 10 stub hub piloted, flanged nut, metric mount, 8.25 DC rims; with steel hubs
- Front/Rear wheel seals shall be oil lubricated and include wheel bearings
- Front/Rear wheels to be painted black.

Section 6: Operator Cab

6.1 **Construction:** The fully enclosed cab shall be all metal, fiberglass or stainless steel constructed to conventional or forward design configuration. The cab shall be thermally and acoustically insulated, and insulation shall separate the engine and operator’s compartment. The cab roof shall be waterproof and include the following:

- An alarm shall sound when the door is opened with the transmission in gear.
- Chrome assist handles, towel bar style with anti-slip rubber inserts (for cab entry mounted on left side of door only at “B” pillar)
- Cab interior assist handle (1) “A” pillar mounted, passenger side with molded plastic cover
- Cab interior assist handle (2) “B” pillar mounted, one each side
- All interior trim panels shall be covered with cloth molded plastic. All surfaces shall be covered full height so that no interior sheet metal is exposed.
- Two molded arm rests, one mounted on each door
- Molded plastic door trim panels on both doors
- Only the upper portion of the doors above the window ledge may be painted. Paint to match exterior color.
- Black rubber floor covering
- Two steps shall be provided at each door. All steps and catwalk surfaces on the exterior of the cab shall be of the non-skid, open grate type.
- Soft padded cloth headliner

- An exterior visor above the windshield outside the cab shall be supplied to assist in shading the operator from sun glare.
- The cab shall be provided with coat hooks and sun visors in the cab of a type that will afford the occupants sun protection.
- One fire extinguisher, ABC dry chemical, 10 lb. minimum shall be mounted inside the cab.
- The cab shall have a rated decibel level conforming to current regulations.
- Seating shall be provided for two occupants, as a minimum. The operator seat shall be easily adjustable up and down, fore and aft, a minimum of three inches, and be equivalent to Bostrom or National Standard air or electric adjustable seats, with adjustable lumbar support. The seats shall be fully upholstered with quality upholstery over foam rubber cushions. Approved, properly installed seat restraints for the occupants shall be provided.

6.2 **Windows:** Windows shall be tinted DOT approved safety type glass. The windshield shall be equipped with electrically operated variable speed windshield wipers. Electrically operated windshield washers shall be provided and installed. The windshield and rear window shall be heated, electrically powered by a dedicated 75 amp alternator or by the vehicle's heating and air conditioning system. Side cab windows shall be power roll down or sliding type, one on each side of cab. Rear window shall be of the stationary type. Cab doors shall be equipped with side window wipers with heated type blades. Cab doors will feature an all glass design to provide the operator with maximum possible visibility

6.3 **Mirrors:** Two heated outside rear view mirrors having an area of not less than 60 square inches each shall be provided as well as a wide-angle convex mirror on each side with a minimum area of seven square inches. Mirrors shall be breakaway type and controlled or adjusted electrically by remote control.

6.4 **Climate Control System:** A fresh air climate control system with selectable functions shall be provided. The climate control system shall be capable of supplying warmed or cooled air to maintain a cab temperature of 65° F at ambient temperatures of -20° F to +90° F. The system shall contain a fresh air filter, recirculating vent and snow-free fresh air intake and approval anti-fog system. Defroster ducts shall be provided to the windshield and side windows. Two ceiling mounted window fans shall be supplied to assist in air movement.

6.5 **Instrumentation and Warning Lights:** The cab shall be provided with an instrument panel or pedestal equipped with instruments and controls in full view of and for convenient operation by the operator. All instruments and controls shall be below eye level and shall be labeled in a manner to remain legible for the life of the carrier, to indicate function and be illuminated for night operation. All instruments, controls, and lights necessary for proper operation of the plows and material spreader system shall be provided, grouped as closely together as practical for each engine, and shall, as a minimum, include the following:

- Molded plastic instrument panel trim with black center section
- Electronic speedometer with recording odometer (English language)
- Gauge cluster shall include engine oil pressure (electronic), transmission oil temperature, water temperature (electronic), electronic fuel gauge, electronic engine tachometer with hour meter, voltmeter and washer fluid level.
- Warning system to include low fuel, low oil pressure, high engine coolant temperature and low battery voltage
- Low air pressure warning, visual and audible alarm

- Transmission oil temperature gauge, with overheat warning icon
- Differential lock indicator or Traction Lock engaged icon
- Engine air cleaner restriction indicator
- Doom light with door activated and push on/off control and dimming integral to center console
- ABS Fail Warning icon
- Parking Brake applied icon
- Message center for fault messages

6.6 **Controls:** The following cab mounted controls shall be provided as applicable with illumination of controls by backlighting or flood lighting as required:

- Accelerator pedal
- Chassis mounted headlight switch
- Brake pedal
- Parking brake control
- A tilt/telescoping steering and warning light column with self-canceling turn signal and horn activator
- Four-way emergency flasher
- Transmission selection lever or push button shifter
- Flashing beacon switch (one switch shall activate all light bars)
- Ignition switch(s)
- Cab-mounted headlight/taillight switches
- Variable speed windshield wiper(s) and washer controls
- Heater/defroster, fresh air type with 3 speed (minimum) fan motor
- Master electrical disconnect switch
- Heated mirrors switch
- Cab dome light switch
- Two (2) 12 volt power outlets

6.7 **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.

Section 7: Electrical System

7.1 **System Requirements:** The electrical system and devices shall be installed in accordance with the best modern practices for the type of service required. The alternator and starting device shall be of a waterproof type, accessibly mounted and protected against excessive heat. All electrical circuit wiring shall be made with stranded conductors of a carrying capacity commensurable with the anticipated maximum circuit loading, with insulation in

accordance with the recommended standards of the Society of Automotive Engineers for such loading at the capacity and location employed. Overall covering of conductors shall be of a weatherproof type. All connections shall be made with lugs or terminals mechanically secured to the conductors. Wiring shall be thoroughly secured in place and suitably protected against heat, oil, and physical injury. Circuits shall be provided with suitable overload protective devices. Such devices shall be readily accessible and protected against excessive heat, physical injury and water spray. Standardized quick disconnect plugs shall be provided throughout for ease of maintenance in removing components or in the event of system damage.

7.2 **Power Supply:** The vehicle shall be provided with a 12 volt DC electrical system for lighting and a 12 volt DC starting system.

- Pad mounted, 12 volt brushless type alternator with minimum 165 amp capacity and adequate to service the full operational electrical load
- Remote voltage sensor
- Gully automatic regulation
- Pad mounted with gear, dual belt or serpentine belt driven.

7.3 **Batteries:**

- Minimum three (3) maintenance free 12 volt 1950 CCA threaded stud batteries
- Battery box to be frame mounted
- Battery box to be steel with fiberglass lid located thirty-five (35) inches behind cab, mounted on the right (passenger) side and perpendicular to frame rail
- Frame ground return for battery cables
- No battery/isolator control
- Jump start stud located on battery box

7.4 **Starting Device:** An electrical starting device shall be provided. When operating under maximum load, its current draw will not introduce a voltage drop, which may adversely affect the function of other electrical equipment required during the start up process. An engine coolant preheating device shall be provided as an aid to rapid starting and high initial engine performance.

7.5 **Lighting System:** The lighting system, including reflectors and clearance lights, shall be the manufacturer's current standard provided the equipment shall meet the applicable state and federal safety regulations. The system shall include, but not be limited to, the following:

- Two High Intensity Discharge (HID) cab roof-mounted headlights shining toward the front of the vehicle
- Dual tail, stop and clearance lights
- Self-cancelling turn signals, front and rear, with a visual indicator
- Two back up lights installed at the rear of the vehicle. Lights shall automatically light up when transmission is shifted into reverse.
- Whelen 800 Amber strobe beacons, or an approved equal, mounted on or near the top of the cab, visible 360 degrees in the horizontal plane, with a single dash mounted switch to activate
- Two halogen chassis-mounted headlights in front of the vehicle

- 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.
- Cab dome light(s)
- Variable intensity instrument lighting
- A master electrical disconnect switch located within easy reach of the operator
- Multi-purpose type work lights mounted under engine hoods (2 required minimum)
- Two extra circuit breakers for owner installed equipment
- One halogen headlight mounted on each side of the vehicle as high as practical

Section 8: Accessories

8.1 **Dump Body:** Dump body shall be as follows:

- Dump body shall be a minimum of 10' long and 26" high with a detachable tailgate height of 32".
- Body and sides shall be constructed of 7 gauge A1011 steel
- Floor shall be constructed of ¼" thick A1011 steel
- Floor to side radius shall be 6" minimum
- Body cross members shall be 4" structural channels mounted on 12" centers
- Body long sills shall be 11" and constructed of ¼" steel. Long sills shall be continuous (non-pieced) members
- Cross members shall interlock with the long sills and have gussets at the long sills
- Cross members shall be welded to outer rails
- Tailgate shall be double acting and of dirt shedding design
- Tailgate shall use 5/16" spreader chains and shall include banjo eye keepers
- Tailgate control shall be air actuated
- Tailgate pins shall be a minimum 1 ¼" diameter
- Tailgate hinge plate shall be 1" minimum and include flame cut finder latches
- Tailgate linkage shall have grease zerks, top pins shall be equipped with grease fittings
- Tailgate air cylinder shall be 3.5" diameter and shall actuate the latch mechanism
- Tailgate shall be manufactured for A1011 and shall be 9 panel design
- Tailgate shall include a lift loop welded at the top of the tailgate
- Dump body top rail shall be boxed design and shall be dirt shedding
- Side bracing shall be horizontal V type braces
- Dump body front panel bracing shall be V type braces
- Side board pockets shall be included
- Body shall include a ½ cab shield, 10 gauge minimum and be continuously welded to the front panel of the dump body
- Four (4) serrated bar grating steps shall be installed on the sides of the body.
- Plain mud flaps shall be installed in front of and behind the drive tires.
- Body shall be 100% continuously welded above the floor line.
- Dump body hoist shall be twin cylinder design underbody hoist. NTEA Class 50
- Hoist shall be double acting, Type VII, and include a full length sub frame
- Hoist shall include a built in check valve to allow for free flow of oil when hoist is fully extended
- Cylinder bore and stroke shall be 7" x 21-5/8"
- Hoist pivot shall be able to receive grease and shall include stainless steel pivot pins
- Hoist sub frame shall include dual body props attached to the sub frame

- Rear hinge shall include greaseable/removable pivot pins
- Hinge shall be an angle mounting type and shall be integral to the sub frame
- Body shall be painted FAA chrome yellow to match vehicle
- Underside of body shall be painted flat black
- All paint shall be polyurethane epoxy type paint
- Dump body and hoist shall be covered with a 5 year manufacturer issued warranty to include 100% parts and labor for years 1-3 and 50% for years 4-5.
- Dump body and hoist shall be manufactured by the same company.

8.2 **Underbody Plow**: Underbody plow shall be extra heavy duty for year round use, capable of handling snow pack, ice and a higher volume of snow at various speeds in the winter season and be able to do gravel access road and safety area maintenance throughout the year. At a minimum, the underbody plow shall include the following:

- Moldboard shall be a minimum 1" thick and 20" in height, heat treated carbon steel with carbide tip.
- Cutting edge shall be a serrated blade specifically designed for ice removal
- Two plow blades shall be supplied. One shall be attached and the other an unattached spare.
- Reversing table shall be a 1" solid one-piece circle with infinite plowing positions available up to 45°
- Reversing will be accomplished with two 4" double acting cylinders
- Cylinders will provide a hydraulic lock for holding the moldboard in place while in use
- A 30 gpm gross over relief valve shall be furnished.
- Circle shall include a hardened, welded in bushing to prevent center pin wear on the circle.
- Cylinder rods shall be a 2" diameter with a hard nitrated finish
- Cylinders shall be mounted with 2" pivot pins
- Reversing circle shall pivot around a 5" center pin and be attached with three ¾" mounting bolts to prevent hold elongation and lubricated with grease zerk.
- Center pin shall include a machined grease groove for lubricating the entire circumference of the center bolt
- Circle hold down blocks shall be a 20.5" long by 7" deep and bolted to the hanger board as close to the circle as possible for maximum strength.
- The shape of the hold down blocks shall match the shape of the circle
- Install a piece of 3/8" UHMW underneath the hold down blocks to act as a wear plate for ease of movement of the circle
- Hanger brackets shall be one piece, solid, ¾" x 18" x 26", A36 mild steel
- An 8" x 12" bar grating step shall be installed on the left front corner of the moldboard to assist operator entry to the cab.
- Hanger board shall be designated and engineered for optimum strength and durability
- Hanger board shall be manufactured from ½" formed plate, reinforced by ½" x 7 ½" flat plate and 2-piece ¾" x 2" bar on edge
- Hinge line shall be a solid shaft, 96" in length and have three moldboard anchor points.
- Cold rolled, 1018 steel, with two outer hinges being 3 ¼" O.D. by 6" length, with center hinge being 3 ¼" O.D. by 10 ¾" in length, , with a 0.344 wall thickness mechanical tubing
- Hinges shall be reinforced with one wrap around ½" gusset on the outer two hinges and two gussets on the inner hinge
- Three heavy duty hinges shall be located to minimize stress along the hanger board for maximum strength

- Hinge shaft and hinge tube shall include four grease zerks
- Inner hinge shall have two wear plates to prevent side to side shifting of the moldboard
- Moldboard actuation will be accomplished by two 3 ½” double acting cylinders with 2” hard nitrated plated piston rods
- Canister cylinder assembly shall be retained by a 4-bolt flange assembly
- Cylinders shall be mounted in shock housings that are trunnion mounted with a ¾” thick reinforced steel trunnion brackets
- Trunnion bearings shall be 2 ¾” by 0.344 wall thickness carbon steel and shall be lubricated with two grease zerks per cylinder at the trunnion mounts
- A grease zerk shall be located at each cylinder head
- Cushioning of the mold board will be with two heavy duty shock assemblies with two internally mounted 586#/inch 0.8125” wire, AISI 5161 steel springs
- Pressure relief valve shall be preset at 400 PSI and be provided with the underbody plow
- Hydraulic steel tubing shall be externally mounted for ease of maintenance in poly mounted block assemblies
- All hardware and fasteners shall be electronically plated and corrosion resistant
- Underbody plow components shall be shot blasted, chemically treated, and powder coated prior to assembly.
- Mold board stops shall be installed so that the moldboard discharge will be outside of the drive tires on each side
- Additional stops shall be installed on the bottom of the circle to protect the transmission in the event of center bolt failure

8.3 **Front Hitch**

- Install 34” Husting type truck hitch that will not interfere with hood operation
- Hitch shall be mounted on either a 10” or 12” structural C channel, approximately 20lbs/ft bumper
- Bumper ends shall be flared back
- All necessary supports and braces shall be installed so as to provide adequate support from the frame to the hitch
- Hitch cylinder shall be a 3” x 10’ double acting type
- Hitch shall be painted flat black to match the hood. A 3/16” tread plate filler plate shall be installed from the outside of the tapered front bumper to the frame to provide a step on top of the bumper for the operator
- Install stirrup step with bar grating tread on each end of the bumper

8.4 **Front Reversible Plow**

- Moldboard shall be 12’ long and 41” high with full length
- 10 gauge roll formed construction shall be 100% continuously welded
- Moldboard shall have 6 flame cut vertical ribs
- Horizontal support angle is to be 3” x 3” x 1/4” steel angles
- Top moldboard angle is to be 2” x 3” x 3/8” steel
- Bottom angle is to be 4” x 4” ¾” steel
- Provide two (2) plow blades. One installed on front hitch and one spare.
- Cutting edge shall be 5/8” x 8” carbide tipped with standard AASHO holes punched
- Plow semi-circle shall be 3 ½” x 3 ½” x ½” hot rolled angle

- Push frame is to be 4' x 4" x 3/8" wall square tubing, 84" in length with eight 4' x 4" x 1/2" ears which form a 4 point pivot to affix the mold board to the push frame with four 1 1/4" plated pins
- Two (2) jack supports 8" x 18" with 6 holes for mounted screw adjustable cast shoes
- Two (2) compression spring assemblies that allow the whole mold board to trip the springs. Assemblies shall be made from AISI 5160 steel with a tensile strength of 112,000 – 140,000 PSA rated at 195#/inch of compression
- Two (2) reverse cylinders with a 3" x 10" stroke and 2" diameter chrome plated rod shall be installed on the underside of the circle
- All hydraulic hoses are to be abrasion resistant. Hoses shall have a minimum 1/2" inside diameter and be rated at 3,000 PSI working pressure and 12,000 burst pressure
- Double relief cushion valve set 1,800 PSI shall be installed
- A-frame construction is 3 1/2" x 4" x 13.8# ship and car channel
- Oscillating plate shall have a hole to accept a 1 1/4" bolt
- Fasteners shall be grade 8 and electronically plated and corrosion resistant
- 34" plow portion of a husting hitch shall be attached to the plow
- Plow shall be shot blasted, chemically treated, washed and have FAA chrome yellow powder coat to match chassis
- Push frame to have flat black powder coat finish to match chassis hood

8.5 **Hydraulic System and Tank**

- Hydraulic system and tank shall be configured to maximize the available space permitted with respect to cab, box, and exhaust systems.
- Hydraulic tank shall be a minimum 30 gallon capacity. Combination of 30 gallon hydraulic tank with 50 gallon fuel tank will be permitted.
- A print of tank location shall be submitted for approval prior to installation
- Tanks shall be constructed of 7 gauge steel and mounted between the cab and the dump body on a steel angle cradle
- Install serrated bar step on the street side end of the mounting bracket
- Tank shall be painted FAA chrome yellow to match chassis and labeled appropriately
- Hydraulic reservoir shall include a screened filler breather cap, magnetic drain plug, 3" NPT supply port with a 3" x 2" filter screen, a 2" full flow ball valve shut off and an external mounted sight temperature gauge
- Install a 3/4" drain port and fitted full flow ball valve
- Mount and in tank 10 micron return line filter in the reservoir
- Install drop tube on filter discharge port
- Mount low oil shut down float on in hydraulic reservoir.
- Install low oil indicator light that will become energized when oil level drops below safe operating level
- Hydraulic oil shall be AW32 type
- Hydraulic pump shall be a Rexroth model A10V071 load sensing piston pump with 71CC displacement or equal
- Pump shall be fitted with split flange adapters on both the supply and pressure port
- Pump drive line shall be a Spicer 1310 series drive line and shall be mounted in such a way that it can be removed without removing the pump
- Install high pressure, manually operated, 1" ball valve on the main pressure line at the pump for pump shut down in the event of a low oil situation
- Hydraulic valve shall be a Rexroth M4-12 modular manifold design or equal
- Material spreader operation valves shall be pulse-width modulated, proportionally controlled and include stroke limiters

- Valve segments shall be individually mounted to the manifold base assembly and serviceable without removing any hydraulic hoses or any other hydraulic valve segments
- Valve sections for dump body hoist, underbody plow and front plow functions must have shim adjustable flow control compensators for each function
- Underbody plow and hoist down circuit shall include a load sense relief to limit the down pressure in the underbody plow down and hoist down circuits. Port relief to limit pressure will not be accepted.
- Valve sections shall be spool type and shall include a 4 way section for hoist, a 4 way section for underbody plow up/down, a 4 way section for front plow up/down, a 4 way section for plow reverse and electric proportioning sections for spinner rated at 8 GPM and conveyer rated at 15 GPM.
- Valve functions for hoist, underbody plow and front plow shall be air operated and controlled by Apsco type air controllers (or equal) mounted in a control console between the seats in the cab.
- Air controllers shall include labels identifying each function built into the handles
- Front and underbody plow controllers shall be dual axis type
- Hoist controller shall be a single axis type with a neutral lock/detent
- Air lines extending from controllers to valve shall be color coded
- Order and location of controllers shall be submitted to airport prior to installation
- Hydraulic valve assembly shall be mounted in a weather-tight stainless steel enclosure
- All plumbing shall be externally and directly into the bottom of the valve manifold base
- Hose shall be Parker Model 451 (or equal) on all high pressure hoses
- All pressure hoses shall be plumbed on the street side of chassis, away from any turbochargers or exhaust systems
- Supply hose for the pump shall be routed in manner that will not interfere with changing of the engine oil filters
- Valve enclosures shall be mounted on the street side of the chassis
- Plow power reverse circuit shall be equipped with a cushion valve mounted at the front bumper
- Plow power reverse circuit shall be equipped with stainless steel hydraulic couplers as well as the spreader and spinner circuits at the end of the chassis
- All couplers shall be equipped with duct caps and plugs.
- Hydraulic lines to operate front plow are to be mounted on LH Side of Husting Hitch for easy access and be outfitted with Faster brand –NV12 – NPT male, female quick coupler connection (or equal)

8.6 **Closed Loop Spreader Control**

- Spread controller shall be Dickey-John Control Point or equal
- Controller shall be capable of displaying and logging both ground temperature and ambient temperature.
- Controller shall include a serial port for down loading of logged data
- Controller shall record and log storm data, seasonal data, alarm history and application errors
- Controller shall be capable of controlling granular application and ground speed oriented spinner operations simultaneously
- Control system shall include a remote control switch box for granular control and blast button

- Control console shall display application rates, vehicle speed, spinner speed, material type, ground and ambient temperature simultaneously
- Control system shall include remote valve drivers for granular control system and include application rate sensors as necessary for closed loop application of granular materials
- Speed input shall be wired into the transmission electronic control module wiring harness
- A pressure transducer shall be installed on the underbody plow down hydraulic circuit and shall input into the control point
- Underbody plow down pressure as a percentage or in pounds per square inch shall be displayed on the screen.
- Install Road Watch temperature sensor (or equal) on the drivers side mirror bracket and wire into the control point console
- Ambient and road temperature shall be displayed on the screen
- All electrical connectors on the material spreader system shall be weather-pak type

8.7 **Stainless Steel V Box Spreader**

- Spreader hopper shall be constructed of 10 gauge 201 stainless steel with a 2” double crimped top edge formed for greater rigidity
- Hopper body length shall be 10 feet with longitudinals overhung for supporting the spinner assembly
- Hopper shall be 56” high with a 6.5 cubic yard capacity. Hopper shall not exceed 84” in outside width.
- Body longitudinals shall be manufactured of 7 ga. Type 201 stainless steel
- Channel cross sills shall be 3” x 4.1# channel iron that tie the lower edge of the longitudinals to each side support
- Cross supports shall be wide enough to allow the unit to slide into a dump body
- Bottom of the cross members shall include at type 201 stainless steel, low profile, skid channel
- Skid channel shall evenly distribute with and allow for washing of dump body
- Body and conveyor longitudinals shall be electrically welded into a rugged solid unit with a continuous weld between the outside joint to prevent rust from forming
- Install a screw type self-locking gate. The 12” x 18” 10 gauge, 201ss feed gate and ruler shall be provided at the rear of the hopper to allow for accurate discharge
- Side supports shall be 10 gauge type 201ss formed side supports that extend the full side angle height spaced on approximately twenty-four (24) inch centers
- Install heavy duty lift loops at each corner of the hopper.
- Rear endplate shall be reinforced inside and supported for maximum strength
- Conveyor system shall be chain bar flight type running longitudinally with the body feed material o the feed gate opening
- Overall conveyor width shall not be less than 24 inches
- Protect chain link strands with 10 gauge 201ss replaceable chain shield cover over the strands exposing only the drag bar to the material
- Conveyor floor shall be of flat design and manufactured of replaceable 3/16” type 201 stainless steel and rolled over edges
- Conveyor chain shall be driven through the worn drive gearbox by a low speed/high-torque “orbital type” hydraulic motor
- Motor shall be directly coupled to the gearbox and protected from the elements by a cast housing

- Motor shall be White Roller Stator type (or equal) and shall include a building in application rate sensor
- Cast iron gearbox shall have hardened and ground bronze gears mounted on 1 2" diameter drive shaft and supported on tapered roller bearings
- Gears shall be machine cut and mounted in antifriction sealed bearings and running in oil
- Gearbox ration shall be 50:1
- Drive and idler sprockets shall be 8 tooth cast grey iron sprockets keyed to the 2" diameter drive shaft and 2" idler shaft
- Conveyor shafts shall have heavy duty, dust sealed self-aligning four bolt flange bearings equipped with grease fitting
- Conveyor shall have in internal front wiper and an external rear wiper
- Install heavy duty spring loaded idler adjustment assembly to provide 4" of adjustment for proper conveyor chain tension
- Front idler adjustments shall be extended to the rear of the V-box spreader for adjustment at the rear of the spreader
- Front bearings shall include grease extension kits to the rear of the V-box
- Conveyor chain shall be heat-treated, 2.25 pitch, self-cleaning, pintle type, with 7/16" pins and tensile strength per strand of 21,000 pounds
- Chain shall utilize a 3/8" x 1 1/2" x 18 3/4" cross bar welded on both the top and bottom to every other chain link making an overall width of 22 1/4"
- Cross bars shall be positioned on approximately 4.5" centers
- Distributor disc shall be a minimum 20" diameter
- Spinner disc shall be 1 piece poly construction and include 6 molded in flights
- Disc shall be mounted on a cast iron replaceable hub connected directly to the top mounted motor
- Material shall be guided from the conveyor to the distribution disc by means of two internal adjustable 10 gauge material deflectors
- Deflectors shall control the spread patter from left to right by controlling where the material drops on the disc
- All spinner assembly components shall be manufactured of minimum 10 gauge type 201ss and shall be adjustable in height to accommodate either the slip-in V-box or chassis mounted V-box
- Install four (4) external adjustable baffles. Baffle adjustment shall be easily operated without the use of tools
- Install rear diverter chute to permit unloading of material without running material over spinner
- The entire spinner shall tip-up to permit cleaning, unloading and storage
- V-box shall be attached to the dump body at the rear by means of a tailgate latch assembly
- Latch assembly shall be constructed of 201ss and be mounted in such a way that the finger latches of the dump body retain the V-box spreader from moving either side to side or front to back
- Four (4) inch winches and four (4) inch nylon winch straps shall be installed on the front of the V-box spreader
- Brackets shall be attached to the dump body to accept 4" flat hooks on the end of the straps
- Unit shall be equipped with manual winch to raise and secure rear spinner housing to provide pintle hitch clearance

8.8 **Rear Hitch**

- Install a ¾' rear hitch plate
- Hitch plate shall be welded integrally into the rear of chassis frame
- Install a 20 ton pintle hitch including 1" D rings for trailer safety chains
- Remount 7 way round, commercial plug
- Install electric brake controller in the cab and wire to 7 way plug
- Confirm height of pintle hitch with airport

Section 9: Miscellaneous Details

Treating and Painting: 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 and painted the specified color with a lead-free and chromate-free baked polyurethane enamel 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. 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.

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 conditions.

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 engine. 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
- A. 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
- B. **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.
- C. **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.

Section 10: Quality Assurance

- 10.1 **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.
- 10.2 **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.

- 10.3 **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.
- 10.4 **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.
- 10.5 **Certification:** The manufacturer must be certified to the quality standard ISO 9001 for the production of heavy duty Intermediate Plow. Vendor certification must be supplied prior to delivery for the engine, transmission, power divider, transfer case and axles, as applicable. 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 J1944, 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

- 10.6 **Instruction and 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, 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.
- 10.7 **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.

10.8 **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. Hitches, dump bodies, material spreader, hydraulic and control systems shall be included in a minimum two (2) year 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.

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.: _____