TOWN OF NORTH HEMPSTEAD

Request for Sealed Bids

IMPORTANT: SEE "NOTICE TO BIDDERS" and "INSTRUCTIONS TO BIDDERS" CLAUSES HEREIN BIDS MAY BE SENT TO THE ADDRESS LISTED BELOW ONLY
(*Fax and/or E-Mail Bid Submissions Will NOT Be Accepted*)

BID OPENING INFORMATION	NAME OF BID:
Date: April 27, 2015 Time: 11AM	***TNH016-2015- Heavy Duty Equipment***
INVITATION FOR BIDS NUMBER:TNH016-2015	Specification Reference: As Incorporated in the Invitation For Bids
CONTRACT PERIOD: To be one year from date of award. At the termination date of contract period, the contract may be extended for one year with price adjustment, by mutual consent of both parties.	

The bid must be fully and properly executed by an authorized person.
By signing you certify your express authority to sign on behalf of yourself, your company, or other entity and full knowledge and acceptance of this INVITATION FOR BIDS, Town of North Hempstead General Conditions, and that all information provided is complete, true and accurate.

Legal Business Name of Company Bidding:	Bidder's Federal Tax Identification #: (Do Not Use SS#)
D/B/A - Doing Business As (if applicable):	
Street City State Zip	
If you are not bidding, place an "x" in the box and return this page only. ☐ WE ARE UNABLE TO BID AT THIS TIME because _____.	
Bidder's Signature: _____ Title: _____	Printed or Typed Name: _____ Date: _____
Phone: ( ) - ext ( ) Fax: ( ) -	E-mail Address: _____ Company Web Site: _____

Department of Administrative Services - Purchasing Division

220 Plandome Road • Manhasset, New York 11030 • (516) 869-2913 (P) • (516) 869-2919
(F)Contracts@northhempsteadny.gov • www.northhempsteadny.gov

THIS BID CONTAINS THE FOLLOWING:

Note: if you are bidding just one item, please only send back the main bid pages (1-30) and the pages containing the specifications and price proposal (if there is one, otherwise, write pricing on this page) for that item only.

Peter Hoda, Commissioner

Department of Administrative Services - Purchasing Division

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Contracts@northhempsteadny.gov • www.northhempsteadny.gov, click on
Working Tab, Bids/RFPs

IMPORTANT NOTE TO POTENTIAL BIDDERS: Receipt of these bid documents does not indicate that the Town of North Hempstead has pre-determined your company's qualifications to receive a contract award. Such determination will be made after the bid opening and will be based on our evaluation of your bid submission compared to the specific requirements and qualifications contained in these bid documents.

NOTICE TO BIDDERS

SEALED BIDS will be received by the Department of Administrative Services – Purchasing Division of the Town of North Hempstead in the Office of the Purchasing Division located on the lower level of Town Hall, 220 Plandome Road, Manhasset, New York 11030, on the 27th day of April 2015, 11:00 AM, at which time they will be publicly opened and read and the Contract awarded as soon thereafter as practicable for:

TNH016-2015- Heavy Duty Equipment

Bids may be mailed or delivered to the Purchasing Division, 220 Plandome Road, Manhasset, New York 11030, provided the Bid is actually received by the Purchasing Division prior to the time of public opening; or Bids may be delivered to the place of public opening (*i.e.*, the Office of the Purchasing Division) immediately prior to the time of public opening.

All Bids must be sealed and submitted in an envelope with the Identification Label provided in the Bid Documents affixed to the front of the envelope.

In accordance with General Municipal Law, Article 5-G, Paragraph 119-o an intermunicipal agreement has been entered into between the Town of North Hempstead and entities listed in attachment A, which agreement provides that said entities may purchase off this bid by separate agreement made directly with the bidder/contractor.

All BIDDERS MUST complete the required Bidder's Disclosure Statement, Non-Collusion Declaration, and must provide a copy of the required Statement of Financial Conditions, even if a Bidder is currently executing work for the Town.

It is the policy of the Town of North Hempstead to encourage the participation of DBE and M/WBE; by bidding on this project, the contractor acknowledges its understanding and support of this policy and pledges to fully cooperate with the Town in meeting the requirements as set forth in the bidding and contract documents.

The Town reserves the absolute right to reject any and all Bids, and to waive any informalities therein.

A Bid/Proposal submitted by a bidder who is not in full compliance with the provisions of the Town of North Hempstead, Town Code at the time of submission will be denied.

The Town will not accept Bids from, nor award a Contract to, anyone who cannot prove to the satisfaction of the Town that the bidder has sufficient experience and/or is financially able and organized to successfully comply with the requirements set forth herein.

PETER HODA, COMMISIONER
DEPARTMENT OF ADMINISTRATIVE SERVICES

DATED: Manhasset, New York
Date: April 13, 2015

INSTRUCTIONS TO BIDDERS/PROPOSER'S

Please take Notice; for the purposes of this Request for Proposals ("RFP"), the term "Bid" and "Proposal" shall be interchangeable and shall be used synonymously.

ITB-1 BID/PROPOSAL PREPARATION

Prepare your bid/proposal on this form using indelible ink. One copy of the bid is required, unless otherwise specified herein.

ITB-2 BID DOCUMENTS

Failure to fully comply with any of the requirements or instructions contained within the bid document may constitute sufficient cause for rejection of the Bid/Proposal. Such rejections will be subject to the discretion of the Commissioner of Administrative Services.

Invitations for Bids will consist of the following documentary components:

a. Notice to Bidders/Proposers
b. Instructions to Bidders/Proposers
c. General Conditions
d. Standard Specifications (as defined in General Conditions)
e. Proposal Form with Schedule 'B'
f. Bidder's Qualifications Statement
g. Addendum to Bid Documents

Invitations for Bids Involving Public Work or Building Services Pursuant to Articles 8 and 9 of the New York State Labor Law (as specified in the Proposal Form) **will also include the following documentary component**:

a. New York State Department of Labor Wage Rate Schedule(s).

ITB – 3 EXAMINATION OF BID DOCUMENTS AND FAMILIARITY WITH SITE

BEFORE SUBMITTING A BID/PROPOSAL, ALL BIDDERS ARE ADVISED TO CAREFULLY EXAMINE THE BID DOCUMENTS; WHERE THE CONTRACT IS FOR PUBLIC WORK OR INSTALLATION THE BIDDER IS ADVISED TO VISIT THE SITE OF THE PROPOSED WORK TO BECOME COGNIZANT OF CONDITIONS AND LIMITATIONS ASSOCIATED WITH FULFILLING REQUIREMENTS OF THE BID DOCUMENTS, INCLUDING BUT NOT LIMITED TO PLANS AND SPECIFICTIONS.

Pleas of ignorance or misunderstanding of conditions that exist, or that may hereafter exist, or of conditions or difficulties that may be encountered in the execution of the work under this Contract, as a result of negligence by failing to make the necessary examinations and investigations as may be expected of a reasonably prudent Bidder, will NOT be accepted as grounds for any excuse on the part of a Contractor to fulfill in every respect all of the requirements of the Bid Documents, nor will such excuses be accepted by the Town as a basis for any claims whatsoever for extra compensation, or for an extension of Contract completion time.

ITB-4 INTERPRETATION OF BID DOCUMENTS

If any prospective Bidder is unsure of, or has any reservations about, the precise and true meaning of any written or drawn material contained within any of the Bid Documents, or finds apparent discrepancies therein, or possible omissions therefrom, s/he shall promptly submit to the Commissioner of Administrative Services, a written request, fully describing the material in question, for an interpretation, explanation or revision thereto. The response to each request for clarification will be made only by an Addendum to the Bid Documents. Neither the Town nor the Commissioner of Administrative Services may be held responsible or liable for any other explanations or interpretations of these Bid Documents.

ITB-5 ADDENDUM TO BID DOCUMENTS

Any Addendum issued during the bidding period shall become an integral part of the Bid Documents and shall be incorporated in the Bidder's Bid/Proposal. All Addendum shall be acknowledged in the Bidder's Bid/Proposal, by entering the title, date and signature of the person signing the Bid/Proposal.

ITB-6 MODIFICATIONS TO BID DOCUMENTS

Bids/Proposals shall not take exception to, or request modifications for, any item described in the Bid Documents. Oral Bids/Proposals will not be considered.

ITB-7 RIGHTS OF TOWN BOARD

The Town Board reserves the right to reject any and all Bids/Proposals and to waive any informalities in the Bids/Proposals received, and to accept the Bid/Proposal most favorable to the interests of the Town, after all Bids/Proposals have been analyzed, checked and verified.

ITB-8 TAX EXEMPTION

The Owner is exempt from payment of Sales and Compensating Use Taxes of the State of New York and of cities and counties on all materials and supplies sold to the Town pursuant to the provisions of this Contract. These taxes are not to be included in Bids/Proposals.

ITB-9 FORM OF BID/PROPOSAL

EACH BID/PROPOSAL MUST BE MADE ON THE "PROPOSAL FORM" ATTACHED HERETO AND SHALL REMAIN ATTACHED HERETO AS ONE OF THE BID DOCUMENTS AND SHALL BE SUBMITTED IN A SEALED ENVELOPE BEARING THE NAME OF THE BID, BID NUMBER, AND THE NAME OF THE BIDDER.

THE TOWN HEREBY RESERVES THE ASBOLUTE RIGHT TO REJECT ANY BID/PROPOSAL THAT IS NOT MADE ON THE "PROPOSAL FORM".

ITB-10 DELIVERY OF BIDS/PROPOSALS

BIDS/PROPOSALS MUST BE DELIVERED BY THE TIME AND TO THE PLACE STIPULATED IN THE ADVERTISEMENT. IT IS THE SOLE RESPONSIBILITY OF THE BIDDER TO SEE THAT HIS BID/PROPOSAL IS RECEIVED IN THE PROPER TIME. ANY BIDS/PROPOSALS RECEIVED AFTER THE SCHEDULED CLOSING TIME FOR RECEIPT OF BIDS/PROPOSALS SHALL BE RETURNED TO THE BIDDER/PROPOSER UNOPENED.

ITB-11 CORRECTIONS TO BIDS/PROPOSALS

Erasures or other corrections in the Bid/Proposal must be initialized by the person signing the Bid/Proposal.

ITB-12 WITHDRAWAL OF BIDS/PROPOSALS

Any Bidder may withdraw his/her Bid/Proposal, either personally, or by telegraphic or written request, if such a request is received by the Purchasing Division at any time during normal working hours prior to the scheduled closing time for receipt of Bids/Proposals. If a Contract is not awarded within 45 calendar days after opening of the Bids, all Bids will be considered to have been rejected for cause, unless, at the Town's request the low Bidder agrees to hold his Bid valid for an additional stipulated length of time.

ITB-13 MULTIPLE BID/PROPOSAL SUBMITTALS

Any person, firm or corporation will not be permitted to make more than one Bid/Proposal for the product or service. If a person is a partner, officer or director of more than one firm interested in bidding for the product or services, only one of the firms may submit a Bid/Proposal.

ITB-14 NON-COLLUSIVE BIDDING CERTIFICATION

In accordance with § 103-d of the General Municipal Law, by submission of this Bid/Proposal, each bidder and each person signing on behalf of any bidder certifies, and in the case of a joint bid each party thereto certifies as to its own organization, under penalty of perjury, that to the best of its knowledge and belief:

(1) The prices in this bid/proposal have been arrived at independently without collusion, consultation, communication, or agreement, for the purpose of restricting competition, as to any matter relating to such prices with any other bidder/proposer or with any competitor;

(2) Unless otherwise required by law, the prices which have been quoted in this bid/proposal have not been knowingly disclosed by the bidder/proposer and will not knowingly be disclosed by the bidder/proposer prior to opening, directly or indirectly, to any other bidder or to any competitor; and

(3) No attempt has been made or will be made by the bidder/proposer to induce any other person, partnership or corporation to submit or not submit a bid for the purpose of restricting competition.

ITB-15 QUALIFICATIONS OF BIDDERS

A BIDDER'S QUALIFICATIONS STATEMENT IS REQUIRED. The forms attached hereto indicate all the information required. Each Bidder/Proposer shall be responsible for submitting his current Disclosure Statement with his Bid/Proposal. The Town retains the right to investigate, verify the information submitted in the Disclosure Statement, and interview all bidders prior to award of the Contract. THE TOWN HEREBY RESERVES THE ASBOLUTE RIGHT TO REJECT ANY BID/PROPOSAL THAT DOES NOT INLCUDE A DISCLOSURE STATEMENT.

ITB- 16 IDENTIFICATION LABEL

To properly expedite the receipt and processing of bids submitted, the following "Identification Label" must be affixed to the outer envelope of the sealed bid. Bids shall be delivered by U.S. Mail, public carrier (e.g. UPS, FedEx), or by hand. THE TOWN HEREBY RESERVES THE ASBOLUTE RIGHT TO REJECT ANY BID/PROPOPOSAL THAT DOES NOT CONFORM TO THIS SECTION.

SEALED BID ENCLOSED
Town of North Hempstead
Department of Administrative Services
Purchasing Division

Bidder's Name: _____

_____

Bid Number: _____

Bid Name: _____

Due Date: _____

Bid Requirements/Pricing
Refer to specs for equipment at the end of the document

GENERAL CONDITIONS

1. **APPLICABILITY** The terms and conditions set forth in this section entitled General Conditions are expressly incorporated in and applicable to the resulting procurement contracts let by the Town of North Hempstead where incorporated by reference in its Bid Documents. Captions are intended as descriptive and are not intended to limit or otherwise restrict the terms and conditions set forth herein.

2. **GOVERNING LAW** This procurement, the resulting contract and any purchase orders issued hereunder shall be governed by the laws of the State of New York except where the Federal supremacy clause requires otherwise, and actions or proceedings arising from the contract shall be heard in a court of competent jurisdiction in the State of New York.

3. **NO ARBITRATION** Disputes involving this procurement, the resulting contract, including the breach or alleged breach thereof, and any purchase orders issued hereunder may not be submitted to binding arbitration (except where statutorily authorized), but must, instead, be heard in a court of competent jurisdiction of the State of New York.

4. **ETHICS COMPLIANCE** All Bidders/Contractors and their employees must comply with the requirements of Section 16A of the Code of the Town of North Hempstead, other New York State codes, rules, regulations and executive orders establishing ethical standards for the conduct of business with New York State. In signing the Bid, Bidder certifies full compliance with those provisions for any present or future dealings, transactions, sales, contracts, services, offers, relationships, etc., involving the Town of North Hempstead and/or its employees. Failure to comply with those provisions may result in disqualification from the Bidding process, termination of contract, and/or other civil or criminal proceedings as required by law.

5. **CONFLICT OF TERMS** Unless otherwise set forth in the procurement or contract documents, conflicts among documents shall be resolved in the following order of precedence:
(A) Contract and other writing(s) setting forth the final agreements, clarifications and terms between the Bid Documents and Contractor's Bid. In the latter circumstance, clarifications must specifically note in writing what was offered by the Contractor and what was accepted by the Town of North Hempstead. If not, such clarifications shall be considered last in the order of precedence under this paragraph.

(1) General Conditions.
(2) Bid Specifications.
(3) Bid Documents.
(4) Contractor's Bid/Proposal.

6. **DEFINITIONS**

AWARD is the decision of the Town to accept the Bid/Proposal of the lowest responsive, responsible Bidder/Contractor for the procurement included in these Bid Documents. An award letter will be issued by the Town informing the Contractor that its bid was accepted.

BID DOCUMENTS Writings by the Town setting forth the scope, terms, conditions and technical specifications for procurement. Such writings typically include, but are not limited to: Invitation for Bids (IFB), Request for Quotation (RFQ), Request for Proposals (RFP), addenda or amendments thereto, and terms and conditions contained therein or incorporated by reference.

BID OR PROPOSAL An offer or proposal submitted by a Bidder to furnish a described product or a solution, perform services or means of achieving a practical end, at a stated price for the stated Contract term. For the purpose of this Request for Proposal, the term "Bid" and "Proposal" shall be interchangeable and shall be used synonymously. As required by the Bid Documents, the Bid or proposal may be subject to modification through the solicitation by the Town of best and final offers during the evaluation process prior to recommendation for award of the Contract.

BIDDER/OFFERER Any individual or other legal entity (including but not limited to sole proprietor, partnership, limited liability company, firm or corporation) which submits a Bid in response to a solicitation. The term Bidder shall also include the term "proposer" or "offeror." In the case of negotiated Contracts, "Bidder" shall refer to the "Contractor."

BID SPECIFICATION A written description drafted by the Town setting forth the specific terms of the intended procurement, which may include: physical or functional characteristics, the nature of a commodity or construction item, any description of the work to be performed, Products to be provided, the necessary qualifications of the Bidder, the capacity and capability of the Bidder to successfully carry out the proposed Contract, or the process for achieving specific results and/or anticipated outcomes or any other requirement necessary to perform work.

CONTRACT The writing(s) which contain the agreement of the Town and the Bidder/Contractor setting forth the total legal obligation between the parties as determined by applicable rules of law.

CONTRACT DOCUMENTS consist of the Contract or Purchase Order made between the Town and the Bidder/Contractor (hereinafter the Agreement), General Conditions, Bid Specifications, Bid Documents, including among others the Notice to Bidders, Instructions to Bidders, any Schedule of Bid Prices, any Addendum to Bid Documents issued prior to execution of the Contract, Bidder's Qualification Statement, Bidder's Proposal (including non-collusive bidding statement), contract or purchase order(s) issued, Insurance and Indemnity Certification, Bid Bond(s) (where required), Performance Bond(s), Materials & Labor Bond(s) (where required), or Maintenance Bond (where required), any New York State

Department of Labor Wage Rate Schedule(s) (for public work or building services as defined by Articles 8 and 9 of the New York State Labor Law), any additional Documentation required for contract execution, any supplemental agreements issued during the course of the Contract, and/or Modifications issued after execution of the Contract. A Modification is: (1) a written amendment to the Contract signed by both parties including but not limited to work change orders or changes to purchase orders.

COMMISSIONER Commissioner of the Department of Administrative Services or his/her authorized representative.

COMPTROLLER Comptroller of the Town of North Hempstead.

CONTRACTOR Any successful Bidder(s) to whom a Contract has been awarded by the Town.

DOCUMENTATION The complete set of manuals (e.g., user, installation, instruction or diagnostic manuals) in either hard or electronic copy, which are necessary to enable the Town to properly test, install, operate and enjoy full use of the Product.

MULTIPLE AWARD A determination and award of a Contract in the discretion of the Commissioner to more than one responsive and responsible Bidder who meets the requirements of a specification, where the multiple award is made on the grounds set forth in the Bid Document in order to satisfy multiple factors and needs of the Town (e.g., complexity of items, various manufacturers, differences in performance required to accomplish or produce required end results, production and distribution facilities, price, compliance with delivery requirements, geographic location or other pertinent factors).

PRODUCT A deliverable under any Bid or Contract which may include commodities, services and/or technology, including software.

PURCHASING DIVISION shall mean the Town of North Hempstead, Department of Administrative Services Purchasing Division.

PURCHASE ORDER The Town's fiscal form or format that is used when making a purchase (e.g., Claim Form, formal written Purchase Order, electronic Purchase Order, or other authorized instrument).

SINGLE SOURCE A procurement where two or more Bidders can supply the required Product, and the Commissioner may award the contract to one Bidder over the other.

SITE The location (street address) where Product will be executed or services delivered.

SOLE SOURCE A procurement where only one Bidder is capable of supplying the required Product.

SUBCONTRACTOR Any individual or other legal entity, (including but not limited to sole proprietor, partnership, limited liability company, firm or corporation) that has entered into a contract, express or implied, for the performance of a portion of a Contract with a Contractor.

TOWN shall mean the Town of North Hempstead, Nassau County, New York.

TOWN ATTORNEY Town Attorney of the Town of North Hempstead.

TOWN BOARD shall mean the council members duly elected by the residents of the Town of North Hempstead, Nassau County, New York.

BID SUBMISSION

7. **BID OPENING** Bids may, as applicable, be opened publicly. The Commissioner reserves the right at any time to postpone or cancel a scheduled Bid opening.

8. **BID/PROPOSAL SUBMISSION** All Bids/Proposals are to be packaged, sealed and submitted to the location stated in the Bid/Proposal Specifications. Bidders/Proposers are solely responsible for timely delivery of their Bids/Proposals to the location set forth in the Bid Specifications prior to the stated Bid opening date/time.

A Bid/Proposal return envelope, if provided with the Bid Specifications, should be used with the Bid/Proposal sealed inside. If the Bid/Proposal response does not fit into the envelope, the Bid/Proposal envelope should be attached to the outside of the sealed box or package with the Bid/Proposal inside. If using a commercial delivery company that requires use of their shipping package or envelope, Bidder's/Proposer's sealed Bid, labeled as detailed below, should be placed within the shipper's sealed envelope to ensure that the Bid is not prematurely opened.

All Bids/Proposals must have a label on the outside of the package or shipping container outlining the following information:

"**BID/PROPOSAL ENCLOSED** (bold print, all capitals)

- Bid/Proposal Name
- Bid/Proposal Number

- Bid/Proposal Submission date and time"

In the event that a Bidder/Proposer fails to provide such information on the return Bid/Proposal envelope or shipping material, the Town reserves the right to open the shipping package or envelope to determine the proper Bid/Proposal number or Bid/Proposal Name, and the date and time of Bid opening. Bidder/Proposer shall have no claim against the Town arising from such opening and such opening shall not affect the validity of the Bid/Proposal or the procurement.

Notwithstanding the Town's right to open a Bid/Proposal to ascertain the foregoing information, Bidder/Proposer assumes all risk of late delivery associated with the Bid/Proposer not being identified, packaged or labeled in accordance with the foregoing requirements.

All Bids/Proposals must be signed by a person authorized to commit the Bidder/Proposer to the terms of the Bid Documents and the content of the Bid (offer).

9. **LATE BIDS/PROPOSALS** For purposes of Bid openings held and conducted by the Purchasing Division, a Bid must be received in such place as may be designated in the Bid Documents or if no place is specified to the Town of North Hempstead, Purchasing Division, 220 Plandome Road, Manhasset, New York 11030, at or before the date and time established in the Bid Specifications for the Bid opening.

Any Bid received at the specified location after the time specified will be considered a late Bid. A late Bid shall not be considered for award unless: (i) no timely Bids meeting the requirements of the Bid Documents are received or, (ii) in the case of a multiple award, an insufficient number of timely Bids were received to satisfy the multiple award; and acceptance of the late Bid is in the best interests of the Town. Delays in United States mail deliveries or any other means of transmittal, including couriers or agents of the Town shall not excuse late Bid submissions. Similar types of delays, including but not limited to, bad weather or security procedures for parking and building admittance shall not excuse late Bid submissions. Determinations relative to Bid timeliness shall be at the sole discretion of the Commissioner.

10. **BID/PROPOSAL CONTENTS** Bids/Proposals must be complete and legible. All Bids/proposals must be signed. All information required by the Bid Specifications must be supplied by the Bidder/Proposer on the forms or in the format specified. No alteration, erasure or addition is to be made to the Bid Documents. Changes may be ignored by the Commissioner or may be grounds for rejection of the Bid. Changes, corrections and/or use of white-out in the Bid or Bidder's/Proposer's response portion of the Bid Document must be initialed by an authorized representative of the Bidder/Proposer. Bidders/Proposers are cautioned to verify their Bids/Proposals before submission, as amendments to Bids or requests for withdrawal of Bids/Proposals received by the Commissioner after the time specified for the Bid opening/date of submission of RFP, may not be considered.

11. **EXTRANEOUS TERMS** Bids/Proposals must conform to the terms set forth in the Bid Documents, as extraneous terms or material deviations (including additional, inconsistent, conflicting or alternative terms) may render the Bid/Proposal non-responsive and may result in rejection of the Bid/Proposal.

Extraneous term(s) submitted on standard, pre-printed forms (including but not limited to: product literature, order forms, license agreements, contracts or other documents) that are attached or referenced with submissions shall not be considered part of the Bid or resulting Contract, but shall be deemed included for informational or promotional purposes only.

No extraneous term(s), whether or not deemed "material," shall be incorporated into a Contract or Purchase Order unless the Commissioner expressly accepts each such term(s) in writing. Acceptance and/or processing of the Bid shall not constitute such written acceptance of Extraneous Term(s).

12. **CONFIDENTIAL/TRADE SECRET MATERIALS** Contractor confidential trade secret or proprietary materials as defined by the laws of the State of New York must be clearly marked and identified as such upon submission by the Bidder. Marking the Bid as "confidential" or "proprietary" on its face or in the document header or footer shall not be considered by the Commissioner to be sufficient without specific justification as to why disclosure of particular information in the Bid would cause substantial injury to the competitive position of the Bidder. Bidders/Contractors intending to seek an exemption from disclosure of these materials under the Freedom of Information Law must request the exemption in writing, setting forth the reasons for the claimed exemption. Acceptance of the claimed materials does not constitute a determination on the exemption request, which determination will be made in accordance with statutory procedures. Properly identified information that has been designated confidential, trade secret, or proprietary by the Bidder will not be disclosed except as may be required by the Freedom of Information Law or other applicable State and federal laws.

13. **RELEASE OF BID EVALUATION MATERIALS** Requests concerning the evaluation of Bids may be submitted under the Freedom of Information Law.

14. **FREEDOM OF INFORMATION LAW** During the evaluation process, the content of each Bid will be held in confidence and details of any Bid will not be revealed (except as may be required under the Freedom of Information Law or other State law). The Freedom of Information Law provides for an exemption from disclosure for trade secrets or information the disclosure of which would cause injury to the competitive position of commercial enterprises. This exception would be effective both during and after the evaluation process. If the Bid contains any such trade secret or other confidential or proprietary information, it must be accompanied in the Bid with a written request to the Commissioner to not disclose such information. Such request must state with particularity the reasons why the information should not be available for disclosure and must be provided at the time of submission of the Bid. Notations in the header, footer or watermark of the Bid Document will not be considered sufficient to constitute a request for non-disclosure of trade secret or other confidential or proprietary information. Where a Freedom of Information request is made for trademark or other confidential or proprietary information, the Commissioner reserves the right to determine upon written notice to the Bidder whether such information qualifies for the exemption for disclosure under the law. Notwithstanding the above, where a Bid tabulation is prepared and Bids publicly opened, such Bid tabulation shall be available upon request.

15. **PREVAILING WAGE RATES - PUBLIC WORKS AND BUILDING SERVICES CONTRACTS** If any portion of work being Bid is subject to the prevailing wage rate provisions of the Labor Law, the following shall apply:

A. "Public Works" and "Building Services" - Definitions

i. **Public Works** Labor Law Article 8 applies to contracts for public improvement in which laborers, workers or mechanics are employed on a "public works" project (distinguished from public "procurement" or "service" contracts). The Town, a public benefit corporation, a municipal corporation (including a school district), or a commission appointed by law must be a party to the Contract. The wage and hours provision applies to any work performed by Contractor or Subcontractors.

ii. **Building Services** Labor Law Article 9 applies to Contracts for building service work over $1,500 with a public agency, that: (i) involve the care or maintenance of an existing building, or (ii) involve the transportation of office furniture or equipment to or from such building, or (iii) involve the transportation and delivery of fossil fuel to such building, and (iv) the principal purpose of which is to furnish services through use of building service employees.

B. **Prevailing Wage Rate Applicable to Bid Submissions** A copy of the applicable prevailing wage rates to be paid or provided are annexed to the Bid Documents. Bidders must submit Bids which are based upon the prevailing hourly wages, and supplements in cash or equivalent benefits (i.e., fringe benefits and any cash or non-cash compensation which are not wages, as defined by law) that equal or exceed the applicable prevailing wage rate(s) for the location where the work is to be performed. Bidders may not submit Bids based upon hourly wage rates and supplements below the applicable prevailing wage rates as established by the New York State Department of Labor. Bids that fail to comply with this requirement will be disqualified.

C. **Wage Rate Payments / Changes During Contract Term**. The wages to be paid under any resulting Contract shall not be less than the prevailing rate of wages and supplements as set forth by law. It is required that the Contractor keep informed of all changes in the Prevailing Wage Rates during the Contract term that apply to the classes of individuals supplied by the Contractor on any projects resulting from this Contract, subject to the provisions of the Labor Law. Contractor is solely liable for and must pay such required prevailing wage adjustments during the Contract term as required by law.

D. **Public Posting and Certified Payroll Records** In compliance with Article 8, Section 220 of the New York State Labor Law:

i. **Posting** The Contractor must publicly post on the work site, in a prominent and accessible place, a legible schedule of the prevailing wage rates and supplements.

ii. **Payroll Records** Contractors and Subcontractors must keep original payrolls or transcripts subscribed and affirmed as true under the penalties of perjury as required by law. For public works contracts over $25,000 where the Contractor maintains no regular place of business in New York State, such records must be kept at the work site. For building services contracts, such records must be kept at the work site while work is being performed.

iii. **Submission of Certified Payroll Transcripts for Public Works Contracts Only** Contractors and Subcontractors on public works projects must submit monthly payroll transcripts to the Town that has prepared or directs the preparation of the plans and specifications for a public works project, as set forth in the Bid Specifications. Upon mutual agreement of the Contractor and the Authorized User, the form of submission may be submitted in a specified disk format acceptable to the Department of Labor provided: (1) the Contractor/Subcontractor retains the original records; and, (2) an original signed letter by a duly authorized individual of the Contractor or Subcontractor attesting to the truth and accuracy of the records accompanies the disk. This provision does not apply to Article 9 of the Labor Law building services contracts.

iv. **Records Retention** Contractors and Subcontractors must preserve such certified transcripts for a period of three years from the date of completion of work on the awarded contract.

E. **Day's Labor** Eight hours shall constitute a legal day's work for all classes of employees in this state except those engaged in farm and domestic service unless otherwise provided by law.

No laborers, workmen or mechanics in the employ of the Contractor, Subcontractor or other person doing or contracting to do all or part of the work contemplated by the Contract shall be permitted or required to work more than eight hours in any one calendar day or more than five calendar days in any one week except in cases of extraordinary emergency including fire, flood or danger to life or property. "Extraordinary emergency" shall be deemed to include situations in which sufficient laborers, workers and mechanics cannot be employed to carry on public work expeditiously as a result of such restrictions upon the number of hours and days of labor and the immediate commencement or prosecution or completion without undue delay of the public work is necessary in the judgment of the New York State Commissioner of Labor for the preservation of the Contract site or for the protection of the life and limb of the persons using the Contract site.

16. APPRENTICESHIP TRAINING PROGRAMS PUBLIC WORKS AND BUILDING SERVICES CONTRACTS

Any Bidder/Contractor entering into a Contract with the Town for public work or building services, or any sub-contractor entering into a sub-contract with a Contractor who has a Contract with the Town for public work or building services, shall submit verification that they have in-place or will participate in an apprenticeship training program appropriate for the type and nature of work to be performed which have been registered with and approved by the New York State Commission of Labor, pursuant to §816-b of the New York State Labor Law, any provision contained in §103 of the General Municipal Law to the Bidder/Contractor notwithstanding.

A sub-contractor entitled to receive less than $20,000 from a Bidder/Contractor sub-contract is exempt from the requirement set forth herein.

17. **TAXES**

A. Unless otherwise specified in the Bid Specifications or Contract, the quoted Bid price includes all taxes applicable to the transaction.

B. Purchases made by the Town are exempt from New York State sales and excise taxes. These taxes are not to be included in Bids. This exemption does not, however, apply to tools, machinery, equipment or other property, sold or leased to the Contractor or a subcontractor, or to materials and supplies of a kind which will not be incorporated into the completed Product, and the Contractor and his subcontractors shall be responsible for and pay any and all applicable taxes including Sales and Compensating Use Taxes, on such leased tools, machinery, equipment or other property or on such unincorporated materials and supplies, and the provisions set forth below will not be applicable to such tools, machinery, equipment, property and unincorporated materials and supplies.

C. New York State Truck Mileage and Unemployment Insurance or Federal Social Security taxes remain the sole responsibility of the Bidder/Contractor, as no person, firm or corporation is exempt from paying them.

D. Pursuant to Revised Tax Law 5-a, Contractor will be required to furnish sales tax certification on its behalf and for its affiliates, and subcontractors for Contracts with a value greater than $100,000 in accordance with provisions of the law.

18. **PRODUCT REFERENCES**

A. **Trade Customs** There shall be no inferences to trade customs, terms, discounts or conditions on sale applicable, which are not specifically expressed in the specifications and proposals on which the award is based nor contrary to the State Finance Law.

B. **"Or Equal"** In all Bid Specifications the words "or equal" are understood to apply where a copyrighted, brand name, trade name, catalog reference, or patented Product is referenced. References to such specific Product are intended as descriptive, not restrictive, unless otherwise stated. Comparable Product will be considered if proof of compatibility is provided, including appropriate catalog excerpts, descriptive literature, specifications and test data, etc. The Commissioner's decision as to acceptance of the Product as equal shall be final.

C. **Discrepancies in References** In the event of a discrepancy between the model number referenced in the Bid Specifications and the written description of the Products which cannot be reconciled, with respect to such discrepancy, then the written description shall prevail.

19. **REMANUFACTURED, RECYCLED, RECYCLABLE OR RECOVERED MATERIALS** Upon the conditions specified in the Bid Specifications and in accordance with the laws of the State of New York, Contractors are encouraged to use recycled, recyclable or recovered materials in the manufacture of Products and packaging to the maximum extent practicable without jeopardizing the performance or intended end use of the Product or packaging unless such use is precluded due to health, welfare, safety requirements or in the Bid Specifications. Contractors are further encouraged to offer remanufactured Products to the maximum extent practicable without jeopardizing the performance or intended end use of the Product and unless such use is precluded due to health, welfare, safety requirements or by the Bid Specifications. Where such use is not practical, suitable, or permitted by the Bid Specifications, Contractor shall deliver new materials in accordance with the "Warranties" set forth below.

Items with recycled, recyclable, recovered, refurbished or remanufactured content must be identified in the Bid or Bidder will be deemed to be offering new Product.

20. PRODUCTS MANUFACTURED IN PUBLIC INSTITUTIONS Bids offering Products that are manufactured or produced in public institutions will be rejected.

21. PRICING

A. **Unit Pricing** If required by the Bid Specifications, the Bidder should insert the price per unit specified and the price extensions in decimals, not to exceed four places for each item unless otherwise specified, in the Bid. In the event of a discrepancy between the unit price and the extension, the unit price shall govern unless, in the sole judgment of the Commissioner, such unit pricing is obviously erroneous.

B. **Net Pricing** Unless otherwise required by the Bid Specifications, prices shall be net, including transportation, customs, tariff, delivery and other charges fully prepaid by the Contractor to the destination(s) indicated in the Bid Specifications, subject to the cash discount.

C. **"No Charge" Bid** When Bids are requested on a number of Products as a Group or Lot, a Bidder desiring to Bid "no charge" on a Product in the Group or Lot must clearly indicate such. Otherwise, such Bid may be considered incomplete and be rejected, in whole or in part, at the discretion of the Commissioner.

D. **Educational Pricing** All Products to be supplied for educational purposes that are subject to educational discounts shall be identified in the Bid and such discounts shall be made available to qualifying institutions.

E. **Third Party Financing** If Product acquisitions are financed through any third party financing, Contractor may be required as a condition of Contract Award to agree to the terms and conditions of a "Consent & Acknowledgment Agreement" in a form acceptable to the Commissioner.

F. **Best Pricing Offer** During the Contract term, if substantially the same or a smaller quantity of a Product is sold by the Contractor outside of this Contract upon the same or similar terms and conditions as that of this Contract at a lower price to a federal, state or local governmental entity, the price under this Contract, at the discretion of the Commissioner, shall be immediately reduced to the lower price. Price decreases shall take effect automatically during the Contract term and apply to Purchase Orders submitted on or after:

(i) GSA Changes: Where Town Net Prices are based on an approved GSA Schedule, the date the approved GSA Schedule pricing decreases during the Contract term; or

(ii) Commercial Price List Reductions: Where Town Net Prices are based on a discount from Contractor's list prices, the date Contractor lowers its pricing to its customers generally or to similarly situated government customers during the Contract term; or

(iii) Special Offers/Promotions Generally: Where Contractor generally offers more advantageous special price promotions or special discount pricing to other customers during the Contract term for a similar quantity, and the maximum price or discount associated with such offer or promotion is better than the discount or Net Price otherwise available under this Contract, such better price or discount shall apply for similar quantity transactions under this Contract for the life of such general offer or promotion.

G. **Best and Final Prices** As specified in the Bid Documents and Contract, a Contractor may be solicited at the time of issuance of a Purchase Order award for best and final pricing for the Product or service to be delivered to the Town. Contractors are encouraged to reduce their pricing upon receipt of such request.

22. DRAWINGS

A. **Drawings Submitted With Bid** When the Bid Specifications require the Bidder to furnish drawings and/or plans, such drawings and/or plans shall conform to the mandates of the Bid Documents and shall, when approved by the Commissioner, be considered a part of the Bid and of any resulting Contract. All symbols and other representations appearing on the drawings shall be considered a part of the drawing.

i. Standard Practices In performing the services required under the Bid Specifications/Contract, the Bidder/Contractor shall follow and adhere to the following standard Town practices. The following practices may be supplemented or modified, in writing, by the Commissioner.

a. All work shall be in charge of an Engineer, Surveyor or Architect (as appropriate) duly licensed and registered in the State of New York, and experienced in the type of work to be performed for the Town.

b. Any and all reports shall be of 8½" x 11" format with the 11" dimension being the vertical size. Cover and binding shall be as specified by the Town. Oversize exhibits (if required) shall be foldouts or shall be contained within a "Pocket" bound into the report.

c. Any specifications shall: (i) Be of 8½" x 11" format; (ii) Be printed, and color coded, in accordance with standard Town practice; (d) Have a cover with content and format which shall conform to current Town practices.

d. The word "plans" shall be synonymous with the words “drawings”. Any plans shall: (i) Have a title sheet conforming to current Town practice; (ii) Be signed and sealed by an Engineer, Surveyor or Architect (as appropriate) duly licensed and registered in the State of New York on the title sheet; (iii) Be ink on mylar, or be an accurate photographic mylar reproduction of any work originally done in pencil; (iv) Be of the following size:

(a) 8½" x 11", or fold-out multiples thereof, if to be bound into the specifications book, subject to approval by the Commissioner.

(b) A minimum of 22" x 36" to a maximum of 36" x 48" to be approved by the Commissioner.

(c) CADD generated drawings shall be plotted on mylar reproducibles and the CADD files shall be additionally provided to the Town on disc in a format acceptable to the Town.

e. Notwithstanding any of these provisions, the Bidder/Contractor shall, in all cases, conform to any special requirements of other government agencies where such conformity is a required condition for funding, grant approval, or submission/approval of applications and the like.

B. **Ownership of Documents** All completed original tracings and the original master specification sheets shall constitute the property of the Town but may, during the course of the performance of the work required by the Bid Specification/Contract, remain in custody of the Contractor unless otherwise directed by the Commissioner. In the event of any revisions in specifications or original drawings, the Contractor shall submit two revised copies to the Commissioner.

C. **Surrender of Documents** Upon termination or completion of the Contract, the Contractor shall surrender, within fifteen (15) days to the Commissioner (as applicable), all data, reports, maps, surveys, material specifications, contacts, budgets, salary schedules, time records, plans, tracings, sketches, charts, photographs and exhibits prepared, developed or kept in connection with or as a part of this project. This section does not apply to any records or documents pertaining to the operation of the Contractor’s business. The Contractor may retain in its possession copies of those records or documents, which it considers necessary for proof of performance.

D. **Drawings Submitted During the Contract Term** Where the Contract require the Contractor to develop, maintain and deliver diagrams or other technical schematics regarding the scope of work, Contractor shall do so on an ongoing basis at no additional charge, and must, as a condition of payment, update drawings and plans during the Contract term to reflect additions, alterations, and deletions. Such drawings and diagrams shall be delivered to the Town’s representative and shall be in accordance with the requirements set forth in Section 22(A).

E. **Accuracy of Drawings Submitted** All drawings shall be neat and of professional quality and technical accuracy. The drawings shall coordinate all designs, drawings, specifications and other services furnished by the Bidder/Contractor under the Bid Specifications/Contract. The Contractor shall, without additional compensation, correct or revise any errors or deficiencies in its designs, drawings, specifications, and other services, unless otherwise agreed upon by the Commissioner. Neither the Town’s review, approval or acceptance of, nor payment for, the drawings under this contract shall be construed to operate as a waiver of any rights under the Contract or of any cause of action arising out of the performance of the Contract, and the Contractor shall be and remain liable to the Town in accordance with applicable law for all damages to the Town caused by the Contractor’s negligent performance or breach of contract of any of the services furnished under the Contract. The rights and remedies of the Town provided for in the Contract are in addition to any other rights and remedies provided by law.

F. **Claims** In the event that any claim is made or any action brought in any way relating to the plans and specifications drawn by the Contractor, the Contractor will diligently render to the Town any and all assistance, which the Town may require of the Contractor at the Contractor’s sole cost and expense. None of the above shall be deemed in any way a waiver of the Contractor’s responsibility for the information provided by his (its) drawings, specifications and work.

23. LABORATORY WORK If any portion of work being Bid is subject to laboratory testing, the following shall apply:

A. Any and all testing work required under this Contract shall be subject to the approval of the Commissioner prior to undertaking any such testing program.

B. The Commissioner will determine if it is in the best interests of the Town to use the facilities of private testing laboratories or those of public agencies such as the Nassau County Department of Public Works, or a combination of both.

C. The Contractor shall review the testing results and shall state, in writing, that they are acceptable or unacceptable.

D. If private testing laboratories are used, the Contractor shall process the claims for payment and shall submit its certification that the amount of the claim is reasonable and proper.

24. SITE INSPECTION Where a site inspection is required by the Bid Specifications or Project Definition, Bidder shall be required to inspect the site, including environmental or other conditions for pre-existing deficiencies that may affect the installed Product, equipment, or environment or services to be provided and, which may affect Bidder’s ability to properly deliver, install or otherwise provide the required Product. All inquiries regarding such conditions shall be made in writing. Bidder shall be deemed to have knowledge of any deficiencies or conditions which such inspection or inquiry might have disclosed. Bidder must provide a detailed explanation with its Bid if additional work is required under this clause in order to properly complete the delivery and installation of the required Product or provide the requested service.

25. SAMPLES

A. **Standard Samples** Bid Specifications may indicate that the Product to be purchased must be equal to a standard sample on display in a place designated by the Commissioner and such sample will be made available to the Bidder for examination prior to the opening date. Failure by the Bidder to examine such sample shall not entitle the Bidder to any relief from the conditions imposed by the Bid Specifications.

B. **Bidder Supplied Samples** The Commissioner reserves the right to request from the Bidder/Contractor a representative sample(s) of the Product offered at any time prior to or after award of a contract. Unless otherwise instructed, samples shall be furnished within the time specified in the request. Untimely submission of a sample may constitute grounds for rejection of Bid or cancellation of the Contract. Samples must be submitted free of charge and be accompanied by the Bidder’s name and address, any descriptive literature relating to the Product and a statement indicating how and where the sample is to be returned. Where applicable, samples must be properly labeled with the appropriate Bid or Contract reference.

A sample may be held by the Commissioner during the entire term of the Contract and for a reasonable period thereafter for comparison with deliveries. At the conclusion of the holding period the sample, where feasible, will be returned as instructed by the Bidder, at the Bidder’s expense and

risk. Where the Bidder has failed to fully instruct the Commissioner as to the return of the sample (*i.e*., mode and place of return, etc.) or refuses to bear the cost of its return, the sample shall become the sole property of the receiving entity at the conclusion of the holding period.

C. **Enhanced Samples** When an approved sample exceeds the minimum specifications, all Product delivered must be of the same enhanced quality and identity as the sample. Thereafter, in the event of a Contractor's default, the Commissioner may procure a Product substantially equal to the enhanced sample from other sources, charging the Contractor for any additional costs incurred.

D. **Conformance with Sample(s)** Submission of a sample (whether or not such sample is tested by, or for, the Commissioner) and approval thereof shall not relieve the Contractor from full compliance with all terms and conditions, performance related and otherwise, specified in the Bid Specifications. If in the judgment of the Commissioner the sample or product submitted is not in accordance with the specifications or testing requirements prescribed in the Bid Specifications, the Commissioner may reject the Bid. If an award has been made, the Commissioner may cancel the Contract at the expense of the Contractor.

E. **Testing** All samples are subject to tests in the manner and place designated by the Commissioner, either prior to or after Contract award. Unless otherwise stated in the Bid Specifications, Bidder samples consumed or rendered useless by testing will not be returned to the Bidder. Testing costs for samples that fails to meet Contract requirements may be at the expense of the Contractor.

SAMPLES MUST BE SUBMITTED IN STRICT ACCORDENCE WITH THIS SECTION. THE TOWN RETAINS THE ABSOLUTE RIGHT TO REJECT ANY BID FOR FAILURE TO COMPLY WITH THIS SECTION.

BID EVALUATION

26. BID EVALUATION The Commissioner reserves the right to accept or reject any and all Bids, or separable portions of offers, and waive technicalities, irregularities, and omissions if the Commissioner determines the best interests of the Town will be served. The Commissioner, in his/her sole discretion, may accept or reject illegible, incomplete or vague Bids and his/her decision shall be final. A conditional or revocable Bid which clearly communicates the terms or limitations of acceptance may be considered, and Contract award may be made in compliance with the Bidder's conditional or revocable terms in the offer.

27. CONDITIONAL BID Unless the Bid Specifications provides otherwise, a Bid is not rendered non-responsive if the Bidder specifies that the award will be accepted only on all or a specified group of items or Product included in the specification. It is understood that nothing herein shall be deemed to change or alter the method of award contained in the Bid Documents.

28. CLARIFICATIONS / REVISIONS Prior to award, the Commissioner reserves the right to seek clarifications, request Bid revisions, or to request any information deemed necessary for proper evaluation of Bids from all Bidders deemed to be eligible for Contract award. Failure to provide requested information may result in rejection of the Bid.

29. EQUIVALENT OR IDENTICAL BIDS In the event that two or more Bidders submit substantially equivalent Bids as to pricing or other factors, the decision of the Commissioner to award a Contract to one or more of such Bidders shall be final.

30. PROMPT PAYMENT DISCOUNTS While prompt payment discounts will not be considered in determining the low Bid, the Commissioner may consider any prompt payment discount in resolving Bids which are otherwise tied. However, any notation indicating that the price is net, (*e.g., net 30 days*), shall be understood to mean only that no prompt payment discount is offered by the Bidder. The imposition of service, interest, or other charges, except as otherwise permitted by law, may render the Bid non-responsive and may be cause for its rejection.

31. PERFORMANCE AND RESPONSIBILITY QUALIFICATIONS The Commissioner reserves the right to investigate or inspect at any time whether or not the Product, services, qualifications or facilities offered by the Bidder/Contractor meet the requirements set forth in the Bid Specifications/Contract or as set forth during Contract negotiations. Contractor shall at all times during the Contract term remain responsible and responsive. If the Commissioner determines that the conditions and terms of the Bid Documents, Bid Specifications or Contract are not complied with, or that items, services or Product proposed to be furnished do not meet the specified requirements, or that the legal authority, integrity experience, ability, prior performance, organization and financial capacity or facilities are not satisfactory, the Commissioner may reject such Bid or terminate the Contract.

32. QUANTITY CHANGES PRIOR TO AWARD The Commissioner reserves the right, at any time prior to the award of a specific quantity Contract, to alter in good faith the quantities listed in the Bid Specifications. In the event such right is exercised, the lowest responsible Bidder meeting Bid Specifications will be advised of the revised quantities and afforded an opportunity to extend or reduce its Bid price in relation to the changed quantities. Refusal by the low Bidder to so extend or reduce its Bid price may result in the rejection of its Bid and the award of such Contract to the lowest responsible Bidder who accepts the revised qualifications.

33. TIMEFRAME FOR OFFERS The Commissioner reserves the right to make awards within forty-five (45) days after opening of Bids, during which period, Bids must remain firm and cannot be withdrawn. Any Bid which expressly states therein that acceptance must be made within a shorter specified time, may at the sole discretion of the Commissioner, be accepted or rejected.

TERMS & CONDITIONS

34. CONTRACT CREATION / EXECUTION Subject to Award and upon receipt of all required approvals as set forth in the Bid Specifications, a Contract shall be deemed executed and created with the successful Bidder(s), upon receipt of: (A) a fully executed Contract; or (B) a Purchase Order authorized by the Commissioner.

35. MODIFICATION OF CONTRACT TERMS The terms and conditions set forth in the Contract shall govern all transactions by and between the Town and the Contractor under this Contract. The Contract may only be modified or amended upon mutual written agreement of the Commissioner and Contractor.

The Contractor may, however, offer more advantageous pricing, payment, or other terms and conditions than those set forth in the Contract. In such event, a copy of such terms shall be furnished to the Commissioner by the Contractor at the time of such offer.

Other than where such terms are more advantageous for the Town than those set forth in the Contract, no alteration or modification of the terms of the Contract, including substitution of Product, shall be valid or binding against the Town unless authorized by the Commissioner. No such alteration or modification shall be made by unilaterally affixing such terms to Product upon delivery (including, but not limited to, attachment or inclusion of standard pre-printed order forms, product literature, "shrink wrap" terms accompanying software upon delivery, or other documents) or by incorporating such terms onto order forms, purchase orders or other documents forwarded by the Contractor for payment, notwithstanding the Town's subsequent acceptance of Product, or that the Town has subsequently processed such document for approval or payment.

36. SCOPE CHANGES The Commissioner reserves the right, unilaterally, to require, by written order, changes by altering, adding to or deducting from the Bid Specifications, such changes to be within the general scope of the Contract. The Commissioner may make an equitable adjustment in the Contract price or delivery date if the change affects the cost or time of performance. Such equitable adjustments require the consent of the Contractor, which consent shall not be unreasonably withheld.

37. ESTIMATED / SPECIFIC QUANTITY CONTRACTS Estimated quantity contracts are expressly agreed and understood to be made for only the quantities, if any, actually ordered during the Contract term. No guarantee of any quantity(s) is implied or given. The Town will neither be compelled to order any quantities of any item nor will it be limited to the quantity indicated for any item. The quantity to be ordered will be such as may actually be required, as determined by the Town. ***The Town retains the absolute right to reject any Bid which expressly imposes a minimum order quantity or minimum dollar amount.*** Purchases by the Town from Contracts for services and technology are voluntary.

38. EMERGENCY CONTRACTS In the event that a disaster emergency is declared by the Town, or it determines that an emergency exists requiring the prompt and immediate delivery of Product, the Town reserves the right to obtain such Product from any source, including but not limited to this Contract(s), as the Town in its sole discretion determines will meet the needs of such emergency. Contractor shall not be entitled to any claim or lost profits for Product procured from other sources pursuant to this paragraph.

39. PURCHASE ORDERS Unless otherwise authorized in writing by the Commissioner, no Product is to be delivered or furnished by Contractor until transmittal of an official Purchase Order from the Town. Unless terminated or cancelled pursuant to the authority vested in the Town, Purchase Orders shall be effective and binding upon the Contractor when placed in the mail or electronically transmitted prior to the termination of the contract period, addressed to the Contractor at the address for receipt of orders set forth in the Contract or in the Award.

All Purchase Orders issued pursuant to Contracts let by the Commissioner must bear the appropriate Contract number. As deemed necessary, the Town may confirm pricing and other Product information with the Contractor prior to placement of the Purchase Order. The Town reserves the right to require any other information from the Contractor which the Town deems necessary in order to complete any Purchase Order placed under the Contract. Should the Town add written terms and conditions to the Purchase Order that conflict with the terms and conditions of the Contract, the Contractor has the option of rejecting the Purchase Order within *five business days* of its receipt but shall first attempt to negotiate the additional written terms and conditions in good faith with the Town, or fulfill the Purchase Order. Notwithstanding the above, the Town reserves the right to dispute any discrepancies arising from the presentation of additional terms and conditions with the Contractor.

40. PRODUCT DELIVERY Delivery must be made as ordered to the address specified in a schedule of locations as indicated on the Purchase Order and in accordance with the terms of the Contract. Unless otherwise specified in the Bid Documents/Bid Specifications, delivery shall be made within ***thirty calendar days*** after receipt of a Purchase Order by the Contractor.

The decision of the Commissioner as to compliance with delivery terms shall be final. The burden of proof for delay in receipt of Purchase Order shall rest with the Contractor. In all instances of a potential or actual delay in delivery, the Contractor shall immediately notify the Commissioner, and confirm in writing the explanation of the delay, and take appropriate action to avoid any subsequent late deliveries. Any extension of time for delivery must be requested in writing by the Contractor and approved in writing by the Town. Failure to meet such delivery time schedule may be grounds for cancellation of the order or, in the Commissioner's discretion, the Contract.

The Town further reserves the absolute right to authorize the immediate purchase of the Product from other sources. Purchase from other sources (without recourse to and by the Contractor for the costs and expenses thereof) to replace all or part of the Products which are the subject of the delay, may be deducted from the Contract quantities without penalty or liability to the Town. The Contractor shall promptly reimburse the Town for any excess cost incurred in replacing all or part of the Products which are the subject of the delay. The Contractor shall have no claim against the Town for the difference in cost where the cost of the purchase is less than that provided in the Contract.

41. **WEEKEND AND HOLIDAY DELIVERIES** Unless otherwise specified in the Bid Specifications or by the Town, deliveries will be scheduled for ordinary business hours, Monday through Friday (excluding legal holidays observed by the Town). Deliveries may be scheduled by mutual agreement for Saturdays, Sundays or legal holidays observed by the Town where the Product is for daily consumption, an emergency exists, the delivery is a replacement, delivery is late, or other reasonable circumstance in which event the convenience of the Town shall govern.

42. SHIPPING/RECEIPT OF PRODUCT

A. Packaging Tangible Product shall be securely and properly packed for shipment, storage and stocking in appropriate, clearly labeled shipping containers and according to accepted commercial practice, without any extra charges for packing materials, cases or other types of containers. The container shall become and remain the property of the Town unless otherwise specified in the Contract documents.

B. Shipping Charges Unless otherwise stated in the Bid Specifications, all deliveries shall be deemed to be freight on board (F.O.B.) destination tailgate delivery at the Town or its designated location listed in the Contract or Purchase Order. Unless otherwise agreed, items purchased at a price F.O.B. Shipping point plus transportation charges shall not relieve the Contractor from responsibility for safe and proper delivery notwithstanding the Town's payment of transportation charges. Contractor shall be responsible for ensuring that the Bill of Lading states "charges prepaid" for all shipments.
C. Receipt of Product The Contractor shall be solely responsible for assuring that deliveries are made to personnel authorized to accept delivery on behalf of the Town. Any losses resulting from the Contractor's failure to deliver Product to authorized personnel shall be borne exclusively by the Contractor.

43. TITLE AND RISK OF LOSS Notwithstanding the form of shipment, title or other property interest, risk of loss shall not pass from the Contractor to the Town until the Products have been received, inspected and accepted by the receiving entity. Acceptance shall occur within a reasonable time or in accordance with such other defined acceptance period as may be specified in the Bid Specifications or Purchase Order. Mere acknowledgment by Town personnel of the delivery or receipt of goods (*e.g., signed bill of lading*) shall not be deemed or construed as acceptance of the Products received. Any delivery of Product that is substandard or does not comply with the Bid Specifications or Contract terms and conditions, may be rejected or accepted on an adjusted price basis, as determined by the Commissioner.

44. RE-WEIGHING PRODUCT Deliveries are subject to re-weighing at the point of destination by the Town. If shrinkage occurs which exceeds that normally allowable in the trade, the Town shall have the option to require delivery of the difference in quantity or to reduce the payment accordingly. Such option shall be exercised in writing by the Town.

45. PRODUCT SUBSTITUTION In the event a specified manufacturer's Product listed in the Contract becomes unavailable or cannot be supplied by the Contractor for any reason (except as provided for in the Savings/Force Majeure Clause) a Product deemed in writing by the Commissioner to be equal to or better than the specified Product must be substituted by the Contractor at no additional cost or expense to the Town. Unless otherwise specified, any substitution of Product prior to the Commissioner's written approval may be cause for cancellation of Contract.

46. REJECTED PRODUCT When Product is rejected, it must be removed by the Contractor from the premises of the Town within ten calendar days of notification of rejection by the Town. Upon notification of rejection, risk of loss of rejected or non-conforming Product shall remain with Contractor. Rejected items not removed by the Contractor within ten calendar days of notification shall be regarded as abandoned by the Contractor, and the Town shall have the right to dispose of Product as its own property. The Contractor shall promptly reimburse the Town for any and all costs and expenses incurred in storage or effecting removal or disposition after the ten-calendar day period.

47. INSTALLATION Where installation is required, Contractor shall be responsible for placing and installing the Product in the required locations. All materials used in the installation shall be of good quality and shall be free from any and all defects that would mar the appearance of the Product or render it structurally unsound. Installation includes the furnishing of any equipment, rigging and materials required to install or place the Product in the proper location. The Contractor shall protect the Site from damage for all its work and shall repair damages or injury of any kind caused by the Contractor, its employees, officers or agents.

If any alteration, dismantling or excavation, etc. is required to effect installation:
A. The Contractor shall promptly restore the structure or site following alteration, dismantling or excavation, etc. Upon completion of the work, the building and surrounding area of work shall be left clean and in a neat, unobstructed condition, and everything in satisfactory repair and order.
B. Work shall be performed to cause the least inconvenience to the Town and with proper consideration for the rights of other Contractors or workers. The Contractor shall promptly perform its work and shall coordinate its activities with those of other Contractors.
C. The Contractor shall be responsible for daily clean up of all wastes of every kind arising from all activity at the work site, including but not limited to dust, refuse, rubbish garbage, scrap metal, construction debris and packaging material, etc., so that the work site shall present a safe, neat, orderly and workmanlike appearance at all times.
D. The Contractor shall clean up and remove all debris and rubbish from its work as required or directed in accordance with all Federal, State and Local Laws and Regulations governing the disposal of materials, debris, rubbish and trash on or off the site. Each Contractor shall provide applicable certifications and affidavits of proper disposals as requested by the Town. Burying or burning of any material will not be permitted.
E. The Contractor shall further be responsible for the removal and legal disposal of any other type of waste material resulting from this contract as well as for any and all costs associated with such proper and legal disposal of these materials. No separate payment will be made for this disposal. Any costs thereof shall be included within the unit price costs for the Contract Items.

48. REPAIRED OR REPLACED PARTS / COMPONENTS Where the Contractor is required to repair, replace or substitute Product or parts or components of the Product under the Contract, the repaired, replaced or substituted Products shall be subject to all terms and conditions for new parts and components set forth in the Contract including Warranties, as set forth in the Additional Warranties Clause herein. Replaced or repaired Product or parts and components of such Product shall be new and shall, if available, be replaced by the original manufacturer's component or part. Remanufactured parts or components meeting new Product standards may be permitted by the Town. Before installation, all proposed substitutes for the original manufacturer's installed parts or components must be approved by the Commissioner. The part or component shall be equal to or of better quality than the original part or component being replaced.

49. ON-SITE STORAGE With the written approval of the Commissioner, materials, equipment or supplies may be stored at the Site at the Contractor's sole risk.

50. EMPLOYEES, SUBCONTRACTORS & AGENTS All employees, sub-contractors or agents performing work under the Contract must be trained staff or technicians who meet or exceed the professional, technical and training qualifications set forth in the Bid Specifications or the Bid Documents, whichever is more restrictive, and must comply with all security and administrative requirements of the Town. The Commissioner reserves the right to conduct a security background check or otherwise approve any employee,

sub-contractor or agent furnished by Contractor and to refuse access to or require replacement of any personnel for cause based on, including but not limited to, professional, technical or training qualifications, quality of work or change in security status or non-compliance with Town's security or other requirements. Such approval shall not relieve the Contractor of the obligation to perform all work in compliance with the Contract terms. The Commissioner reserves the right to reject and/or bar from the facility for cause any employee, sub-contractor, or agents of the Contractor.

51. ASSIGNMENT The Contractor shall not assign, transfer, convey, sublet, or otherwise dispose of the contract or its right, title or interest therein, or its power to execute such contract to any other person, company, firm or corporation in performance of the contract without the prior written consent of the Town. Failure to obtain consent to assignment from the Town shall revoke and annul such Contract. Prior to a consent to assignment of a Contract, or portion thereof, becoming effective, the Contractor shall submit the request to assignment to the Commissioner and seek written agreement from the Commissioner. The Commissioner reserves the right to reject any proposed assignee in his/her discretion.

52. SUBCONTRACTORS AND SUPPLIERS The Contractor shall advise the Commissioner, in writing, as to the name and address of the proposed sub-contractor and the exact scope of the work the sub-contractor will perform. The Contractor shall not sub-contract with the sub-contractor until the Commissioner has given written approval of the sub-contractor and the work to be performed. All work by sub-contractors shall be performed at no additional cost to the Town except as herein elsewhere stated in the Contract. All sub-contractors shall be required to furnish the Town with proof of insurance in the same manner and the amounts as required by the Contractor. All sub-contractors shall be required to comply with the applicable terms and conditions of the Contract.

The Commissioner reserves the right to reject any proposed Subcontractor or supplier for bona fide business reasons, which may include, but are not limited to: they are on the New York State Department of Labor's list of companies with which New York State cannot do business; the Commissioner determines that the company is not qualified; the Commissioner determines that the company is not responsible; the company has previously provided unsatisfactory work or services; the company failed to solicit minority and women's business enterprises (M/WBE) Bidders as required by prior Contracts.

53. PERFORMANCE / BID BOND The Commissioner reserves the right to require a Bidder or Contractor to furnish without additional cost, a performance, payment or Bid bond or negotiable irrevocable letter of credit or other form of security for the faithful performance of the Contract. Where required, such bond or other security shall be in the form prescribed by the Town Attorney of the Town of North Hempstead. Failure of the Contractor to furnish said surety within ten days from the date of request shall be sufficient cause to terminate the Contract and cancel a pending Purchase Order(s).

54. SUSPENSION OF WORK The Commissioner, in his/her sole discretion, reserves the right to suspend any or all activities under this Contract, at any time, in the best interests of the Town. In the event of such suspension, the Contractor will be given a formal written notice outlining the particulars of such suspension. Examples of the reason for such suspension include, but are not limited to, a budget freeze or reduction on Town spending, declaration of emergency, contract compliance issues or other such circumstances. Upon issuance of such notice, the Contractor is not to accept any Purchase Orders, and shall comply with the suspension order. Activity may resume at such time as the Commissioner issues a formal written notice authorizing a resumption of performance under the Contract.

55. TERMINATION

A. **By written notice:** This Contract may be terminated at any time by the Town upon sixty (60) days written notice or other specified period without penalty or other early termination charges due. The Town will be responsible for payment of any portion of the Services completed prior to termination of the Contract and satisfactory to the Town's Comptroller. Such termination of the Contract shall not affect any project or Purchase Order that has been issued under the Contract prior to the date of such termination. Contractor shall use due diligence and provide any outstanding deliverables.

B. **For Violation of the Sections 139-j and 139-k of the State Finance Law**: The Commissioner reserves the absolute right to terminate the Contract in the event it is found that the certification filed by the Bidder in accordance with Section 139-k of the State Finance Law was intentionally false or intentionally incomplete. Upon such finding, the Commissioner may exercise its termination right by providing written notification to the Contractor in accordance with the written notification terms of the Contract.

C. **For Violation of Revised Tax Law 5a:** The Commissioner reserves the absolute right to terminate the contract in the event it is found that the certification filed by the Contractor in accordance with §5-a of the Tax Law is not timely filed during the term of the Contract or the certification furnished was intentionally false or intentionally incomplete. Upon such finding, the Commissioner may exercise its termination right by providing written notification to the Contractor.

D. **Contractor Assistance Upon Termination**. In connection with the termination or impending termination of the Contract, the Contractor shall, regardless of the reason for termination, take all actions reasonably requested by the Town to assist the Town in transitioning the Contractor's responsibilities under the Contract.

E. **Accounting Upon Termination**. Within thirty (30) days of the termination of the Contract, the Contractor shall provide the Town with a complete accounting up to the date of termination of all monies received from the Town, and shall immediately refund to the Town any unexpended balance remaining as of the time of termination.

F**. Reimbursement Upon Termination**. Payment to the Contractor following termination shall not exceed authorized expenditures made prior to termination, and may be suspended by the Town pending the Contractor's reasonable compliance with the terms and provisions of (D) and (E) above.

56. SAVINGS/FORCE MAJEURE A force majeure occurrence is an event or effect that cannot be reasonably anticipated or controlled. Force majeure includes, but is not limited to, acts of God, acts of war, acts of public enemies, strikes, fires, explosions, actions of the elements, floods, or other similar causes beyond the control of the Contractor or the Commissioner in the performance of the Contract which non-performance, by exercise of reasonable diligence, cannot be prevented. Contractor shall provide the Commissioner with written notice of any force majeure occurrence as soon as the delay is known.

Neither the Contractor nor the Commissioner shall be liable to the other for any delay in or failure of performance under the Contract due to a force majeure occurrence. Any such delay in or failure of performance shall not constitute default or give rise to any liability for damages. The existence of

such causes of such delay or failure shall extend the period for performance to such extent as determined by the Contractor and the Commissioner to be necessary to enable complete performance by the Contractor if reasonable diligence is exercised after the cause of delay or failure has been removed.

Notwithstanding the above, at the discretion of the Commissioner where the delay or failure will significantly impair the value of the Contract to the Town, the Commissioner may:

A. Accept allocated performance or deliveries from the Contractor. The Contractor, however, hereby agrees to grant preferential treatment to the Town with respect to Product subjected to allocation; and/or
B. Purchase from other sources (without recourse to and by the Contractor for the costs and expenses thereof) to replace all or part of the Products which are the subject of the delay, which purchases may be deducted from the Contract quantities without penalty or liability to the Town; or
C. Terminate the Contract or the portion thereof which is subject to delays, and thereby discharge any unexecuted portion of the Contract or the relative part thereof.

In addition, the Commissioner reserves the right, in his/her sole discretion, to make an equitable adjustment in the Contract terms and/or pricing should extreme and unforeseen volatility in the marketplace affect pricing or the availability of supply. "Extreme and unforeseen volatility in the marketplace" is defined as market circumstances which meet the following criteria: (i) the volatility is due to causes outside the control of Contractor; (ii) the volatility affects the marketplace or industry, not just the particular Contract source of supply; (iii) the effect on pricing or availability of supply is substantial; and (iv) the volatility so affects Contractor's performance that continued performance of the Contract would result in a substantial loss.

57. CONTRACT BILLINGS

A. Contractor and the distributors/resellers designated by the Contractor, if any, shall provide complete and accurate billing invoices to the Town in order to receive payment. None of the Contract amount shall be paid by the Town except pursuant to timely filed claim forms containing documentation of the costs claimed following completion of all or a portion of the Product or services performed, all in form and substance satisfactory to the Town.

i. **Claim Forms, Claim Form Review and Approval.** Payments shall be made to the Contractor in arrears and shall be expressly contingent upon: (a) the Contractor submitting a claim form (the "Claim Form") in a form provided by the Town, that (i) states with reasonable specificity the Product or services provided and the payment requested as consideration for such Product or services; (ii) certifies that the sum sought is just, true and correct; that no part thereof has been paid except as stated, and that the balance is actually due and owing and that taxes from which the Town is exempt are excluded; and (iii) is accompanied by documentation satisfactory to the Town supporting the amount claimed, and review, approval and audit of the Claim Form by the Town.

ii. **Timing of Payment Claims**. The Contractor shall submit claims no more frequently than once a month and no later than three (3) months following the Town's receipt of the Product or services performed that are the subject of the claim. Any claims submitted in violation of this Section 55 shall not be due and payable by the Town.

iii. **No Duplication of Payments**. Payments for the Product shall not duplicate payments for any work performed or to be performed under any other agreements made between the Contractor and any funding source including the Town.

iv. **Release** The acceptance by the Contractor or any person claiming under the Contractor of any payment made on the final payment claim under this Contract shall operate on and shall be a release to the Town from all claims and liability to the Contractor, its successors, legal representatives and assigns, for any compensation or reimbursement for services rendered or work performed under or by the provisions of this Contract.

B. The Comptroller shall render payment for Town purchases, and such payment shall be made in accordance with ordinary Town procedures and practices.
C. Submission of a Claim Form and payment thereof shall not preclude the Commissioner from reimbursement or demanding a price adjustment in any case where the Product delivered is found to deviate from the terms and conditions of the Contract or where the billing was inaccurate.
D. Contractor shall provide, upon request of the Commissioner or the Comptroller, any and all information necessary to verify the accuracy of the billings. Such information shall be provided in the format requested by the Commissioner or Comptroller and in a media commercially available from the Contractor.

58. REMEDIES FOR BREACH It is understood and agreed that all rights and remedies afforded below shall be in addition to all remedies or actions otherwise authorized or permitted by law:

A. **Cover/Substitute Performance** In the event of Contractor's material breach, the Commissioner may, with or without formally Bidding: (i) Purchase from other sources; or (ii) If the Commissioner is unsuccessful after making reasonable attempts, under the circumstances then existing, to timely obtain acceptable service or acquire replacement Product of equal or comparable quality, the Commissioner may acquire acceptable replacement Product of lesser or greater quality.

Such purchases may, in the discretion of the Commissioner, be deducted from the Contract quantity and payments due Contractor.
B. **Withhold Payment** In any case where a question of non-performance by Contractor arises, payment may be withheld in whole or in part at the discretion of the Commissioner. Should the amount withheld be finally paid, a cash discount originally offered may be taken as if no delay in payment had occurred.
C. **Reimbursement of Costs Incurred** The Contractor agrees to reimburse the Town promptly for any and all additional costs and expenses incurred for acquiring acceptable services, and/or replacement Product. Should the cost of cover be less than the Contract price, the Contractor shall have no claim to the difference. The Contractor covenants and agrees that in the event suit is successfully prosecuted for any default on the part of the Contractor, all costs and expenses expended or incurred by the Town in connection therewith, including reasonable attorney's fees, shall be paid by the Contractor.
D. **Substitute Equipment** Where the Contractor fails to timely deliver pursuant to the guaranteed delivery terms of the Contract, the Town may rent substitute equipment temporarily. Any sums expended for such rental shall, upon demand, be reimbursed to the Town promptly by the Contractor or deducted by the Town from payments due or to become due the Contractor on the same or another transaction.
E. **Deduction/Credit** Sums due as a result of these remedies may be deducted or offset by the Town from payments due, or to become due, the Contractor on the same or another transaction. If no deduction or only a partial deduction is made in such fashion the Contractor shall pay to the Town

the amount of such claim or portion of the claim still outstanding, on demand. The Commissioner reserves the right to determine the disposition of any rebates, settlements, restitution, liquidated damages, etc., which arise from the administration of the Contract.

59. TOXIC SUBSTANCES Each Contractor furnishing a toxic substance as defined by Section 875 of the Labor Law, shall provide the Town with not less than two copies of a material safety data sheet, which sheet shall include for each such substance the information outlined in Section 876 of the Labor Law.

Before any chemical product is used or applied on or in any building, a copy of the product label and Material Safety Data Sheet must be provided to and approved by the Town.

60. INDEPENDENT CONTRACTOR The Contractor, in accordance with his status as an independent contractor, covenants and agrees that it will conduct itself consistent with such status, that it will neither hold itself out as, not claim to be, an officer or employee of the Town by reason hereof, and that it will not by reason hereof, make any claim, demand or application to or for any right or privilege applicable to an officer or employee of the Town, including but not limited to, Workmen's Compensation coverage, Unemployment Insurance benefits, Social Security or Retirement membership or credit. The Contractor shall not engage, on a full time or part-time or other basis during the period of the Contract, any professional or technical personnel who are or have been at any time during the period of the Contract in the employ of the Federal Highway Administration or the Public Works organization of any State, County or City or Town except regularly retired employees, without the consent of the public employer of such person.

61. COOPERATION WITH THIRD PARTIES The Contractor shall be responsible for fully cooperating with any third-party, including but not limited to other Contractors or Subcontractors of the Town, as necessary to ensure delivery of Product or coordination of performance of services.

62. ADDITIONAL WARRANTIES Where Contractor, product manufacturer or service provider generally offers additional or more advantageous warranties than set forth below, Contractor shall offer or pass through any such warranties to the Town. Contractor hereby warrants and represents:

A. **Product Performance** Contractor warrants and represents that Products delivered pursuant to this Contract conform to the manufacturer's specifications, performance standards and documentation, and the documentation fully describes the proper procedure for using the Products.
B. **Title and Ownership Warranty** Contractor warrants, represents and conveys (i) full ownership, clear title free of all liens, or (ii) the right to transfer or deliver perpetual license rights to any Products transferred to the Town under this Contract. Contractor shall be solely liable for any costs of acquisition associated therewith. Contractor fully indemnifies the Town for any loss, damages or actions arising from a breach of said warranty without limitation.
C. **Contractor Compliance** Contractor represents and warrants to pay, at its sole expense, for all applicable permits, licenses, tariffs, tolls and fees to give all notices and comply with all laws, ordinances, rules and regulations of any governmental entity in conjunction with the performance of obligations under the Contract. Prior to award and during the Contract term and any renewals thereof, Contractor must establish to the satisfaction of the Commissioner that it meets or exceeds all requirements of the Bid/Contract and any applicable laws, including but not limited to, permits, insurance coverage, licensing, proof of coverage for worker's compensation and/or disability benefits, and shall provide such proof as required by the Commissioner. Failure to do so may constitute grounds for the Commissioner to cancel or suspend this Contract, in whole or in part, or to take any other action deemed necessary by the Commissioner.
D. **Product Warranty** Unless recycled or recovered materials are available in accordance with the "Recycled or Recovered Materials" clause, Product offered shall be standard new equipment, current model or most recent release of regular stock product with all parts regularly used with the type of equipment offered; and no attachment or part has been substituted or applied contrary to the manufacturer's recommendations and standard practice.

Contractor further warrants and represents that components or deliverables specified and furnished by or through Contractor shall individually, and where specified and furnished as a system, be substantially uninterrupted or error-free in operation and guaranteed against faulty material and workmanship for the warranty period, or for a minimum of one (1) year from the date of acceptance, whichever is longer ("Project warranty period"). During the Project warranty period, defects in the materials or workmanship of components or deliverables specified and furnished by or through Contractor shall be repaired or replaced by Contractor at no cost or expense to the Town. Contractor shall extend the Project warranty period for individual component(s), or for the Product as a whole, as applicable, by the cumulative period(s) of time, after notification, during which an individual component or the Product requires servicing or replacement (down time) or is in the possession of the Contractor, its agents, officers, Subcontractors, distributors, resellers or employees ("extended warranty").

Where Contractor, the Independent Software Vendor "ISV," or other third party manufacturer markets any Project Deliverable delivered by or through Contractor with a standard commercial warranty, such standard warranty shall be in addition to, and not relieve the Contractor from, Contractor's warranty obligations during the project warranty and extended warranty period(s). Where such standard commercial warranty covers all or some of the Project warranty or extended warranty period(s), Contractor shall be responsible for the coordination during the Project warranty or extended warranty period(s) with ISV or other third party manufacturer(s) for warranty repair or replacement of ISV or other third party manufacturer's Product.

Where Contractor, ISV or other third party manufacturer markets any Project Deliverable with a standard commercial warranty which goes beyond the Project warranty or extended warranty period(s), Contractor shall notify the Town and pass through the manufacturer's standard commercial warranty to the Town at no additional charge; provided, however, that Contractor shall not be responsible for coordinating services under the third-party extended warranty after expiration of the Project warranty and extended warranty period(s).

E. **Replacement Parts Warranty** If during the regular or extended warranty period's faults develop, the Contractor shall promptly repair or, upon demand, replace the defective unit or component part affected. All costs for labor and material and transportation incurred to repair or replace defective Product during the warranty period shall be borne solely by the Contractor, and the Town shall in no event be liable or responsible therefor.

Any part of component replaced by the Contractor under the Contract warranty shall be replaced at no cost to the Town and guaranteed for the greater of: (i) the warranty period under paragraph (D) above; or (ii) if a separate warranty for that part or component is generally offered by the manufacturer, the standard commercial warranty period offered by the manufacturer for the individual part or component.

F. **Virus Warranty** The Contractor represents and warrants that Licensed Software contains no known viruses. Contractor is not responsible for viruses introduced at Licensee's site.

G. **Date/Time Warranty** Contractor warrants that Product(s) furnished pursuant to this Contract shall, when used in accordance with the Product documentation, be able to accurately process date/time data (including, but not limited to, calculating, comparing, and sequencing) transitions, including leap year calculations. Where a Contractor proposes or an acquisition requires that specific Products must perform as a package or system, this warranty shall apply to the Products as a system.

This Date/Time Warranty shall survive beyond termination or expiration of this contract through: (i) ninety (90) days or (ii) the Contractor's or Product manufacturer/developer's stated date/time warranty term, whichever is longer. Nothing in this warranty statement shall be construed to limit any rights or remedies otherwise available under this Contract for breach of warranty.

H. **Workmanship Warranty** Contractor warrants that all components or deliverables specified and furnished by or through Contractor under the Project Definition/Work Order meet the completion criteria set forth in the Project Definition/Work Order and any subsequent statement(s) of work, and that services will be provided in a workmanlike manner in accordance with industry standards.

I. **Survival of Warranties** All warranties contained in this Contract shall survive the termination of this Contract.

63. LEGAL COMPLIANCE Contractor represents and warrants that it shall secure all notices and comply with all laws, ordinances, rules and regulations of any governmental entity in conjunction with the performance of obligations under the Contract. Prior to award and during the Contract term and any renewals thereof, Contractor must establish to the satisfaction of the Commissioner that it meets or exceeds all requirements of the Bid and Contract and any applicable laws, including but not limited to, permits, licensing, and shall provide such proof as required by the Commissioner. Failure to comply or failure to provide proof may constitute grounds for the Commissioner to cancel or suspend the Contract, in whole or in part, or to take any other action deemed necessary by the Commissioner. Contractor also agrees to disclose information and provide affirmations and certifications to comply with the New York State Finance Law.

64. COMPLIANCE WITH SECTIONS 139a AND 139b OF THE NEW YORK STATE FINANCE LAW

The Contractor hereby agrees to the provisions of Sections 139a and 139b of the New York State Finance Law which require that upon the refusal of a person, when called before a grand jury, head of a State department, temporary State commission or other State agency, or the organized crime task force in the Department of Law, head of a Municipal Department or other Municipal Agency, which is empowered to compel the attendance of witnesses and examine them under oath, to testify in an investigation, concerning any transaction or Contract had with the State, any political subdivision thereof, a public authority or with any public department, agency or official of the State or of any political subdivision thereof or of a public authority, to sign a waiver of immunity against subsequent criminal prosecution or to answer any relevant question concerning such transaction or contract.

A. Such person, and any firm, partnership or corporation of which he is a member, partner, director or officer shall be disqualified from thereafter selling to or submitting bids to or receiving awards from or entering into any Contracts with the Town or any public department, agency or official thereof, for goods, work or services, for a period of five years after such refusal; and

B. Any and all Contracts made with the Town or any public department, agency or official thereof, since the effective date of this law, by such person, and by any firm, partnership or corporation of which he is a member, partner, director or officer may be canceled or terminated by the Town without incurring any penalty or damages on account of such cancellation or termination, but any moneys owing, by the Town for goods delivered or work done prior to the cancellation or termination shall be paid.

65. **EQUAL EMPLOYMENT OPPORTUNITY**

In accordance with the provisions of Section 220-E of the Labor Law, the Bidder agrees as follows:

A. The Contractor shall comply with all Federal, State and local statutory and constitutional anti-discrimination provisions.

B. That in the hiring of employees for the performance under this Contract or any sub-contract hereunder, no Contractor, sub-contractor, nor any person acting on behalf of such Contractor or subcontractor, shall by reason of race, creed, color, national origin, sex, age, disability, marital status, or military status discriminate against any citizen of the State of New York who is qualified and available to perform the work to which the employment relates under this Contract;

C. That the Town may deduct from the amount payable to the Contractor under this Contract a penalty of up to fifty dollars ($50.00) for each person for each calendar day during which such person was discriminated against or intimidated in violation of the provisions of the Contract; and

D. That this Contract may be cancelled or terminated by the Town, and all monies due, or to become due, hereunder may be forfeited for a second or any subsequent violation of the terms or conditions of the Contract.

E. The Contract shall be void unless Section 222 of the Labor Law, Sections 291 through 299 of the Executive Law and the Civil Rights Law are complied with. The Contractor will also comply with all findings and requests of the State Division of Human Rights.

66. INSURANCE The Contractor agrees to procure and maintain (A) Workers Compensation Insurance as required by the Laws of the State of New York, or proof that Contractor is not required to secure same, as evidenced by certificates or affidavits approved by the State Workers' Compensation Board pursuant to State Workers' Compensation Law § 57 (2); (B) Disability benefits insurance or proof that the Contractor is not required to secure same, as evidenced by certificates or affidavits approved by the State Workers' Compensation Board pursuant to State Workers' Compensation Law 220 (2); (C) Commercial General Liability Insurance (with completed operations, plus X.C.U. when applicable) with a minimum combined single limit (bodily injury/property damage) of Two Million Dollars ($2,000,000); and (d) Automobile Liability Insurance in the amount specified on the Town of North Hempstead Insurance Certificate.

Said policies identified in subparagraphs (C) and (D) shall contain assurance of the existence of contractual coverage defending, indemnifying, and holding harmless the Town, and its employees, agents, and representatives from any and all loss and/or damage arising out of the performance of this Contract, and shall name the Indemnitees as additional insureds thereunder.

The Contractor's Additional Insurance shall be primary and fully exhausted in all circumstances prior to the Town's own insurance being utilized. Said contractual coverage shall be absolute and not dependent upon any question of the negligence of the Contractor (and its employees, agents, and except, however, that the Contractor shall not be held liable for an occurrence that results solely from the negligence of the Town).

The above insurance is to be with New York State admitted insurance carriers holding an "A" rating from AM Best Company or its equivalent. The Contractor is required to give the Town thirty (30) days advance written notice of termination, expiration or cancellation of any insurance coverage required hereunder.

67. INDEMNIFICATION

A. To the fullest extent permitted by law, the Contractor:

(i) shall be solely responsible for and shall indemnify and hold harmless the: Town and its officers, employees, agents and servants (the "Indemnified Parties") from and against any and all liabilities, all claims, suits, actions, damages and costs, expenses of every name and description (including, without limitation, attorneys' fees and disbursements) and damages ("Losses"), arising out of or in connection with any acts or omissions of the Contractor or any of its officers, directors, employees, servants, agents or independent contractors taken pursuant to or authorized by the performance of this Contract ("Contractor Agents") or from any defective condition of the materials furnished it or supplied or contemplated to be furnished or supplied under this Contract regardless of whether due to negligence, fault, or default, including Losses in connection with any threatened investigation, litigation or other proceeding or preparing a defense to or prosecuting the same, except, however, that the Contractor shall not be held liable when an occurrence results solely from the negligence of the Town;

(ii) shall, upon the Town's demand and at the Town's direction, promptly and diligently defend, at the Contractor's sole own risk and expense, any and all suits, actions, or proceedings which may be brought or instituted against one or more Indemnified Parties and the Contractor shall pay and satisfy any judgment, decree, loss or settlement in connection therewith; and

(iii) shall, and shall cause the Contractor Agents to, cooperate with the Town in connection with the investigation, defense or prosecution of any action, suit or proceeding arising out of or in connection with this Contract.

(B) The obligations of the Contractor pursuant to Section 67(a) hereof shall not be limited by reason of enumeration of any insurance coverage provided under this Contract.

(C) Nothing in this Section 65 or elsewhere in this Contract shall create or give to third parties any claim or right of action against the Town beyond that which legally exist regardless of the provisions of this Contract.

(D) The provisions of this Section shall survive the termination of this Contract.

68. EXECUTORY UNDERSTANDING Notwithstanding any other provision of this procurement or the resulting Contract or Purchase Order, the Town shall have no liability to any Person beyond funds appropriated or otherwise lawfully available for this Contract; and unless (A) all relevant and required Town approvals have been obtained, including, if required, approval by the Town Board, and (B) the Contract or Purchase Order has been executed by an authorized representative of the Town

69. **PARTICIPATION BY POLITICAL SUBDIVISIONS:**

Under New York General Municipal Law Section 103(16), any contract awarded under this bid (hereinafter, the "Contract") shall be made available to all other governmental entities in New York State. It is understood that the extension of the Contract to such other governmental entities is at the discretion of the Bidder and that the Bidder is not bound, by virtue of such contract, to any contract or agreement other than the Contract. All purchases or other orders made by another governmental entity will be placed by and be the responsibility of such governmental entity. Such governmental entity shall be billed by and make payment to the Bidder directly, with no involvement of the Town of North Hempstead. The Bidder and any governmental entity using the Contract understands and agrees that sole responsibility with regard to the performance of any work for another governmental entity and all terms and conditions of the Contract (including, but not limited to, payment), shall be assumed by the Bidder and such governmental entity and not by the Town of North Hempstead. In the event of a breach in the performance of any such work and any and all terms and conditions of the Contract (including, but not limited to, payment) by the Bidder or such governmental entity, the Town of North Hempstead specifically and expressly disclaims any liability for such breach. The Bidder and any governmental entity utilizing the Contract guarantees to the Town of North Hempstead that the Bidder shall not hold the Town of North Hempstead liable for any breach by another governmental entity in the performance of any provision of the Contract, for the payment of any amounts owed by such governmental entity or for any other matter associated with another governmental entity's use of the Contract. The Bidder and any governmental entity using the Contract shall hold the Town of North Hempstead, its officers, directors, employees, contractors and agents harmless from any liability that may be or is imposed by the failure of the Bidder or such governmental entity to perform in accordance with its obligations, covenants and terms and conditions of the Contract.

BIDDER'S QUALIFICATION STATEMENT

INSTRUCTIONS:

The Bidder's Qualifications Statement Consists of the Following Documents:

1. Statement of Understanding;
2. Disclosure Form;
3. Noncollusive Bidding Certification;
4. Certification of Insurance (*to be completed by an authorized insurance agent*); and
5. Acknowledgement of Receipt of Addenda Form.

Please complete **ALL FIVE** forms and submit with the Bid/Proposal.

THE TOWN RETAINS THE ABSOLUTE RIGHT TO REJECT ANY BID/PROPOSAL THAT FAILS TO INCLUDE COMPLETE AND ACCURATE ORIGNALS OF ALL FOUR FORMS INCLUDING ALL APPROPRIATE ACKNOWLEDGMENT(S) AND BEARING THE SIGNATURE OF A NOTARY PUBLIC.

STATEMENT OF UNDERSTANDING

By signing in the space provided below, the undersigned certifies, under penalty of perjury, as follows:

1. I am duly authorized to submit this Bid/Proposal on behalf of the below listed sole proprietorship/company/partnership/corporation.

2. That he/she has read and understands all terms and conditions pursuant to this bid, including but not limited to the Bid Documents, Bid Specifications, General Conditions, and bid prices hereto.

2. That he/she will furnish any and all items upon which prices are bid at the price set forth for each item bid with a **CASH DISCOUNT OF _____%, IF ANY**.

3. That he/she has the capacity to and will abide by all terms and conditions pursuant to this bid, including but not limited to the Bid Documents, Bid Specifications, General Conditions, and bid prices hereto.

4. That he/she agrees to accept payment in accordance with the requirements of the Bid Documents, Bid Specifications, General Conditions, and bid prices hereto; and

5. That **DELIVERY** to the destination stated in the Bid Documents will be made within 30 days after the receipt of the order.

6. That he/she will, if his/her Bid/Proposal is accepted, enter into a Contract with the Town of North Hempstead pursuant to the terms and conditions set forth in the Bid Documents, Bid Specifications, General Conditions, and bid prices hereto.

7. That he/she certified that his/her sole proprietorship/company/partnership/corporation will carry all types of insurance specified in the contract.

8. Is the response that you are providing compliant with the instructions set forth in this solicitation for bids?

   □ Yes □ No

The undersigned further stipulates that the information in this Proposal is, to the best of its knowledge, true and accurate.

_____
Signature

_____
Name of Bidder

_____
Title of Person Signing

Sworn to and subscribed on

this _____ day of _____, 20____

_____
(Notary Public)

DISCLOSURE FORM

The signatory of this questionnaire certifies under oath the truth and correctness of all statements and of all answers to interrogatories hereinafter made.

Provide answers to each of the following and supporting documentation, where necessary:

1. **Adverse Equal Opportunity Determinations**: Identify all adverse determinations against your Company/Corporation/Partnership, or its employees or persons acting on its behalf, with respect to actions, proceedings, claims or complaints concerning violations of federal, state or municipal equal opportunity laws or regulations.

2. **Convictions and Unscrupulous Practice**: Has your Company/Corporation/Partnership, or any of its employees present or past, or anyone acting on its behalf, ever been cited for unscrupulous practice, or been convicted of any crime or offense arising directly or indirectly from the conduct of your Company/Corporation/Partnership's business, or has any of your Company/Corporation/Partnership's officers, director or persons exercising substantial policy discretion ever been convicted of any crime or offense involving business/financial misconduct or fraud? If so, describe the convictions and surrounding circumstances in detail.

3. **Pending or Threatened Actions/Suits**: Describe any past or present action, suit, proceeding or investigation pending or threatened against your Company/Corporation/Partnership including, without limitation, any proceeding known to be contemplated by government authorities, private parties, or current or former clients.

4. **Criminal Misconduct**: Has your Company/Corporation/Partnership, or any of its employees, or anyone acting on its behalf, been indicted or otherwise charged in connection with any criminal matter arising directly or indirectly from the conduct of your Company/Corporation/Partnership's business which is still pending, or has any of the Company/Corporation/Partnership's officers, directors or persons exercising substantial policy discretion been indicted or otherwise charged in connection with any criminal matter involving business or financial misconduct or fraud which is still pending? If so, describe the indictments or charges and surrounding circumstances in detail.

5. **Survey Forgery (If applicable):** Has your Company/Corporation/Partnership, or any of its employees present or past, or anyone acting on its behalf, ever signed and sealed surveys for which your Company/Corporation/Partnership has not actively participated in the production thereof; or been investigated by the New York Department of State for such activity? If so, describe the circumstances in detail.

6. **Conflicts of Interest**: disclose any of the following, and describe any procedures your Company/Corporation/Partnership has, or would adopt, to assure the Town that a conflict of interest would not exist in the future):

(a) Any material financial relationships that your Company/Corporation/Partnership or any Company/Corporation/Partnership employee has that may create a conflict of interest or the appearance of a conflict of interest in contracting with or representing the Town.

(b) Any family relationship that any employee of your Company/Corporation/Partnership has with a member, employee, or official of the Town or that may create a conflict of interest or the appearance of a conflict of interest in contracting with or representing the Town.

(c) Any other matter that your Company/Corporation/Partnership believes may create a conflict of interest or the appearance of a conflict of interest in contracting with or representing the Town.

7. **Financial Disclosure**: Submit with this Disclosure Statement Form, any one of the following three items:

(a) a financial statement, prepared on an accrual basis, in a form which clearly indicates: Bidder's (1) assets, liabilities and net worth; (2) date of financial statement; and (3) name of firm preparing statement.
(b) a letter of credit reference from a recognized bank or financial institution; or
(c) a certified copy of a credit report from a recognized credit bureau, such as Dun and Bradstreet or TRW.

THE TOWN RETAINS THE ABSOLUTE RIGHT TO REJECT ANY BID/PROPOSAL THAT FAILS TO INCLUDE COMPLETE DISCLOSURE STATREMENT FORM.

Dated at _____, this _____day of _____, 20_____.

_____

(Signature, if Individual)

By: _____ (Seal, if corporation)

(Signature)

Print Name: _____

(Legal Business Name of Company/Partnership/Corporation)

Print Title: _____

[MANDATORY AFFIDAVIT(S) AND ACKNOWLEDGMENT APPEARS ON FOLLOWING PAGE]

----------(Affidavit for Individual)----------

_____ being duly sworn, deposes and says, under penalty of perjury, that: a) he/she is an authorized representative of the Bidder/Proposer; b) he/she has read all statements and answers to this DISCLOSURE STATEMENT FORM, including the attached letter of credit/certified copy of credit report or financial statement submitted pursuant to interrogatory number 7 Financial Disclosure; c) the attached letter of credit/certified copy of credit report or financial statement, taken from his/her books, is a true and accurate statement of his/her financial condition as of the date thereof; and b) all of the foregoing qualification information is true, complete, and accurate.

----------(Affidavit for Partnership)----------

_____ being duly sworn, deposes and says, under penalty of perjury, that: a) he/she is a member of the partnership of _____, b) he/she has read all statements and answers this DISCLOSURE STATEMENT FORM, including the attached letter of credit/certified copy of credit report or financial statement submitted pursuant to interrogatory number 7 Financial Disclosure; c) he/she is familiar with the books of said partnership showing its financial condition; c) the attached letter of credit/certified copy of credit report or financial statement, taken from the books of said partnership, is a true and accurate statement of the financial condition of the partnership as of the date thereof; and d) all of the foregoing qualification information is true, complete and accurate.

----------(Affidavit for Corporation)----------

_____ being duly sworn, deposes and says, under penalty of perjury, that: a) he/she is _____ of _____ (Full Legal Name of Corporation); b) he/she has read all statements and answers this DISCLOSURE STATEMENT FORM, including the attached letter of credit/certified copy of credit report or financial statement submitted pursuant to interrogatory number 7 Financial Disclosure; c) he/she is familiar with the books of said corporation showing its financial condition; c) the attached letter of credit/certified copy of credit report or financial statement, taken from the books of said corporation, is a true and accurate statement of the financial condition of said corporation as of the date thereof; and d) that all of the foregoing qualification information is true, complete and accurate.

----------(Acknowledgement)----------

_____ being duly sworn, deposes and says, under penalty of perjury, that he/she is _____ of _____ (Name of Bidder) that he/she is duly authorized to make the foregoing affidavit and that he/she makes it on behalf of ( ) himself/herself: ( ) said partnership; ( ) said corporation.

Sworn to before me this _____day of _____, 20_____, in the County of _____, State of _____.

_____ My commissioner expires: _____

(Notary Public)

NONCOLLUSIVE BIDDING CERTIFICATION

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

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

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

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

I, hereby certify under the penalties of perjury that the foregoing statement is true.

By: _____ _____

Bidder's Signature | Date

_____ _____

Print Name | Title

_____ _____

Legal Name of Individual or Business Name of Company/Partnership/Corporation | Bidder's Federal Tax Identification # (Do Not Use SS#)

_____ _____

Address | Email Address

[MANDATORY ACKNOWLEDGMENT APPEARS ON FOLLOWING PAGE]

----------(**Acknowledgment for Individual**)----------

STATE OF)

ss.:
COUNTY OF)

On _____, 20____ before me personally came_____ to me known, and known to me to be the individual(s) described in, and who executed the foregoing NONCOLLUSIVE BIDDING CERTIFICATION, and duly acknowledged to me that s/he executed the same.

_____ My commission expires:_____
(Notary Public)

----------(**Acknowledgment for Partnership**)----------

STATE OF)
ss.:
COUNTY OF)

On _____, 20____ before me personally came_____ to me known, who, by me duly sworn, did depose and say that deponent resides at_____; that deponent is a member of the partnership described in and which executed the foregoing NONCOLLUSIVE BIDDING CERTIFICATION; deponent is authorized to sign the foregoing NONCOLLUSIVE BIDDING CERTIFICATION.

_____ My commission expires:_____
(Notary Public)

----------(**Acknowledgement for Corporation**)----------

STATE OF)
ss.:
COUNTY OF)

On _____, 20____ before me personally came_____ to me known, who, by me duly sworn, did depose and say that deponent resides at_____ that deponent is the _____ of the corporation described in, and which executed the foregoing NONCOLLUSIVE BIDDING CERTIFICATION, that deponent knows the seal of the corporation, that the seal affixed to the NONCOLLUSIVE BIDDING CERTIFICATION, is the corporate seal, that its was affixed by order of the board of _____ of the corporation; and that deponent signed deponent's name by like order.

_____ My commission expires:_____
(Notary Public)

INSURANCE CERTIFICATION

TO BE COMPLETED BY AN AUTHORIZED INSURANCE AGENT

INSTRUCTIONS:

Please complete this Insurance Certification and attach copies of proof of insurance as follows:

(a) **Commercial General Liability/Automobile Liability**: ACCORD-25 FORM.

(b) **Worker's Compensation**: Certificates or affidavits approved by the State Workers' Compensation Board pursuant to State Workers' Compensation Law § 57 (2) evidencing proof of workers' compensation insurance *or* proof of Bidder not being required to secure same.

(c) **Disability Benefits Insurance**: Certificates or affidavits approved by the State Workers' Compensation Board pursuant to State Workers' Compensation Law § 220 evidencing proof of disability benefits insurance *or* proof of Bidder not being required to secure same.

This form and all supporting documentation must be submitted with this Bid/Proposal even if said information is on-file with the Town in connection with another bid, project or contract.

_____

(Name and Address of Bidder)

_____

_____

Name of Bid: _____Bid Number:_____

(1) Commercial General Liability with completed operations (plus X.C.U. when applicable), to which the Town of North Hempstead has been added as additional insured, and Automobile Liability: $ 2,000,000.00 Combined single limit (bodily and personal injury/property damage).

Insurance Carrier (Commercial General Liability):

_____

Policy Number(s):

_____

(2) Worker's Compensation:

Insurance Carrier: _____ Policy Number(s):_____

(3) The above insurance is effective with New York State admitted insurance companies, and is A rated or equivalent to A rated.

(4) Policy cancellation or non-renewal shall be effective only upon thirty (30) days prior notice by certified mail to: ***Town of North Hempstead, Office of the Town Attorney, 220 Plandome Road, P.O.B. 3000, Manhasset, New York 11030***

Authorized Insurance Agent's Signature and Title:

_____

Name, Insurance Affiliation and Address:

_____ Dated_____

ACKNOWLWDGEMENT OF RECEIPT OF ADDENDA FORM

The bidder hereby acknowledges that he/she has received and that he/she has considered in the preparation of his/her bids, all requirements in the following Addenda to this Bid/Proposal/Contract:

Note: This acknowledgement shall be signed by the person executing the Statement of Understanding. Insert additional pages, as necessary.

ADDENDUM NUMBER	DATE OF ADDENDUM	ACKNOWLEDGEMENT

☐ **NO ADDENDUM WAS RECEIVED IN CONNECTION WITH THIS BID/PROPOSAL/CONTRACT.**

ACKNOWLEDGEMENT: _____

***IMPORTANT NOTICE*:**

THIS FORM MUST BE COMPLETED AND SUBMITTED BY ALL BIDDERS. IF NO ADDENDA ARE RECEIVED, CHECK THE "NO ADDENDUM" BOX ABOVE AND SIGN THE ACKNOWLEDGMENT.

ITEM 1:

TOWN OF NORTH HEMPSTEAD HIGHWAY DEPARTMENT
TECHNICAL SPECIFICATION FOR AUTOMATIC BRINE PRODUCTION PLANT

Table of Contents

1. **Intent** - It is the intent of this specification to provide for the purchase of one new and unused downward flow automatic brine production plant system where the salt acts as a filter bed as the water moves down though to sump area and filter screen. The automatic brine production plant system shall be capable of producing 5,000 gallons of brine per hour (based on available water supply of 6,000 gallon /hr and storage tank configuration static discharge of 45ft. / head pressure); flushing out all sediment collected in the bottom of the vessel with salt level full in the tank; be completely automated and be capable of producing brine without the intervention of an operator; and automatically monitor and control brine consistency monitoring during production. A detailed list of owners located in Nassau and Suffolk Counties is to be provided. To evaluate the machine being bid other than what is specified the Town will require a working demonstration prior to the bid date.

   The following specification is based upon a Cargill Deicing Technologies Model RTF. This specification is not to be interpreted as restrictive, but rather as a measure of the safety, quality and performance against which all machines bid will be compared. In comparing proposals, consideration will not be confined to price only. The successful bidder will be one whose product is judged to best serve the interests of the Town of North Hempstead Highway Department when standardization, price, product, safety, quality and delivery are considered. The Town of North Hempstead Highway Department reserves the right to reject any or all bids or any part thereof, and to waive any minor technicalities.

2. Salt Hopper

2.1. The salt hopper shall have a minimum capacity of 5 cubic yards.
2.2. The salt hopper shall hold approximately .75 cubic yard of sediment without interfering with brine outlet.
2.3. Minimum inside dumping width shall be no less than 120” inches.
2.4. The hopper shall be constructed of 16,000 lb tensile strength fiberglass & isophthalic resin.
2.5. All inside surfaces shall be coated with a ceramic resin .050” thick.
2.6. Vessel shall have structural integral ribs to limit flex to within 1” from full to empty.
2.7. Overall thickness of fiberglass and resin in the vessel shall be .35” thick, structural areas such as ribs, corners and floor shall have additional layers of woven fiberglass matt for an overall thickness of .50”
2.8. Sediment collection area shall have a 15 degree slope towards a 12”X 12” sump to promote debris clean out.
2.9. For ease and expediency of cleaning, the system shall be capable of being cleaned via a flush mechanism not to exceed (5) minutes and to be accomplished without disassembly of any components

of the unit. Units requiring any disassembly of components for clean out shall be deemed unacceptable.
2.10. For ease and expediency of cleaning accumulated sediment, the system shall be capable of being cleaned with the salt hopper full of salt by a process of opening sump outlet cap and water flush valves. Salt hoppers that require dumping of the hopper or trap doors for clean out shall be deemed unacceptable.
2.11. There shall be fresh water flushing system to force sediment to sump and out of sump.
2.12. There shall be a 4” stainless steel bulkhead fitting with 4” ball valve for clean out.
2.13. There shall be no air gaps in the vessel areas between sloped floor and mounting feet.
2.14. Areas with a void shall be filled with high-density foam rated for compression strength of 3 PSI with fiberglass coating on the exterior.
2.15. All Valves, bulkhead fittings, etc. 1” and larger shall be manifold type fittings.
2.16. There shall be a pressure transducer connected to the PLC to activate brine pump on and off and water flow into salt holding tank these levels shall be adjustable from the HMI Interface and shall be adjustable to within 1 inch increments.
2.17. Transducer shall have an air capillary to the inside of salt hopper.
2.18. Vessel shall have 2” male cam-lock type fittings and on/off valves for hose connections (fresh water, brine return, brine outlet to pump).
2.19. There shall be reinforced forklift pockets for moving the vessel.
2.20. All metallic items shall be 304 stainless steel.
2.21. Salt hopper shall have a stainless steel debris screen located above the sump and sediment collection area.
2.21.1. The screen shall have 3/16” diameter perforations.
2.21.2. To allow for maximum flow, the debris screen shall be 60 feet square.
2.21.3. Debris screen shall be capable of supporting 10,000 lb of salt evenly distributed across the total area.
2.21.4. Screen frame shall have six permanently attached 3/8” diameter stainless steel eyebolts connected to a poly sling for ease of removal and shall be removed in one piece.
2.22 Two flow tubes are to be supplied.
2.23 Air purge system package to be supplied to divert compressed air through the water supply line leading to the salt tank. System shall be configured to automatically purge water from line via an electric valve each time the machine stops production. The purge ON time shall be configured via HMI (air supply to be supplied via purchasing agency).
2.24 A roll tarp cover with arches and roll mechanism shall be installed onto brine maker to keep heat in and debris out. Tarp shall be easily operated be one person to open top of brine maker for normal operation.

Unit complies will all requirements of section 2: Salt Hopper
Yes or no: _____

3. Control System

3.1. The control system shall be a continuous brine production control system to be mounted inside a building.
3.2. Main panel shall be constructed of 304-brushed stainless steel with valve labels and valve functions etched into the panel.
3.3. The Brine concentration sensor shall monitor the brine temperature and automatically compensate brine concentration accordingly.
3.4. Brine pumped from the salt hopper shall be monitored for salt concentration.
3.5. Brine concentration sensors shall be TERODIAL type conductivity sensor.
3.6. All brine exiting the salt hopper shall pass over the brine a concentration sensor that monitors brine between 19.6 and 27.0 % concentration by weight.
3.7. System shall include a 256-color LCD touch screen display (7-1/2” diagonal). Information on the screen to display shall include, but not be limited to:

3.7.1. Actual brine production concentration in the form of % concentration by weight. For example 23.3%
3.7.2. Gallons of Fresh water used to make brine. For example: Total gallons = 187,324, Gallons of Brine Produced & Salt Used
3.7.3. Self-diagnostic of conductivity sensor. For example: Brine sensor failure
3.7.4. Status of machine operating normal “Automatic Mode” mode along with the status of all electrical components.
3.7.5. Graphic items such as liquid flow, system components, parts manuals, and operational instructions.
3.7.6. Self-diagnostic of electric valves shall indicate if and what valve is not functioning normally and valve status of open or closed.
3.8. Calibration shall be performed from the display located on the face of the machine. Programming parameters shall be password protected.
3.9. There shall be 6 user selectable operating modes (Brine production, Winterization, system test, component rinse, simulation, and default settings)
3.10. The programmable logic controller (PLC) shall have a non-volatile memory with EPROM back up of programming.
3.11. As the brine concentration is pumped from the salt tank, the brine shall be monitored for the desired concentration.

Systems requiring an operator to manually test brine concentration will be deemed unacceptable.

3.12. If the brine concentration is above the target rate, the brine shall be returned to the salt hopper until the correct amount of water is automatically added to the incoming brine to bring product to the desirable concentration.
3.13. Once brine is at an acceptable tolerance is to be + or -. 3% of target concentration the brine is to be diverted to storage tanks.
3.14. In the event that the concentration is below minimum desired concentration, the system shall automatically divert brine to salt tank for a second pass through the salt bed to achieve the desirable concentration.
3.15. The control system shall be configured to accept a signal from a level sensor located in a storage tank to automatically stop brine production when tank is full. This circuit shall be capable of working with a normally open or closed level device and shall be configurable via operator display.
3.16. Control system shall monitor total gallons of water used, salt used, and brine produced for record keeping.
3.17. The control system shall be programmed with a winterization mode where the system will automatically cycle the brine pump and return the brine to the salt tank. The pump “on” and “off” times shall be programmable to desired parameters via the control panel.
3.18. The control system shall have a component rinse mode that cycles valves and flow system to rinse system out with fresh water at the end of season.
3.19. All valves shall include manual overrides for operation of system in the event of an electrical component failure.
3.20. The system shall be designed with a manual valve counterpart to the electric valve to run parallel for a redundant manual control system.
3.21. The system shall be completely self-diagnostic to include the pump, electrical valve and input signals.
3.22. All electric valves and sensors shall communicate with the controller to confirm the current state.
3.23. In the event of a component failure, the system shall automatically shut down and inform the operator of the specific failure along with a corrective measure, including how to manually override problem and part number failure.
3.24. All wetted parts on control panel except for pump shall manifold type glass filled polypropylene rated for 150 psi.

3.25. Electric components mounted onto control panel shall have UL rated conduit protecting connections and wiring outside of the enclosure.
3.26. Individual components over 10A shall have circuit breakers and components less than 10A shall be fuse protected from inside of control panel. Fuses shall have diagnostic LED to detect fuse fault. Fuse fault shall illuminate red.
3.27 The system shall come complete pre-wired for electric service supply to include 10' of SOW type cord with preinstalled 1430P type plug. To mate to customer supplied L14-30R receptacle.
3.28 The control system shall be capable of activation a remote mounted warning beacon lamp. Lamp shall blink when a machine fault has occurred or illuminate solid when low salt level is detected. Lamp, control relay and automation logic shall be supplied.
Unit complies with all requirements of section 3: Control System
Yes or no: _____

4. Mechanical Components
4.1. Pump shall be constructed of cast 304 stainless steel with a stainless steel shaft and impeller.
4.2. Electric pump motor shall be thermally protected 3 HP 220 Volt single phases.
4.3. Pump seals shall be constructed of silicon carbide.
4.4. Pump shall be capable of delivering 5,000 gallons per hour of salt brine to storage tanks with a dynamic head of 45 ft.
4.5. All fittings and valves shall be manifold type glass filled polypropylene.
4.6. Wetted Steel components shall be kept to a minimum; all steel components shall be constructed of 304-grade stainless steel
4.7. All exposed eclectic components shall be rated at NEMA 12X.
4.8. All fasteners shall be constructed of stainless steel.
4.9 A through wall manifold(s) shall be supplied as a conduit for 2" hose and electrical connections exiting through wall (s). Wall manifold shall be constructed out of 14G Stainless Steel and shall have grommets supplied.
Unit complies with all requirements of section 4: Mechanical Components
Yes or no: _____

5. Storage Tanks
5.1 One (1) 5,000 gallon storage tank rated at 1.5 S.G, white in color measuring approximately 102" diameter and 152" tall shall be supplied.
Available yes or no: _____ **Price per unit:** _____
5.3 Manifold type storage tank fitting kit 2" with tank flange, valve, tee, hose clamps, and hose barbs (note: Three units required for each storage tank)
5.4 A discrete storage tank full level sensor and interconnect kit to integrate into automation process is to be installed. The sensor shall communicate with the automation process to shut off brine production when storage tank is full
5.5 Hose Kit. The system shall come complete with 100' of 2" EPDM rubber suction discharge hose, 10' of 2" pressure hose, Stainless Steel T-Bolt type hose clamps and (3) Type C cam lock couplings.
Unit complies with all requirements of section 5: Storage Tanks
Yes or no: _____
6. Fully Automated Remote Truck Mounted Fill Package
6.1 Package shall be four electric ball valves, with manual override mounted onto an expandable modular panel.
6.2 The system shall include a remote mounted NEMA 4X switch box with e-stop, pilot light and on/off switch.
6.3 In the event that the system is producing brine at the same time as filling trucks, the system shall automatically divert brine to the truck fill hose.
6.4 If brine is not being produced then brine from storage tanks shall be diverted to truck fill hose.

6.5 System shall be automated with self diagnostics and the ability to be integrated with a RFID data logging device

Unit complies with all requirements of section 6: Fully Automated Remote Truck Mounted Fill Package

Yes or no: _____

7. Truck Fill Data Logging

7.1 Remote Truck Fill Integrated Data Logging system complete with RFID reader and tags.
7.2 The system shall include a low frequency RFID reader mounted onto a NEMA 4X enclosure.
7.3 Data recorded shall include Tag number, Date, Time, quantity of material loaded, and material type
7.4 System shall be integrated into brine production system with automated truck filling system.

Unit complies with all requirements of section 7: Truck Fill Data Logging

Yes or no: _____

8. LAN Access

8.1 The system shall come complete with the ability to access the HMI (operator interface) via Internet Explorer, all set up and operation data shall be capable of being viewed remotely as via the display. Integration with network will be the responsibility of the end user.

Unit complies with all requirements of section 8: LAN Access

Yes or no: _____

9. Site Preparation

9.1. The Town of North Hempstead Highway Department will provide compressed air, electric and water service to the machine.
9.2. A reinforced concrete pad for the salt hopper shall be supplied. It shall be a minimum of five (5) feet by ten (10) feet by 24 inches high. Load will be approximately 3 lbs. per square inch.
9.3 A reinforced concrete pad for the storage tank is to be provided. It will be large enough to support the quantity of storage tank... Storage tank load is approximately 4.8 lbs per square inch. Location should be level.
9.4 A heated enclosure for the control panel shall be provided. It shall be a minimum 10 feet long 6 feet wide and 8 feet high with 36" entrance door.
9.5 The Town will provide an electrical circuit, 230V single phase 30amp with neutral leg and grounding wire with a L14-30R receptacle installed within five (5) feet of the control panel, and a single 110V 20 amp circuit. A 2"water supply with anti- backflow prevention to the machine control panel room as per local codes and regulations is to be installed.
9.6 A ¾” compressed air supply regulated and moisture controlled is to be installed with a National Pipe thread female fitting.
9.7 Provisions will be made to locate the through the wall manifolds for the salt hopper and brine storage tanks and a single two inch truck fill supply port at the loading bay.
9.8 Interior of control room to have sufficient lighting for operation, maintenance and safety as per local codes and regulations.
9.9 It is recommended that barricade posts with cross member or bollards be installed to protect storage tank and salt hopper from accidental contact with loader

10. Warranty

10.1. A full parts and labor warranty shall be provided for one year. Warranty is to start upon completion of installation.

Unit complies with all requirements of section 10: Warranty

Yes or no: _____

PROPOSAL FORM

TO: Town of North Hempstead Highway Department

The undersigned hereby declares that they have carefully examined the requirements of the specifications contained herein, and propose to furnish and deliver to the Town of North Hempstead Highway Department the apparatus listed below.

ONE (1) New and Unused Automatic Brine Production Plant

MAKE: _____ MODEL: _____

PURCHASE PRICE: @ $_____ Total: $_____

(In Words)_____

RTF & Storage Tank Deduct

(Base Model ABM)

$_____

Signed: _____

Bidder: _____

Title: _____

Address: _____

_____

Date: _____

ITEM 2

TOWN OF NORTH HEMPSTEAD HIGHWAY DEPARTMENT TECHNICAL SPECIFICATIONS FOR A COMBINATION SAND /SALT SPREADER WITH PRE-WETTING CAPABILITY SINGLE AXLE DUMP BODY MOUNT

1.0 INTENT

It is the intent of this specification to provide for the purchase or lease purchase of one (1) new and unused chassis mounted salt/sand spreader with anti-icing and pre-wetting capability to be mounted on a six wheel single axle chassis with dump body.
The following specification is based upon an EPOKE model S3800 SIRIUS AST spreader. The Highway Department has evaluated different types of spreaders and has determined that this product is best suited for the Highway Department's needs in safety, quality, and performance,. This specification is not to be interpreted as restrictive, but rather as a measure of the safety, quality and performance against which all spreaders bid will be compared.
In comparing proposals, consideration will not be confined to price only. The successful bidder will be one whose product is judged shall best serve the interests of the Highway Department when price, product, safety, quality and delivery are considered. The Highway Department reserves the right to reject any or all bids or any part thereof, and to waive any minor technicalities. A contract will be awarded to the bidder submitting the lowest responsible bid meeting the requirements of this specification.

2.0 EQUIVALENT PRODUCT

Bids will be accepted for consideration on any make or model that is equal or superior to the spreader specified. Decisions of equivalency will be at the sole interpretation of the Highway Department. A blanket statement that equipment proposed will meet all requirements will not be sufficient to establish equivalence. Original manufacturer's brochures of the proposed unit are to be submitted with the proposal.
All modifications made to the standard production unit described in the manufacturer's brochures must be certified by the manufacturer and submitted with the bid, or the bid will be deemed "non-responsive" and rejected without further review. Bidder must be prepared to demonstrate a unit similar to the one proposed prior to the bid opening, if requested.

3.0 INTERPRETATIONS

In order to be fair to all bidders, no oral interpretations will be given to any bidder as to the meaning of the specification documents or any part thereof. Every request for such a consideration shall be made in writing to the Highway Department. Based upon such inquiry, the Highway Department may choose to issue an Addendum.

4.0 GENERAL

The specification herein states the minimum requirements of the Highway Department. All bids must be regular in every respect. Unauthorized conditions, limitations, or provisions shall be cause for rejection. The Highway Department will consider as "irregular" or "non-responsive" any bid not prepared and submitted in accordance with the bid document and specification, or any bid lacking sufficient technical literature to enable the Highway Department to make a reasonable determination of compliance to the specification.

It shall be the bidder's responsibility to carefully examine each item of the specification. Failure to offer a completed bid or failure to respond to each section of the technical specification (COMPLY: YES NO) will cause the proposal to be rejected without review as "non-responsive". All variances, exceptions and/or deviations shall be fully described in the appropriate section. Deceit in responding to the specification will be cause for rejection.

5.0 INSTALLATION

Installation shall include mounting of control panel, all hydraulic hoses and spreader electrical system into dump truck body. Recommended hydraulic system requirements: variable displacement load sensing pump capable of supplying 12 GPM @ 2500 PSI through an electrically controlled valve section with 3/4" port. Pressure supply line from valve body to be 3/4" 100R2 hose routed to the left rear side of truck pintle plate equipped with a stainless steel hydraulic quick disconnect. The return line is to be 1" 100R2 hose directly plumbed to the hydraulic tank and routed to left rear side of truck pintle plate equipped with a hydraulic quick disconnect. Four (4) two (2) inch wide ratchet strap binders are to be supplied to secure the spreader to the dump body. Four (4) pieces of channel steel measuring 3'x3'x1/4" shall be welded at the top rail of the dump body so that when the ratchet straps are installed and tightened the spreader will be secured from moving fore and aft in the body.

6.0 SECIFICATIONS

6.1 Spreaders to be new, current model, Epoke Sirius 3800 or equivalent.

This spreader must apply:

- Dry material
- Variably prewet dry material and liquid from 5% to 30%

Product brochure to be submitted with bid.

Spreader, control system and liquid system to be supplied from a single, ISO certified manufacturer. All functions to be run test before leaving the factory and a copy of the run test to be provided.

COMPLY YES_____ **NO**_____

6.2 State un-laden tare weight of spreader. _____

Hopper to be ten (10) feet in length.

Dry material hopper capacity to be a minimum of 4 yd3.

Liquid capacity to be a minimum of 330 gallons.

Hopper to be all steel construction.

All fasteners to be stainless steel.

All material surfaces to be shot blasted and shall have zinc-vinyl primer, two primer coats and two top coats of manufacturers orange polyurethane paint baked on for durability.

COMPLY YES_____ **NO**_____

6.3 All hydraulic controls, including drive motors and valving and all electronic controls are to be housed in a sealed compartment at rear of the spreader.

COMPLY YES_____ **NO**_____

6.4 Transmission to have external controls for selection of applications (anti-ice, pre-wet, solid).

COMPLY YES_____ **NO**_____

6.5 Rear mounted access ladder with hand holds and safety grip steps to provide access to rear compartment.

COMPLY YES_____ **NO**_____

6.5 Hopper grates shall be sloped with 4” square openings and will have a built in, lockable man door for access to the hopper.
COMPLY YES_____ **NO**_____
6.6 Spinner and drop chute to be stainless steel.
COMPLY YES_____ **NO**_____
6.7 Chute and spinner assembly shall be capable of spring assisted swinging to an upright position for storage and/or calibration.
COMPLY YES_____ **NO**_____
6.8 Spinner height to be vertically adjustable from 12” to 20” above the road surface.
COMPLY YES_____ **NO**_____
6.9 Hydraulic off loading of the spreader to be possible with the spinner and drop chute in the upright position.
COMPLY YES_____ **NO**_____
6.10 Safety device to prevent the spinner from being activated when in the upright position to be supplied.
COMPLY YES_____ **NO**_____
6.11 Time required to mount/ dismount the slide in spreader to/ from the dump body not to exceed 5 minutes.
COMPLY YES_____ **NO**_____
6.12 Storage legs and front roller to remain on spreader while in use.
Leg system to allow for mounting and de-mounting of a fully laden spreader.
COMPLY YES_____ **NO**_____
6.13 Material metering achieved by a feed delivery roller with various sized replaceable cams along the full inside length of the hopper. A conveyor/ gate system for material metering is not acceptable.
COMPLY YES_____ **NO**_____
6.14 A stainless steel agitator shaft mounted above the delivery roller to have replaceable spring fingers and will rotate in synchronized speed with delivery roller to ensure equalization and homogenization of material to the roller.
COMPLY YES_____ **NO**_____
6.15 Material delivery to spinner drop chute via an unloaded rubber belt conveyor de-mountable with a full hopper of material.
COMPLY YES_____ **NO**_____
6.16 Hopper must empty equally and fully from front to rear to ensure a constant center of gravity as the hopper is emptied.
COMPLY YES_____ **NO**_____
6.17 An adjustable spring tensioned rubber base to be provided for calibration adjustment.
COMPLY YES_____ **NO**_____
6.18 Liquid pump must be multi-chamber diaphragm design with a minimum of 34 gallons/ minute @ 300 psi.
COMPLY YES_____ **NO**_____
6.19 Prewetting to be programmable and variable from 5% to 30% of the dry rate.
COMPLY YES_____ **NO**_____

6.20 An in-line (1 1/4” inlet/outlet) 40-mesh filter shall be provided to supply filtered liquid to the prewetting pump. Filter shall be easily accessible and serviceable with liquid tanks full without loss of liquid.
COMPLY YES_____ **NO**_____
6.21 Tanks shall be sumped and baffled and be secured to body by means of recessed steel brackets and bolts. Straps are not acceptable.
COMPLY YES_____ **NO**_____
6.22 A sight gauge easily seen from the filling position for liquid level shall be provided.
COMPLY YES_____ **NO**_____
6.23 Tanks to be filled from a single 2” hydrant type cam lock male port nipple with shutoff valve and be located near spinner chute frame. Single bottom ported and vented tank lines will fill and drain all tanks equally. Filling and draining of tanks must not affect the center of gravity.
COMPLY YES_____ **NO**_____
6.24 A single liquid nozzle to be mounted at the spinner.
COMPLY YES_____ **NO**_____
6.25 Unit to be supplied with EpoMaster III Controller or approved equivalent. All controller functions for dry and liquid materials to be road speed related from 0-40mph. Controller to allow on the go operator adjustment of:

- Spreading width
- Spreading symmetry: spreading symmetry to be adjustable from the in cab EpoMaster controller to allow for accurate material placement over multiple lanes behind and/ or to the left and right of the lane in which the truck is traveling.
- Spreading quantity
- Maximum (‘blast’)

Controller screen to display application rates, settings, spread width and material selected.
Control system to have self diagnostic capabilities and the controller screen to display errors in graphical symbology. Controller to be programmable and incorporate password protection to 4 levels of allowed programmability. Liquid and dry material empty sensors to be provided and the controller screen to indicate when dry material hopper or liquid tanks are empty.
COMPLY YES_____ **NO**_____
6.26 Controller to include PCMCIA slot to allow for uploading of any future software enhancements to the control system.
COMPLY YES_____ **NO**_____
6.27 Conveyor assembly to be cartridge design enabling removal when spreader is fully loaded.
COMPLY YES_____**NO**_____
6.28 All electrical functions to be through a single, 6 conductor, multiplex wiring harness.
COMPLY YES_____ **NO**_____

6.29 Control system must be capable of full manual override to allow spreading in the event of an electrical failure.
COMPLY YES_____ **NO**_____
6.30 One rear-mounted work light to be supplied switched and controlled from the EpoMaster III controller. Two rotating warning beacons to be installed at rear of spreader switched and controlled from the EpoMaster controller.
COMPLY YES_____ **NO**_____
6.31 Data production system- data output to an RS232 port with up to 35 data streams for collection by others.
A new event occurs each time that:

- Start/stop- dry material
- Start/ stop- liquid
- Prewetting on/off
- Width setting is changed
- Symmetry setting is changed
- Quantity setting is changed
- Function buttons
- Alarms & status
- Distance traveled
- Time logging

COMPLY YES_____ **NO**_____
6.32 Warranty to be 100% parts and labor against defects in materials and workmanship with the following minimum coverage:

- 1 year full FOB customer yard
- 2 years on all electrical components FOB nearest Dealer
- 10 years against hopper rust perforation FOB nearest Dealer

COMPLY YES_____ **NO**_____
6.33 Two parts and Operator manuals to be provided.
COMPLY YES_____ **NO**_____
6.34 Operator training to be included.
COMPLY YES_____ **NO**_____

7.0 EXCEPTIONS AND DEVIATIONS

Bidder shall fully describe every variance, exception and/or deviation. Additional sheets may be used if required.

_____
_____
_____
_____
_____

8.0 OPTIONS

8.1 EPOSAT GPS CONTROLLED SPREADING WITH ROUTE NAVIGATION

The system allows for pre programmed automated spreading based on GPS positioning for consistent spreading and is not operator dependent for control settings yet is also able to operate in the conventional mode.

The system is to consist of a software package for up to 50 spreaders to be installed on customers PC including digital map displaying road names, cities, villages etc. Omni drive card reader and one EpoCard for reference route recording. One year license agreement for software. Hardware package active GPS antenna and Eposat GPS print installed on truck.

8.1 ADDITIONAL HOPPER LENGTH (14 ft.) HOPPER CAPACITY (6.5 cu. yd.) 620 GALLON LIQUID CAPACITY

9.0 USER LIST

Units must not be prototypes and must have been in use with other municipalities for a minimum of two years.

A minimum of 5 references are to be provided on request.

PROPOSAL FORM

TO: TOWN OF NORTH HEMPSTEAD HIGHWAY DEPARTMENT

The undersigned hereby declares that they have carefully examined the requirements of the specifications contained herein, and propose to furnish and deliver to the TOWN OF NORTH HEMPSTEAD HIGHWAY DEPARTMENT the apparatus listed below. ONE (1) New and Unused Epoke Salt/Sand Spreader with Anti-Icing and Pre Wetting capabilities.

MAKE: _____ MODEL: _____

PURCHASE PRICE: @ $_____ Total: $_____

(In Words)_____

OPTIONAL EPOSTAT CONTROL SYSTEM:
$_____

OPTIONAL SPREADER 14 FT. LENGTH PACKAGE
$_____

TOTAL $_____

Signed: _____

Bidder: _____

Title: _____

Address: _____
_____

Date: _____

ITEM 3

TOWN OF NORTH HEMPSTEAD HIGHWAY DEPARTMENT TECHNICAL SPECIFICATIONS FOR A COMBINATION SAND /SALT SPREADER WITH PRE-WETTING AND ANTI-ICING CAPABILITY TANDEM AXLE DUMP BODY MOUNT

1.0 INTENT

It is the intent of this specification to provide for the purchase or lease purchase of one (1) new and unused chassis mounted salt/sand spreader with anti-icing and pre-wetting capability to be mounted on a ten wheel tandem axle chassis with dump body.
The following specification is based upon an EPOKE model S4900 SIRIUS COMBI AST spreader. The Highway Department has evaluated different types of spreaders and has determined that this product is best suited for the Highway Department's needs in safety, quality, and performance,. This specification is not to be interpreted as restrictive, but rather as a measure of the safety, quality and performance against which all spreaders bid will be compared.
In comparing proposals, consideration will not be confined to price only. The successful bidder will be one whose product is judged shall best serve the interests of the Highway Department when price, product, safety, quality and delivery are considered. The Highway Department reserves the right to reject any or all bids or any part thereof, and to waive any minor technicalities. A contract will be awarded to the bidder submitting the lowest responsible bid meeting the requirements of this specification.

2.0 EQUIVALENT PRODUCT

Bids will be accepted for consideration on any make or model that is equal or superior to the spreader specified. Decisions of equivalency will be at the sole interpretation of the Highway Department. A blanket statement that equipment proposed will meet all requirements will not be sufficient to establish equivalence. Original manufacturer's brochures of the proposed unit are to be submitted with the proposal.
All modifications made to the standard production unit described in the manufacturer's brochures must be certified by the manufacturer and submitted with the bid, or the bid will be deemed "non-responsive" and rejected without further review. Bidder must be prepared to demonstrate a unit similar to the one proposed prior to the bid opening, if requested.

3.0 INTERPRETATIONS

In order to be fair to all bidders, no oral interpretations will be given to any bidder as to the meaning of the specification documents or any part thereof. Every request for such a consideration shall be made in writing to the Highway Department. Based upon such inquiry, the Highway Department may choose to issue an Addendum.

4.0 GENERAL

The specification herein states the minimum requirements of the Highway Department. All bids must be regular in every respect. Unauthorized conditions, limitations, or provisions shall be cause for rejection. The Highway Department will consider as "irregular" or "non-

responsive" any bid not prepared and submitted in accordance with the bid document and specification, or any bid lacking sufficient technical literature to enable the Highway Department to make a reasonable determination of compliance to the specification. It shall be the bidder's responsibility to carefully examine each item of the specification. Failure to offer a completed bid or failure to respond to each section of the technical specification (COMPLY: YES NO) will cause the proposal to be rejected without review as "non-responsive". All variances, exceptions and/or deviations shall be fully described in the appropriate section. Deceit in responding to the specification will be cause for rejection.

5.0 INSTALLATION

Installation shall include mounting of control panel, all hydraulic hoses and spreader electrical system into dump truck body. Recommended hydraulic system requirements: variable displacement load sensing pump capable of supplying 12 GPM @ 2500 PSI through an electrically controlled valve section with 3/4" port. Pressure supply line from valve body to be 3/4" 100R2 hose routed to the left rear side of truck pintle plate equipped with a stainless steel hydraulic quick disconnect. The return line is to be 1" 100R2 hose directly plumbed to the hydraulic tank and routed to left rear side of truck pintle plate equipped with a hydraulic quick disconnect. Four (4) two (2) inch wide ratchet strap binders are to be supplied to secure the spreader to the dump body. Four (4) pieces of channel steel measuring 3'x3'x1/4" shall be welded at the top rail of the dump body so that when the ratchet straps are installed and tightened the spreader will be secured from moving fore and aft in the body.

6.0 SECIFICATIONS

6.1 Spreaders to be new, current model, Epoke Combi 4900 AST or equivalent.

This spreader must apply:

- Dry material
- Variably prewet dry material and liquid from 5% to 30%

Product brochure to be submitted with bid.

Spreader, control system and liquid system to be supplied from a single, ISO certified manufacturer. All functions to be run test before leaving the factory and a copy of the run test to be provided.

COMPLY YES_____ NO_____

6.2 State un-laden tare weight of spreader. _____

Hopper to be thirteen feet six inches (13’6”) in length.

Dry material hopper capacity to be a minimum of 6.5 yd3.

Liquid capacity to be a minimum of 950 gallons.

Hopper to be all steel construction.

All fasteners to be stainless steel.

All material surfaces to be shot blasted and shall have zinc-vinyl primer, two primer coats and two top coats of manufacturers orange polyurethane paint baked on for durability.

COMPLY YES_____ NO_____

6.3 All hydraulic controls, including drive motors and valving and all electronic controls are to be housed in a sealed compartment at rear of the spreader. Plastic enclosures not acceptable.

COMPLY YES_____ NO_____

6.4 Transmission to have external controls for selection of applications (anti-ice, pre-wet, solid).
COMPLY YES_____ **NO**_____
6.5 Rear mounted access ladder with hand holds and safety grip steps to provide access to rear compartment.
COMPLY YES_____ **NO**_____
6.5 Hopper grates shall be sloped with 4” square openings and will have a built in, lockable man door for access to the hopper.
COMPLY YES_____ **NO**_____
6.6 Spinner and drop chute to be stainless steel.
COMPLY YES_____ **NO**_____
6.7 Chute and spinner assembly shall be capable of spring assisted swinging to an upright position for storage and/or calibration.
COMPLY YES_____ **NO**_____
6.8 Spinner height to be vertically adjustable from 12” to 20” above the road surface.
COMPLY YES_____ **NO**_____
6.9 Hydraulic off loading of the spreader to be possible with the spinner and drop chute in the upright position.
COMPLY YES_____ **NO**_____
6.10 Safety device to prevent the spinner from being activated when in the upright position to be supplied.
COMPLY YES_____ **NO**_____
6.11 Time required to mount/ dismount the slide in spreader to/ from the dump body not to exceed 5 minutes.
COMPLY YES_____ **NO**_____
6.12 Storage legs and front roller to remain on spreader while in use.
Leg system to allow for mounting and de-mounting of a fully laden spreader.
COMPLY YES_____ **NO**_____
6.13 Material metering achieved by a feed delivery roller with various sized replaceable cams along the full inside length of the hopper. A conveyor/ gate system for material metering is not acceptable.
COMPLY YES_____ **NO**_____
6.14 A stainless steel agitator shaft mounted above the delivery roller to have replaceable spring fingers and will rotate in synchronized speed with delivery roller to ensure equalization and homogenization of material to the roller. A lump crusher is not acceptable.
COMPLY YES_____ **NO**_____
6.15 Material delivery to spinner drop chute via an unloaded rubber belt conveyor de-mountable with a full hopper of material.
COMPLY YES_____ **NO**_____
6.16 Hopper must empty equally and fully from front to rear to ensure a constant center of gravity as the hopper is emptied.
COMPLY YES_____ **NO**_____

6.17 An adjustable spring tensioned rubber base to be provided for calibration adjustment.
COMPLY YES_____ **NO**_____
6.18 Liquid pump must be multi-chamber diaphragm design with a minimum of 34 gallons/ minute @ 300 psi.
COMPLY YES_____ **NO**_____
6.19 Prewetting to be programmable and variable from 5% to 30% of the dry rate.
COMPLY YES_____ **NO**_____
6.20 An in-line (1 1/4" inlet/outlet) 40-mesh filter shall be provided to supply filtered liquid to the prewetting pump. Filter shall be easily accessible and serviceable with liquid tanks full without loss of liquid.
COMPLY YES_____ **NO**_____
6.21 Tanks shall be sumped and baffled and be secured to body by means of recessed steel brackets and bolts. Straps are not acceptable.
COMPLY YES_____ **NO**_____
6.22 A sight gauge easily seen from the filling position for liquid level shall be provided.
COMPLY YES_____ **NO**_____
6.23 Tanks to be filled from a single 2" hydrant type cam lock male port nipple with shutoff valve and be located near spinner chute frame. Single bottom ported and vented tank lines will fill and drain all tanks equally. Filling and draining of tanks must not affect the center of gravity.
COMPLY YES_____ **NO**_____
6.24 A single liquid nozzle to be mounted at the spinner.
COMPLY YES_____ **NO**_____
6.25 Unit to be supplied with EpoMaster III Controller or approved equivalent. All controller functions for dry and liquid materials to be road speed related from 0-40mph. Controller to allow on the go operator adjustment of:

- Spreading width
- Spreading symmetry: spreading symmetry to be adjustable from the in cab EpoMaster controller to allow for accurate material placement over multiple lanes behind and/ or to the left and right of the lane in which the truck is traveling.
- Spreading quantity
- Maximum ('blast')

Controller screen to display application rates, settings, spread width and material selected.
Control system to have self diagnostic capabilities and the controller screen to display errors in graphical symbology. Controller to be programmable and incorporate password protection to 4 levels of allowed programmability. Liquid and dry material empty sensors to be provided and the controller screen to indicate when dry material hopper or liquid tanks are empty.
COMPLY YES_____ **NO**_____
6.26 Controller to include PCMCIA slot to allow for uploading of any future software enhancements to the control system.

COMPLY YES_____ NO_____
6.27 Conveyor assembly to be cartridge design enabling removal when spreader is fully loaded.
COMPLY YES_____NO_____
6.28 All electrical functions to be through a single, 6 conductor, multiplex wiring harness.
COMPLY YES_____ NO_____
6.29 Control system must be capable of full manual override to allow spreading in the event of an electrical failure.
COMPLY YES_____ NO_____
6.30 One rear-mounted work light to be supplied switched and controlled from the EpoMaster III controller. Two rotating warning beacons to be installed at rear of spreader switched and controlled from the EpoMaster controller.
COMPLY YES_____ NO_____
6.31 Data production system- data output to an RS232 port with up to 35 data streams for collection by others.
A new event occurs each time that:

- Start/stop- dry material
- Start/ stop- liquid
- Prewetting on/off
- Width setting is changed
- Symmetry setting is changed
- Quantity setting is changed
- Function buttons
- Alarms & status
- Distance traveled
- Time logging

COMPLY YES_____ NO_____
6.32 Warranty to be 100% parts and labor against defects in materials and workmanship with the following minimum coverage:

- 1 year full FOB customer yard
- 2 years on all electrical components FOB nearest Dealer
- 10 years against hopper rust perforation FOB nearest Dealer

COMPLY YES_____ NO_____
6.33 Two parts and Operator manuals to be provided.
COMPLY YES_____ NO_____
6.34 Operator training to be included.
COMPLY YES_____ NO_____

7.0 EXCEPTIONS AND DEVIATIONS

Bidder shall fully describe every variance, exception and/or deviation. Additional sheets may be

used if required.

8.0 OPTIONS

8.1 EPOSAT GPS CONTROLLED SPREADING WITH ROUTE NAVIGATION

The system allows for pre programmed automated spreading based on GPS positioning for consistent spreading and is not operator dependent for control settings yet is also able to operate in the conventional mode.

The system is to consist of a software package for up to 50 spreaders to be installed on customers PC including digital map displaying road names, cities, villages etc. Omni drive card reader and one eference route recording. One year license agreement for software. Hardware package to include ac nna and Eposat GPS print installed on truck.

8.1 ADDITIONAL HOPPER LENGTH (15.8ft.) HOPPER CAPACITY (6.5 cu. yd.) 1150 GALLON LIQUID CAPACITY

8.2 HIGH SPEED SPREADER OPTION ALLOWS FOR SPREADING AND ANTI-ICING AT SPEEDS UP TO 55 MPH. AND THREE LANES WIDE

9.0 USER LIST

Units must not be prototypes and must have been in use with other municipalities for a minimum of two years.

A minimum of 5 references are to be provided on request.

PROPOSAL FORM

TO: TOWN OF NORTH HEMPSTEAD HIGHWAY DEPARTMENT

The undersigned hereby declares that they have carefully examined the requirements of the specifications contained herein, and propose to furnish and deliver to the TOWN OF NORTH HEMPSTEAD HIGHWAY DEPARTMENT the apparatus listed below. ONE (1) New and Unused Epoke Salt/Sand Spreader with Anti-Icing and Pre Wetting capabilities.

MAKE: _____ MODEL: _____

PURCHASE PRICE: @ $_____ Total: $_____

(In Words)_____

OPTIONAL EPOSTAT CONTROL SYSTEM:
$_____

OPTIONAL SPREADER 16 FT. LENGTH PACKAGE
$_____

OPTIONAL HIGH SPEED OPTION
$_____

TOTAL $_____

Signed: _____

Bidder: _____

Title: _____

Address: _____

_____

Date: _____

ITEM 4

TOWN OF NORTH HEMPSTEAD HIGHWAY DEPARTMENT
TECHNICAL SPECIFICATIONS
FOR
THREE WHEEL BROOM STREET SWEEPER WITH BELT CONVEYOR

COMPLY
Yes No

1.0 INTENT

It is the intent of this specification to provide for the purchase or lease purchase of one (1) 2015 new and unused street sweeper having a three wheel configuration, belt conveyor, 3.6 cubic yard front high dumping hopper, hydrostatic transmission, and right and left side brooms with variable down pressure controlled from cab.
The following specification is based upon an ELGIN PELICAN P street sweeper. This specification is not to be interpreted as restrictive, but rather as a measure of the safety, quality and performance against which all sweepers bid will be compared.
In comparing proposals, consideration will not be confined to price only. The successful bidder will be one whose product is judged to best serve the interests of the Town of North Hempstead Highway Department when standardization, price, product, safety, quality and delivery are considered. The Town of North Hempstead Highway Department reserves the right to reject any or all bids or any part thereof, and to waive any minor technicalities. A contract will be awarded to the bidder submitting the lowest responsible bid meeting the requirements of this specification.

COMPLY
Yes No

2.0 EQUIVALENT PRODUCT

Bids will be accepted for consideration on any make or model that is equal or superior to the sweeper specified. Decisions of equivalency will be at the sole interpretation of the Town of North Hempstead Highway Department. A blanket statement that equipment proposed will meet all requirements will not be sufficient to establish equivalence. Original manufacturer's brochures of the proposed unit are to be submitted with the proposal.
All modifications made to the standard production unit described in the manufacturer's brochures must be certified by the manufacturer and submitted with the bid, or the bid will be deemed "non-responsive" and rejected without further review. Bidder must be prepared to demonstrate a unit similar to the one proposed prior to bid opening, if requested.

COMPLY
Yes No

3.0 INTERPRETATIONS

In order to be fair to all bidders, no oral interpretations will be given to any bidder as to the meaning of the specification documents or any part thereof. Every request for such a

consideration shall be made in writing to the Town of North Hempstead Highway Department. Based upon such inquiry, the Highway department may choose to issue an Addendum.

COMPLY
Yes No

4.0 GENERAL ____ ____

The specification herein states the minimum requirements of the Town of North Hempstead Highway Department. All bids must be regular in every respect. Unauthorized conditions, limitations, or provisions shall be cause for rejection. The Town of North Hempstead Highway Department s will consider as "irregular" or "non-responsive" any bid not prepared and submitted in accordance with the bid document and specification, or any bid lacking sufficient technical literature to enable the Town of North Hempstead Highway Department to make a reasonable determination of compliance to the specification.

It shall be the bidder's responsibility to carefully examine each item of the specification. Failure to offer a completed bid or failure to respond to each section of the technical specification (COMPLY: YES NO) will cause the proposal to be rejected without review as "non-responsive". All variances, exceptions and/or deviations shall be fully described in the appropriate section. Deceit in responding to the specification will be cause for rejection.

COMPLY
Yes No

5.0 CHASSIS

5.1	Configuration shall be three wheel, rear steer. Front steer configurations shall not be acceptable.	____	____
5.2	For safety, steering strut shall have dual tires. Single tire steer wheels shall not be acceptable in case of flat tire.	____	____
5.3	To protect the target vehicle receiving the hopper discharge, sweeper shall have permanently fixed heavy duty steel bumpers with rubber padding, capable of limiting the forward movement of the sweeper before the sweeper drive wheels or chassis can impact the target vehicle.	____	____
5.4	For maximum strength, chassis shall be fully welded; formed channel and boxed tube style. Bolt together chassis shall not be acceptable due to limited structural strength.	____	____
5.5	Chassis shall have front and rear tow hooks.	____	____
5.6	Engine compartment cover shall have two raising assist cylinders.	____	____
5.7	Rear axle shall be strut type, having a minimum capacity of 7,400 lbs.	____	____
5.8	Front axles shall be stub type, each having a minimum capacity of 10,000 lbs.	____	____
5.9	A centralized grease manifold is to be installed.	____	____
5.10	Front and rear illuminated license plate holders shall be provided.	____	____
5.11	Limb guard shall be supplied which protect the right side of the Pelican and direct low tree branches up and over the sweeper. A crossbar is to be included to strengthen the limb guard.	____	____

5.12 A slow moving vehicle warning decal shall be provided. ____ ____

5.13 Three triangle shaped reflectors for emergency stopping on roadside shall be included. ____ ____

6.0 CHASSIS ENGINE		**COMPLY Yes**	**No**
6.1	Diesel engine shall be 4 cylinder, turbocharged, dynamically counter balanced, 276 cu/in. (John Deere 4045T or equal). Engine shall have EPA Tier 4i emissions and be capable of operating on bio-diesel up to B20.	____	____
6.2	Horsepower rating shall be 55KW @ 2500 RPM. With electronic throttle.	____	____
6.3	Engine shall be rubber mounted.	____	____
6.4	For greater heat dissipation and lower cost of maintenance, engine shall have individually replaceable wet sleeve cylinder liners.	____	____
6.5	Air cleaner shall be dual element safety dry-type.	____	____
6.6	Anti-freeze/water mixture shall be rated at -20 degrees.	____	____
6.7	Diesel fuel tank shall have a minimum capacity of 35 U.S. gallons.	____	____
6.8	For operator safety in the event of engine cutout, steering system shall have a manual override.	____	____
6.9	An engine shutdown shall be included which protects against damage when either low oil pressure or high coolant temperature conditions occur.	____	____
6.10	A 1000 watt engine block heater shall be provided which assists with starting the auxiliary engine in cold weather conditions.	____	____
6.11	An extra ignition/door key shall be supplied for the sweeper.	____	____
6.12	Silicone hoses shall be installed on the auxiliary engine in lieu of standard rubber hoses.	____	____

7.0 HYDROSTATIC TRANSMISSION		**COMPLY Yes**	**No**
7.1	Pump shall be variable displacement with separate variable displacement wheel drive motors.	____	____
7.2	Power shall be evenly distributed through planetary torque hubs.	____	____
7.3	Power shall be transferred from wheel drive motors to planetary torque hubs without side loading.	____	____
7.4	Single foot pedal shall automatically produce required torque at a set pressure.	____	____
7.5	To prevent the possibility of contamination and the resulting damage to the transmission system, transmission shall be protected by 10 micron filter with cab restriction indicator.	____	____
7.6	Single foot pedal shall control both forward and reverse directions.		
7.7	Hydrostatic transmission shall be computer controlled to optimize propel system to engine power.	____	____

8.0 TIRES AND WHEELS		**COMPLY Yes**	**No**
8.1	Front drive tires shall be tubeless radial tires, 11R22.5 (14 Ply Rated) mounted on disc wheels.	____	____
8.2	Dual rear tires shall be tubeless radial tires, 10R17.5 (16 Ply Rated) 15 mounted on disc wheels.	____	____
8.3	To reduce chassis fatigue, sweeper shall be equipped with fully sprung guide wheel strut utilizing two large heavy duty springs.	____	____

9.0 BRAKES		**COMPLY Yes**	**No**
9.1	Service brakes shall be full power, hydraulically applied, three-caliper disc type.	____	____
9.2	For safety, the hydrostatic system shall be equipped with a priority relief valve to enable the sweeper to gradually coast to a stop when the accelerator pedal is released. The Highway Department has determined that systems that abruptly stop the sweeper by dynamically braking when the accelerator pedal is in the neutral position are potentially dangerous to our operators and following vehicles and will not be accepted.	____	____
9.3	For safety, loss of engine power shall not automatically engage brakes.	____	____
9.4	For safety, loss of hydraulic power shall not automatically engage brakes.	____	____
9.5	For safety, neither brake engagement nor disengagement shall be dependent upon the engine running.	____	____
9.6	For safety, neither brake engagement nor disengagement shall be dependent on any electrical circuit.	____	____
9.7	To safely provide redundancy, parking brake shall be positively and mechanically applied to drive axle.	____	____
9.8	Neither parking brake engagement nor disengagement shall be dependent on any electrical circuit.	____	____

10.0 CAB		**COMPLY Yes**	**No**
10.1	To maximize operator visibility, cab glass area shall be not less than 6,000 square inches.	____	____
10.2	For safety and maximum operator visibility, door windows shall be one piece sag glass. Opera windows to open.	____	____
10.3	Front windows shall be tinted. Front window area shall be a minimum of 2600 square inches for optimum forward visibility.	____	____
10.4	For safety, minimum cab visibility shall be approximately 360^{o} without using mirrors.	____	____

10.5	For operator safety, cab doors shall be rear opening (hinged at front), with secondary latch.	____	____
10.6	Right-hand Bostrom mid back air suspension seat with woven nylon cloth upholstered, foam cushioned bucket type with three point seat belts. Left seat to be standard seat.	____	____
10.7	Sweeper shall include one (1) inside rear view mirror and two (2) heated and in-cab remote controlled west coast cab mirrors.	____	____
10.8	To maximize operator visibility, outside mirrors shall be mounted forward of the cab enclosure.	____	____
10.9	For safety during night sweeping, rocker switches shall be internally illuminated so that they can be readily identified without the use of the cab dome light.	____	____
10.10	Windshield wiper shall be two-speed intermittent with washer.	____	____
10.11	Interior of cab shall be lined with acoustical insulation, have automotive type trim, and center console.	____	____
10.12	Dash shall be faced with soft molded plastic.	____	____
10.13	There shall be a soft textured steering wheel with center horn at the operator position with tilt and telescopic steering wheel for safer operation.	____	____
10.14	Sweeper shall have an automatic electronic back-up alarm.	____	____
10.15	Sound levels within the cab shall not exceed OSHA standards.	____	____
10.16	Door latch systems shall be FMVSS approved.	____	____
10.17	Doors and ignition shall be keyed alike.		
10.18	An AM/FM radio w/ CD shall be provided.	____	____
10.19	Cab interior environment shall be fully conditioned by air conditioner / fresh air heater / ventilator / defroster with 6 adjustable vents and dome light. No portion of the air conditioning system shall protrude above the cab roofline.	____	____
10.20	A 2½-lb. fire extinguisher shall be provided.	____	____
10.21	An automatic rear view camera with full color 5.6" LCD monitor shall be provided. Camera shall monitor display the area behind the sweeper whenever the sweeper is moving in reverse. The display shall be selectable to allow continuous rear view at all times. The display shall have an additional camera input to allow future expansion of additional cameras. The camera shall be equipped with infra red lamps to allow night vision.	____	____

11.0 SIDE BROOMS		**COMPLY Yes**	**No**
11.1	Side brooms shall be hydraulic, direct drive; vertical digger type mounted on right and left sides.	____	____
11.2	To provide flexibility for varying sweeping conditions, broom speed shall be variable, (90 RPM to 160 RPM), by operator from cab while moving independent of sweeping speed.	____	____

11.3	Broom down pressure shall be adjustable by operator from the cab while sweeping.	____	____
11.4	Each broom shall consist of four (4) replaceable plastic segments, filled with 26" long tempered wire.	____	____
11.5	Broom diameter shall be not less than 36", protruding not less than 13" beyond outside of tire while sweeping.	____	____
11.6	Tilting of right side broom shall be variable from the cab. An electrically controlled linear actuator shall allow the operator to tilt the side broom inward and outward from the cab, while sweeping.	____	____
11.7	An in cab indicator showing the degree of tilt is to be installed.	____	____

12.0 MAIN BROOM		**COMPLY Yes**	**No**
12.1	Broom shall be hydraulic, direct drive, not less than 35" diameter and not less than 68" long and be equipped with a cover to prevent debris from going into engine compartment.	____	____
12.2	To provide flexibility for varying sweeping conditions, broom speed shall be variable, (80 RPM to 140 RPM), by operator from cab while moving independent of sweeping speed.	____	____
12.3	Broom shall be prefab disposable strip type, United Rotary Brush center sweep design, filled with polypropylene	____	____
12.4	Sweeping path shall be not less than 8 feet wide with one gutter broom activated.	____	____
12.5	To protect the broom mechanism, the main broom shall raise automatically when the sweeper is reversed. The broom will return to its sweep position when a forward direction is resumed.	____	____
12.6	To be equipped with greaseable dirt shoes.	____	____

13.0 CONVEYOR		**COMPLY Yes**	**No**
13.1	Conveyor with Chevron style cleats and sipes shall be hydraulically driven and able to load hopper to 100% of rated useable capacity.	____	____
13.2	Conveyor shall be reversible in direction without stopping or reversing any broom.	____	____
13.3	Conveyor shall be capable of effectively sweeping debris of varying sizes (from large bulky trash 6" in height to fine sand) without the need to make any adjustments to the conveyor system.	____	____
13.4	To reduce wear on all conveyance components, a conveyor belt having molded Chevron style cleats and sipes shall carry, not drag, debris to the hopper.	____	____
13.5	To protect the broom mechanism, the main broom shall raise automatically when the sweeper is reversed. The broom will return to its position and down pressure when a forward direction is resumed.	____	____
13.6	An audible conveyor stall alarm is to be provided as a warning to the operator.	____	____
13.7	A lower conveyor wash out shall be supplied.	____	____

14.0 HOPPER		**COMPLY Yes**	**No**
14.1	For safety, the hopper shall be front dumping, allowing an operator to observe the dump target and surrounding area at all times from the cab, without the use of mirrors. No rear dumping sweeper will be considered or accepted.	____	____
14.2	Hopper shall dump at varying heights ranging from ground level through a height of 9-1/2 feet.	____	____
14.3	Hopper shall have a dumping reach of 33 in. forward.	____	____
14.4	To extend wear life, tilt arm bearings shall be perma- lube Teflon impregnated composite.	____	____
14.5	Dump cycle shall be not more than 60 seconds.	____	____
14.6	Volumetric capacity shall be not less than 3.6 cubic yards, useable capacity not less than 3.5 cubic yards.	____	____
14.7	A LifeLiner Hopper System shall be provided to protect the hopper against corrosion and wear and to facilitate the removal of the debris when dumping. This liner system shall provide protection such that the hopper will be warranted for the life of the sweeper. Bare steels including stainless steels are unacceptable as they do not provide sufficient protection for long term wear.	____	____

15.0 WATER SYSTEM		**COMPLY Yes**	**No**
15.1	Tank capacity shall be not less than 220 U.S. gallons.	____	____
15.2	Tank shall be constructed of non-rusting material (polyethylene or 7 gauge type 304 stainless steel). Because epoxy lining has the potential to chip and	____	____

flake off causing clogs in the water system, water tank constructions containing epoxy liners will not be accepted.
STATE TANK CONSTRUCTION: _____

15.3	Pump shall be twin diagram capable of running dry.	____	____
15.4	Water fill gauge shall be visible from normal operating position.	____	____
15.5	Sweeper shall be equipped with an automatic internal hopper/conveyor flush and wash down system.	____	____
15.6	Water fill hose shall be not less than 16'8" in length, equipped with 2-1/2" NST hydrant coupler.	____	____
15.7	Storage basket shall be provided for fill hose.	____	____
15.8	A hydrant wrench shall be supplied.	____	____

16.0 HYDRAULIC SYSTEM		**COMPLY** Yes	No
16.1	Power shall be provided by shaft and gear driven pumps.	____	____
16.2	Hydraulic reservoir shall be not less than 33 gallons, baffled and with sight gauge.	____	____
16.3	Test ports shall be at staggered height, including individual ports for sweeping functions, hopper functions and propulsion.	____	____
16.4	To prevent contamination of the reservoir during the dump cycle, the reservoir vent shall be equipped with 10 micron, spin on filter.	____	____
16.5	To prevent the possibility of contamination and the resulting damage to the hydraulic system, suction lines for drive to have 10 micron filter with cab mounted restriction indicator.	____	____
16.6	To prevent the possibility of contamination and the resulting damage to the hydraulic system, return lines for drive to have 10 micron filter with cab mounted restriction indicator.	____	____
16.7	To prevent contamination of the reservoir when adding hydraulic fluid, all oil added shall pass through a 10 micron filter located within the fill spout.	____	____
16.8	To maximize cooling efficiency and permit thorough cleaning, the hydraulic cooler shall be mounted along side the water radiator.	____	____
16.9	Cooler shall be protected by a 125 PSI bypass valve.	____	____
16.10	To minimize environmental damage caused by leaking hydraulic fittings, all pressure hydraulic fittings shall be flat-face "O" ring or "O" ring boss type.	____	____
16.11	All circuits shall have quick-disconnect check ports.	____	____
16.12	A warning indicator shall be supplied to warn operator if the hydraulic oil in the reservoir falls below the acceptable level required.	____	____
16.13	A shutdown shall be supplied which stops the engine when the hydraulic oil in the reservoir falls below the acceptable level required.	____	____

17.0 ELECTRICAL	**COMPLY**

		Yes	No
17.1	Unitized alternator/regulator shall be not less than 120 ampere.	____	____
17.2	Battery shall be maintenance free, 12 volt, 180 minimum reserve, 925 CCA.	____	____
17.3	For safety, all electrical circuits shall be protected with automatically self-resetting circuit breakers which do not require any action by the operator to reset.	____	____
17.4	All lighting shall be D.O.T. approved including combination stop and tail lights, sealed multiple beam headlights, high beam - low beam switch, adjustable side broom spotlights, illuminated gauges and instrument panel, internally illuminated rocker switches, self canceling directional signals, and hazard switch.	____	____
17.5	For ease of electrical "trouble shooting", all wiring shall be harnessed, identified by color coded and word coded wires (i.e. "Ignition", "Headlight" etc.)	____	____
17.6	All terminals and electrical splices shall be crimped and soldered.	____	____
17.7	To prevent deterioration from oxidation all electrical splices shall be fully and completely insulated with heat shrinkable tubing.	____	____
17.8	All electrical connections shall be sealed with weatherproof, polarized connectors.	____	____
17.9	Two alternating LED lights mounted on the back of the sweeper in the battery cover shall be provided.	____	____
17.10	Rear flood and back-up lights to be installed.	____	____
17.11	LED clearance lights to be installed.	____	____
17.12	Electrical system shall have complete plug-in diagnostics that includes fault codes and troubleshooting.	____	____

18.0 CONTROLS		**COMPLY** Yes	No
18.1	All sweeper controls shall be mounted on a central control console with locking ignition for use from the right position. This allows the operator to view all important information from either operating position.	____	____
18.2	The controls shall include all sweep, spray water, and lighting functions.	____	____
18.3	The controls for sweep, spray water, and lighting functions shall be conventional rocker switches.	____	____
18.4	Rocker switches shall be clearly identified by name and international symbol.	____	____
18.5	Hydraulic functions shall be controlled by electric rocker switches.	____	____
18.6	Hopper dump functions shall be controlled by a single “joy” stick that meets the SAE standard. Multiple levers shall not be acceptable.	____	____

19.0 INSTRUMENTS		**COMPLY** Yes	No
19.1	Instrument panel shall be full vision illuminated with tachometer, hour meter, speedometer, odometer, fuel gauge, hydrostatic oil temperature gauge, water temperature gauge, oil pressure gauge, voltmeter gauge, hydraulic filter/drive filter indicator and engine air intake restriction indicator.	____	____

20.0 PAINT

		COMPLY Yes	No
20.1	All visible exterior metallic surfaces shall be coated prior to assembly with polyester powder coat. The paint must be a minimum of 2 mils thick. The uses of acrylic enamels and/or polyurethane's are not acceptable.	____	____
20.2	Color shall be the Town of North Hempstead Highway Department color of "White".	____	____
20.3	Vehicle shall have an accent color of Grey on the lower portions of the unit.	____	____

21.0 MANUALS

		COMPLY Yes	No
21.1	One parts manual shall be provided.	____	____
21.2	One operator manual shall be provided.	____	____
21.3	A repair, service and trouble shooting manual shall be supplied with the unit.	____	____
21.4	A John Deere parts manual shall be supplied with the unit.	____	____
21.5	A John Deere operator manual shall be provided.	____	____

22.0 WARRANTY

		COMPLY Yes	No
22.1	Manufacturer's warranty shall be not less than one (1) year on entire vehicle.	____	____
22.2	Bidders submitting literature stating warranties which do not fully comply with warranty requirements of these specifications must submit a letter from the manufacturer certifying warranty compliance as an integral part of their proposal. Failure to comply may cause the proposal to be deemed "non-responsive" and rejected without further review.	____	____

23.0 SERVICE AND TRAINING

		COMPLY Yes	No
23.1	Vendors shall have a full parts and service facility within a reasonable distance from the Town of North Hempstead Highway Department garage. State location and distance._____ _____	____	____
23.2	A qualified technician shall provide complete training to Town of North Hempstead Highway Department personnel at the Town of North Hempstead Highway Department Garage. Training shall include safety, operation, maintenance and service.	____	____

24.0 DELIVERY

		COMPLY Yes	No
24.1	Sweeper shall be delivered F.O.B. Town of North Hempstead Highway Department in new operating condition.	____	____
24.2	Acceptance shall be subject to the inspection and approval of the Town of North Hempstead Highway Department.	____	____
24.3	Bidder shall state delivery time after receipt of order:		

_____

25.0 REFERENCES

25.1 Bidder shall state the length of time in service as an authorized dealer for the product being proposed.

_____

25.2 Bidder shall submit the name, address, responsible party and phone number of not less than ten (10) municipal owners of comparable models (including having an identical debris conveyance system) to that being offered, who have used such models over a ten year span. If none, state so.

26.0 QUALITY

26.1 Sweeper shall be manufactured by a company with a registered quality standard no less than ISO 9001. ____ ____

27.0 OPTIONAL ITEMS

The Town of North Hempstead Highway Department may choose, at its sole discretion, to add any or all of optional items to this purchase. Bidder shall state the amount to be added to the Bidder's Proposal, should each item be selected.

ADDITIONAL COST: $_____

Manufacturer's warranty shall be not less than five (5) years on the sweeper only (not Power plant), including parts and labor.
ADDITIONAL COST: $_____
Dual Limb Guards in lieu of Right Side Only.
ADDITIONAL COST: $_____
Spare Guide and Drive Wheels and Tires.
ADDITIONAL COST: $_____

28.0 EXCEPTIONS AND DEVIATIONS

Bidder shall fully describe every variance, exception and/or deviation. Additional sheets may be used if required

_____
_____
_____

PROPOSAL FORM

TO: Town of North Hempstead Highway Department

The undersigned hereby declares that they have carefully examined the requirements of the specifications contained herein, and propose to furnish and deliver to the Town of North Hempstead Highway Department the apparatus listed below. The Town of North Hempstead Highway Department may, at its sole discretion, **either purchase or lease purchase** such apparatus.

ONE (1) New and Unused Three Wheel Broom Street Sweeper with Belt Conveyor

SWEEPER MAKE: _____ MODEL: _____

PURCHASE PRICE: @ $_____ Total: $_____

(In Words)_____

OPTIONAL ITEMS: $_____

Signed: _____

Bidder: _____

Title: _____

Address: _____
_____

Date: _____

ITEM 5

TOWN OF NORTH HEMPSTEAD
TECHNICAL SPECIFICATIONS
FOR
SIX WHEEL BROOM STREET SWEEPER WITH SQUEEGEE STYLE CONVEYOR AND HIGH DUMP HOPPER

SPECIFICATIONS:

4 Cubic yard, twin engine, dual gutter broom, 2015 or newer model mechanical street sweeper, mounted on a new and unused 2015 or newer model year Diesel 'Cab Over' truck chassis. The following specification is based upon an ELGIN BROOM BADGER street sweeper mounted on an Isuzu NRR Chassis.

INSTRUCTIONS FOR COMPLETING BID

The sweeper to be furnished under this proposal shall be a truck chassis mounted type, 4 cubic yard capacity mechanical street sweeper, with dual right and left side gutter brooms and a squeegee type elevator. It shall be the manufacturer's latest model and design, mounted on a new and unused 2015 truck chassis utilizing the latest UREA fuel system. These specifications shall be regarded as **minimum.** Bidders must furnish all descriptive literature, manufacturer's compliance certificates and all other data on the equipment proposed as required in this specification. Bidder must answer **YES** or **NO** to each specification line item except where asked to state specific data. Failure to answer correctly, or failure to respond, will deem your bid as non-responsive. Bidder must be prepared to demonstrate a unit similar to the one proposed prior to the bid opening, if requested. All line items with a **"NO"** response, shall be explained in detail on the "Exceptions to Bid Specifications" pages provided at the end of this document.

BIDDER PROPOSED **YES / NO**

1. Truck Cab & Chassis

State:

Chassis Make: _____
Chassis Model: _____
Sweeper Make: _____
Sweeper Model: _____

2. Weights and Dimensions

2.1. GVWR: 19,500 lbs. minimum. _____

2.2 To allow maximum maneuverability the wheelbase shall not exceed 109" NO EXCEPTIONS. _____

2.3 For maximum maneuverability the sweeper shall have a turning radius not to exceed 16'4". NO EXCEPTIONS. _____

2.4 To ensure maximum visibility and pedestrian Safety, the truck shall be 'Cab Over' type. _____

2.5 To permit clearance under low hanging tree

Branches, the overall sweeper height shall not exceed 96". NO EXCEPTIONS. _____

3. Axles

3.1. Front axle shall be 7,275 lbs. minimum. _____

3.2. Rear axle shall be single speed with a minimum of 14,550lb. capacity. _____

3.3. Front and rear oil seals shall be provided. _____

4. Suspension

4.1 Front suspension shall be 8,440 lbs. minimum at ground load rating. _____

4.2 Front shock absorbers shall be supplied. _____

4.3 Rear suspension shall be a combination of leaf spring and rubber spring. _____

5. Brakes – ABS

5.1 Front service brakes shall be hydraulic disc. _____

5.2 Rear service brakes shall be hydraulic drum. _____

6. Steering

6.1. Complete dual hydraulic power steering with gauges and warning lights on left side. _____

7. Engine

7.1. Engine shall be a turbocharged diesel, with a minimum of 5.19L displacement. _____

7.2. Engine shall be rated at 215 H.P at 2,500 RPM, minimum. _____

7.3. Engine shall have a torque rating of 452- ft. lbs. at 1,850 RPM. _____

7.4. Engine shall be water cooled with antifreeze protection to –34 degrees Fahrenheit. _____

8. Transmission

8.1 Transmission shall be an 6 speed automatic with overdrive. _____

9. Engine Equipment

9.1 Alternator shall have a minimum of 110 amp output rating. _____

9.2 Two batteries shall be maintenance free and each rated at 750 CCA. _____

9.3 A Donaldson single stage air cleaner with restriction indicator shall be supplied. _____

10 Cab

10.1 Cab shall be 'Cab Over' engine type. _____

10.2 Cab shall have two seats with approved seat belts. Left side seat shall be bucket type. _____

10.3 Sun visors and arm rests shall be supplied on both sides. _____

10.4 Cigarette lighter and ash tray to be provided. _____

10.5 Heater with full width defrosters, fresh air ducts & variable speed fan shall be supplied. _____

10.6 Dual, two speed electric intermittent windshield wipers with washers shall be supplied. _____

10.7 Two West Coast type mirrors 6" x 16" shall be supplied. Two 6" diameter spot mirrors shall be mounted below. _____

10.8 Two 12" convex mirrors shall also be mounted below the west coast mirrors to permit the operator full view of sweeping equipment. _____

10.9 Factory air conditioner shall be supplied and installed in cab. _____

10.10 Two cup holders shall be provided. _____

10.11 The sweeper shall be supplied with an AM/FM stereo with CD player. _____

10.12 The truck shall be equipped with power windows and door locks. _____

11 Fuel Tank

11.1 A single 30 gallon fuel tank shall be provided for both the truck and auxiliary engine. _____

11.2 A diesel exhaust fluid tank shall also be provided. To prevent accidental filling of wrong fluids, the tank cap shall be blue and the tank location must be mounted on the opposite frame rail to the fuel tank. _____

12 Lights

12.1 All lamps and reflectors shall comply with federal regulations. _____

12.2 Four-way hazard warning lights shall be supplied. _____

12.3 Back up lights and alarm shall be fitted. _____

12.4 Sweepers backup alarm, rear lighting and auto reverse lifting of brush gear shall utilize reverse circuit from truck chassis. _____

12.5 Connections for rear lighting shall be provided through a sealed junction box in the rear of each side of the sweeper to prevent contamination. _____

13 Frame

13.1 High tensile frame shall be supplied. 7.20 S.M. 316,800 RBM, 44,000 PSI yield strength. _____

13.2 Front tow hooks shall be supplied. _____

13.3 Steel front bumper shall be supplied. _____

13.4 To prevent warranty issues resulting from body mounting, no drilling of the chassis frame shall be permitted. _____

13.5 The sweeper body shall be mounted on it's own sub-frame and fastened to the chassis through U-Bolts. _____

All sweeper hydraulic and water hoses shall be routed and connected to sweeper sub-frame. No routing on vehicle truck chassis frame is permitted. _____

14 Wheels & Tires

14.1 **Tires**:
Two front & four rears shall be tubeless radial type 225/70R-19.5 12 ply rated. _____

14.2 Rear tire sets to be protected by

heavy duty replaceable plastic fenders. _____

15 Warranty

15.1 The basic vehicle shall be warranted for 5 years 100% parts and labor. _____

15.2 The truck engine shall be warranted for 5 years 100% parts and labor. _____

15.3 The truck automatic transmission shall be warranted for 5 years 100% parts and labor. _____

SWEEPER

16. Power Pack **YES NO**

16.1 Power shall be supplied by a Kubota 59 hp min. heavy-duty turbocharged industrial diesel engine. _____

16.2 Engine shall be four cylinder, four cycle, water cooled and antifreeze protected to -34 degrees Fahrenheit. A cold weather start aid shall be supplied. _____

16.3 The auxiliary engine must be Interim Tier 4/stage 3a compliant. _____

16.4 To reduce fuel consumption the sweeper shall be equipped with a load sense hydraulic system. _____

16.5 The unit shall be capable of operating within a temperature range of -34 degrees Fahrenheit to +126 degrees Fahrenheit with the manufacturer's full warranty approval. _____

16.6 Heavy duty, two stage Donaldson air filter with pre-cleaner. Restriction service indicator shall be provided. _____

16.7 A 12 volt 50 amp alternator shall be furnished. _____

16.8 To safeguard the engine, a high coolant temperature, low oil pressure shutdown system shall be supplied. _____

16.9 Engine shall have a vertical exhaust above cab height. _____

16.10 For greater reliability, the engine speed shall be controlled by an electric actuator mounted on the sweeper control panel. _____

16.11 A tachometer and hour meter shall be supplied. _____

16.12 All sweeping controls shall be easily accessible to the

operator from the driving position. _____

16.13 Warning lights shall be furnished for low oil pressure, high water temperature. _____

17 Sweeper Hopper Body

17.1 Hopper body shall be fabricated from steel. _____

17.2 Sweeper shall have a hopper capacity of 4 cu yds. _____

17.3 The hopper shall have a minimum lift capacity of 9,800lbs. _____

17.4 A hydraulically operated discharge door shall automatically open when the container is tilted. Door shall be a minimum 36” in length to position the debris load into the center of the dump truck. NO EXCEPTIONS. _____

17.5 Two safety prop rods shall be furnished. _____

17.6 Debris dump angle shall be 50 degrees minimum. _____

17.7 Shall be a variable dump height from ground level to 120” as measured to the bottom of the dump door. _____

17.8 For maximum visibility and safety during dumping, the sweeper shall dump to the side. Rear and front dump systems are not acceptable. _____

17.9 For greater durability and longer life, the hopper scissor mechanism shall incorporate hardened pins and composite bushings. _____

17.10 To reduce maintenance, the hopper scissor lift mechanism shall not require any maintenance or greasing. _____

17.11 For added safety, the hopper lift system shall incorporate a velocity fuse. NO EXCEPTIONS. _____

17.12 To assist in bulk debris removal, the hopper shall be equipped with a side mounted access door. _____

17.13 The hopper shall be equipped with a proximity switch to indicate if hopper is raised/lowered. For greater reliability the proximity switch shall be magnetic type. _____

17.14 A light shall be furnished on the control box to indicate when hopper is raised. _____

18 Gutter brooms – Dual

18.1 Gutter brooms shall be five piece, refillable, of steel tine construction and 42” in diameter. _____

18.2 Gutter brooms shall be direct hydraulic drive type and relief valve protected. _____

18.3 For added strength and durability, the broom motors must incorporate a 4 bolt mounting flange. _____

18.4 Gutter brooms shall be hydraulically raised and lowered _____

18.5 Down pressure shall be controlled hydraulically from within the cab. _____

18.6 A visual indicator dial in the cab shall indicate each side broom pressure setting. _____

18.7 To adapt to changing curb line conditions, the right and left side brooms shall have tilt angle controls adjustable from inside the cab. _____

18.8 To prevent damage, the brooms must be trailing arm design with spring kickback. _____

18.9 Gutter brooms each shall have three water spray nozzles for dust control. _____

18.10 Gutter brooms shall be capable of being operated independently of other sweep gear. _____

18.11 Gutter brooms, and components shall be “non-handed” and interchangeable from left to right and vice versa. _____

18.12 Each broom shall be equipped with a work light. _____

18.13 To reduce maintenance the entire gutter broom assembly shall not require any greasing. _____

18.14 Total sweep path including both gutter brooms shall be 106”. _____

19 Pickup Broom

19.1 Polypropylene strip type rear broom shall be supplied. _____

19.2 Broom shall be 35” diameter x 58” long minimum. _____

19.3 For greater durability the sweeper shall be equipped with steel dirt shoes. _____

19.4 Main broom shall be enclosed within its own hood to prevent debris from being ejected. _____

19.5 Broom hood shall hinge up without the use of tools to facilitate easier broom replacement. _____

19.6 Broom shall operate at a constant speed and be equipped with an adjustable pressure and flotation system. _____

19.7 Main broom adjustment shall be set without the use of any tools. _____

19.8 To reduce repair and maintenance costs, the broom shall be direct hydraulic motor driven. The use of chain and sprocket drive systems are not acceptable. _____

19.9 For added strength and durability the main broom motor shall incorporate a 4 bolt mounting flange. _____

19.10 Pickup broom shall have a minimum of four water nozzles for dust control. _____

19.11 The spray bar shall be removable without the use of tools to permit cleaning of the spray jets. _____

19.12 Pickup broom shall be equipped with a work light. _____

20 Elevator

20.1 Shall be squeegee type design, minimum 58” width. _____

20.2 Squeegee elevator shall have a minimum of 7 flights. _____

20.3 To reduce repair and maintenance costs, the elevator shall be direct hydraulic motor driven. The use of chain and sprocket drive systems are unacceptable. _____

20.4 For added strength and durability the elevator motor shall incorporate a 4 bolt mounting flange. _____

20.5 For ease of maintenance and cleaning the elevator back plate shall hinge open without the use of tools. _____

20.6 For greater durability the elevator floor shall be ¼” abrasion resistant steel. _____

20.7 Elevator direction must be forward and reverse with in cab controls. _____

20.8 Shall have an in cab elevator stall alarm. (Light and buzzer) _____

20.9 Elevator shall be raised and lowered hydraulically. _____

20.10 To reduce cost of ownership and maintenance the elevator shall only incorporate two shafts. _____

20.11 For ease of overhauling, the entire elevator shall be removable by disconnecting the elevator motor and 4 bolts . _____

20.12 Squeegee flights shall be connected to standard metal chain and poly sprocket system. Use of rubber elevator belts is not acceptable.

_____

21 Hydraulic System

21.1 For simplicity and safety all sweeper functions shall be controlled hydraulically. Sweepers incorporating pneumatics supplied from the truck air tanks/brakes are not acceptable. NO EXCEPTIONS. _____

21.2 Hydraulic oil reservoir capacity shall be 30 gallons minimum and capable of maintaining continuous operation without overheating.

_____

21.3 Hydraulic system shall incorporate an externally mounted oil cooler with a thermostatically controlled electric fan. _____

21.4 Hydraulic system shall have a tank mounted site gauge indicating oil level and temperature. _____

21.5 To reduce heat and provide power on demand, the sweeper shall be equipped with a load sense hydraulic pump. NO EXCEPTIONS. _____

21.6 The pump shall be an axial piston type with a capacity of 32gpm. Gear pump systems are not acceptable. _____

21.7 To reduce heat generation, all hydraulic functions shall be controlled by Sauer-Danfoss PVG32 series valves. _____

21.8 For maximum performance each valve shall be load independent. _____

21.9 All hydraulic valves shall be equipped with manual override levers to assist in troubleshooting. Use of tools is not acceptable. _____

21.10 Each individual hydraulic valve shall have independent flow control. _____

21.11 For maximum system efficiency and reliability the hydraulic system valves, pumps and valve manifold must be of the same manufacturer. Sauer-Danfoss or approved equal. _____

21.12 The hydraulic sweep system shall have a systems locker mounted pressure test port. _____

21.13 The sweeper hydraulic system must be designed so that all new hydraulic fluid added to the sweeper passes through a 10 micron filter. _____

21.14 The sweeper hydraulic system filter must have a filter condition indicator. _____

21.15 To prevent damage to the hydraulic pump and system, the auxiliary engine shall shut down automatically in the event of either low hydraulic oil level or high hydraulic oil temperature. _____

22 <u>Water System</u>

22.1 The water tank shall be constructed of polyethylene. _____

22.2 To maximize available sweep time, the water tank capacity shall be a minimum of 220 gallons. _____

22.3 A 3 gpm self priming water pump shall be supplied and not subject to damage when operated dry. _____

22.4 A quick disconnect 20' hydrant hose and coupler shall be provided for water tank filling. _____

22.5 Provision shall be made to enable water tank filling to be accomplished by either hydrant or garden type hose. _____

22.6 An external water filter shall be provided. The filter must be accessible with body lowered. A shut off (isolation) valve must be provided to facilitate servicing. _____

22.7 The water system shall have a low water warning light installed in the cab. _____

22.8 A storage rack shall be provided for the hydrant fill hose. _____

22.9 To prevent corrosion all water system components shall be non ferrous. _____

22.10 To facilitate easy cleaning, all water spray nozzles shall be removable without the use of tools. _____

22.11 Water system shall be PM10 compliant per S.C.A.Q.M.D rule 1186. _____

22.12 Spray nozzles must be located at each gutter broom (3), in front of main rear broom (4) and on front bumper (5). _____

22.13 Spray nozzles shall be removable for cleaning without the use of tools. _____

24. <u>Maintenance</u>

24.1 All controlling elements for the sweeper's electrics and hydraulics shall be housed in an easily accessible, side compartment. _____

24.2 Test ports shall be provided for each system. _____

24.3 All electrical wiring shall be contained within flame retardant conduit. _____

24.4 All wires shall be color & numbered coded for ease of troubleshooting. _____

24.5 All sweeper circuit fuses, relays and diodes shall be centrally located in a sealed box within the locker. No diodes shall be installed within any wiring harnesses. _____

24.6 To reduce maintenance, the sweeper pivot points must utilize chrome hardened pins with composite bushings. _____

24.7 To reduce maintenance the sweeper shall have no more than 6 grease points. (4-elevator; 2-main broom). _____

24.8 Sweepers with more than 6 grease points as described above must incorporate automatic lubrication systems. Midwest Auto-Lube or equal. _____

VI.**25.** **Safety**

25.1 One rear mounted amber flashing strobe shall be provided. _____

25.2 A rear mounted LED arrowstick shall be provided. _____

25.3 A back up alarm of not less than 107 dB (A) shall be installed and shall sound when reverse gear is selected. _____

25.4 To prevent damage, all brush gear must raise automatically when the truck transmission is placed in reverse. _____

25.5 A pre-programmed single "ergo" master switch shall control all sweep gear. The sweeping gear shall raise and shut off when "ergo" is moved out of "work" position. All functions shall resume their previously programmed settings when "ergo" switch is returned to "work" position. _____

25.6 The sweeper shall be equipped with 2 infrared cameras. The cameras shall be located at the right side gutter broom, and rear of the sweeper. A 7" LCD monitor shall be installed inside the cab to permit viewing. The rear view must automatically be shown when the transmission is placed in reverse gear. _____

26. **Paint**

26.1 The sweeper shall be powder coated manufacturers standard white. Sweep gear shall be black. _____

27. **Warranty**

27.1 The sweeper auxiliary engine shall carry a two-year warranty, 100% parts and labor minimum. Include warranty statement with your bids. _____

27.2 Warranty repairs to be made at customer's premises including all parts and labor, 100% coverage, no pro-rating. _____

27.3 The sweeper hydraulic pump and valve assembly shall have a 1 year warranty. _____

27.4 Sweeper components other than wearing items

shall carry a standard one-year warranty. _____

28 Manuals

The following documentation shall be supplied upon delivery of unit:

28.1 Sweeper:
1-Driver/ Operator Guide, 1 parts list, 1 service/ maintenance manual. _____

29 Training

29.1 Operator/mechanic training will be conducted at the customer's premises at no charge to the customer. _____

29.2 Operator/mechanic training shall be conducted by a manufacturer's employee and not a distributor. _____

EXCEPTIONS TO BID SPECIFICATIONS

Clause #	Explanation
_____	_____
_____	_____
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PROPOSAL FORM

TO: **Town of North Hempstead:** The undersigned hereby declares that they have carefully examined the requirements of the specifications contained herein, and propose to furnish and deliver to the Town of North Hempstead the apparatus listed below. The Town of North Hempstead, at its sole discretion, either purchase or lease purchase such apparatus.

ONE (1) New and Unused Six Wheel Broom Street Sweeper with High Dump and Squeegee Style Conveyor

BODY MAKE: _____ MODEL: _____

CHASSIS MAKE: _____ MODEL: _____

PURCHASE PRICE: @ $_____ Total: $_____

(In Words)_____

Signed: _____

Bidder: _____

Title: _____

Address: _____

_____

Date: _____

Purchase Order Number: _____

Signature _____

ITEM 6

TECHNICAL SPECIFICATIONS
FOR
SIX WHEEL SINGLE ENGINE BROOM STREET SWEEPER WITH BELT CONVEYOR

***Section A* - Chassis**

1.0 CHASSIS (Freightliner M2 2015 OR EQUAL)		**COMPLY Yes**	**No**
1.1	For safety, service, parts availability, etc the chassis shall be of a commercially available conventional cab type configuration (Freightliner M2 or equal). A purpose built chassis manufactured by the sweeper company will not be acceptable.	____	____
1.2	The wheelbase shall not exceed 136 inches; cab-to-axle shall be 70 in. Overall length not to exceed 268 inches. Outside width in transport mode not to exceed 8'. Overall height not to exceed 9'	____	____
1.3	Gross Vehicle Weight Rating (GVWR) shall be not less than 33,000 pounds.	____	____
1.4	For safety, certification of Federal Motor Vehicle Safety Standard (FMVSS) compliance must be submitted with the proposal. Failure to comply will result in proposal being rejected as "non-responsive".	____	____
1.5	Chassis shall be capable of safely propelling the sweeper, loaded to the maximum GVWR, under all normal sweeping and transport conditions.	____	____
1.6	Vehicle shall be rated for carrying an 11,000 lbs. load in the hopper at highway speed of 55 MPH and should not be speed restricted by tire limitations.	____	____
1.7	Speed shall be governed at 55 MPH.	____	____
1.8	Manufacturer shall certify that pass-by noise level at 50 feet (per SAE J 1077) while sweeping, does not exceed 79 dB(A).	____	____
1.9	Front axle shall be an I-beam type, 68" track; with a minimum capacity of 10,000 lbs. Front axle shall have leaf spring suspension and shock absorbers as standard equipment to avoid high stress areas and cracking of the chassis.	____	____
1.10	Rear axle shall have a minimum capacity of 23,000 lbs.	____	____
1.11	Rear suspension shall be provided through a twin air spring suspension system having a minimum capacity of 23,000 pounds.	____	____
1.12	Rear axle shall provide a full width heavy duty, 80" track.	____	____
1.13	Two-speed rear axle shall have a 6.67/9.08:1 ratio. An auxiliary transmission for sweeping is not acceptable.	____	____
1.14	Turning radius shall not exceed 19ft 7in curb to curb. Front axle steering cut shall be 50 degrees minimum.	____	____
1.15	Brakes shall be full air dual circuit type with auto slack adjusters, front and rear. Wabco ABS brakes shall be supplied. Hydraulic brakes shall not be acceptable.	____	____
1.16	Air compressor shall be 18.7 CFM.	____	____
1.17	Parking brake shall be spring applied rear wheel drum and shoe.	____	____
1.18	Air shall be equipped with an Bendix AD-9 air dryer	____	____

1.19	Front and rear dust shields and automatic slack adjustors to be installed at each wheel.	____	____
1.20	Chassis shall include front tow hooks. Access to frame on both sides of machine for jacking purposes shall be available.	____	____
1.21	Automatic lubrication system to provide appropriately timed grease application to all greasable points shall be provided for the sweeper and chassis.	____	____
1.22	A rear mounted "slow moving vehicle" sign shall be supplied for visibility during operation.	____	____

2.0 CHASSIS ENGINE		**COMPLY** Yes	No
2.1	Diesel engine shall be an electronic inline 6 cylinder, turbocharged, 507 cubic inch displacement. The engine shall supply power for propulsion and sweeper functions.	____	____
2.2	Horsepower rating shall be 260 HP @ 2200 RPM. Torque rating shall be 660 ft-lbs. @ 1300 RPM.	____	____
2.3	Engine shall be supplied with a low oil pressure and high water temperature warning system integrated in the engine electronic system.	____	____
2.4	Engine shall be equipped with a single stage, dual element dry-type air cleaner, spin-on fuel filter, full flow oil filter, and fuel water separator.	____	____
2.5	Radiator fan shall utilize a clutch type drive. Direct drive fans shall not be acceptable.	____	____
2.6	Anti-freeze/water mixture shall be rated at –34 F degrees.	____	____
2.7	Diesel fuel tank shall have a minimum capacity of 50 U.S. gallons.	____	____
2.8	Diesel emissions shall be EPA 2010 and have a minimum capacity of 6 U.S. gallons diesel emissions fluid.	____	____

3.0 TRANSMISSION		**COMPLY** Yes	No
3.1	Automatic transmission shall have five forward speeds and one reverse. (Allison 3500RDS or equal).	____	____
3.2	Transmission shift pattern shall be illuminated for night operation. Shift operation shall be by push button in lieu of shift lever.	____	____
3.3	Transmission shall be equipped with a heavy-duty oil cooler and magnetic drain plugs.	____	____
3.4	Synthetic Transmission fluid (TES-295 compliant) shall be provided.	____	____

4.0 TIRES AND WHEELS **COMPLY**

		Yes	No
4.1	Front and rear tires shall be first line quality tubeless radial tires, 11R X 22.5, 14 ply rating.	____	____
4.2	Tires shall be mounted on 10 hub piloted steel disc 22.5/8.25 rims.	____	____
4.3	Rear axle shall be equipped with dual tires for load capacity and stability. Rear mud flaps shall be supplied.	____	____
4.4	All wheels shall be interchangeable to allow for emergency change at the job site.	____	____
4.5	A spare tire and wheel shall be provided.	____	____

5.0 CAB		**COMPLY** Yes	No
5.1	For maximum visibility, the forward line of sight (distance from operating position to view of ground) shall be 16 feet maximum.		
5.2	Steering shall be full power with dual operator controls. Dual OEM dash mounted instrumentation, including speedometer, odometer, tachometer, hour meter, water temperature, oil pressure, voltmeter, fuel gauge and transmission temperature gauge.	____	____
5.3	Dual steering shall include right and left steering wheels, brake and throttle pedals, center mounted single windshield wiper control, dual turn signal controls, and tilt adjustment.	____	____
5.4	Console shall have Left / Right primary driver switch which changes controls for the operator station and instrumentation from left to right and back. For safety driver switch can only be activated with the parking brake applied.	____	____
5.5	Right and left side operators' seats shall be hi back, cloth, air suspension, and include 3 point seat belts.	____	____
5.6	Left and right fender mounted mirrors shall be supplied.	____	____
5.7	Sweeper shall include two (2) heated and remotely controlled outside west coast type mirrors with 8-inch convex auxiliary mirrors.	____	____
5.8	Cab shall be full width Aluminum cab with one-piece fiberglass tilting hood.	____	____
5.9	Hydraulic functions shall be controlled by a single rocker switch which activates the hydraulic power which is supplied from the "HOT SHIFT" PTO on the transmission. The hydraulic system must be able to be disengaged in case of a hydraulic oil leak, thus allowing transport capability without draining the hydraulic oil tank. Full time live hydraulics or the use of an auxiliary transmission in the drive train will not be acceptable.	____	____
5.10	For safety during night sweeping, rocker switches shall be illuminated and clearly marked for easy identification. All sweeper controls shall be mounted between the two operator stations for easy reach and visibility.	____	____
5.11	Cab shall be supplied with an AM/FM/CD radio.	____	____
5.12	Dual electric horns and single air horn shall be supplied.	____	____
5.13	Cab interior environment shall be fully conditioned by fresh air heater / ventilator /	____	____

defroster / air conditioning with a three speed fan.

5.14	Cab shall have full flow through ventilation.	____	____
5.15	Windshield wipers shall be two speeds with washer.	____	____
5.16	Wipers shall have an intermittent feature.	____	____
5.17	Interior of cab shall have acoustical insulation, automotive type trim, and center console.	____	____
5.18	Dashboard shall be fully faced with soft molded plastic; two cup holders shall be included.	____	____
5.19	Left and right hand side grab handles shall be supplied to aid in operator entry and exit from the cab.	____	____
5.20	Sweeper shall have an automatic electronic back-up alarm.	____	____
5.21	Each operator station shall have an adjustable sun visor.	____	____
5.22	Doors and ignition shall be keyed alike and a spare key is to be provided.	____	____
5.23	All glass shall be tinted safety glass.	____	____
5.24	Side windows shall have a defogger.	____	____
5.25	Door windows shall be roll down type. Sliding windows are not acceptable.	____	____
5.26	Manufacturer must certify that cab noise level while operating does not exceed 82 dB (A) (per J919 testing).	____	____
5.27	Fire Extinguisher 2.5 lb.	____	____
5.28	A set of three triangular reflector flares shall be provided	____	____
5.29	An automatic rear view camera with full color 5.6” LCD monitor shall be provided. Camera shall monitor display the area behind the sweeper whenever the sweeper is moving in reverse. The display shall be selectable to allow continuous rear view at all times. The display shall have an additional camera input to allow future expansion of additional cameras. The camera shall be equipped with infra red lamps to allow night vision.	____	____

6.0 ELECTRICAL		**COMPLY** **Yes**	**No**
6.1	Chassis alternator shall not be less than 160 amps.	____	____
6.2	Shall be a 12-volt negative ground system.	____	____
6.3	Dual batteries shall be maintenance free, 12 volt, and 1850 CCA total.	____	____
6.4	For safety, all electrical circuits must be protected by blade type fuses.	____	____
6.5	All lighting shall be LED DOT approved including combination stop and tail lights, backup lights, sealed multiple beam headlights, high beam - low beam switch, adjustable side broom and main broom spotlights, clearance and running lights, front parking and signal lights, four way flashers, dome light, illuminated gauges and instrument panel, illuminated rocker switches, self canceling directional signals,	____	____

and hazard switch.

6.7 Warning lights shall indicate glow plug, air brakes, stop and tail light failure, charging system, park brake, engine oil system, hydraulic oil filter restriction and low spray water. ____ ____

7.0 LIGHTING

COMPLY
Yes No

7.1 All lighting shall meet DOT safety requirements and to be LED where applicable. ____ ____

7.2 Front and rear shall have clearance lights. ____ ____

7.3 Left and right sides shall each contain two clearance lights. ____ ____

7.4 Front and rear directional lights with emergency flasher shall be provided. ____ ____

7.5 Work lights for each gutter broom and the rear broom shall be provided. ____ ____

7.6 Dash, all console switches and all gauges shall be illuminated. ____ ____

7.7 An automatic back-up light and electric alarm shall be activated when transmission is placed into reverse. ____ ____

7.8 License plate holder shall be illuminated. ____ ____

7.9 Vehicle shall have two rear side combination light/reflectors. ____ ____

***Section B* - Sweeper Module**

COMPLY
Yes No

1.0 INTENT ____ ____

It is the intent of this specification to provide for the purchase or lease purchase of one (1) new and unused street sweeper having a six wheel configuration, single engine for propulsion and sweeping, 4.5 cubic yard right side variable high dumping hopper, automatic transmission, dual steering and operator controls, full width belt conveyor, left side and right side broom with variable down pressure controlled from cab.
The following specification is based upon an Elgin Sweeper Broom Bear street sweeper mounted on a Freightliner M2 chassis. The Town of North Hempstead Highway Department has evaluated different types of street sweepers and has determined that this product is best suited for the Town of North Hempstead Highway Department needs in safety, quality, performance, and standardization. This specification is not to be interpreted as restrictive, but rather as a measure of the safety, quality and performance against which all sweepers bid will be compared.
In comparing proposals, consideration will not be confined to price only. Contract will be awarded for the product which best serves the interests of the Town of North Hempstead Highway Department when cost, product, safety, quality and delivery are considered. The Town of North Hempstead Highway Department reserves the right to reject any or all bids or any part thereof, and to waive any minor technicalities. A contract will be awarded to the bidder submitting the lowest responsible bid meeting the requirements.

COMPLY
Yes No

2.0 EQUIVALENT PRODUCT ____ ____

Bids will be accepted for consideration on any make or model that is equal or superior to the sweeper specified. Decisions of equivalency will be at the sole interpretation of the Town of North Hempstead Highway Department. A blanket statement that equipment proposed will meet all requirements will not be sufficient to establish equivalence. Original manufacturer's brochures of the proposed unit are to be submitted with the proposal. All modifications made to the standard production unit described in the manufacturer's brochures must be certified by the manufacturer and submitted with the bid, or the bid will be deemed "non-responsive" and rejected without further review. Bidder must be prepared to demonstrate a unit similar to the one proposed, prior to the bid opening, if requested.

COMPLY
Yes No

3.0 INTERPRETATIONS ____ ____

In order to be fair to all bidders, no oral interpretations will be given to any bidder as to the meaning of the specification documents or any part thereof. Every request for such a consideration shall be made in writing to the Town of North Hempstead Highway Department. Based upon such inquiry, the Town of North Hempstead Highway Department may choose to issue an Addendum.

COMPLY
Yes No

4.0 GENERAL ____ ____

The specification herein states the minimum requirements of the Town of North Hempstead Highway Department. All bids must be regular in every respect. Unauthorized conditions, limitations, or provisions shall be cause for rejection. The Town of North Hempstead Highway Department will consider as "irregular" or "non-responsive" any bid not prepared and submitted in accordance with the bid document and specification, or any bid lacking sufficient technical literature to enable the Town of North Hempstead Highway Department to make a reasonable determination of compliance to the specification.
It shall be the bidder's responsibility to carefully examine each item of the specification. Failure to offer a completed bid or failure to respond to each section of the technical specification (COMPLY: YES NO) will cause the proposal to be rejected without review as "non-responsive". All variances, exceptions and/or deviations shall be fully described in the appropriate section. Deceit in responding to the specification will be cause for rejection.

5.0 SIDE BROOMS **COMPLY**

		Yes	No
5.1	Brooms shall be driven by a hydraulic motor directly mounted to broom disc plate. They shall be the vertical digger type, trailing arm design, mounted on right and left side.	____	____
5.2	To hold broom pattern, regardless of up and down motion, arm suspension design shall be the parallelogram type.	____	____
5.3	Broom rotation speed shall be constant governed by load sensing hydraulic system, regardless of engine RPM or sweeper ground speed.	____	____
5.4	Broom down pressure shall be adjustable by operator from the cab while moving.	____	____
5.5	Broom shall be five (5) plastic segments, filled with 26" long tempered wire. Discs shall be cross-drilled for 5 or 4 segment usage.	____	____
5.6	Broom diameter shall not be less than 44", protruding not less than 13" beyond outside of tire while sweeping.	____	____
5.7	Broom location shall be positioned to provide best sweep path in relation to the main broom.	____	____
5.8	Each broom shall have a spotlight for night operation.	____	____
5.9	Side brooms must be capable of extending from 110" (2794 mm) to 144" (3657 mm) with both side brooms activated. Positive outward extension shall be provided by air cylinders. Mechanisms relying on bristle torque to deploy broom are not acceptable.	____	____
5.10	Tilting of right side broom shall be variable from the cab. An electrically controlled linear actuator shall allow the operator to tilt the side broom inward and outward from the cab, while sweeping. Degree of tilt to be displayed on operator console LCD display.	____	____

6.0 MAIN BROOM		**COMPLY** Yes	No
6.1	Broom shall be direct drive by a hydraulic motor.	____	____
6.2	Broom shall be not less than 34.5" diameter and not less than 58" long.	____	____
6.3	Broom rotation speed shall be constant, governed by load sensing hydraulic system, regardless of engine RPM or ground speed.	____	____
6.4	Broom shall be full floating with self-aligning bearings.	____	____
6.5	Broom shall be disposable type, filled with 26" long polypropylene.	____	____
6.6	Broom side plates shall be equipped with steel drag shoes.	____	____
6.7	Sweeping path shall be not less than 7-1/2 feet wide with one side broom activated, and not less than 10 feet wide with both side brooms activated.	____	____
6.8	Main broom shall be shielded by a steel broom hood. Plastic hoods shall not be acceptable due to cracking.	____	____
6.9	Main broom and conveyor shall have a work light.	____	____
6.10	Broom shall be hydraulically raised and lowered and be capable of movement	____	____

independent of the conveyor assembly to effectively sweep varying debris. This independent movement also avoids damage to the main broom or the conveyor assembly during sweeping.

6.11 Suspension and pressure control shall be hydraulic, automatic self adjusting and maintain a set pattern throughout the broom life with no input from the operator. ____ ____

7.0 CONVEYOR **COMPLY Yes No**

7.1 Conveyor shall be able to load hopper to 100% of rated useable capacity. ____ ____

7.2 Conveyor rotation, forward or reverse shall be selectable without leaving the cab. Hydraulic conveyor speed shall be constant governed by load sensing hydraulic system, independent of engine RPM or ground speed. ____ ____

7.3 Conveyor shall be high strength belt type with molded in full width cleats. Elevator with rubber squeegee type flights is not acceptable. ____ ____

7.4 Conveyor shall be reversible in direction. The main broom shall stop rotation while conveyor is reversed. ____ ____

7.5 Conveyor shall be capable of effectively sweeping debris of varying sizes without the need to make any adjustments to the conveyor system. ____ ____

7.6 To provide proper clearance during variable sweeping conditions, the lower portion of the conveyor shall be capable of raising while sweeping, independent of main broom height. ____ ____

7.7 To reduce wear on all conveyance components, a conveyor belt having molded cleats must carry, not drag, debris to the hopper. ____ ____

7.8 For safety, conveyor shall automatically stop and raise when transmission is placed in reverse or when the sweeper is put in transport mode. ____ _____

7.9 An audible conveyor stall alarm is to be provided as a warning to the operator. ____ ____

7.10 The lower roller is to be constructed from hardened steel pipe, with a thicker wall, for improved wear resistance and longer life. ____ ____

8.0 HOPPER **COMPLY Yes No**

8.1 For safety, the hopper shall be right side dumping, allowing an operator to observe the dump target and surrounding area at all times from the cab, without the use of mirrors. All dump controls to be cab mounted. ____ ____

8.2 Volumetric capacity shall be not less than 4.5 cubic yards, useable capacity not less than 3.3 yards. A hopper inspection door shall be supplied. ____ ____

8.4 Lift mechanism shall be double stage, scissors lift system. Hopper lift cylinders to be 3.5" x 33.5" stroke minimum, hopper dump cylinders to be 3.5" x 19.8" stroke minimum. ____ ____

8.5 Hopper to offer not less than 11" side shift of load for maximum dumping efficiency and for extra clearance between sweeper and dump truck. Minimum clearance between sweeper and truck shall be 28". ____ ____

8.6	Hopper load shall be visible at all times from the cab through a glass window and skylight.	____	____
8.7	Maximum time for dump cycle shall not exceed 70 seconds.	____	____
8.8	Lift capacity shall be not less than 11,000 lbs.	____	____
8.9	Hopper to be constructed of 7 gauge abrasion resistant steel floor and 11 gauge door, top, and sides.	____	____
8.10	Units that require use of jack stands and/or outriggers to stabilize chassis during dumping procedure shall not be acceptable.	____	____

9.0 WATER SYSTEM		**COMPLY** **Yes**	**No**
9.1	Tank capacity shall be not less than 360 U.S. gallons.	____	____
9.2	Tank shall be constructed of a non-metallic, non-rusting polyethylene material. Removable manhole cover for tank access shall be supplied.	____	____
9.3	Water pump shall be diaphragm type capable of running dry without damage.	____	____
9.4	A water level gauge indicator shall be located within the cab.	____	____
9.5	Shall be equipped with 10 brass spray nozzles for dust suppression. 3 spray nozzles shall be over each side broom, 4 spray nozzles shall be located at the main broom.	____	____
9.6	Water fill hose shall be not less than 15' in length, equipped with 2-1/2" NST hydrant coupler.	____	____
9.7	Water to each area, side broom left or right, front spray bar shall be cab controlled with adjustable valves, which control water flow.	____	____
9.8	An in-line water filter with shut off valve shall be in water system to prevent contaminants from entering the water system	____	____
9.9	To prevent the contamination of the water supply, tank shall be equipped with an anti-siphon device.	____	____
9.10	A front mounted spray bar shall be provided for increased water supply during extreme sweeping conditions.	____	____
9.11	Sweeper shall be equipped with an automatic internal hopper/conveyor flush and wash down system. The system shall divert hydrant water onto the conveyer after the water tanks are full.	_____	____
9.12	A hydrant wrench shall be provided.	____	____

10.0 HYDRAULIC SYSTEM		**COMPLY** **Yes**	**No**
10.1	Reservoir shall have a capacity of 23 gallons with outside level and temperature indicator.	____	____
10.2	Twin pumps that shall be a variable displacement piston type that are directly driven, by a hot shift PTO, with load sensing to adjust flow based upon hydraulic oil demand in the sweeping gear to maximize efficiency and reduce heat for longevity of all the hydraulic systems.	____	____
10.3	To prevent contamination of the reservoir during the dump cycle, the reservoir vent	____	____

shall be equipped with 40 micron, breather filter.

10.4 To prevent the possibility of contamination and the resulting damage to the hydraulic system, return lines to have 10 micron filter with cab mounted restriction indicator. ____ ____

10.5 To minimize environmental damage caused by leaking fittings, all pressure hydraulic fittings must be ORFS type. All solenoids to be located in a single easily accessible location. A tank shut off valve shall be supplied. ____ ____

10.6 For ease and accuracy of testing, all circuits shall have quick-disconnect check ports. ____ ____

10.7 There shall be a high hydraulic temperature, low hydraulic oil level shut down installed. ____ ____

11.0 PNEUMATIC SYSTEM **COMPLY Yes No**

11.1 There shall be a PR4 type pressure protector for the chassis air system to protect the chassis air system. ____ ____

11.2 All pneumatic cylinders shall be interchangeable. ____ ____

11.3 All pneumatic cylinders must be rated to 150 PSI and have a separate rod seal and wiper to prevent contamination entering the cylinder. ____ ____

12.0 ELECTRICAL SYSTEM **COMPLY Yes No**

12.1 Sweeper electrical system shall be integral to the chassis electrical system. ____ ____

12.2 Sweeper shall have an electronic back-up alarm for additional warning and safety when chassis is in reverse and hopper up constant alarm when hopper is raised. ____ ____

12.3 Sweeper lighting shall include rear identification lights, side broom and rear clearance lights. ____ ____

12.4 Sweeper wiring harnesses shall be color-coded and hot stamped with circuit name. ____ ____

12.5 For safety, all electrical circuits must be protected by circuit breakers or fuses. ____ ____

12.6 Two (2) Front flush mounted amber LED strobe lights shall be installed. ____ ____

12.7 Amber LED strobe lights, having 360 degree visibility are to be mounted on the top of the cab and one at the rear of the sweeper. ____ ____

12.8 Two High mounted oval LED strobes are to be installed on the rear of the sweeper. _____ ____

12.9 Two Low mounted oval LED strobes are to be installed on the rear of the sweeper. ____ ____

13.0 CONTROLS **COMPLY Yes No**

13.1 All sweeper controls shall be mounted on an adjustable central console located between the left and right operator's position and access. ____ ____

13.2 The controls shall include all sweep, hopper, elevator, and lighting functions and shall all be located on the adjustable operator control console. ____ ____

13.3 The controls for sweep, spray water, and lighting functions shall be conventional ____ ____

rocker switches.

13.4 The sweeper shall be equipped with SWEEP RESUME. Sweep resume will pick up and stow all sweep gear by operating one switch. Reactivating the switch will engage all sweep gear to preset operating conditions. ____ ____

13.5 All sweep gear shall pick up and stow when the transmission is placed in reverse and automatically return to the work position when the transmission is placed into forward. ____ ____

14.0 SWEEPER INSTRUMENTS **COMPLY Yes No**

14.1 Sweeper instruments shall include right and left side broom down pressure, hydraulic filter restriction indicator, hydraulic oil temperature, spray water level indicator. ____ ____

15.0 PAINT **COMPLY Yes No**

15.1 All visible exterior metallic surfaces shall be coated prior to assembly with polyester powder coat. The paint must be a minimum of 2 mils thick. ____ ____

15.2 Color shall be the Town of North Hempstead Highway Department of white. ____ ____

15.3 Vehicle shall have an accent color of Grey on the lower portions of the unit. ____ ____

16.0 MANUALS **COMPLY Yes No**

16.1 A sweeper parts manual shall be provided. ____ ____

16.2 A sweeper maintenance manual shall be provided. ____ ____

16.3 A sweeper operator manual shall be provided. ____ ____

16.4 A chassis engine manual shall be provided ____ ____

16.5 A Freightliner Service manual shall be provided. ____ ____

16.6 A Freightliner Parts manual shall be provided. ____ ____

17.0 WARRANTY **COMPLY Yes No**

17.1 Manufacturer's warranty shall be not less than one (1) year on entire sweeper, including all parts and labor. ____ ____

17.2 Bidders submitting literature stating warranties which do not fully comply with warranty requirements of this specification must submit a letter from the manufacturer certifying warranty compliance as an integral part of their proposal. Failure to comply may cause the proposal to be deemed "non-responsive" and rejected without further review. ____ ____

18.0 SERVICE AND TRAINING **COMPLY Yes No**

18.1 Vendors shall have a full parts and service facility within a reasonable distance from the Town of North Hempstead Highway Department Garage. State location and distance._____ ____ ____

18.2 A qualified technician shall provide complete training to Town of North Hempstead Highway Department personnel at the Town of North Hempstead Highway Department Garage. Training shall include safety, operation, maintenance and service. ____ ____

19.0 DELIVERY

19.1 Sweeper shall be delivered F.O.B. Town of North Hempstead Highway Department in first class operating condition. ____ ____

19.2 Acceptance shall be subject to the inspection and approval of the Town of North Hempstead Highway Department. ____ ____

19.3 Bidder shall state delivery time after receipt of order:
_____

20.0 QUALITY

Sweeper shall be manufactured by a company with a registered quality standard no less than ISO 9001. ____ ____

21.0 OPTIONAL ITEMS

The Town of North Hempstead Highway Department may choose, at its sole discretion, to add any or all of the optional items to this purchase. Bidder shall state the amount to be added to the Bidder's Proposal, should each item be selected.
Manufacturer's warranty shall be not less than five (5) years on the entire chassis and sweeper, including parts and labor.
ADDITIONAL COST: $_____

22.0 EXCEPTIONS AND DEVIATIONS

Bidder shall fully describe every variance, exception and/or deviation. Additional sheets may be used if required.

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

PROPOSAL FORM

TO: Town of North Hempstead Highway Department: The undersigned hereby declares that they have carefully examined the requirements of the specifications contained herein, and propose to furnish and deliver to the Town of North Hempstead Highway Department the apparatus listed below. The Town of North Hempstead Highway Department may, at its sole discretion, either purchase or lease purchase such apparatus.

ONE (1) New and Unused Six Wheel Single Engine Broom Street Sweeper with Full Width Belt Conveyor

BODY MAKE: _____ MODEL: _____

CHASSIS MAKE: _____ MODEL: _____

PURCHASE PRICE: $_____ Total: $_____

(In Words)_____

OPTIONAL ITEMS:

$_____

Signed: _____

Bidder: _____

Title: _____

Address: _____

_____

Date: _____

Purchase Order Number: _____Signature_____

ITEM 7

SPECIFICATION FOR: A NEW ARTICULATED WHEEL LOADER

It is the intent of these specifications to provide for the purchase of one (1) new rubber tired, diesel powered, four wheel drive articulated wheel loader. The following specification is based upon a Komatsu WA270-7. The Town has evaluated different types of wheel loaders and determined that this product is best suited for the Town's needs in safety, quality, performance and standardization. This specification shall not be interpreted as restrictive, but rather as a measure of safety, quality and performance against which all wheel loaders offered will be compared.

In comparing proposals, consideration will not be confined to price only. The successful bidder will be the one whose product is judged shall best service the interests of the Town when price, product, safety, quality and delivery are considered. The Town reserves the right to reject any or all bids or any part thereof and to waive any minor technicalities. A contract will be awarded to the bidder submitting the lowest responsible bid meeting the requirements.

The wheel loader shall be of rugged frame design, fabricated from high strength, low alloy steel. The frame shall be designed with structural box sections to provide maximum rigidity and resist loading stress and shock.

The wheel loader described shall be the manufacturer's current production model. It shall be built no earlier than the 2015 model year.

ENGINE

The wheel loader shall be equipped with a six (6) cylinder, four (4) cycle, direct start, direct injection, turbocharged, diesel engine with an air to air aftercooler. It shall have a bore and stroke of not less than 4.21" x 4.88" producing a displacement of not less than 408 cu.in. The engine shall be rated, SAE J1349 standards, to produce not less than 151 FwHP at a governed 2000 rpm.

The engine shall be equipped with the following:

- Two (2) Stage, Dry Type Air Cleaner
  w/Automatic Dust Evacuator
  Dust Indicator
- Electronic Disconnect
  w/Key
- All Speed Electronic Governor
- Engine Pre Lube
- Starting Aid – Manifold Intake Preheater
- Full Flow Filtration
  w/Spin-on Type Filter
- Gear Pump, Force Lubrication

ENGINE-cont'd

- Water Conditioner
- Curved Exhaust
- Gull Wing Type Engine Side Doors
  w/Gas Spring Assist
- Fan – Hydraulic Driven Auto-Reversible
  w/Swing Open Guard
- Modular Radiator Core and Wide Core Coolers
- Hydraulically Actuated Variable Geometric Turbocharger

The engine shall be equipped with a diesel particulate filter (DPF) that shall employ both passive and active regeneration by way of a diesel oxidation catalyst. The regeneration process shall be flameless and shall not affect the operation of the wheel loader. The diesel particulate filter shall be capable of manual stationary regeneration.

The loader shall be equipped with two (2) selectable power modes:

- E Mode: Maximum Fuel Efficiency
- P Mode: Maximum Power – Hard Digging / Hill Climb

The engine shall be equipped with a programmable auto-idle shutdown feature and shall meet all EPA Interim Tier IV emissions criteria.

ELECTRICAL SYSTEM

The wheel loader shall be equipped with a 24 Volt electrical system. It shall meet the following minimum parameters:

- Starter ..... 24 Volt / 5.5 kW
- Alternator ..... 24 Volt / 60 Amp
- Batteries ..... 2 x 12 Volt / 92 Amp Hour

The main wiring harness shall employ sealed DT connectors. An exterior battery disconnect switch and a 12 Volt converter shall be provided.

TRANSMISSION

The wheel loader shall be equipped with an electronically controlled hydrostatic type transmission with one (1) piston pump with two (2) piston type motors, one (1) high speed and one (1) low speed. The system shall be designed to provide the correct power to the transfer case for the work requirements.

TRANSMISSION –cont'd

Engine power shall be transmitted hydraulically to the transfer case. Power will be transmitted from the transfer case to the differentials mechanically.

The transmission shall be a full auto-shift design with speed range select. The transmission shall be designed to permit the operator to adjust the maximum speed in 1st range.

The transmission shall have not less than four (4) speeds in forward and reverse. The following speeds shall be considered minimum for each speed range:

Speed	1st	2nd	3rd	4th
Fwd/Rev (mph)	0.6 to 8.1	8.1	11.8	23.6

A three (3) mode (Max/On/S) traction control system shall be provided. A "Max" traction button shall be located on the work equipment lever to cancel the traction control temporarily. There shall be two (2) additional control modes that can be set through the monitor panel.

An inching pedal shall provide for the simultaneous control of travel and equipment hydraulic speeds.

OVERRUN PROTECTION SYSTEM

The wheel loader shall be equipped with an overrun protection system designed to prevent damage to the drive train components and brakes. The system shall be designed to automatically control travel speed on down slopes of 6° or less.

The system shall be designed to sense travel speed and restrict discharge of the transmission pump and motors. The top travel speed shall be restricted to no more than 24 mph.

For slopes in excess of 6°, use of the service brake is required. When the machine is on a steep slopes and travel speed exceeds 24 mph, a caution lamp shall alert the operator to apply brakes to reduce speed.

DIFFERENTIALS

The wheel loader shall be equipped with torque proportioning differentials on both axles. The differential shall be designed to prevent slippage of the tire on one side until the resistance between tires on the right and left sides exceeds 38%.

AXLES

The wheel loader shall be equipped with heavy duty axles with full floating shafts and four (4) wheel, inboard mounted, planetary type final drives. The front axle shall be fixed to the frame. The rear axle shall be center pin supported and shall oscillate not less than a total of 20 degrees.

RIDE CONTROL SYSTEM

The loader shall be equipped with an electronically controlled suspension system. It shall be designed to optimize productivity by improving material retention in the bucket and improving operator comfort and control.

The system shall employ a single accumulator and shall be designed to absorb low frequency vibration when traveling on rough ground. The accumulator shall adjust automatically to high or low pressure settings based on travel speed and load weight. The system shall automatically engage when travel speed exceeds 3.1 mph.

STEERING

The loader shall employ a fully hydraulic, articulating frame, power assisted steering system. The frame shall articulate not less than 40 degrees in either direction.

Articulation shall be effected by two (2) double acting cylinders with hardened chrome plated piston rods. The pistons shall have a bore and stroke of not less than 2.76" x 17.8".
The minimum turning radius, when measured at the center of the outside tire, shall be not greater than 17' 0".

LOADER MECHANISM

The loader shall be equipped with a single bellcrank type loader mechanism. It shall have not more than thirteen (13) pivot points. All pivot points shall be equipped with sealed linkage pins. Pivot point lubrication shall be not more frequent than every 250 hours.
The lift boom arms shall be of a heavy duty, single plate design. They shall be fabricated from high strength steel and shall be designed to withstand maximum stress.
The loader boom lift and bucket tilt shall be controlled by two (2) electronic pilot control levers on the operator's right. The boom control lever shall be equipped with a transmission "kickdown" switch. A third lever shall control those attachments requiring hydraulic actuation. A safety lock shall be provided for the control levers.
Loader boom lift shall be effected by two (2) double acting hydraulic cylinders with a bore and stroke of not less than 4.3" x 28.2". Bucket tilt shall be effected by a one (1) double acting cylinder with a bore and stroke of not less than 5.5" x 18.9".
The loader lift mechanism shall be equipped with bucket "Rap Out".
The loader lift mechanism shall be equipped with an automatic bucket positioner. This device, which shall stop the bucket automatically at the desired digging angle, shall employ a proximity switch and a bucket control lever on the bucket tilt cylinder. The positioner may be reset manually from within the cab to meet the digging angle requirement of a particular job.

LOADER MECHANISM-cont'd

The loader lift mechanism shall be equipped with an automatic boom kickout. This device, which shall stop the boom at the desired lifting height, shall employ a proximity switch and arm control lever mounted on the boom. The automatic kickout feature may be reset manually from within the cab.

BRAKES

The loader shall be equipped with four (4) wheel hydraulic actuated, outboard mounted, wet type, multiple disc service brakes. Two (2) independent hydraulic circuits shall be provided.
The brakes shall be controlled by two (2) pedals. Both pedals shall be used for braking. A selector switch shall be provided to allow the left pedal to be used to neutralize the transmission.
The loader shall be equipped with a wet disc type parking brake which shall be on the transmission out-put shaft.

HYDRAULIC SYSTEM

The loader hydraulic system shall be an automatic power speed, two stage type designed to reduce cycle times. It shall employ piston type pumps. The following flow rates (calculated at governed rpm) shall be considered minimums:

Loader Pump	.....	39.6	gpm
Steering Pump	39.6	gpm	
Total	.....	79.2	gpm

The hydraulic relief pressures shall be as follows:

Loader Circuit	……	4,555 psi min.
Steering Circuit	……	3,000 psi. min.

The hydraulic system shall employ a three (3) spool control valve. The first spool shall feed the steering circuit. The second spool shall feed the loader circuits. The third spool shall provide flow for hydraulically driven attachments. All necessary piping and controls shall be provided for the attachment circuit.
The hydraulic system shall be sufficient to provide the following cycle times:

Raise Boom	.....	5.7 sec.
Lower Boom	.....	3.2 sec.
Dump Bucket	.....	2.0 sec.
Total Cycle	.....	10.9 sec.

The hydraulic system shall be equipped with an oil cooler and face to face O-Ring seals.

OPERATOR'S COMPARTMENT

The loader shall have its operator's compartment located on the rear frame over the articulation joint. The operator's compartment shall consist of a fully enclosed ROPS cab. The cab shall be a walk through design with sliding windows in both doors to permit cross ventilation. It shall employ viscous mounts to reduce vibration. The doors shall be hinged to open to the rear and shall be capable of being locked in the open position. The cab shall be accessible by means of inclined ladders with safety steps and handrails on both sides.

The cab shall be equipped with the following:

- Sound Suppression – 73 dB(A) Max. @ Operator's Ear
- Air Conditioner / Heater / Front & Rear Defroster / Pressurizer
- Heated Suspension Seat
  w/3" Retractable Seat Belt
- Front (Intermittent) & Rear Wipers with Washers
- Two (2) Interior and Two (2) Exterior Rearview Mirrors
- Telescopic/Tilt Steering Wheel
- AM / FM Radio with Speakers and Auxiliary Output
- Sun Visor
- Dome Light
- (2) 12 Volt Outlets
- Ashtray & Cigarette Lighter
- Cup Holder
- Hot/Cold Storage Box
- Rearview Camera with Color Monitor

INSTRUMENTATION

The loader shall be equipped with an electronic equipment management and monitoring system which shall include a high resolution LCD /TFT main and maintenance monitor. The monitors shall include the following:

Main Monitor:

- Central Warning Lamp - Check Item
- Central Warning Lamp - Caution Items
- Headlight High Beam Pilot
- Speedometer (mph)
- Service Meter
- Transmission Shift Indicator
- Turn Signal Pilot

Maintenance Monitor:

- Air Cleaner Check
- Battery Charge
- Brake Oil Pressure
- Engine Oil Pressure
- Engine Water Level
- Engine Water Temperature
- Fuel Gauge
- Parking Brake Warning Light
- Torque Converter Temperature
- Diesel Particulate Filter
- Hydraulic Oil Temperature
- DPF Regeneration Check
- GPS Message Center
- Seat Belt Caution

WIRELESS REMOTE MONITORING SYSTEM

The wheel loader shall be equipped with a satellite-based remote wireless monitoring and management system. The system shall be designed to utilize global positioning satellite technology. The system shall be designed to be operated by any Windows based PC operating system using commercially available software. Information shall be accessed through an internet-based portal, providing e-mail and text alerts, web-dial-up service, and monthly summary reports.

The system shall provide the following machine and operation information, free of charge:

Fleet Optimization

Fuel consumption data and trends	Machine fuel level
Machine utilization	Actual working hours/machine idle hours
Attachment usage hours	Machine travel hours
Machine load analysis	Operating mode ratios

Location and Asset Management

GPS location/operation maps Out-of-area and movement alert with location and time
Engine, nighttime and calendar lock

Maintenance Management
Service meter reading Maintenance replacement notifications

BUCKET
The wheel loader shall be equipped with a general purpose type bucket with an SAE rated capacity of not less than 3.0 cu. yd. at a density of not less than 2,700 lb./cu.yd. The bucket shall be equipped with bolt-on cutting edges and shall be not less than 106" wide.

LIGHTS
The wheel loader shall be equipped with the following lights:
- Two (2) Front Chassis Mounted Halogen Work Lights w/ High-Low Beams & Indicator
- Two (2) Rear Chassis Halogen Work Lights
- Two (2) Front & Two (2) Rear Turn Signals w/Hazard Flashers
- Stop, Tail & Back-up Lights (LED)
- Two (2) Front Cab Halogen Work lights

TIRES
The wheel loader shall be equipped with new Michelin 20.5R25 XHA (L-3) radial tires, or equal.

ADDITIONAL EQUIPMENT
The loader shall be equipped with the following additional equipment:

- Back-Up Alarm
- Additional Counterweight
- Partial Rear Fenders
- Exterior Guard Rails
- Std. Counterweight
- Full Front Fenders
- Lifting Eyes

VANDALISM PROTECTION
The loader shall be supplied with the following vandalism protection:
- Cap Lock & Cover – Fuel Tank
- Padlocks: Battery Boxes; Brake Oil Tank; Engine Hood Side Panels; Radiator Cap Cover; Radiator Tank; Trans. Oil Filter Cover

PAINT
The loader shall be painted the manufacturer's standard colors.

SERVICE CAPACITIES
The following service capacities shall be considered minimums for a loader of this class:

- Cooling System	-----	7.4 gal.
- Engine Crankcase	-----	6.7 gal.
- Transfer Case	-----	2.1 gal.
- Axle Front	-----	4.9 gal.
- Axle Rear	-----	4.8 gal.
- Hydraulic System	-----	20.6 gal.
- Fuel Tank	-----	49.1 gal.

OPERATING DIMENSIONS & CAPACITIES
The following operating parameters, which are calculated per SAE J732 standards and based on the loader being equipped with the bucket, tires and counterweights specified:

Max. Hinge Pin Height	-----	13' 0"
Dump Clearance @ Max. Height	-----	9' 9"
Reach @ Max. Height	-----	3' 1"
Overall Length (Bucket on Ground)	-----	24' 0"
Turn Radius (Outside Bucket)	-----	19’7.5”

Breakout Force	-----	29,487#
Tip Load - Straight	-----	23,093#
Tip Load - Full Turn	-----	20,216#
Operating Weight	-----	28,351#

COMPLIMENTARY MAINTENANCE PROGRAM

The successful bidder shall perform periodic maintenance on the machine being offered at no charge. It shall include, but not be limited to, the following service at the noted hourly intervals:

DESCRIPTION	INTERVALS				
	250	500	1000	1500	2000
PERFORM KOWA SAMPLING- ENGINE, FRONT AXLE, REAR AXLE ONLY	X				
CLEAN AC FRESH AND RECIRC AIR FILTERS	X				
CHANGE HYDRAULIC OIL	X				X
REPLACE HYDRAULIC OIL FILTER ELEMENT	X				X
CHANGE TRANSMISSION OIL	X		X		X
REPLACE TRANSMISSION OIL FILTER	X		X		X
REPLACE TRANSMISSION OIL STRAINER	X		X		X
CLEAN AIR CLEANER ELEMENT	X	X	X	X	X
CHECK AND CLEAN FUEL BREATHER ELEMENT	X	X	X	X	X
LUBRICATE REAR AXLE PIVOT PIN	X	X	X	X	X
LUBRICATE WORK EQUIPMENT	X	X	X	X	X
DRAIN WATER AND SEDIMENT FROM FUEL TANK	X	X	X	X	X
CHECK PARKING BRAKE	X	X	X	X	X
CHECK WHEEL HUB BOLTS AND RETIGHTEN AS NECESSARY	X	X	X	X	X
COMPLETE 50 POINT INSPECTION FORM; LEAVE PINK COPY WITH CUSTOMER OR IN CAB	X	X	X	X	X
RESET MONITOR PANEL MAINTENANCE COUNTER FOR APPROPRIATE ITEMS		X	X	X	X
PERFORM KOWA SAMPLING (5 samples) – engine, transmission, hydraulics, front & rear axle		X	X	X	X
CHANGE ENGINE OIL		X	X	X	X
REPLACE ENGINE OIL FILTER		X	X	X	X
REPLACE AC FRESH & RECIRC AIR FILTERS		X	X	X	X
REPLACE FUEL PRE-FILTER		X	X	X	X
REPLACE FUEL MAIN FILTER			X		X
CLEAN TRANSMISSION BREATHER ELEMENT			X		X
LUBRICATE CENTER HINGE PIN			X		X
LUBRICATE DRIVE SHAFT CENTER SUPPORT			X		X
CHANGE FRONT AND REAR AXLE OIL					X
REPLACE HYDRAULIC TANK BREATHER ELEMENT					X
CLEAN HYDRAULIC OIL STRAINER					X
REPLACE KCCV FILTER					X
CHANGE COOLANT					X

The wheel loader shall also receive two (2) complimentary diesel particulate filter exchange units for the first 5 years / unlimited hours. (manufacturer's pre-authorization required)

WARRANTY

The loader shall carry a one (1) year/unlimited hour full machine warranty covering parts and labor.

WHEEL LOADER OPTIONS:

1) **Multi-Purpose Bucket**

The wheel loader shall be equipped with a multi-purpose bucket with an SAE rated capacity of not less than 2.75 cu. yd. at a density of 2,700 lb./cu yd. The bucket shall be equipped with a reversible bolt-on cutting edge and be not less than 106" wide.

2) **Hydraulic Coupler**
The wheel loader shall be equipped with a hydraulic quick coupler consisting of a male master located on the boom arms. It shall interface with a female blank attached to the back of the specified bucket. The coupler shall be activated by means of a switch located in the operator's compartment.

3) **Spare Tire and Rim**
A new spare Michelin 20.R25 XHA tire, or equal, shall be supplied. The tire shall be mounted on to a new rim manufactured by the wheel loader OEM.

4) **Automatic Lubrication System**
The wheel loader shall be equipped with a Vogel automatic lubrication system. The system shall employ an electrically driven gear type pump. The system reservoir shall have a capacity of not less than 5 lbs. The pump shall operate at a nominal pressure of 550 psi and shall be mounted as to be easily accessible for service and maintenance. The lubrication system shall employ piston type distributors to provide lubricant via metering nipples, which shall be able to withstand pressures of up to 4,350 psi. The lubrication system shall be monitored by an electronic control module, which shall incorporate a digital display to show system status.

5) **Spare Parts Package**
The wheel loader specified shall be supplied with the following spare parts package:
- One (1) complete set of radiator hoses and clamps
- Three (3) complete sets of filters
- One (1) complete set of all belts
- One (1) grease gun with one (1) case of grease
- Two (2) spare keys

6) **Special Lighting Package/Strobe Kit**
The wheel loader shall be equipped with a strobe light package. Four (4) perimeter lights shall be wired to flash in sequence. The strobe light package shall be activated by means of a toggle switch.

7) **Extended Warranty**
The wheel loader shall carry an additional twenty-four (24) month/5,000 hour powertrain warranty covering parts and labor.

VENDOR PARTS & SERVICE REQUIREMENTS

- Vendor submitting bid must be manufacturers' authorized representing dealer for the products being bid, capable of extending all services available including manufacturers' warranty repairs, parts and other support services.
- Vendor shall stock an ample supply (as recommended by manufacturer) of the replacement parts for the specific model to be serviced, located at a facility no further than 10 miles from Town Hall. Proof of detailed parts inventory can be provided prior to award.
- All replacement parts shall be genuine "O.E.M." as supplied by the equipment manufacturer.
- Manufacturers' parts price books (or price tapes, discs, or CD's if specified) shall be supplied upon award of contract and supplied as updated through term of contract.
- Vendor shall have a full service repair facility located within 50 miles of Town Hall, available for inspection, and capable of performing all possible type repairs "on premises" including, but not limited to: engine, transmission and other component overhaul; welding and fabricating; crawler undercarriage overhaul, hydraulic cylinder repair, machining, steam cleaning, painting, etc.
- With exception to smaller sub-components (i.e., starters, alternators, injection pumps, injectors), all repair work shall be performed by Vendor and their employees only. Use of O.E.M. rebuilt parts and components with warranty shall also be available.

- Vendor shall submit to the Office of Purchasing, insurance policies indicating full and complete coverage for all equipment which is in its' possession or control. The insurance includes; Theft, vandalism, fire damage, floods, acts of God, etc. The insurance shall be equal to the replacement purchase price of the equipment. In addition, the insurance shall cover equipment for similar mishaps as numerated above during the transportation of equipment. In the event of an accident during the transportation of equipment, Vendor shall assume all responsibility including any and all damage to equipment.
- All equipment to be repaired can be inspected on using agency property. However, should repair or inspection require special facilities, tooling, etc., the equipment can be moved by Vendor.
- Upon inspection, Vendor shall submit a time and cost estimate indicating the approximate number of hours that will be required and the cost of parts and any other charges that will be used to affect repairs.
- Vendor shall be capable of servicing equipment on-site, if required, with the use of properly equipped service vehicles. Typical service vehicles shall be equipped with, at a minimum, the following items: compressed air, hydraulic crane, gas and electric welding equipment, typical hand and pneumatic tooling for repairing heavy equipment and specific diagnostic tools for trouble-shooting, i.e., hydraulic flow meters and gauges, electrical system checkers, temperature measuring equipment, etc.
- Vendor shall be capable of providing transportation via there owned and operated low-bed equipment trailers, flat beds, boom trucks, etc. as required by the type of equipment. Vendor shall not sublet the transportation of equipment.
- Vendor technicians shall have received manufacturer's sponsored training for the equipment to be repaired. Technicians possess all applicable regulatory certifications if specific work requires same.

VENDOR PARTS & SERVICE REQUIREMENTS-cont'd

- Vendor shall maintain, at all servicing facilities, a complete library of manufacturer's parts manuals, service manuals, service bulletins and all other related parts and service publications. In addition to printed media, all these materials shall be available via a live "Extranet" between manufacturer and Vendor providing continuously updated timely information.
- Vendor shall be staffed with Regional Product Support Sales Representatives full time in the field. Their function is to assist equipment users with any parts or service related issues.
- Vendor shall be capable of providing the equipment owner with an Intranet connection to allow access to parts and service information via the internet. This connection provides latest parts and service information from manufacturer and parts pricing, inventory status and ordering capability from Vendor.
- Periodic maintenance services shall be available on-site via dedicated lube service vehicles. Vehicles shall carry an inventory of lubes, coolant and filters, waste oil recovery and minor parts making it capable of field response to most all models without need for return to shop facility in most instances.
- A manufacturer-sponsored program of lube oil analysis shall be available. Reports from lab are to be provided in triplicate to: equipment owner, Vendor and manufacturer thus providing the additional monitoring for abnormal results assuring proper response.
- A 24-hour Vendor telephone response system shall be available through all locations.
- All field service trucks, low beds and lube trucks shall be equipped with 2-way communications capability.
- Proof of additional qualification, if required, shall be provided. Proof via statements from manufacturers and previous contracts may also be requested.

ITEM 8

SPECIFICATION FOR: A NEW ARTICULATED WHEEL LOADER

It is the intent of these specifications to provide for the purchase of one (1) new rubber tired, diesel powered, four wheel drive articulated wheel loader. The following specification is based upon a Komatsu WA320-7. The Town has evaluated different types of wheel loaders and determined that this product is best suited for the Town's needs in safety, quality, performance and standardization. This specification shall not be interpreted as restrictive, but rather as a measure of safety, quality and performance against which all wheel loaders offered will be compared.

In comparing proposals, consideration will not be confined to price only. The successful bidder will be the one whose product is judged shall best service the interests of the Town when price, product, safety, quality and delivery are considered. The Town reserves the right to reject any or all bids or any part thereof and to waive any minor technicalities. A contract will be awarded to the bidder submitting the lowest responsible bid meeting the requirements.

The wheel loader shall be of rugged frame design, fabricated from high strength, low alloy steel. The frame shall be designed with structural box sections to provide maximum rigidity and resist loading stress and shock.

The wheel loader described shall be the manufacturer's current production model. It shall be built no earlier than the 2015 model year.

ENGINE

The wheel loader shall be equipped with a six (6) cylinder, four (4) cycle, direct start, direct injection, turbocharged, diesel engine with an air to air aftercooler. It shall have a bore and stroke of not less than 4.21" x 4.88" producing a displacement of not less than 408 cu.in. The engine shall be rated, SAE J1349 standards, to produce not less than 165 FwHP at a governed 2100 rpm.

The engine shall be equipped with the following:

- Two (2) Stage, Dry Type Air Cleaner
  w/Automatic Dust Evacuator
  Dust Indicator
- Electronic Disconnect
  w/Key
- All Speed Electronic Governor
- Engine Pre Lube
- Starting Aid – Manifold Intake Preheater
- Full Flow Filtration
  w/Spin-on Type Filter
- Gear Pump, Force Lubrication

ENGINE-cont'd

- Water Conditioner
- Curved Exhaust
- Gull Wing Type Engine Side Doors
  w/Gas Spring Assist
- Fan – Hydraulic Driven Auto-Reversible
  w/Swing Open Guard
- Modular Radiator Core and Wide Core Coolers
- Hydraulically Actuated Variable Geometric Turbocharger

The engine shall be equipped with a diesel particulate filter (DPF) that shall employ both passive and active regeneration by way of a diesel oxidation catalyst. The regeneration process shall be flameless and shall not affect the operation of the wheel loader. The diesel particulate filter shall be capable of manual stationary regeneration.

The loader shall be equipped with two (2) selectable power modes:

- E Mode: Maximum Fuel Efficiency
- P Mode: Maximum Power – Hard Digging / Hill Climb

The engine shall be equipped with a programmable auto-idle shutdown feature and shall meet all EPA Interim Tier IV emissions criteria.

ELECTRICAL SYSTEM

The wheel loader shall be equipped with a 24 Volt electrical system. It shall meet the following minimum parameters:

- Starter ..... 24 Volt / 5.5 kW
- Alternator ..... 24 Volt / 60 Amp
- Batteries ..... 2 x 12 Volt / 92 Amp Hour

The main wiring harness shall employ sealed DT connectors. An exterior battery disconnect switch and a 12 Volt converter shall be provided.

TRANSMISSION

The wheel loader shall be equipped with an electronically controlled hydrostatic type transmission with one (1) piston pump with two (2) piston type motors, one (1) high speed and one (1) low speed. The system shall be designed to provide the correct power to the transfer case for the work requirements.

TRANSMISSION –cont'd

Engine power shall be transmitted hydraulically to the transfer case. Power will be transmitted from the transfer case to the differentials mechanically.

The transmission shall be a full auto-shift design with speed range select. The transmission shall be designed to permit the operator to adjust the maximum speed in 1st range.

The transmission shall have not less than four (4) speeds in forward and reverse. The following speeds shall be considered minimum for each speed range:

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Fwd/Rev (mph)	0.6 to 8.1	8.1	11.6	23.6

A three (3) mode (Max/On/S) traction control system shall be provided. A "Max" traction button shall be located on the work equipment lever to cancel the traction control temporarily. There shall be two (2) additional control modes that can be set through the monitor panel.

An inching pedal shall provide for the simultaneous control of travel and equipment hydraulic speeds.

OVERRUN PROTECTION SYSTEM

The wheel loader shall be equipped with an overrun protection system designed to prevent damage to the drive train components and brakes. The system shall be designed to automatically control travel speed on down slopes of 6° or less.

The system shall be designed to sense travel speed and restrict discharge of the transmission pump and motors. The top travel speed shall be restricted to no more than 24 mph.

For slopes in excess of 6°, use of the service brake is required. When the machine is on a steep slopes and travel speed exceeds 24 mph, a caution lamp shall alert the operator to apply brakes to reduce speed.

DIFFERENTIALS

The wheel loader shall be equipped with torque proportioning differentials on both axles. The differential shall be designed to prevent slippage of the tire on one side until the resistance between tires on the right and left sides exceeds 38%.

AXLES

The wheel loader shall be equipped with heavy duty axles with full floating shafts and four (4) wheel, inboard mounted, planetary type final drives. The front axle shall be fixed to the frame. The rear axle shall be center pin supported and shall oscillate not less than a total of 20 degrees.

RIDE CONTROL SYSTEM

The loader shall be equipped with an electronically controlled suspension system. It shall be designed to optimize productivity by improving material retention in the bucket and improving operator comfort and control.

The system shall employ a single accumulator and shall be designed to absorb low frequency vibration when traveling on rough ground. The accumulator shall adjust automatically to high or low pressure settings based on travel speed and load weight. The system shall automatically engage when travel speed exceeds 3.1 mph.

STEERING

The loader shall employ a fully hydraulic, articulating frame, power assisted steering system. The frame shall articulate not less than 40 degrees in either direction.
Articulation shall be effected by two (2) double acting cylinders with hardened chrome plated piston rods. The pistons shall have a bore and stroke of not less than 2.76" x 17.8".

The minimum turning radius, when measured at the center of the outside tire, shall be not greater than 17' 8".

LOADER MECHANISM

The loader shall be equipped with a single bellcrank type loader mechanism. It shall have not more than thirteen (13) pivot points. All pivot points shall be equipped with sealed linkage pins. Pivot point lubrication shall be not more frequent than every 250 hours.
The lift boom arms shall be of a heavy duty, single plate design. They shall be fabricated from high strength steel and shall be designed to withstand maximum stress.
The loader boom lift and bucket tilt shall be controlled by two (2) electronic pilot control levers on the operator's right. The boom control lever shall be equipped with a transmission "kickdown" switch. A third lever shall control those attachments requiring hydraulic actuation. A safety lock shall be provided for the control levers.
Loader boom lift shall be effected by two (2) double acting hydraulic cylinders with a bore and stroke of not less than 4.7" x 28.7". Bucket tilt shall be affected by a one (1) double acting cylinder with a bore and stroke of not less than 5.9" x 22".
The loader lift mechanism shall be equipped with bucket "Rap Out".
The loader lift mechanism shall be equipped with an automatic bucket positioner. This device, which shall stop the bucket automatically at the desired digging angle, shall employ a proximity switch and a bucket control lever on the bucket tilt cylinder. The positioner may be reset manually from within the cab to meet the digging angle requirement of a particular job.

LOADER MECHANISM-cont'd

The loader lift mechanism shall be equipped with an automatic boom kickout. This device, which shall stop the boom at the desired lifting height, shall employ a proximity switch and arm control lever mounted on the boom. The automatic kickout feature may be reset manually from within the cab.

BRAKES

The loader shall be equipped with four (4) wheel hydraulic actuated, outboard mounted, wet type, multiple disc service brakes. Two (2) independent hydraulic circuits shall be provided.
The brakes shall be controlled by two (2) pedals. Both pedals shall be used for braking. A selector switch shall be provided to allow the left pedal to be used to neutralize the transmission.
The loader shall be equipped with a wet disc type parking brake which shall be on the transmission out-put shaft.

HYDRAULIC SYSTEM

The loader hydraulic system shall be an automatic power speed, two stage type designed to reduce cycle times. It shall employ piston type pumps. The following flow rates (calculated at governed rpm) shall be considered minimums:

Loader Pump	.....	47.6	gpm
Steering Pump	47.6	gpm	
Total	.....	95.2	gpm

The hydraulic relief pressures shall be as follows:

Loader Circuit	……	4,410 psi min.
Steering Circuit	……	3,000 psi. min.

The hydraulic system shall employ a three (3) spool control valve. The first spool shall feed the steering circuit. The second spool shall feed the loader circuits. The third spool shall provide flow for hydraulically driven attachments. All necessary piping and controls shall be provided for the attachment circuit.
The hydraulic system shall be sufficient to provide the following cycle times:

Raise Boom	.....	6.1 sec.
Lower Boom	.....	3.5 sec.

Dump Bucket ..... 1.9 sec.
Total Cycle ..... 11.5 sec.

The hydraulic system shall be equipped with an oil cooler and face to face O-Ring seals.

OPERATOR'S COMPARTMENT

The loader shall have its operator's compartment located on the rear frame over the articulation joint. The operator's compartment shall consist of a fully enclosed ROPS cab. The cab shall be a walk through design with sliding windows in both doors to permit cross ventilation. It shall employ viscous mounts to reduce vibration. The doors shall be hinged to open to the rear and shall be capable of being locked in the open position. The cab shall be accessible by means of inclined ladders with safety steps and handrails on both sides.

The cab shall be equipped with the following:

- Sound Suppression – 73 dB(A) Max. @ Operator's Ear
- Air Conditioner / Heater / Front & Rear Defroster / Pressurizer
- Heated Suspension Seat
  w/3" Retractable Seat Belt
- Front (Intermittent) & Rear Wipers with Washers
- Two (2) Interior and Two (2) Exterior Rearview Mirrors
- Telescopic/Tilt Steering Wheel
- AM / FM Radio with Speakers and Auxiliary Output
- Sun Visor
- Dome Light
- (2) 12 Volt Outlets
- Ashtray & Cigarette Lighter
- Cup Holder
- Hot/Cold Storage Box
- Rearview Camera with Color Monitor

INSTRUMENTATION

The loader shall be equipped with an electronic equipment management and monitoring system which shall include a high resolution LCD /TFT main and maintenance monitor. The monitors shall include the following:

Main Monitor:

- Central Warning Lamp - Check Item
- Central Warning Lamp - Caution Items
- Headlight High Beam Pilot
- Speedometer (mph)
- Service Meter
- Transmission Shift Indicator
- Turn Signal Pilot

Maintenance Monitor:

- Air Cleaner Check
- Battery Charge
- Brake Oil Pressure
- Engine Oil Pressure
- Engine Water Level
- Engine Water Temperature
- Fuel Gauge
- Parking Brake Warning Light
- Torque Converter Temperature
- Diesel Particulate Filter
- Hydraulic Oil Temperature
- DPF Regeneration Check
- GPS Message Center
- Seat Belt Caution

WIRELESS REMOTE MONITORING SYSTEM

The wheel loader shall be equipped with a satellite-based remote wireless monitoring and management system. The system shall be designed to utilize global positioning satellite technology. The system shall be designed to be operated by any Windows based PC operating system using commercially available software. Information shall be accessed through an internet-based portal, providing e-mail and text alerts, web-dial-up service, and monthly summary reports.

The system shall provide the following machine and operation information, free of charge:

Fleet Optimization

Fuel consumption data and trends
Machine fuel level
Machine utilization
Actual working hours/machine idle hours

Attachment usage hours | Machine travel hours
Machine load analysis | Operating mode ratios

Location and Asset Management
GPS location/operation maps | Out-of-area and movement alert with location and time
Engine, nighttime and calendar lock
Maintenance Management
Service meter reading | Maintenance replacement notifications

BUCKET

The wheel loader shall be equipped with a general purpose type bucket with an SAE rated capacity of not less than 3.7 cu. yd. at a density of not less than 2,700 lb./cu.yd. The bucket shall be equipped with bolt-on cutting edges and shall be not less than 106" wide.

LIGHTS

The wheel loader shall be equipped with the following lights:
- Two (2) Front Chassis Mounted Halogen Work Lights w/ High-Low Beams & Indicator
- Two (2) Rear Chassis Halogen Work Lights
- Two (2) Front & Two (2) Rear Turn Signals w/Hazard Flashers
- Stop, Tail & Back-up Lights (LED)
- Two (2) Front Cab Halogen Work lights

TIRES

The wheel loader shall be equipped with new Michelin 20.5R25 XHA (L-3) radial tires, or equal.

ADDITIONAL EQUIPMENT

The loader shall be equipped with the following additional equipment:

- Back-Up Alarm
- Additional Counterweight
- Partial Rear Fenders
- Exterior Guard Rails
- Std. Counterweight
- Full Front Fenders
- Lifting Eyes

VANDALISM PROTECTION

The loader shall be supplied with the following vandalism protection:
- Cap Lock & Cover – Fuel Tank
- Padlocks: Battery Boxes; Brake Oil Tank; Engine Hood Side Panels; Radiator Cap Cover; Radiator Tank; Trans. Oil Filter Cover

PAINT

The loader shall be painted the manufacturer's standard colors.

SERVICE CAPACITIES

The following service capacities shall be considered minimums for a loader of this class:

- Cooling System ----- 7.4 gal.
- Engine Crankcase ----- 6.1 gal.
- Transfer Case ----- 1.5 gal.
- Axle Front ----- 7.1 gal.
- Axle Rear ----- 6.7 gal.
- Hydraulic System ----- 23.7 gal.
- Fuel Tank ----- 64.7 gal.

OPERATING DIMENSIONS & CAPACITIES

The following operating parameters, which are calculated per SAE J732 standards and based on the loader being equipped with the bucket, tires and counterweights specified:

Max. Hinge Pin Height ----- 13' 2"
Dump Clearance @ Max. Height ----- 9' 5"

Reach @ Max. Height	-----	3' 3"
Overall Length (Bucket on Ground)	-----	25' 0"
Turn Radius (Outside Bucket)	-----	20'7"
Breakout Force	-----	36,310#
Tip Load - Straight	-----	25,640#
Tip Load - Full Turn	-----	21,186#
Operating Weight	-----	33,731#

COMPLIMENTARY MAINTENANCE PROGRAM

The successful bidder shall perform periodic maintenance on the machine being offered at no charge. It shall include, but not be limited to, the following service at the noted hourly intervals:

DESCRIPTION	INTERVALS				
	250	500	1000	1500	2000
PERFORM KOWA SAMPLING- ENGINE, FRONT AXLE, REAR AXLE ONLY	X				
CLEAN AC FRESH AND RECIRC AIR FILTERS	X				
CHANGE HYDRAULIC OIL	X				X
REPLACE HYDRAULIC OIL FILTER ELEMENT	X				X
CHANGE TRANSMISSION OIL	X		X		X
REPLACE TRANSMISSION OIL FILTER	X		X		X
REPLACE TRANSMISSION OIL STRAINER	X		X		X
CLEAN AIR CLEANER ELEMENT	X	X	X	X	X
CHECK AND CLEAN FUEL BREATHER ELEMENT	X	X	X	X	X
LUBRICATE REAR AXLE PIVOT PIN	X	X	X	X	X
LUBRICATE WORK EQUIPMENT	X	X	X	X	X
DRAIN WATER AND SEDIMENT FROM FUEL TANK	X	X	X	X	X
CHECK PARKING BRAKE	X	X	X	X	X
CHECK WHEEL HUB BOLTS AND RETIGHTEN AS NECESSARY	X	X	X	X	X
COMPLETE 50 POINT INSPECTION FORM; LEAVE PINK COPY WITH CUSTOMER OR IN CAB	X	X	X	X	X
RESET MONITOR PANEL MAINTENANCE COUNTER FOR APPROPRIATE ITEMS		X	X	X	X
PERFORM KOWA SAMPLING (5 samples) – engine, transmission, hydraulics, front & rear axle		X	X	X	X
CHANGE ENGINE OIL		X	X	X	X
REPLACE ENGINE OIL FILTER		X	X	X	X
REPLACE AC FRESH & RECIRC AIR FILTERS		X	X	X	X
REPLACE FUEL PRE-FILTER		X	X	X	X
REPLACE FUEL MAIN FILTER			X		X
CLEAN TRANSMISSION BREATHER ELEMENT			X		X
LUBRICATE CENTER HINGE PIN			X		X
LUBRICATE DRIVE SHAFT CENTER SUPPORT			X		X
CHANGE FRONT AND REAR AXLE OIL					X
REPLACE HYDRAULIC TANK BREATHER ELEMENT					X
CLEAN HYDRAULIC OIL STRAINER					X
REPLACE KCCV FILTER					X
CHANGE COOLANT					X

The wheel loader shall also receive two (2) complimentary diesel particulate filter exchange units for the first 5 years / unlimited hours. (manufacturer's pre-authorization required)

WARRANTY

The loader shall carry a one (1) year/unlimited hour full machine warranty covering parts and labor.

WHEEL LOADER OPTIONS:

8) Multi-Purpose Bucket

The wheel loader shall be equipped with a multi-purpose bucket with an SAE rated capacity of not less than 3.25 cu. yd. at a density of 2,700 lb./cu yd. The bucket shall be equipped with a reversible bolt-on cutting edge and be not less than 106" wide.

9) Hydraulic Coupler

The wheel loader shall be equipped with a hydraulic quick coupler consisting of a male master located on the boom arms. It shall interface with a female blank attached to the back of the specified bucket. The coupler shall be activated by means of a switch located in the operator's compartment.

10) Spare Tire and Rim

A new spare Michelin 20.R25 XHA tire, or equal, shall be supplied. The tire shall be mounted on to a new rim manufactured by the wheel loader OEM.

11) Automatic Lubrication System

The wheel loader shall be equipped with a Vogel automatic lubrication system. The system shall employ an electrically driven gear type pump. The system reservoir shall have a capacity of not less than 5 lbs. The pump shall operate at a nominal pressure of 550 psi and shall be mounted as to be easily accessible for service and maintenance. The lubrication system shall employ piston type distributors to provide lubricant via metering nipples, which shall be able to withstand pressures of up to 4,350 psi. The lubrication system shall be monitored by an electronic control module, which shall incorporate a digital display to show system status.

12) Spare Parts Package

The wheel loader specified shall be supplied with the following spare parts package:

- One (1) complete set of radiator hoses and clamps
- Three (3) complete sets of filters
- One (1) complete set of all belts
- One (1) grease gun with one (1) case of grease
- Two (2) spare keys

13) Special Lighting Package/Strobe Kit

The wheel loader shall be equipped with a strobe light package. Four (4) perimeter lights shall be wired to flash in sequence. The strobe light package shall be activated by means of a toggle switch.

14) Extended Warranty

The wheel loader shall carry an additional twenty-four (24) month/5,000 hour powertrain warranty covering parts and labor.

VENDOR PARTS & SERVICE REQUIREMENTS

- Vendor submitting bid must be manufacturers' authorized representing dealer for the products being bid, capable of extending all services available including manufacturers' warranty repairs, parts and other support services.
- Vendor shall stock an ample supply (as recommended by manufacturer) of the replacement parts for the specific model to be serviced, located at a facility no further than 10 miles from Town Hall. Proof of detailed parts inventory can be provided prior to award.
- All replacement parts shall be genuine "O.E.M." as supplied by the equipment manufacturer.
- Manufacturers' parts price books (or price tapes, discs, or CD's if specified) shall be supplied upon award of contract and supplied as updated through term of contract.
- Vendor shall have a full service repair facility located within 50 miles of Town Hall, available for inspection, and capable of performing all possible type repairs "on premises" including, but not limited to: engine, transmission and other component overhaul; welding and fabricating; crawler undercarriage overhaul, hydraulic cylinder repair, machining, steam cleaning, painting, etc.

- With exception to smaller sub-components (i.e., starters, alternators, injection pumps, injectors), all repair work shall be performed by Vendor and their employees only. Use of O.E.M. rebuilt parts and components with warranty shall also be available.
- Vendor shall submit to the Office of Purchasing, insurance policies indicating full and complete coverage for all equipment which is in its' possession or control. The insurance includes; Theft, vandalism, fire damage, floods, acts of God, etc. The insurance shall be
  equal to the replacement purchase price of the equipment. In addition, the insurance shall cover equipment for similar mishaps as numerated above during the transportation of
  equipment. In the event of an accident during the transportation of equipment, Vendor shall assume all responsibility including any and all damage to equipment.
- All equipment to be repaired can be inspected on using agency property. However, should repair or inspection require special facilities, tooling, etc., the equipment can be moved by Vendor.
- Upon inspection, Vendor shall submit a time and cost estimate indicating the approximate number of hours that will be required and the cost of parts and any other charges that will be used to affect repairs.
- Vendor shall be capable of servicing equipment on-site, if required, with the use of properly equipped service vehicles. Typical service vehicles shall be equipped with, at a minimum, the following items: compressed air, hydraulic crane, gas and electric welding equipment, typical hand and pneumatic tooling for repairing heavy equipment and
  specific diagnostic tools for trouble-shooting, i.e., hydraulic flow meters and gauges, electrical system checkers, temperature measuring equipment, etc.
- Vendor shall be capable of providing transportation via there owned and operated low-bed equipment trailers, flat beds, boom trucks, etc. as required by the type of equipment. Vendor shall not sublet the transportation of equipment.
- Vendor technicians shall have received manufacturer's sponsored training for the equipment to be repaired. Technicians possess all applicable regulatory certifications if specific work requires same.

VENDOR PARTS & SERVICE REQUIREMENTS-cont'd

- Vendor shall maintain, at all servicing facilities, a complete library of manufacturer's parts manuals, service manuals, service bulletins and all other related parts and service
  publications. In addition to printed media, all these materials shall be available via a live "Extranet" between manufacturer and Vendor providing continuously updated timely information.
- Vendor shall be staffed with Regional Product Support Sales Representatives full time in the field. Their function is to assist equipment users with any parts or service related issues.
- Vendor shall be capable of providing the equipment owner with an Intranet connection to allow access to parts and service information via the internet. This connection provides latest parts and service information from manufacturer and parts pricing, inventory status and ordering capability from Vendor.
- Periodic maintenance services shall be available on-site via dedicated lube service vehicles. Vehicles shall carry an inventory of lubes, coolant and filters, waste oil
  recovery and minor parts making it capable of field response to most all models without need for return to shop facility in most instances.
- A manufacturer-sponsored program of lube oil analysis shall be available. Reports from lab are to be provided in triplicate to: equipment owner, Vendor and manufacturer thus providing the additional monitoring for abnormal results assuring proper response.
- A 24-hour Vendor telephone response system shall be available through all locations.
- All field service trucks, low beds and lube trucks shall be equipped with 2-way communications capability.
- Proof of additional qualification, if required, shall be provided. Proof via statements from manufacturers and previous contracts may also be requested.

ITEM 9
SPECIFICATION FOR: AN ARTICULATED WHEEL LOADER

INTENT

It is the intent of these specifications to provide for the purchase of one (1) rubber tire, diesel powered, four wheel drive, articulated front-end loader. The following specification is based upon a JCB 407. The Town has evaluated different types of wheel loaders and determined that this product is suited for the Town's needs in safety, quality, performance and standardization. This specification shall not be interpreted as restrictive, but rather as a measure of safety, quality and performance against which all wheel loaders offered will be compared.

In comparing proposals, consideration will not be confined to price only. The successful bidder will be the one whose product is judged shall best service the interests of the Town when price, product, safety, quality and delivery are considered. The Town reserves the right to reject any or all bids or any part thereof and to waive any minor technicalities. A contract will be awarded to the bidder submitting the lowest responsible bid meeting the requirements.

The loader shall be of rugged frame design, fabricated from high strength, low alloy steel. The frame shall be designed with structural box sections to provide maximum rigidity and resist loading stress and shock.

The loader described shall be the manufacturer's current production model and shall be built no earlier than the 2015 model year.

ENGINE

The loader shall be equipped with a four (4) cylinder, turbocharged engine. It shall have four (4) stroke, electronically controlled high pressure common rail injection, and a diesel oxidation catalyst.

The engine shall be rated for not less than 64 FwHP @ 2200rpm.

The engine shall be in conformance with all EPA Tier 4 Final emission standards without the need of either a Diesel Particulate Filter (DPF) or Selective Catalytic Reduction.

ELECTRICAL SYSTEM

The loader shall be equipped with a 12 Volt electrical system equipped as follows:

- 12 Volt / 80 Amp Alternator
- 2 x 12 Volt/100 Amp Hour Battery

TRANSMISSION

The loader shall be equipped with a two-speed hydrostatic transmission. It shall have neutral start, inching function, and a forward/reverse switch on the joystick control lever.

The speed range shall be as follows:

- Fwd & Rev .....3.7 to 12.4 mph

AXLES & DIFFERENTIALS

The loader shall be equipped with front and rear axles with limited slip differentials and outboard planetary hub reduction. Machine shall have remote grease lines for the rear axle pivot.

STEERING

The loader shall be equipped with a tilt and slide adjustable steering wheel as standard equipment.

LOADER MECHANISM

The loader lift mechanism shall consist of two lift cylinders and two dump cylinders as standard.

BRAKES

The loader shall be equipped with in board oil immersed brakes with combined

Handbrake as well as a cable operated parking brake. The loader will have a parking brake warning light.

HYDRAULIC SYSTEM

The hydraulic system shall employ a three (3) spool control valve. The first spool shall feed the steering circuit. The second spool shall feed the loader circuits. The third spool shall provide flow for hydraulically driven attachments. All necessary piping and controls shall be provided for the attachment circuit.

The loader shall be equipped with a single lever servo control, gear pump with priority steer, emergency steer back up, and flow sharing. The single gear pump shall have a maximum flow of 16.91 GPM. The loader will have a priority valve to the power steering. It shall articulate at a minimum angle of 40 degrees in each direction.

HYDRAULIC SYSTEM (cont.)

The hydraulic system shall be sufficient to provide the following cycle times:

Raise Boom ..... 4.9 sec.
Lower Boom ..... 3.1 sec.

A front mounted auxiliary hydraulic service shall be provided.

OPERATOR'S COMPARTMENT

The loader shall have its operator's compartment located on the rear frame over the articulation joint. The operator's compartment shall consist of a fully enclosed steel cab with an integral ROPS structure.

The loader cab shall be accessible by means of safety steps on both sides and shall have a cab door which includes a sliding window for additional ventilation.

The loader cab shall have a hydraulic control lever lock out that can deactivate the loader controls for traveling. It shall have a servo single level control for the main functions, plus a single lever for the auxiliary circuit with a loader control arm rest as standard equipment.

The loader cab shall be equipped with a forward/reverse direction switch mounted on the loader control so the operator is able to change direction without removing their hand from the steering wheel.

The cab shall be equipped with the following:

- Fully Adjustable Suspension Seat w/Seatbelt
- Interior Light
- Adjustable Tilt Steering Column
- Safety Glass
- LCD Display
- Front & Rear Screen Wash/Wipe
- Air Conditioning
- 3 Speed Heater Fan w/Replaceable Filters
- Sun Visor
- Clock
- 12-Volt Power Outlets

QUICK COUPLER

The loader shall be equipped with a hydraulically actuated quick coupler.

BUCKET

The loader shall be equipped with a General Purpose type bucket rated by SAE standards of not less than 1.00 cu. yd. The bucket shall be equipped with a bolt on cutting edge. It shall be equipped with a female coupler interface compatible with the coupler installed.

LIGHTS

The loader shall be equipped with the following lights:

- Two (2) Front & Two (2) Rear Halogen Work Lights
- Front & Rear Turn Signals
- Front & Rear Flashers

TIRES

The wheel loader shall be equipped with new Solideal 12.5 x 18 pneumatic tires, or equal.

PAINT

The loader shall be painted the manufacturer's standard colors.

SERVICE CAPACITIES

The following service capacities shall be considered minimums for a loader of this class:

Hydraulic System	18.5 gal.
Fuel Tank	21.1 gal.
Engine oil sump	3.0 gal.
Axle oil (Front)	1.2 gal.
Axle oil (Rear)	1.6 gal.

OPERATING CAPACITIES

The following operating parameters, which are calculated per SAE J732 standards, are to be considered minimums for a loader of this class when equipped with the tires and bucket specified:

Overall Length	16'10"
Axle to Pivot Pin	3'0"
Wheel Base	6'11"
Axle to Countweight Face	4'2"
Ground Clearance	1'1"
Width Over Cab	4'10"
Wheel Track	4'7"
Height Over Cab	8'2"
Bucket Breakout Force	9,419 lbs.
Front Axle Weight	3,075 lbs.
Rear Axle Weight	8,087 lbs.
Operating Weight	11,486 lbs.

ADDITIONAL EQUIPMENT

The loaders shall be equipped with the following additional equipment:

- One Piece Opening Hood
- Lockable Doors to Protect Against Vandalism
- Recovery Hitch
- Lifting Lugs

Only original equipment manufacturers genuine replacement parts shall be quoted. Generic parts will not be accepted.

A listing of parts bid by part number must be submitted as part of the bid.

WARRANTY

The loader shall carry a two (2) year / unlimited hour full machine warranty.

OPTIONAL ITEMS:

TIRES:

The wheel loader shall be equipped with new Dunlop 365/70 R18 tires, or equal in lieu of the Solideal tires specified in the base bid.

SPARE TIRE & RIM:

A new spare tire and rim shall be supplied. The tire shall be mounted on to a new rim manufactured by the wheel loader OEM.

BUCKET:

The wheel loader shall be equipped with a multi-purpose type bucket with an SAE rated capacity of not less than 1.0 cu. Yd in lieu of the general purpose bucket specified in the base bid. The bucket shall be equipped with bolt-on cutting edges and shall be no less than 74" wide.

SPARE PARTS

The rubber tired loader specified shall be supplied with the following spare parts package:

- Three (3) set of all filters

- One (1) complete set of all belts
- One (1) grease gun with one (1) case of cartridges
- Two (2) spare keys

AUTOMATIC LUBRICATION SYSTEM

The wheel loader shall be equipped with an automatic lubrication system. The system shall employ an electrically driven gear type pump. The lubrication system shall employ piston type distributors to provide lubricant via metering nipples. The lubrication system shall be monitored by an electronic control module, which shall incorporate a digital display to show system status.

SPECIAL LIGHTING PACKAGE/STROBE KIT

The wheel loader shall be equipped with a strobe light package. Four (4) perimeter lights shall be wired to flash in sequence. The strobe light package shall be activated by means of a toggle switch.

Engine Pre-Heater:

The wheel loader shall be equipped with an engine pre-heater.

Air Suspension Seat:

The wheel loader shall be equipped with a fully adjustable air suspension seat.

VENDOR PARTS & SERVICE REQUIREMENTS

- Vendor submitting bid must be manufacturers' authorized representing dealer for the products being bid, capable of extending all services available including manufacturers' warranty repairs, parts and other support services.
- Vendor shall stock an ample supply (as recommended by manufacturer) of the replacement parts for the specific models to be serviced. Proof of inventory can be provided prior to award.
- All replacement parts shall be genuine "O.E.M." as supplied by the equipment manufacturer.
- Manufacturers' parts price books (or price tapes, discs, or CD's if specified) shall be supplied upon award of contract and supplied as updated through term of contract.
- Vendor shall have full repair facilities available for inspection, capable of performing all possible type repairs "on premises" including, but not limited to: engine, transmission and other component overhaul; welding and fabricating; crawler undercarriage overhaul, hydraulic cylinder repair, machining, steam cleaning, painting, etc.
- With exception to smaller sub-components (i.e., starters, alternators, injection pumps, injectors), all repair work shall be performed by Vendor and their employees only. Use of O.E.M. rebuilt parts and components with warranty shall also be available.
- Vendor shall submit to the Office of Purchasing, insurance policies indicating full and complete coverage for all equipment which is in its' possession or control. The insurance includes; Theft, vandalism, fire damage, floods, acts of God, etc. The insurance shall be equal to the replacement purchase price of the equipment. In addition, the insurance shall cover equipment for similar mishaps as numerated above during the transportation of equipment. In the event of an accident during the transportation of equipment, Vendor shall assume all responsibility including any and all damage to equipment.
- All equipment to be repaired can be inspected on using agency property. However, should repair or inspection require special facilities, tooling, etc., the equipment can be moved by Vendor.
- Upon inspection, Vendor shall submit a time and cost estimate indicating the approximate number of hours that will be required and the cost of parts and any other charges that will be used to affect repairs.

VENDOR PARTS & SERVICE REQUIREMENTS (Cont'd.)

- Vendor shall be capable of servicing equipment on-site, if required, with the use of properly equipped service vehicles. Typical service vehicles shall be equipped with, at a minimum, the following items: compressed air, hydraulic crane, gas and electric welding equipment, typical hand and pneumatic tooling for repairing heavy equipment and specific diagnostic tools for trouble-shooting, i.e., hydraulic flow meters and gauges, electrical system checkers, temperature measuring equipment, etc.

- Vendor shall be capable of providing transportation via there owned and operated low-bed equipment trailers, flat beds, boom trucks, etc. as required by the type of equipment. Vendor shall not sublet the transportation of equipment.
- Vendor technicians shall have received manufacturer's sponsored training for the equipment to be repaired. Technicians possess all applicable regulatory certifications if specific work requires same.
- Vendor shall maintain, at all servicing facilities, a complete library of manufacturer's parts manuals, service manuals, service bulletins and all other related parts and service publications. In addition to printed media, all these materials shall be available via a live "Extranet" between manufacturer and Vendor providing continuously updated timely information.
- Vendor shall be staffed with Regional Product Support Sales Representatives full time in the field. Their function is to assist equipment users with any parts or service related issues.
- Vendor shall be capable of providing the equipment owner with an Intranet connection to allow access to parts and service information via the World Wide Web. This connection provides latest parts and service information from manufacturer and parts pricing, inventory status and ordering capability from Vendor.
- Periodic maintenance services shall be available on-site via dedicated lube service vehicles. Vehicles shall carry an inventory of lubes, coolant and filters, waste oil recovery and minor parts making it capable of field response to most all models without need for return to shop facility in most instances.
- A manufacturer-sponsored program of lube oil analysis shall be available. Reports from lab are to be provided in triplicate to: equipment owner, Vendor and manufacturer thus providing the additional monitoring for abnormal results assuring proper response.
- A 24-hour Vendor telephone response system shall be available through all locations.
- All field service trucks, low beds and lube trucks shall be equipped with 2-way communications capability.
- Proof of additional qualification, if required, shall be provided. Proof via statements from manufacturers and previous contracts may also be requested.

ITEM 10

Suggested Bid Specifications

SCOPE: It is the intent of this specification to describe a hydraulically actuated packer body of the rear loading type with the following minimum specifications considered necessary to perform the work assigned. The body shall be capable of compacting and transporting refuse to a landfill or transfer station and dispensing the load by means of hydraulic ejection. The body shall not be required to be tilted, lifted, or otherwise displaced from the chassis in order to eject the load.
GENERAL: All equipment furnished under this contract shall be new and unused, and the same as the manufacturers current production model. Leach Alpha III & New Way Cobra Series have been demonstrated as both approved equal to the General specification. Accessories not specifically mentioned, but necessary to furnish a complete unit ready for use shall also be included. The equipment furnished shall conform to all ANSI Safety Standards A245.1-1984.

SUGGESTED BID SPECIFICATIONS FOR BODY AND CHASSIS AS A COMPLETED MOUNTED REFUSE TRUCK

Bidder Shall Complete the Following
If No, State Specifically the Item being Offered

	YES	NO	OFFERED
A. CAPACITY			
1. The body shall have a minimum capacity excluding hopper of:			
20 Cubic Yards	_____	_____	_____
2. The body shall have an average compaction rate of up to 950 pounds per cubic yard	_____	_____	_____
B. BODY DIMENSIONS			
1. Maximum overall width not to exceed 96".	_____	_____	_____
2. Maximum overall length and height (*with tailgate in locked position*) above the chassis frame not to exceed:			
Capacity Length HeightCA (cab to axle)			
20 Cu./Yd. 224." 83" 138"	_____	_____	_____
3. Body weight (exclusive of options) shall not exceed:			
Capacity Weight			
20 Cu./Yd. 11,730 pounds	_____	_____	_____
C. BODY CONSTRUCTION	**YES**	**NO**	**OFFERED**
1. Body sides, roof shall be curve shell design without the need of side bracing. Continuous operation at maximum loads without harmful deformation or wear.	_____	_____	_____
2. The roof shall be constructed of 10 gauge 80,000 PSI steel.		_____	_____ _____

3. The body sides shall be constructed of 10 gauge, 80,000 PSI steel. Rear third of body panels shall be have add'l liner 10 ga

4. Sides shall be braced along the bottom 3 1/2" x 12" from tailgate tapered to a point at the front of the body. Braces shall be interconnected with floor gussets and continuously welded. Rear portion of side brace shall connect to a 12" x 16" triangular gussets and all seams continuously welded for maximum strength. _____ _____ _____

5. The body floor shall incorporate a trough design *(flat floors not acceptable).* _____ _____ _____
6. The body upper floor sides shall be 10 gauge 80,000 PSI steel. _____ _____ _____
7. The body floor center shall be 1/4" plate high tensile steel. _____ _____ _____
8. The trough shall be constructed of two 8" channel sills to hold the ejection panel in line under the most extreme load conditions. (Flat floors not acceptable) _____ _____ _____
9. Side access door shall be located on the street side of the body sidewall. _____ _____ _____
10. Side access door shall be equipped with a safety interlock to disengage PTO when door is open. _____ _____ _____

D. TAILGATE DIMENSIONS

1. Hopper opening width shall not be less than 82". _____ _____ _____

2. Hopper capacity shall not be less than 3 cubic yards as calculated By WASTEC DWRP03 No.1 method. _____ _____ _____

2a. Hopper capacity of 12.6 and 16 through 25 yard bodies shall not be less than 3.0 cubic yards as calculated by WASTEC DWRP03 No. 1 method. ____ _____ _____

3. Hopper cycle time with the maried PTO and pump shall not exceed 27- 30 seconds. ____ _____ _____

E. TAILGATE CONSTRUCTION **YES NO OFFERED**

1. Tailgate sides shall be constructed of a minimum of ¼" high tensile sheet steel, and the upper sides shall be constructed of a minimum of 10 gauge high tensile sheet steel . _____ _____ _____

2. Tailgate sides shall be reinforced by 1 3/4" x 4" bracing constructed of 7 gauge formed steel and fully welded in a horizontal position for maximum support. _____ _____ _____

3. The slide panel guide track shall be constructed of 1/2" x 2 1/2" AR400 steel reinforced by formed 1/4" high tensile steel. *(Free floating design is not acceptable).* _____ _____ _____

4. The tailgate shall be equipped with an automatic hydraulic locking system with a pilot check valve to ensure constant pressure for a tight seal. _____ _____ _____

5. The tailgate shall be unlocked raised by two double acting cylinders equipped with clevis ends and restrictors to prevent precipitous tailgate decent in the event of a broken hydraulic line. (9-13RL 3 ½" bore cylinder, 16-25RL 4" bore cylinder) _____ _____ _____

6. The tailgate perimeter edge shall be reinforced by 2" x 2" structural tube steel. _____ _____ _____

7. Tailgate shall be equipped with a chemically inert seal to provide a watertight seal. (23" high) _____ _____ _____

8. Hopper floor shall remain stationary during the packing cycle and shall be equipped with a 1 1/2" drain plug. _____ _____ _____

9. Hopper floor shall be a minimum of 1/2" high tensile Sheet (one piece –layers not acceptable) adequately braced to withstand maximum pressures imposed upon it. Hopper back 1/4" T-1 100K steel. _____ _____ _____

10. The hopper load sill shall be constructed from a 3/8" plate and be even with the chassis frame height _____ _____ _____

11. Self cleaning grip bolt on strut steps and grab handles shall be required on both sides of the tailgate. _____ _____ _____

12. Auto locking Hydraulic tailgate (No turn buckles). _____ _____ _____

F. PACKING MECHANISM CONSTRUCTION **YES NO OFFERED**

1. The sweep panel shall be of the backhoe packing type, and designed to have a minimum clearance to thoroughly clean the hopper bottom during cycling. _____ _____ _____

2. The sweep panel face plate shall be constructed of 1/4" 100k high tensile sheet steel and shall be reinforced with (4) integral braces made from 1" steel plate. _____ _____ _____

3. The sweep panel shall be powered by two 5" x 16" double acting cylinders equipped with bronze bushings. _____ _____ _____

4. The slide panel face plate shall be constructed of 1/4" high strength 100k sheet steel. _____ _____ _____

5. The slide panel shall be powered by two (11-13RL 4" bore x 36" stroke, 12.6 and 16-25RL 4 ½" bore x 43" stroke) double Acting cylinders. _____ _____ _____

6. The linear slide movement of the panel shall be accomplished on two 4 1/2" x 2 1/4" x 24" high density UHMW guide bearing blocks. _____ _____ _____

7. The pivotal rotation of the sweep panel shall be accomplished through the sweep panel pivot which shall consist of two 2" diameter stress proof pivot pins with bronze bushings. _____ _____ _____

8. Both ends of the pivot shaft shall be equipped with bronze bushings._____ _____ _____

G. EJECTION PANEL CONSTRUCTION

1. Ejection blade shall form the front of the body and be hydraulically operated and designed to have a minimum clearance too thoroughly clean the body during cycling. _____ _____ _____

2. The load shall be discharged by means of a positive ejection system. A double acting, telescopic cylinder shall extend and retract the full length of the body. _____ _____ _____

3. The ejection panel face plate shall be constructed of 10 gauge 50,000 PSI sheet steel and reinforced with trapezoidal cross members of high 3" x 3" and 4" x 4" structural tube. _____ _____ _____

4. The ejection panel shall slide in an 8" channel sill on four high

density UHMW slide bearing blocks. _____ _____ _____

5. Ejection panel bearing blocks must be able to be replaced without removing ejection panel. _____ _____ _____

YES NO OFFERED

6. The telescopic cylinder shall be horizontally positioned & consist of the following dimensional characteristics:

Capacity	Stage	Bore
20 Cu./Yd.	4 Stage	6.5″

_____ _____ _____

7. No clamping cylinder or clamping mechanism shall be required. _____ _____ _____

H. CONTROLS

1. The ejector panel and tailgate raise control shall be mounted inside the front left hand side of the body. Controls are accessed through opening located in access door. Controls will not come into contact with any refuse and are protected from outside elements. _____ _____ _____

2. An electrical device shall be supplied to automatically raise the engine speed to the proper RPM during the packing cycle. _____ _____ _____

3. An additional throttle advance switch shall be mounted at the front left hand side of the body near the tailgate raise control handle and at the rear right hand side near the packing blade control. _____ _____ _____

4. A Back Pack Valve shall be required to automatically advance the ejector panel when packing against it. _____ _____ _____

5. The packing panel control shall be designed to accomplish the normal packing cycle in two steps and shall be reversible or stopped at any time during the cycle. _____ _____ _____

6. The packing panel control shall be a two handle design and located at the rear of the tailgate on the curbside. _____ _____ _____

I. HYDRAULIC SYSTEM

1. A power takeoff/pump combination shall be used to power the

hydraulic system. _____ _____ _____

2. All hydraulic valve shall be mechanically operated and use direct link controls. _____ _____ _____

3. The hydraulic pump shall provide a delivery of 29 GPM at 1400 to 1500 RPM. _____ _____ _____

4. Normal maximum operating pressures shall not exceed 2000 PSI. (For 12.6 and 16-25RL or 2500 PSI for 11-13RL). _____ _____ _____

YES NO OFFERED

5. The hydraulic system shall incorporate a relief valve and a hydraulic pressure gauge to protect all components from excess pressures. _____ _____ _____

6. All hydraulic hoses shall conform to S.A.E. Standards. No flat spots in hoses will be acceptable. _____ _____ _____

7. Hydraulic tank shall not be less than 40 gallons and must be equipped with a sight and temperature gauge. The tank shall be located inside the body. _____ _____ _____

8. A replaceable 10 micron absolute in tank immersed filter with by-pass valve and visual indicator shall be furnished in the return line of the hydraulic system. _____ _____ _____

9. A shut-off valve shall be mounted on the suction line near the oil tank. _____ _____ _____

10. All cylinder rods shall be chrome plated. _____ _____ _____

11. Sweep and slide cylinder rods induction hardened. _____ _____ _____

J. ELECTRICAL

1. All body wiring shall be color coded in factory harness with sealed connectors. All lighting is to be LED type _____ _____ _____

2. Body to chassis wiring shall be in sealed junction box at front of body with sealed connectors. _____ _____ _____

3. The body shall be equipped with approved LED clearance, warning, tail, license, stop and turn signals in compliance with the national safety standards. _____ _____ _____

4. The body shall be equipped with an external audio back up alarm activated when the chassis is in reverse. _____ _____ _____

5. Driver alert buzzer and safety stop shall be installed at the rear of the tailgate located by the packing controls. ____ ____ _____

6. A light shall illuminate in the cab when the tailgate is open and an audible alarm will sound when the vehicle is placed in reverse while the tailgate is open. ____ ____ _____

YES NO OFFERED

7. A light bar shall be mounted on the upper section of the tailgate and consist of stop, turn and three clearance lights, in accordance to the national safety standards. ____ ____ _____

8. It shall include a rear color vision camera, Safety Vision or equivalent. ____ ____ _____

K. PAINT

1. The body shall be properly cleaned of all dirt, oil, and welding slag. Gray DuPont Epoxy primer with rust inhibitors shall be applied. ____ ____ _____
2. DuPont Imron 5000 paint North Hempstead shall be applied. ____ ____ _____
   Specify paint code: _____N0006HN_____

   Specify paint color: _____WHITE_____

L. MOUNTING

1. Body shall be mounted in accordance to industry standards. No welding shall be performed on the chassis frame in the mounting process. ____ ____ _____

M. SAFETY

1. Access door to body to be equipped with an interlock switch to disable the hydraulic system when the door is open. ____ ____ _____
2. Safety Shut Down switch to be provided on the right side of the tailgate. ____ ____ _____

3. Driver alert switch to be provided at the right rear of the truck. ____ ____ _____

4. 20 lb. Fire extinguisher mounted on body or truck frame. ____ ____ _____

5. Triangle reflector kit located in cab. ____ ____ _____

N. WARRANTY

1. Manufacturer's limited warranty shall apply for a period of two years for body and two years for cylinders after date of acceptance of the unit. ____ ____ _____

O. ADDITIONAL EQUIPMENT

1. **Hopper Lights** Two white halogen lamps shall be mounted on the upper half of the tailgate. The lights shall be capable of illuminating the hopper of the tailgate. The lights will

be activated by a switch in the cab of the chassis. ____ ____ _____

YES NO OFFERED

3. **Strobe Light** Two Oval LED strobe light shall be mounted on the upper half of the tailgate. The lights shall be activated by a switch located inside the cab of the chassis. ____ ____ _____

4. **Hydraulic Kick Bar** - A device to lift and dump a commercial container, including trunnion locks to lock container into position, shall be supplied along with all associated hydraulic components. ____ ____ _____

NEW INTERNATIONALCHASSIS SPECIFICATION

Description	**Comply**	
Base Chassis, Model 4300 SBA 4X2 with 205.00 Wheelbase, 137.90 CA, and 75.00 Axle to Frame.	(yes)	(no)
TOW HOOK, FRONT (2) Frame Mounted	(yes)	(no)
FRAME RAILS Heat Treated Alloy Steel (120,000 PSI Yield); 10.375" x 3.705" x 0.438" (263.5mm x 94.1mm x 11.1mm); 456.0" (11582mm) Maximum OAL	(yes)	(no)
BUMPER, FRONT Full Width, Aerodynamic, Steel; 0.142" Material Thickness	(yes)	(no)
: BUMPER, FRONT Powder Coated Gray (Argent) Color	(yes)	(no)
BUMPER EXTENSION, FRONT 4.0"	(yes)	(no)
WHEELBASE RANGE 199" (505cm) Through and Including 254" (645cm)	(yes)	(no)
AXLE, FRONT NON-DRIVING {Meritor MFS-12-122A} I-Beam Type, 12,000-lb Capacity	(yes)	(no)
SUSPENSION, FRONT, SPRING Parabolic, Taper Leaf; 12,000-lb Capacity; With Shock Absorbers	(yes)	(no)
: SPRING PINS Rubber Bushings, Maintenance-Free	(yes)	(no)
BRAKE SYSTEM, AIR Dual System for Straight Truck Applications	(yes)	(no)
: BRAKE LINES Color and Size Coded Nylon	(yes)	(no)
: DRAIN VALVE Twist-Type	(yes)	(no)
: GAUGE, AIR PRESSURE (2) Air 1 and Air 2 Gauges; Located in Instrument Cluster	(yes)	(no)
: PARKING BRAKE CONTROL Yellow Knob, Located on Instrument Panel	(yes)	(no)
: PARKING BRAKE VALVE For Truck	(yes)	(no)
: QUICK RELEASE VALVE Bendix On Rear Axle for Spring Brake Release: 1 for 4x2, 2 for 6x4	(yes)	(no)
: SLACK ADJUSTERS, FRONT Automatic	(yes)	(no)
: SLACK ADJUSTERS, REAR Automatic	(yes)	(no)
: SPRING BRAKE MODULATOR VALVE R-7 for 4x2, SR-7 with relay valve for 6x4	(yes)	(no)
DRAIN VALVE {Bendix DV-2} Automatic; With Heater; for Air Tank	(yes)	(no)
: DRAIN VALVE Mounted in Wet Tank	(yes)	(no)
BRAKE SHOES, REAR Cast	(yes)	(no)
AIR BRAKE ABS {Bendix AntiLock Brake System} Full Vehicle Wheel Control System (4-Channel)	(yes)	(no)
AIR DRYER {Bendix AD-9} With Heater	(yes)	(no)
: AIR DRYER LOCATION Inside Left Rail, Back of Cab	(yes)	(no)
BRAKE CHAMBERS, FRONT AXLE {Haldex} 20 SqIn	(yes)	(no)
BRAKE CHAMBERS, REAR AXLE {Haldex GC3030LHDHO} 30/30 Spring Brake	(yes)	(no)
: BRAKE CHAMBERS, SPRING (2) Rear Parking; WITH TRUCK BRAKES	(yes)	(no)
BRAKES, FRONT, AIR CAM S-Cam; 16.5" x 5.0"; Includes 20 Sq. In. Long Stroke Brake Chambers	(yes)	(no)
SLACK ADJUSTERS, FRONT {Haldex} Automatic	(yes)	(no)

SLACK ADJUSTERS, REAR {Haldex} Automatic	(yes)	(no)
BRAKES, REAR, AIR CAM S-Cam; 16.5" x 7.0"; Includes 30/30 Sq.In. Long Stroke Brake Chamber and Spring Actuated Parking Brake	(yes)	(no)
AIR COMPRESSOR {Cummins} 18.7 CFM Capacity	(yes)	(no)
DUST SHIELDS, REAR BRAKE for Air Brakes	(yes)	(no)
STEERING COLUMN Tilting	(yes)	(no)
STEERING WHEEL 2-Spoke, 18" Diam., Black	(yes)	(no)
STEERING GEAR {Sheppard M-100} Power	(yes)	(no)
EXHAUST SYSTEM Switchback Horizontal Aftertreatment Device, Frame Mounted Right Side Under Cab; Includes Single Vertical Tail Pipe, Frame Mounted Right Side Back of Cab	(yes)	(no)
ELECTRICAL SYSTEM 12-Volt, Standard Equipment	(yes)	(no)
: BATTERY BOX Steel	(yes)	(no)
: DATA LINK CONNECTOR For Vehicle Programming and Diagnostics In Cab	(yes)	(no)
: FUSES, ELECTRICAL SAE Blade-Type	(yes)	(no)
: HAZARD SWITCH Push On/Push Off, Located on Top of Steering Column Cover	(yes)	(no)
: HEADLIGHT DIMMER SWITCH Integral with Turn Signal Lever	(yes)	(no)
: JUMP START STUD Located on Positive Terminal of Outermost Battery	(yes)	(no)
: PARKING LIGHT Integral with Front Turn Signal and Rear Tail Light	(yes)	(no)
: STARTER SWITCH Electric, Key Operated	(yes)	(no)
: STOP, TURN, TAIL & B/U LIGHTS Dual, Rear, Combination with Reflector	(yes)	(no)
: TURN SIGNAL SWITCH Self-Cancelling for Trucks, Manual Cancelling for Tractors, with Lane Change Feature	(yes)	(no)
: TURN SIGNALS, FRONT Includes Reflectors and Auxiliary Side Turn Signals, Solid State Flashers; Flush Mounted	(yes)	(no)
: WINDSHIELD WIPER SWITCH 2-Speed with Wash and Intermittent Feature (5 Pre-Set Delays), Integral with Turn Signal Lever	(yes)	(no)
: WINDSHIELD WIPERS Single Motor, Electric, Cowl Mounted	(yes)	(no)
: WIRING, CHASSIS Color Coded and Continuously Numbered	(yes)	(no)
CIGAR LIGHTER Includes Ash Cup	(yes)	(no)
ALTERNATOR {Leece-Neville AVI160P2013} Brush Type; 12 Volt 160 Amp. Capacity, Pad Mount, With Remote Sense	(yes)	(no)
BODY BUILDER WIRING Back of Standard Cab at Left Frame or Under Extended or Crew Cab at Left Frame; Includes Sealed Connectors for Tail/Amber Turn/Marker/ Backup/Accessory Power/Ground and Sealed Connector for Stop/Turn	(yes)	(no)
BATTERY SYSTEM {International} Maintenance-Free, (3) 12-Volt 1950CCA Total	(yes)	(no)
RADIO AM/FM/WB/Clock/Bluetooth/USB Input/3MM Auxiliary Input, MP3, Apple Device Play & Control, Bluetooth for Phone & Music, with Multiple Speakers	(yes)	(no)
BACK-UP ALARM Electric, 102 dBA	(yes)	(no)
HORN, ELECTRIC Disc Style	(yes)	(no)
HORN, AIR Black, Single Trumpet, Air Solenoid Operated	(yes)	(no)
WINDSHIELD WIPER SPD CONTROL Force Wipers to Slowest Intermittent Speed When Park Brake Set and Wipers Left on for a Predetermined Time	(yes)	(no)
CLEARANCE/MARKER LIGHTS (5) {Truck Lite} Amber LED Lights, Flush Mounted on Cab or Sunshade	(yes)	(no)
TEST EXTERIOR LIGHTS Pre-Trip Inspection will Cycle all Exterior Lamps Except Back-up Lights	(yes)	(no)
HEADLIGHTS ON W/WIPERS Headlights Will Automatically Turn on if Windshield Wipers are turned on	(yes)	(no)
STARTING MOTOR {Delco Remy 38MT Type 300} 12 Volt; less Thermal Over-Crank Protection	(yes)	(no)
INDICATOR, LOW COOLANT LEVEL With Audible Alarm	(yes)	(no)
ALARM, PARKING BRAKE Electric Horn Sounds in Repetitive Manner When Vehicle Park Brake is "NOT" Set, With Ignition "OFF" and any Door Opened	(yes)	(no)
HEADLIGHTS Halogen; Composite Aero Design for Two Light System	(yes)	(no)
CIRCUIT BREAKERS Manual-Reset (Main Panel) SAE Type III With Trip Indicators, Replaces All Fuses Except For 5-Amp Fuses	(yes)	(no)
TURN SIGNALS, FRONT LED, Includes LED Side Marker Lights, Mounted on Fender	(yes)	(no)
GRILLE Chrome	(yes)	(no)

FRONT END Tilting, Fiberglass, With Three Piece Construction	(yes)	(no)
PAINT SCHEMATIC, PT-1 Single Color, Design 100	(yes)	(no)
PAINT TYPE Base Coat/Clear Coat,	(yes)	(no)
CLUTCH Omit Item (Clutch & Control)	(yes)	(no)
BLOCK HEATER, ENGINE 120 Volt/1000 Watt, for ISB Engine	(yes)	(no)
ENGINE, DIESEL {Cummins ISB 280} EPA 2010, 280 HP @ 2400 RPM, 660 lb-ft Torque @ 1600 RPM, 2600 RPM Governed Speed, 280 Peak HP (Max)	(yes)	(no)
: ANTI-FREEZE Red Shell Rotella Extended Life Coolant; -40 Degrees F/ -40 Degrees C; for Cummins ISB Engines	(yes)	(no)
: FUEL/WATER SEPARATOR Fuel/Water Separator; Heated; with Water-in-Fuel Sensor. Engine Mounted	(yes)	(no)
FAN DRIVE {Borg-Warner SA85} Viscous Type, Screw On	(yes)	(no)
: FAN Nylon	(yes)	(no)
RADIATOR Aluminum; 2-Row, Cross Flow, Over Under System, 717 SqIn Louvered, With 313 SqIn Charge Air Cooler. With In-Tank Transmission Cooler	(yes)	(no)
: DEAERATION SYSTEM with Surge Tank	(yes)	(no)
: HOSE CLAMPS, RADIATOR HOSES Gates Shrink Band Type; Thermoplastic Coolant Hose Clamps	(yes)	(no)
: RADIATOR HOSES Premium, Rubber	(yes)	(no)
AIR CLEANER With Service Protection Element	(yes)	(no)
: GAUGE, AIR CLEANER RESTRICTION Air Cleaner Mounted	(yes)	(no)
THROTTLE, HAND CONTROL Engine Speed Control; Electronic, Stationary, Variable Speed; Mounted on Steering Wheel	(yes)	(no)
OIL PAN 15 Quart Capacity, For Cummins ISB Engines	(yes)	(no)
EMISSION COMPLIANCE Low NOx Idle Engine, Complies with California Clean Air Regulations; Includes "Certified Clean Idle" Decal on Hood	(yes)	(no)
ENGINE CONTROL, REMOTE MOUNTED Provision for; Includes Wiring for Body Builder Installation of PTO Controls; With Ignition Switch Control for Cummins ISB Engines	(yes)	(no)
FEDERAL EMISSIONS EPA, OBD and GHG Certified for Calendar Year 2015; ISB Engines	(yes)	(no)
AUTOMATIC NEUTRAL Allison WT, 3000 & 4000 Series Transmission Shifts to Neutral When Parking Brake is Engaged	(yes)	(no)
TRANSMISSION, AUTOMATIC {Allison 3000_RDS_P} 5th Generation Controls; Close Ratio, 6-Speed, With Double Overdrive; Refuse/ Mixer; Includes Oil Level Sensor With PTO Provision, Less Retarder, With 62,000-lb GVW Max.	(yes)	(no)
TRANSMISSION SHIFT CONTROL {Allison} Push-Button Type; for Allison 3000 & 4000 Series Transmission	(yes)	(no)
TRANSMISSION OIL Synthetic; 29 thru 42 Pints	(yes)	(no)
ALLISON SPARE INPUT/OUTPUT for Rugged Duty Series (RDS); Front Loaders, Rear Loaders, Recycling/Packer Trucks	(yes)	(no)
TRANSMISSION TCM LOCATION Located Inside Cab	(yes)	(no)
SHIFT CONTROL PARAMETERS Allison 3000 or 4000 Series Transmissions, 5th Generation Controls, Performance Programming	(yes)	(no)
AXLE, REAR, SINGLE {Dana Spicer S26-190D} Single Reduction, 26,000-lb Capacity, R Wheel Ends, Driver Controlled Locking	(yes)	(no)
Differential . Gear Ratio: 6.83	(yes)	(no)
: REAR AXLE DRAIN PLUG (1) Magnetic, For Single Rear Axle	(yes)	(no)
SUSPENSION, RR, SPRING, SINGLE Vari-Rate; 31,000-lb Capacity, With 4500 lb Auxiliary Rubber Spring	(yes)	(no)
FUEL TANK Top Draw; D Style, Non Polished Aluminum, 19" Deep, 50 U.S. Gal., 189 L Capacity, with Quick Connect Outlet, Mounted Left Side, Under Cab	(yes)	(no)
DEF TANK 7 U.S. Gal. 26.5L Capacity, Frame Mounted Outside Left Rail, Under Cab	(yes)	(no)
CAB Conventional	(yes)	(no)
: ARM REST (2) Molded Plastic; One Each Door	(yes)	(no)
: CLEARANCE/MARKER LIGHTS (5) Flush Mounted	(yes)	(no)
: COAT HOOK, CAB Located on Rear Wall, Centered Above Rear Window	(yes)	(no)
: CUP HOLDERS Two Cup Holders, Located in Lower Center of Instrument Panel	(yes)	(no)
: DOME LIGHT, CAB Rectangular, Door Activated and Push On-Off at Light Lens, Timed Theater Dimming, Integral to Console, Center Mounted	(yes)	(no)

: GLASS, ALL WINDOWS Tinted	(yes)	(no)
: GRAB HANDLE, CAB INTERIOR (1) "A" Pillar Mounted, Passenger Side	(yes)	(no)
: GRAB HANDLE, CAB INTERIOR (2) Front of "B" Pillar Mounted, One Each Side	(yes)	(no)
: INTERIOR SHEET METAL Upper Door (Above Window Ledge) Painted Exterior Color	(yes)	(no)
GAUGE CLUSTER English With English Electronic Speedometer	(yes)	(no)
: GAUGE CLUSTER (5) Engine Oil Pressure (Electronic), Water Temperature (Electronic), Fuel (Electronic), Tachometer (Electronic), Voltmeter	(yes)	(no)
: ODOMETER DISPLAY, Miles, Trip Miles, Engine Hours, Trip Hours, Fault Code Readout	(yes)	(no)
: WARNING SYSTEM Low Fuel, Low Oil Pressure, High Engine Coolant Temp, and Low Battery Voltage (Visual and Audible)	(yes)	(no)
IP CLUSTER DISPLAY On Board Diagnostics Display of Fault Codes in Gauge Cluster	(yes)	(no)
GAUGE, DEF FLUID LEVEL	(yes)	(no)
SEAT, DRIVER {National 2000} Air Suspension, High Back With Integral Headrest, Vinyl, Isolator, 1 Chamber Lumbar, With 2 Position Front Cushion Adjust, -3 to +14 Degree Angle Back Adjust	(yes)	(no)
: SEAT BELT 3-Point, Lap and Shoulder Belt Type	(yes)	(no)
SEAT, TWO-MAN PASSENGER {National} Fixed Back, Integrated Headrest in Both Occupant Positions, Vinyl, Less Under Seat Storage Compartment	(yes)	(no)
MIRRORS (2) {Lang Mekra} Rectangular, 7.55" x 14.1" Integral Convex Both Sides, 102" Inside Spacing, Breakaway Type, Thermostatically Controlled Heated Heads, Black Heads, Brackets and Arms	(yes)	(no)
CAB MOUNTING HEIGHT EFFECTS Mid Cab in Lieu of Low Cab Mounting Height (Approx. 4") With Cab Air Suspension	(yes)	(no)
AIR CONDITIONER {Blend-Air} With Integral Heater & Defroster	(yes)	(no)
: HEATER HOSES Premium	(yes)	(no)
: HOSE CLAMPS, HEATER HOSE Mubea Constant Tension Clamps	(yes)	(no)
: REFRIGERANT Hydrofluorocarbon HFC-134A	(yes)	(no)
INSTRUMENT PANEL Center Section, Flat Panel	(yes)	(no)
WINDOW, POWER (2) and Power Door Locks, Left and Right Doors, Includes Express Down Feature	(yes)	(no)
HVAC FRESH AIR FILTER	(yes)	(no)
STORAGE POCKET, DOOR Molded Plastic, Full Width; Mounted on Passenger Door	(yes)	(no)
CAB INTERIOR TRIM Deluxe	(yes)	(no)
: "A" PILLAR COVER Molded Plastic	(yes)	(no)
: CAB INTERIOR TRIM PANELS Cloth Covered Molded Plastic, Full Height; All Exposed Interior Sheet Metal is Covered Except for the Following: with a Two-Man Passenger Seat or with a Full Bench Seat the Back Panel is Completely Void of Covering	(yes)	(no)
: CONSOLE, OVERHEAD Molded Plastic; With Dual Storage Pockets with Retainer Nets and CB Radio Pocket	(yes)	(no)
: DOOR TRIM PANELS Molded Plastic; Driver and Passenger Doors	(yes)	(no)
: FLOOR COVERING Rubber, Black	(yes)	(no)
: HEADLINER Soft Padded Cloth	(yes)	(no)
: INSTRUMENT PANEL TRIM Molded Plastic with Black Center Section	(yes)	(no)
: STORAGE POCKET, DOOR (1) Molded Plastic, Full-Length; Driver Door	(yes)	(no)
: SUN VISOR (2) Padded Vinyl with Driver Side Toll Ticket Strap, Integral to Console	(yes)	(no)
WHEELS, FRONT {Maxion 90541} DISC; 22.5" Painted Steel, 2-Hand Hole, 10-Stud (285.75MM BC) Hub Piloted, Flanged Nut, Metric Mount, 8.25 DC Rims; With Steel Hubs	(yes)	(no)
WHEELS, REAR {Maxion 90541} DISC; 22.5" Painted Steel, 2 Hand Hole, 10 Stud (285.75MM BC) Hub Piloted, Flanged Nut, Metric Mount, 8.25 DC Rims; With Steel Hubs	(yes)	(no)
PAINT IDENTITY, FRONT WHEELS Disc Front Wheels; With Vendor Applied White Powder Coat Paint	(yes)	(no)
PAINT IDENTITY, REAR WHEELS Disc Rear Wheels; With Vendor Applied White Powder Coat Paint	(yes)	(no)
(2) TIRE, FRONT 11R22.5 G662 FUEL MAX (GOODYEAR) 497 rev/mile, load range H, 16 ply	(yes)	(no)
(4) TIRE, REAR 11R22.5 G572A LHD FUEL MAX (GOODYEAR) 492 rev/mile, load range H, 16 ply	(yes)	(no)
Cab schematic 100GA	(yes)	(no)

Location 1: 9219, Winter White (Std)	(yes)	(no)
WARRANTY Standard for Durastar 1000/4000 Series, Effective with Vehicles Built January 2, 2015 or Later, CTS-2475P	(yes)	(no)
SRV CONTRACT, EXT CMMS ENGINE {Cummins} To 60-Month/150,000 Miles (240,000 km), Extended Cummins ISB Engine Coverage,	(yes)	(no)
Protection Plan 1, (Truck Application Only)	(yes)	(no)
SRV CONTRACT, EXT CMMS AFTR {Cummins} To 60-Month/150,000 Miles (240,000 km), Extended Cummins ISB Aftertreatment	(yes)	(no)
Coverage, With Equal or Greater Duration Purchased of Protection Plan 1 (Truck Application Only)	(yes)	(no)
SRV CONTRACT, EXT VEH COVERAGE {Navistar} To 60-Month/150,000 Miles (240,000 km), Covers 100% Parts and Labor, Excludes	(yes)	(no)
Extended Warranty for Engine and Transmission	(yes)	(no)
SVC CONTRACT, EXT TRANS COVERAGE {Allison} to 60-Month/Unlimited Miles, Cover 100% Parts and Labor	(yes)	(no)

ITEM 11

COBRA MAGNUM

BID SPECIFICATIONS

20 YARD REAR LOADING REFUSE BODY

INTENT

It is the intent of these specifications to provide a 20 cubic yard rear load refuse body and chassis. The Town of North Hempstead has evaluated different types of refuse trucks and has determined that this product is best suited for the Towns needs in safety, quality, performance and the availability of parts and service. Bids will be accepted for consideration on any make or model that is equal or superior to these specifications. Decisions of equivalency will be the sole interpretation of the Town of North Hempstead. The model being offered must be in production for a minimum of five years. A detailed users list to be provided with the ebid response. To evaluate the automated body being bid other than what is specified will require a working demonstration prior to the bid date for a minimum of three days. It will be the responsibility of the bidder to make arrangements. Failure to comply will result in non compliance and rejection of the bid.

Maintenance Program for service/training and Inspection to be included

	Comply	Exception
Sufficient training shall be given to the employees at the village garage by Manufacture's certified trainer.	___	___
Complete preventive maintenance program on the Body, per manufacture's guide lines, to be done after 6 months. This includes labor and parts. Complete hydraulic fluid & filter change once a year. This is to completed at no additional cost to the TNH	___	___

Bidders not having an authorized parts and full service facility with 30 miles of the town Resource facility will not be accepted

State location : _____

NEW WAY Rear loading Refuse Collection Truck Body

COBRA MAGNUM

Suggested Bid Specifications

SCOPE: It is the intent of this specification to describe a hydraulically actuated packer body of the rear loading type with the following minimum specifications considered necessary to perform the work assigned. The body shall be capable of compacting and transporting refuse to a landfill or transfer station and dispensing the load by means of hydraulic ejection. The body shall not be required to be tilted, lifted, or otherwise displaced from the chassis in order to eject the load.

GENERAL: All equipment furnished under this contract shall be new and unused, and the same as the manufacturers current production model. Accessories not specifically mentioned, but necessary to furnish a complete unit ready for use shall also be included. The equipment furnished shall conform to all ANSI Safety Standards A245.1-2008.

SUGGESTED BID SPECIFICATIONS

Bidder Shall Complete the Following

If No, State Specifically the Item being Offered

	YES	NO	OFFERED
A. CAPACITY			

1. The body shall have a minimum capacity of:
   20 Cubic Yards ____ ____ _____
2. The body shall have a compaction rate of
   up to 1300 pounds per cubic yard ____ ____ _____

B. BODY DIMENSIONS

1. Maximum overall width not to exceed 96". ____ ____ _____
2. Maximum overall length and height (with tailgate in locked position) above the chassis frame not to exceed:

Capacity	Length	Height	CT			
20 Cu./Yd.	251.5"	102.5"	136"	____	____	_____

3. Body weight (exclusive of options) shall not exceed:

Capacity	Weight			
20 Cu./Yd.	15,500 pounds	____	____	_____

C. BODY CONSTRUCTION

1. The body shall be constructed entirely of 10 gauge 80,000 PSI steel. Full body weld, stitch weld not acceptable
   ____ ____ _____

	YES	NO	OFFERED	
2. All pivot points shall be provided with grease zerks.			____	____
3. Body sides, roof shall be curve shell design without the need of side bracing. Continuous operation at maximum loads without harmful deformation or wear.			____	____
4. The roof shall be constructed of 7 gauge 80,000-PSI steel.			____	____
5. The body sides shall be constructed of 10 gauge, 80,000 PSI steel. Sides shall be braced along the bottom 3 1/2" x 12" from tailgate tapered to a point at the front of the body. Longitudinal braces shall be interconnected with floor gussets and continuously welded.			____	____
6. The flat body floor shall be 7 gauge 100,000 PSI steel with 7 gauge supports. (Trough floors not acceptable)			____	____
7. Side access door shall be located on the street side of the body sidewall. The door shall be securely fastened to the body sidewall by stainless steel hinges.			____	____
8. Side access door shall be equipped with a safety interlock to disengage the hydraulic system when open.			____	____

D. TAILGATE DIMENSIONS

1. Hopper opening width shall not be less than 80" wide and 55" high. ____ ____ _____

2. Hopper capacity shall not be less than 3.5 cubic Yards. _____ _____ _____
3. Hopper cycle time with the standard PTO and pump shall not exceed an average of 21-23 seconds. _____ _____ _____
4. The entire hopper floor shall be a minimum of 1/2" 100,000-PSI steel adequately braced to withstand maximum loading pressures. One piece- no layers _____ _____ _____
5. The hopper sides shall be constructed of 1/4" 100,000 PSI steel. _____ _____ _____
6. The hopper wall braces shall be 10 gauge 80,000 PSI high strength steel. _____ _____ _____
7. The hopper tracks are to be 8.5" X 3.5" X 3/8" 50,000 PSI steel, and the track rails are to be 1/2" X 3". _____ _____ _____

YES NO OFFERED

E. TAILGATE CONSTRUCTION

1. Tailgate is to be attached by (2), 1" 50,000 PSI heavy-duty hinges. _____ _____ _____
2. The tailgate shall have a water tight sealing height of 46". _____ _____ _____
3. The slide panel guide track shall be constructed of 1/2" x 3" 36,000 PSI yield steel. (Free-floating design is not acceptable). _____ _____ _____
4. The tailgate shall be equipped with a turnbuckle style lock incorporating a 1 1/4" diameter threaded rod. _____ _____ _____
5. The tailgate shall be raised by two 3 1/2" x 42" double acting cylinders equipped with restrictors to prevent precipitous tailgate decent in the event of a broken hydraulic line. _____ _____ _____
6. The tailgate perimeter edge shall be reinforced by 3" x 2" x 1/4" wall structural tube steel. _____ _____ _____
7. Tailgate shall be equipped with a chemically inert seal to provide a watertight seal. _____ _____ _____
8. Hopper floor shall remain stationary during the packing cycle and shall be equipped with a 1 1/2" drain plug. _____ _____ _____
9. The hopper load sill shall be constructed from a 1/4" wall formed structure and be 3.5" below the chassis frame height. _____ _____ _____
10. Self cleaning grip strut steps and grab handles shall be required on both sides of the tailgate. The steps shall be bolted on for easy repair or removal. _____ _____ _____

F. PACKING MECHANISM CONSTRUCTION

1. The sweep panel shall be of the backhoe packing type,

and designed to have a minimum clearance to thoroughly clean the hopper bottom during cycling. _____ _____ _____

	YES	NO	OFFERED
2. The sweep panel face plate shall be constructed of 1/4" 100,000 PSI steel and shall be reinforced with internal braces constructed of 3/8"thick steel. It shall be equipped with 1/2" thick high strength cylinder supports, 3/8" 50,000 PSI steel braces and 1/4" 50,000 PSI gussets.		_____	_____ _____
3. The sweep blade shall be powered by two 4 1/2"x 25 5/8" double acting cushioned cylinders equipped with bronze bushings.		_____	_____ _____
4. The sweep pivot bearings are to be 3" ID x 3 1/2" OD bronze bushings.		_____	_____ _____
5. The sweep panel cutting edge is to be 5/8" AR200 steel.		_____	_____ _____
6. The slide panel face plate shall be constructed of 7 gauge 100,000-PSI steel with 1/2" 50,000 PSI steel side frames and 3/16" 80,000 PSI steel center support braces.		_____	_____ _____
7. The slide panel shall be powered by two 5" x 38 5/8" stroke cushioned double acting cylinders.		_____	_____ _____
8. The linear slide movement of the panel shall be accomplished on two high strength rectangular tubing with each having an upper and lower UHMW pad that measures 4" x 14"	_____	_____	_____
The pivotal rotation of the sweep panel shall be accomplished through the sweep panel cylinder pivot which shall consist of two 2" diameter stress proof pivot pins.	_____	_____	_____
9. The slide, sweep and option cycles will be positive and automatic and be operated from the right hand side of the tailgate at the rear; all levers to be clearly identified that allow the operator to start, stop and reverse the direction of any function, at any time throughout the packing cycle.	_____	_____	_____
10. UHMW slide pads shall be easily replaced without removing the slide panel or slide shoes through easy external ports.	_____	_____	_____

G. EJECTION PANEL CONSTRUCTION

	YES	NO	OFFERED
1. Ejection panel shall form the front of the body and be hydraulically operated and designed to have a minimum clearance to thoroughly clean the body during cycling.		_____	_____ _____
2. The load shall be discharged by means of a center mounted			

positive ejection system. A double acting, 7.5" bore telescopic cylinder shall extend and retract the full length of the body. _____ _____ _____

3. The ejection panel face plate shall be curved face constructed of 10 gauge 50,000-PSI sheet steel and reinforced with 4 formed vertical braces, and base structure of 3”x3”x ¼”and 3”x5” 3/8”wall structural tube. _____ _____ _____
   The ejection panel shall slide on four 1"x4" x 53 7/16” UHMW high-density slide bearing blocks. _____ _____ _____

4. The ejection panel shall extend and retract without The assistance of clamp bars. _____ _____ _____
5. The ejection panel will be automatically retracted during the packing mode by a hydraulic pressure relief system. _____ _____ _____

6. The ejector panel and tailgate raise controls to be positive type, manually activated and shall be mounted outside at the front of the body on the front left-handed side of the body. _____ _____ _____

7. The telescopic cylinder shall not lay in a horizontal position on the floor of the packer. It shall be mounted at an angle so as to prevent trash at the floor level accumulating on it. _____ _____ _____

H. CONTROLS

1. The packing mechanism controls shall be located curbside and incorporate direct linkage to the valve spool. The valve sections will be located within the side frame of the tailgate and be easily accessible without removing hoods or covers. The speed up sensor for the packing mechanism shall be a proximity style switch adequately protected from limbs and debris. _____ _____ _____
2. An electrical device shall be supplied to automatically raise the engine speed to the proper RPM during the packing cycle. _____ _____ _____
3. An additional throttle advance switch shall be mounted at the front left hand side of the body near the tailgate raise control handle and at the rear right hand side near the packing blade control. _____ _____ _____

YES NO OFFERED

4. A Back Pack Valve shall be required to automatically retract the ejection panel when packing against it. _____ _____ _____

5. The packing panel control shall be designed to accomplish the normal packing cycle in two steps and shall be

reversible or stopped at any time during the cycle. ____ ____ _____

6. The packing blade control shall be a two handle design and located at the rear of the tailgate on the curbside. ____ ____ _____

I. HYDRAULIC SYSTEM

A power takeoff/pump combination shall be used to power the hydraulic system. ____ ____ _____

1. All hydraulic valving shall be mechanically operated and use direct link controls. ____ ____ _____
   The hydraulic pump shall provide a delivery of 36 GPM at 1000 RPM. ____ ____ _____
4. Normal maximum operating pressures shall not exceed 2750 PSI. ____ ____ _____

5. The hydraulic system shall incorporate a relief valve and a hydraulic pressure gauge to protect all components from excess pressures. ____ ____ _____
6. All hydraulic hoses shall conform to S.A.E. Standards. No flat spots in hoses will be acceptable. ____ ____ _____
7. Hydraulic tank shall not be less than 55 gallons and must be equipped with a sight and temperature gauge. The tank shall be frame mounted. ____ ____ _____
8. A replaceable 10 micron spin on filter with by-pass valve and visual indicator shall be furnished in the return line of the hydraulic system. ____ ____ _____

9. A shut-off valve shall be mounted on the suction line near the oil tank. ____ ____ _____

10. All cylinder rods shall be chrome plated. ____ ____ _____
11. Sweep and slide cylinder rods to be induction hardened. ____ ____ _____
12. All cylinders shall incorporate nylon wear rings on the piston and rods to prevent metal to metal contact, and an "O" ring is to be used to pre-load the seal. ____ ____ _____

	YES	NO	OFFERED
13. Steel piping shall be used whenever possible.	____	____	_____
14. All hydraulic tubes shall be securely clamped to prevent abrasion and excessive noise.	____	____	_____
15. All hydraulic hoses and pipes, wherever they are exposed to limb, ground obstructions, or debris damage, shall be properly shielded or guarded .	____	____	_____
16. All hydraulic hoses shall have a 4:1 burst safety factor and use hose ends of 37-degrees JIC fittings wherever possible. All high-pressure hoses shall be sheathed with			

fabric protective covering. ____ _____ _____

J. ELECTRICAL

4. All body wiring shall be loomed and/or in conduit with heat shrunk connectors. All lights LED ____ ____ _____
5. The body shall be equipped with LED approved clearance, warning, tail, license, stop and turn signals in compliance with the national safety standards. ____ ____ _____
6. The body shall be equipped with an external audio back up alarm activated when the chassis is in reverse. ____ ____ _____
7. Driver alert buzzer shall be installed at the rear of the tailgate located by the packing controls. ____ ____ _____
   A light shall illuminate in the cab when the tailgate is open and an audible alarm will sound when the vehicle is placed in reverse while the tailgate is open. ____ ____ _____
8. A light bar shall be mounted on the upper section of the tailgate and consist of (4) 4" stop, turn and three clearance lights, in accordance to the national safety standards. ____ ____ _____
7. A color rear vision camera shall be installed with a 5.6" monitor mounted in the cab. ____ ____ _____

K. PAINT

1. The body shall be properly cleaned with a chemical etching solution to remove all dirt, oil, and prepare surface for good paint adhesion. All surfaces shall be clean of welding slag. Gray Dupont Color, lead-free primer with rust inhibitors shall be applied. ____ ____ _____

	YES	NO	OFFERED
2. Dupont Imron 5000 paint shall be applied.	____	____	_____

Specify paint code: _____N6431EX_____
Specify paint color: _____White_____

L. MOUNTING

1. Body shall be mounted in accordance to industry standards. No welding shall be performed on the chassis frame in the mounting process. ____ _____ _____

Do to continually changing chassis specifications, It is the chassis distributor's responsibility that the chassis provided for mounting be suitable and with all proper codes. ____ ____ _____

M. SAFETY

Access door to body to be equipped with an interlock switch to disable the hydraulic system when the door is open. ____ ____ _____

1. Safety Shut Down switch to be provided on the right side of the tailgate. ____ ____ _____

2. Driver alert switch to be provided at the right rear of the truck. ____ ____ _____

3. 20 lb. Fire extinguisher mounted on body or truck frame. ____ ____ _____

4. Triangle reflector kit located in cab. ____ ____ _____

N. WARRANTY

1. Manufacturer's limited warranty shall apply for a period of two years after date of acceptance of the unit. ____ ____ _____

O. ADDITIONAL EQUIPMENT

1. **Hopper Lights** (2) Two Halogen white lamps shall be mounted on the upper half of the tailgate. The lights shall be capable of illuminating the hopper of the tailgate. The lights will be activated by a switch in the cab of the chassis. ____ ____ _____

   Strobe Light (2) TWO --LED strobe lights shall be mounted on the upper half of the tailgate. The light shall be activated by a switch located inside the cab of the chassis. ____ ____ _____

	YES	NO	OFFERED

OPTIONAL

Hydraulic Kick Bar - A device to lift and dump a commercial container, including trunnion locks to lock container into position, shall be supplied along with all associated hydraulic components. ____ ____ _____

OPTION ADDITIONAL PRICE _____

SAFETY CAMERA

. Minimum 5.6" color camera rear vision system shall be installed. ____ ____ _____

OPTION ADDITIONAL PRICE _____

BODY EXTENSION

ADDITIONAL 5 YARD CAPACITY 38" BODY EXTENSION ____ ____ _____

OPTION ADDITIONAL PRICE _____

ITEM 12

BID SPECIFICATIONS
FOR LEACH 2RIII/OR EQUAL REAR LOADING REFUSE BODY

INTENT

It is the intent of these specifications to provide a 25 cubic yard rear load refuse body and chassis. The Town of North Hempstead has evaluated different types of refuse trucks and has determined that this product is best suited for the Towns needs in safety , quality , performance and the availability of parts and service. Bids will be accepted for consideration on any make or model that is equal or superior to these specifications. Decisions of equivalency will be the sole interpretation of the Town of North Hempstead. The model being offered must be in production for a minimum of five years. A detailed users list to be provided with the ebid response. To evaluate the automated body being bid other than what is specified will require a working demonstration prior to the bid date for a minimum of three days. It will be the responsibility of the bidder to make arrangements. Failure to comply will result in non compliance and rejection of the bid.

Maintenance Program for service/training and Inspection to be included

	Comply	Exception
Sufficient training shall be given to the employees at the village garage by Manufacture's certified trainer.	___	___
Complete preventive maintenance program on the Body, per manufacture's guide lines, to be done after 6 months. This includes labor and parts. Complete hydraulic fluid & filter change once a year. This is to completed at no additional cost to the TNH	___	___

Bidders not having an authorized parts and full service facility with 30 miles of the town Resource facility will not be accepted

State location : _____

BID SPECIFICATIONS FOR 25
CUBIC YARD HIGH COMPACTION REAR LOADING BODY

It is the intent of these specifications to describe the minimum requirements for a refuse collection body of the rear loading design. The capacity of the refuse body shall be 25 cubic yards, exclusive of tailgate.

The refuse body described shall meet the minimum specifications that follow. All bidders shall attach a statement that the unit offered meets exactly, or exceeds, these specifications, or list any exceptions fully and accurately.

The successful bidder shall supply features, which are regularly furnished as standard with this unit. The body shall conform in strength, quality of material and workmanship to that provided by the best manufacturing and engineering practices of the industry.
The bidder shall represent by his bid that all equipment bid is new and unused.
It is required that the unit, as specified herein, shall be completely assembled, painted, and ready for operation.
(X) If specification is met. If exception is taken, bidder must explain (use separate page if necessary).

Comply	Exception		
		I.	**GENERAL**
_____	_____	1.	Refuse body to be a minimum 25 cubic yards Capacity, exclusive of the hopper.
_____	_____	2.	Packer body capable of packing 1,300 pounds per Cubic yard based on average household refuse.
_____	_____	3.	Packer body must meet all applicable ANSI Z-245.1 Safety standards.

Comply Exception

II. BODY CONSTRUCTION

_____ _____ 1. The roof and side sheets are to be one piece, 11ga 80,000-PSI minimum yield strength steel throughout with no seams.

_____ _____ 2. Roof and sides are to be joined together by a one-piece formed corner; 1/4" 50,000 PSI minimum yield strength steel. Rear third of body to have double panel liner

_____ _____ 3. Body sides and roof must be curved design.

_____ _____ 4. Body must incorporate a longitudinal center floor-trough running the entire body length. The floor trough is to be constructed of a minimum 5/16", 50,000-PSI yield strength steel. Flat floors not utilizing a floor-trough will not be considered.

_____ _____ 5. The floor sheets shall have a thickness of 1/4" and be made out of 50,000-PSI minimum yield strength steel. The floor sheets are to have a formed flange, minimum 3" tall, that ties into side sheet.

_____ _____ 6. The floor support braces to be constructed of 1/2" x 6" steel bar 36,000 PSI yield strength, and must run from the center floor trough outward.

_____ _____ 7. A steel, side hinged, access door located at the left front corner of the body, at floor level, is to be provided. Opening is to be a min. 30" X 32.5". Door to incorporate latch and locking mechanisms.

III. BODY DIMENSIONS

_____ _____ 1. The inside height from bottom of floor-trough to center of roof sheet is to be no less than 90-7/8".

_____ _____ 2. The overall height of body above the chassis frame is not to exceed 93-1/2" (no mounting sills)

_____ _____ **3. The maximum inside width is to be no less than 90".**

_____ _____ 4. The outside width is to be no more than 96".

IV. EJECTION SYSTEM

_____ _____ 1. Unloading by full ejection method only. Dumping or rising of the body is not acceptable. Control lever for ejection is to be located at the front, left side of the body.

_____ _____ 2. The ejection cylinder shall be telescopic consisting of multiple stages. A variable (adjustable) externally piloted resistance valve, which controls packing density and cylinder retraction, must be incorporated in the ejector panel/tailgate lift, two spool valve assembly. No portion of the ejection forces shall be directed toward the body floor (downward).

Comply Exception

_____ _____ 3. The telescopic ejection system hydraulic cylinder must angle upward from its front mounting location to avoid forces being directed into the floor. Telescopic ejection cylinders mounted downward or horizontally are not acceptable. The case end of the cylinder must be attached to the ejection panel with full style bearing housings for easy removal and be secured approximately half way up the panel to counter the tipping forces applied to the ejection panel by the tailgate packing mechanism.

_____ _____ 4. The ejector panel face sheet is to be minimum 3/16" thick, 50,000-PSI steel. The panel must withstand the packing mechanism forces and the ejection of highly compacted refuse.

_____ _____ 5. The ejector panel is to travel the full length of the body and be equal in area to the cross section area of the body.

_____ _____ 6. The ejector panel must be designed to act as a bulkhead against which refuse is compressed and incorporate a "diamond-shaped deflector structure" which enhances compaction by directing material entering from the packing mechanism toward the upper corners of the body.

_____ _____ 7. The ejector panel shall travel on four 10-1/2" long poly shoes on the lower panel guide and four 9-7/8" long poly shoes on the upper panel guide. These guide shoes must be replaceable without removing the ejection panel from body.

_____ _____ 8. At no time may any portion of the ejector panel, when in its rearmost position, extend beyond the plane of the rear body opening.

V. TAILGATE

_____ _____ 1. The tailgate is to be top hinged to the body at the roofline utilizing cast steel hinges. It is to be raised for load ejection by two, 4" bore, single acting "RAM style" cylinders mounted on the outside of the tailgate. Cylinders shall contain a restricting mechanism to prevent rapid descent of the tailgate and be manufactured with chrome-plated rods for added durability.

_____ _____ 2. The tailgate is held in the closed position by two double lead thread screw clamps, one on each side of the tailgate. Clamps are to be equipped with a fast spin handle.

_____ _____ 3. Two tailgate props (one each side) externally mounted shall be furnished. Tailgate to be open in the propped position a minimum of 24".

_____ _____ 4. An extruded rubber gasket is to be affixed to the tailgate to provide a watertight seal between the body and tailgate. Sealing must be effective up to a minimum of 49".

Comply Exception

_____ _____ 5. Bolt-on riding steps are to be provided on each side of the tailgate, and 1" min. diameter grab handles will be located in a convenient place for rider safety. The steps must be made of grip-strut open grate material and allow for a 4" vertical adjustment. Step must comply with ANSI standards.

_____ _____ 6. The tailgate shall be equipped with a "tailgate ajar" switch with an indicator light in the cab. The purpose of this light is to indicate to the driver that the tailgate is not completely closed. The "tailgate ajar" switch with light must comply with ANSI safety standards.

_____ _____ 7. Tailgate top sheets are to be two-piece poly (for ease of removal no tools required) and secured by quick release type fasteners.

_____ _____ 8. The tailgate-loading sill must be 5" below the chassis frame after mounting.

_____ _____ 9. Control lever for the tailgate lift is to be located at the front, left side of the body.

VII. HOPPER

_____ _____ 1. Hopper floor is to be 1/2" 100,000 PSI minimum yield strength Steel one piece (layered/liners not acceptable)

_____ _____ 2. The hopper sides to be 1/4" 50,000 PSI minimum yield strength Steel w/additional 3/16 wall liner.

_____ _____ 3. Inside hopper width is to be a minimum of 80".

_____ _____ 4. The hopper opening is to be a minimum of 80" wide x 56" high.

_____ _____ 5. The hopper capacity is to be a minimum of 3.5 cubic yards.

_____ _____ 6. The total cycle time is not to exceed 24 seconds.

_____ _____ 7. Hopper bottom to incorporate a minimum of three (3) external longitudinal flat bar reinforcing members. Each bar to be 1/2" thick and 4" wide

VIII. PACKING MECHANISM

1. The packer faceplate is to be a minimum of 1/4" 80,000 PSI yield strength steel.
2. The carrier faceplate is to be a minimum of 3/16" 50,000 PSI yield trength steel.
3. Minimum two (2) double acting, single stage, induction hardened, cushioned, 5.5" bore, packer plate cylinders

Comply Exception

4. Minimum two (2) double acting, single stage, induction hardened, cushioned, 5.5" bore, carrier plate cylinders
5. The packer and carrier plate cylinders must be mounted inside the tailgate and all four cylinders must be interchangeable with each other.
6. The packing plate is to compact material into the body against the ejector panel and not into the forward portion of the hopper itself. Pre-crushing of material in the hopper is not acceptable.
7. The upper carrier plate is to utilize rollers vs. slides for easy movement. Rollers are to be 5" diameter made from forged 4150 steel induction hardened to 57-60 "Rockwell C" and have grease fittings accessible from external roller access openings.
8. When the packing mechanism reaches the interrupt position, the packer plate must stop approximately 16" above the loading sill to avoid a pinching action. The packing control handles must then be reactivated to complete the cycle. The packing control handles must be able to stop or reverse the packing mechanism at any position in the cycle.
9. The packing plate shall be protected from overload by an independent packer (load edge stress sensing) circuit relief valve located at the operating valve.

VIII. HYDRAULIC SYSTEM

1. The hydraulic pump is to be a spur gear type with wear compensating side plates using hydraulic pressure to keep them properly tensioned and positioned to maintain a consistent fluid flow rate. Pump to be driven through a transmission mounted Hot shift PTO
2. The capacity of the pump must not be rated at less than 42 gallons per minute at 1200 rpm.
3. A factory sealed relief valve is to be set at a maximum of 2300 PSI
4. There shall be an internally mounted 141-micron (100 mesh) suction strainer with built-in by-pass.
5. A 10 micron filter with a visual indicator to show when the filter is in a bypass mode must be supplied.
6. The hydraulic oil reservoir to be located on the curbside, mounted on The body floor, and have an oil sight gauge located for easy viewing. Hydraulic lines to run on top of body from front to rear mounted on the lower part of roof crown, not making them the highest part of the vehicle.
7. The hydraulic oil reservoir to have a combination filler/breather cap with 10-micron air filtration.

Comply Exception

8. The hydraulic oil reservoir shall supply adequate capacity to run all functions on the vehicle at a 15% grade.
9. The hydraulic system shall contain the following cylinders:
   A. All cylinders to operate without direct contact with collected refuse.
   B. All cylinder rods must be chrome plated to increase durability.
   C. Two packer plate and two carrier plate cylinders-5-1/2" bore, double acting, cushioned, with a stroke of 30-5/16". These four cylinders must have fully welded hydraulic fittings and must be interchangeable with each other. The cylinder rods must be induction hardened to a minimum 55 Rockwell “c” and chrome plated.
   D. Two tailgate lift cylinders - 4" bore, single acting “RAM style”, with a stroke of 32-11/16". Rods to be chrome plated
   E. Telescopic Ejection Cylinder

_____ _____ 10. Hydraulic hose construction to be SAE approved with a burst pressure at least four times working pressure. All hydraulic connections to have o-ring face seals. No "JIC" or pipefittings in high-pressure or return lines.

_____ _____ 11. All hydraulic tubing to be zinc and yellow chromate plated. Must pass 100-hour salt spray.

_____ _____ 12. A manually operated control valve assembly utilizing direct mounted handles for ejection and tailgate lift is to be provided. This valve is to be located at the left front corner of the body. The valve is to incorporate the main system relief valve, which is set and sealed at a maximum pressure of 2300 PSI.

_____ _____ 12. At no time shall control handles be inaccessible due to chassis components or configurations.

_____ _____ 13. The packing mechanism-operating valve shall be a two-spool stack style hydraulic valve and incorporate self-contained pressure release detent end cap assemblies.

_____ _____ 14. For ease of access, the valve assembly is to be located at the right hand side of the tailgate. The hydraulic valve work ports must point upward for ease of service. Also, all hydraulic lines going to the main valve must be isolated by bulkhead style connections from all moving hydraulic lines.

IX. CONTROLS

Comply Exception

_____ _____ 1. The manually operated controls for the packing mechanism are to be located curbside at the rear of the tailgate. An automatic throttle advance must be provided. The dual lever controls must have the capability of stopping, starting, and reversing the packing mechanism. To avoid possible damage from rubbish, the dual lever control rods must be located outside the hopper.

_____ _____ 2. A push-button switch that activates a buzzer in the cab is to be provided on both sides of the tailgate to signal the driver.

_____ _____ 3. The tailgate lift and ejector controls, complete with a manually operated engine speed-up switch, are to be located at the left front corner of the body.

_____ _____ 4. PTO/pump controls are to be mounted inside the cab.

X. LIGHTING & ELECTRICAL

_____ _____ 1. Body lighting must comply with FMVSS#108 regulations.

_____ _____ 2. For maximum visibility, a light panel above the hopper must also be provided, consisting of two 4" red stop/tail lights, two 4" amber turn signal lights, three individual I.D. lights, and one license plate bracket with light. All lights to be grommet mounted except utility and license plate lights. Two flush mounted LED strobe lights to be mounted on rear light bat.

_____ _____ 3. Wiring to be enclosed in a pre-assembled sealed harness to meet SAE spec, J22223-1-2-3.

_____ _____ 4. All electrical junction locations are to be within the body structure and must be weather-proof. Meeting SAE spec. J2202. All junction locations are to be located so no overhead access is required.

_____ _____ 5. All wiring to be color-coded and labeled.

_____ _____ 6. A back-up alarm conforming to current ANSI standards must be provided. The alarm must also sound when the tailgate is not closed.

XI. PAINTING

_____ _____ 1. All metal burrs, weld residue and rough areas are to be ground off to a clean, smooth surface.

_____ _____ 2. All body surfaces to be thoroughly washed with an iron-phosphate-based steam cleaning solution.

_____ _____ 3. A coat of two-part epoxy, rust-inhibiting primer is to be applied to all metal surfaces.

_____ _____ 4. A high gloss two part polyurethane topcoat is to be applied. Color is to be TNH WHITE

_____ _____ 5. Top finish coat is to be baked on.

XII. MOUNTING

Comply	Exception		
_____	_____	1.	Mounting is to be done at the factory of the body manufacturer.
_____	_____	2.	Factory mounting to incorporate rear mounts, spring supported front mounts, with integral lateral restraints.

XIII. COMMERCIAL PACKAGE--HEAVY DUTY PACKER PLATE

_____	_____	1.	Packer &Carrier plate shall be designed for heavy-duty commercial use.
_____	_____	2.	Packer & Carrier face plate is to be 1/4 “, 80,000 PSI yield steel with heavy duty reinforcing channels made from 3/16” thick steel.
_____	_____	3.	A formed channel 10” wide and 7-9/16” high shall run between the two packer panel cylinder towers.
_____	_____	4.	Two additional formed steel channels shall run from the 10” wide channel to the packer plate cutting edge.
_____	_____	1.	Tailgate is to have a 1/2" 100,000PSI yield steel hopper floor and a 3/16” grade 80-partition sheet.
_____	_____	2.	Commercial units are to have heavy–duty packer plate, full center bearings, ramp liners and a heavy-duty ejector panel.

	YES	NO	OFFERED
OPTIONAL			
Hydraulic Kick Bar - A device to lift and dump a commercial container, including trunnion locks to lock container into position, shall be supplied along with all associated hydraulic components.	_____	_____	_____
OPTION ADDITIONAL PRICE			_____
SAFETY CAMERA			
Minimum 5.6″ color camera rear vision system shall be installed.	_____	_____	_____
OPTION ADDITIONAL PRICE			_____

ITEM 13-

Diamondback

BID SPECIFICATIONS

8 YARD REAR LOADING REFUSE BODY

INTENT

It is the intent of these specifications to provide a 8 cubic yard rear load refuse body and chassis. The Town of North Hempstead has evaluated different types of refuse trucks and has determined that this product is best suited for the Towns needs in safety , quality , performance and the availability of parts and service. Bids will be accepted for consideration on any make or model that is equal or superior to these specifications. Decisions of equivalency will be the sole interpretation of the Town of North Hempstead. The model being offered must be in production for a minimum of five years. A detailed users list to be provided with the ebid response. To evaluate the automated body being bid other than what is specified will require a working demonstration prior to the bid date for a minimum of three days. It will be the responsibility of the bidder to make arrangements. Failure to comply will result in non compliance and rejection of the bid.

Maintenance Program for service/training and Inspection to be included

	Comply	Exception
Sufficient training shall be given to the employees at the village garage by Manufacture's certified trainer.	___	___
Complete preventive maintenance program on the Body, per manufacture's guide lines, to be done after 6 months. This includes labor and parts. Complete hydraulic fluid & filter change once a year. This is to completed at no additional cost to the TNH	___	___

Bidders not having an authorized parts and full service facility with 30 miles of the town Resource facility will not be accepted

State location : _____

SUGGESTED BID SPECIFICATIONS

FOR REARLOADING

REFUSE COLLECTION TRUCK BODY

SCOPE: It is the intent of this specification to describe a hydraulically actuated packer body of the rear loading type with the following minimum specifications considered necessary to perform the work assigned. The body shall be capable of compacting and transporting refuse to a landfill or transfer station and dispensing the load by means of hydraulic ejection. The body shall not be required to be tilted, lifted, or otherwise displaced from the chassis in order to eject the load.

GENERAL: All equipment furnished under this contract shall be new and unused, and the same as the manufacturers current production model. Accessories not specifically mentioned, but necessary to furnish a complete unit ready for use shall also be included. The equipment furnished shall conform to all ANSI Safety Standards Z245.1-2008.

SUGGESTED BID SPECIFICATIONS

Bidder Shall Complete The Following

If No, State Specifically The Item Being Offered

	YES	NO	OFFERED

A. CAPACITY

The capacity shall be measured exclusive of the hopper.

1. The body shall have a minimum capacity of:
   8 Cubic Yards _____ _____ _____
2. The body shall have an average compaction rate of 800 pounds per cubic yard. _____ _____ _____

B. BODY DIMENSIONS

1. Maximum overall width not to exceed 75" _____ _____ _____
2. Maximum overall length and height (*with tailgate in Locked position)* above the chassis frame not to exceed:

Capacity	Length	Height			
8 Cu./Yd.	189"	61"	_____	_____	_____

Rear loading refuse packer specification.

Diamondback

(Continued)

	YES	NO	OFFERED
3. Body height above truck frame with the tailgate fully open shall not exceed 109"	_____	_____	_____
4. Body weight (exclusive of options) shall not exceed: Capacity 8 Cu./Yd. Weight 6,130 pounds	_____	_____	_____

C. BODY CONSTRUCTION

1. The body shall be constructed entirely of 50K high tensile sheet steel and formed sections.	_____	_____	_____
2. Body sides and roof shall be curved and the floor shall be reinforced so as to withstand continuous operation at maximum loads without harmful deformation or wear.	_____	_____	_____
3. The roof shall be constructed of 10 gauge 50K high tensile steel.	_____	_____	_____
4. The body sides shall be constructed of a minimum of 10 gauge high tensile steel.	_____	_____	_____
5. The body sides shall be of the curve shell design.	_____	_____	_____
6. The body floor shall incorporate a trough design (*flat floors not acceptable*).	_____	_____	_____
7. The body floor sides shall be 10 gauge 50K high tensile sheet steel.	_____	_____	_____
8. The body floor center shall be 1/4" plate steel.	_____	_____	_____
9. The trough shall be constructed of two 6" channel sills to hold the ejection blade in line under the most extreme load conditions.	_____	_____	_____
10. Side access door shall be located on the street side of the body side wall. The door shall be securely fastened to the body side wall by two bullet style hinges allowing easy removal.	_____	_____	_____

11. Side access door shall incorporate a PTO shut-down interlock switch to prevent the hydraulic system from operating with the door in the open position. ____ ____ _____

Rear loading refuse packer specification. Diamondback
(Continued)

	YES	NO	OFFERED
D. TAILGATE DIMENSIONS			
1. Hopper width shall not be less than 54".	____	____	_____
2. Hopper opening height shall not be less than 45".	____	____	_____
3. Hopper capacity shall not be less than 1 cubic yard, measured by the WASTEC DWRP08 No.1 method.		____	____ _____
4. Hopper cycle time with the standard PTO and pump shall not exceed 15 seconds.	____	____	_____
E. TAILGATE CONSTRUCTION			
1. Tailgate sides shall be constructed of a minimum of 10 gauge 50K. high tensile sheet steel.	____	____	_____
2. Tailgate sides shall be reinforced by 10 gauge 1 3/4" x 4" formed steel and fully welded in a horizontal position for maximum support.	____	____	_____
3. An interlaced network of 3/16" wall 1 1/2" x 2 1/2" structural tube shall form the slide blade guide tract.		____	____ _____
4. The tailgate perimeter edge shall be reinforced by a 2" x 2" structural steel tube.	____	____	_____
5. The tailgate shall be equipped with an automatic hydraulic locking system to ensure constant pressure for a tight seal.		____	____ _____
6. The tailgate shall be raised by two 2 1/2" x 24" cylinders equipped with restrictors to prevent precipitous tailgate decent in the event of a broken hydraulic line.		____	____ _____
7. Tailgate shall be equipped with a chemically inert seal to provide a watertight seal.	____	____	_____
8. The hopper floor shall be equipped with a 1 1/2" drain plug.		____	____ _____
9. Hopper floor shall remain stationary during the packing cycle.		____	____ _____

Rear loading refuse packer specification.
Diamondback
(Continued)

	YES	NO	OFFERED
10. Hopper floor shall be a minimum of 1/4" high			

strength sheet steel adequately braced to withstand maximum pressures imposed upon it. _____ _____ _____

11. The hopper load sill shall be constructed of 3" x 4" x 1/4" wall tube. _____ _____ _____
12. Self cleaning bolt on grip strut steps and grab handles shall be required on both sides of the tailgate. _____ _____ _____

F. PACKING MECHANISM CONSTRUCTION

1. The sweep panel shall be of the backhoe packing type, and designed to have a minimum clearance too thoroughly clean the hopper bottom during cycling. _____ _____ _____
2. The sweep panel face plate shall be constructed of 1/4" high tensile sheet steel and shall be reinforced with internal braces constructed of 1/4" and ¾" plate steel. _____ _____ _____
3. The sweep panel shall be powered by 2 1/2" x 16" double action cylinders. _____ _____ _____
4. The slide panel face plate shall be constructed of formed 10 gauge 50K high strength sheet steel reinforced with internal braces of 10 gauge 50K high strength sheet steel and 4" channel. _____ _____ _____
5. The slide panel shall be powered by two 2 1/2" x 30" double action cylinders. _____ _____ _____
6. The linear slide movement of the panel shall be accomplished on four 2 1/2" x 4 1/2" x 6" high density UHMW guide bearing blocks. _____ _____ _____
7. The pivotal rotation of the sweep panel shall be accomplished through the sweep panel pivots which shall be a minimum of 2 1/2" in diameter. _____ _____ _____

G. EJECTION PANEL CONSTRUCTION

1. Ejection panel shall form the front of the body and be hydraulically operated and designed to have a minimum clearance to thoroughly clean the body during operation. _____ _____ _____

	YES	NO	OFFERED
2. The load shall be discharged by means of a positive ejection system. A double acting telescopic cylinder shall extend and retract the full length of the body.		____	____ _____
3. The ejection panel face plate shall be constructed of 10 gauge 50K. high strength sheet steel and reinforced with trapezoidal cross members of high strength 1/4" wall 3" x 3" structural tube.	____	____	_____
4. The ejection panel shall slide in a 6" channel sill on four high density UHMW slide bearing blocks.		____	____ _____
5. The telescopic cylinder shall be horizontally positioned & consist of the following dimensional characteristics:		____	____ _____

Capacity	Stage	Bore		
8 Cu./Yd.	4 Stage	6.5"	____	____ _____

H. CONTROLS

1. The ejector panel and tailgate raise control shall be mounted outside the front left hand side of the body.		____	____ _____
2. An electrical device shall be supplied to automatically raise the engine speed to the proper RPM during the packing cycle.	____	____	_____
3. An additional throttle advance switch shall be mounted at the front left hand side of the body near the tailgate raise control handle and at the rear right hand side near the packing panel control.		____	____ _____
4. A Back Pack Valve shall be required to automatically advance the ejector panel when packing against it.		____	____ _____
5. The packing panel control shall be designed to accomplish the normal packing cycle in two steps and shall be reversible or stopped at any time during the cycle.		____	____ _____
6. The packing panel control shall be a two handle design and located at the rear of the tailgate on the curbside.		____	____ _____

	YES	NO	OFFERED
L. HYDRAULIC SYSTEM			
1. Power takeoff/pump combination shall be used to power the hydraulic system.	_____	_____	_____
2. All hydraulic valve shall be mechanically operated and use direct link controls.	_____	_____	_____
3. The hydraulic pump shall provide a minimum delivery of 17 GPM at 1500 RPM.	_____	_____	_____
4. Normal maximum operating pressures shall not exceed 1800 PSI.	_____	_____	_____
5. The hydraulic system shall incorporate a relief valve to protect all components from excess pressures.	_____	_____	_____
6. All hydraulic hoses shall conform to S.A.E. Standards No flat spots in hoses will be acceptable.	_____	_____	_____
7. Hydraulic tank shall not be less than 22 gallons and must be equipped with a sight and temperature gauge. The tank shall be located inside the body.	_____	_____	_____
8. A replaceable 10 micron spin on filter with bypass valve shall be furnished in the return line of the hydraulic system.		_____	_____ _____
9. A shut-off valve shall be mounted on the suction line near the oil tank.	_____	_____	_____
10. All cylinder rods shall be chrome plated.	_____	_____	_____
11. All cylinders shall incorporate nylon wear rings on the piston and rods to prevent metal to metal contact, and an "O" ring is to be used to pre-load the seal.	_____	_____	_____
J. ELECTRICAL			
1. All wiring in an integrated harness with sealed connections.		_____	_____ _____

2. The body shall be equipped with approved LED clearance, warning, tail, license, stop and turn signals in compliance with the national safety standards. _____ _____ _____

3. The body shall be equipped with an external audio back up alarm activated when the chassis is in reverse. _____ _____ _____

Rear loading refuse packer specification.
Diamondback
(Continued)

YES NO OFFERED

4. A light shall illuminate in the cab when the tailgate is open and an audible alarm will sound when the vehicle is placed in reverse while the tailgate is open. _____ _____ _____

5. A light bar shall be mounted on the upper section of the tailgate and consist of stop, turn, backup and three cluster lights. _____ _____ _____

6. Minimum 5.6" color camera rear vision system shall be installed. _____ _____ _____

7. Driver alert buzzer shall be installed at the rear of the tailgate by packing controls. _____ _____ _____

8. Safety shut down switch to be provided on the right side of the tailgate. _____ _____ _____

K. PAINT

1. The body shall be properly cleaned of all dirt, oil and welding slag. A gray epoxy primer with rust inhibitors shall be applied. _____ _____ _____

2. Top coat paint shall be DuPont Imron 5000 acrylic enamel. _____ _____ _____

Specify paint code: _____F3405EX_____

Specify paint color: _____WHITE_____

L. MOUNTING

1. Body shall be mounted in accordance to industry standards. No welding shall be performed on the chassis frame in the mounting process. ____ ____ _____

2. 10 pound fire extinguisher mounted on body. ____ ____ _____

3. Triangle reflector kit located in cab. ____ ____ _____

M. WARRANTY

1. Manufacturer's limited warranty shall apply for a period of one year after date of acceptance of the unit. ____ ____ _____

Rear loading refuse packer specification.
Diamondback
(Continued)

YES NO OFFERED

2. Hydraulic cylinder limited warranty shall apply for a period of two years after date of acceptance of the unit. ____ ____ _____

N. ADDITIONAL EQUIPMENT

1. Hopper Lights (*insert into electrical if desired*). Two halogen lamps shall be mounted on the upper half of the tailgate. The lights shall be capable of illuminating the hopper of the tailgate. The lights will be activated by a switch in the cab of the chassis. ____ ____ _____

2. Strobe Light (*insert into electrical if desired*). A strobe light shall be mounted on the upper half of the tailgate. The light shall be activated by a switch located inside the cab of the chassis. ____ ____ _____

Notice to all Bidders:

- Bidder must make notations at each item indicating compliance or deviation by writing “Comply” or “Exception” next to each line item.
- **Do not use** “check marks” or “X marks” as “Comply” or “Exception.”
- All “exceptions” and “Deviations” must be explained in detail on as described in this bid packet.
- These specifications are not intended to preclude bidding components with exceptions that are equal in quality and performance to the products described in the specifications.
- All factory standard equipment and parts should be used where possible.
- The Town of North Hempstead reserves the right to reject any and all bids, waive any informalities or irregularities in the bids received and to accept any bid which it deems most favorable to The Town.

Following these instructions is essential for proper bid evaluation. Failure to do so will result in the rejection of a bid for lack of information. Town of North Hempstead will take all necessary steps to properly evaluate each bid including contacting one or more bidders for clarification and/or consultation.

Package “A” for Chassis, Dump Body, Plow, Hydraulics and Misc Items for Epoke Setup

“BIDDING REQUIREMENTS SECTION”

SECTION	SPECIFICATION DETAIL	COMPLY	
		Comply	Exception
PACKAGE A: 6 WHEEL TRUCK, DUMP BODY, PLOW, HITCH, CENTRAL HYDARAULICS FOR HI-WAY SPREADER			
Description: Chassis Specifications For A New 2016 GU712 Chassis With SCR Technology To Meet 2014 Emissions Of 0.2 Grams Of Nox Or Equal			
Chassis/ Frame & Wheelbase:	Chassis: 2016 Mack GU712 Chassis Or Equal		
	Frame Rails, 11.811” x 3.54” x 0.44” High Strength 120,000 PSI Steel - 20” Integral Front Frame Extension For Snow Plow Mount		
	Single Chassis Rail		
	Section Modulus 23.5 cu In/Rbm 2,820,000 In Lbs. Per Rail		

	Wheelbase - 180”WB, Center of Axle - 92”CA,		
	Platform - 154”LP, After Frame - 62"AF		
MAXIMUM GVW & AXLE RATINGS:	Gross Vehicle Weight Rating Of 48,000lbs.		
	Front Axle Capacity - 18,000 Lbs.		
	Rear Single Drive Axle Capacity - 30,000lbs		
	Front Steer Axle-Gross Axle Weight Rating - 18,000lbs		
	Rear Drive Axle –Gross Axle Weight Rating - 30,000lbs		
ENGINE:	MP7-405M 405 Hp @ 1500-1900 Rpm. Operating range 1100-2100 1480 Lb. Ft. Max. Torque @ 1050-1350 Rpm High Torque Rise 60%		
	11.9 Liter, 659 Cu. In Piston Displacement.		
	EPA Carb Emission Certified For 2014 Utilizing Selective Catalyst Reduction(Scr).Engines Utilizing Government Credits Or Penalties Are Not Acceptable		
ENGINE EQUIPMENT:	Air Compressor, Meritor/Wabco 318 18.7 Cfm		
	Engine Mounted Oil Check And Fill		
	Mack Powerleash Engine Brake		
	Alternator, Delco 12V 130A (24SI) Brush-Type		
	(3) 12volt Mack Grp31 Batteries With 3000 CCA Threaded Post		
	Air Cleaner, 11” x 30” Under Hood Single Element Dry Type		
	12 Volt Heavy Duty Starter-Delco 39mt-Mxt		
	Electronic Starter Interlock System		
	Coolant Protection To Below –34 Degrees Fahrenheit With Coolant Conditioner Filter		
ENGINE EQUIPMENT:	Engine Block Heater, Gomack (Phillips) – 1500 Watt 120 Volt With Intake Grid Heater mounted under driver side door.		
	Starting Aid Engine Electric Preheater		
	Engine Hoses And Tubing, Silicone		
	Diesel Particulate Filter /Scr System Horizontal-Under Right Side Of Cab-Clear Back Of Cab Option		
	Exhaust After –Treatment System Diesel Particulate Filter Ceramic Catalyzed, And Scr Technology To Meet 0.2 Grams Of Nox		
	Exhaust, Side Of Cab Single (R/S) Vertical Straight Exhaust Stack		
	Poly-V Fan Belt With Automatic Tensioner		
	Fan Drive, Behr Fan And Electronic Modulating Fan Drive		
	Flywheel ,Light Weight Aluminum		
	Fuel-Water Separator: Davco 382, (Fluid Heater) Fuel Heater/Water Separator w/vendor Prim & Mack Sec fuel Filter		
	Tether device Furnish Cap Retainer for Oil Fill & Radiator		
	Hand Primer Pump		
	Hoses, Radiator/Heater Mack Brand EPDM Radiator & Heater Hoses		

	Injection Pump- Electronic Engine Control		
	Radiator, Aluminum Core		
TRANSMISSION:	Allison 4500-RDS -6 (4.70/0.67) Rugged Duty Series Gen 5 Includes transmission Cooler, External Oil Cooler, Internal Filter, and Oil Level Sensor		
	Driveline-Main, Meritor 18 MXL "Xtended Lube"		
	Transmission Bell Housing, Aluminum		
	Synthetic Transmission Fluid		
CAB EQUIPMENT:	Air Conditioner/Heater, (Bergstrom) Integral w/heater combination		
	Air Restriction Monitor, Air Cleaner Intake Mtd		
	Instrument Cluster Display, Co-Pilot Driver Display(4.5”Diagonal Graphic Lcd Display W/4-Button Stalk Control)(Includes Guardog Routine Maintenance Monitoring)		
	Conventional Cab (Welded Steel Galvanized Shell) with Air Ride Suspension(Aluminum Cabs Not Acceptable)		
	Fiberglass Tilt Hood With Safety Lock And Hood Hatch For Maintenance Checks		
	Cigar Lighter On Instrument Panel		
	Overhead Console with 2 Storage Compartments and Power Leads		
	Dome Light, (4) W/Self-Contained Switch		
	Diagonal Handle On Driver Side Door Panel		
	AM/FM Premium Stero, CD-Player, MP3, Weatherband, Handsfree Interface, Bluetooth		
	Driver and Passenger side Power door locks and Windows		
	Gauge, Air Pressure		
	Gauge, Voltmeter		
	Gauge Cluster, Exhaust Pyrometer, Engine Oil, And Transmission Oil Temperature Gauges		
CAB EQUIPMENT:	Gauge, Engine Coolant Temperature		
	Gauge, Engine Oil Pressure		
	Gauge, Fuel Level		
	Gauges, English Display		
	Gauge, Speedometer w/Trip Odometer (Electronic 1% Accuracy)		
	Engine Tachometer Electronic With Hourmeter		
	Glass-Cab Window, Safety Tinted Windshield, Side And Rear Windows		
	Grab Handles, Aluminum, Rh & Lh Behind Door		
	Grille, Bright Finish With Bug Screen		
	Headlamp Bezel- Molded Plastic		
	High Beam Indicator Light		
	Body Builder Access Connector Inside Of Cab For Body Controls		
	Horn-Air, (2) Mounted On Cab Roof		

	Horn- Electric, Single Tone		
	Identification/Clearance Lights, (5) TruckLite LED Chrome Bullet Type Lamp		
	Instrument Panel, Gray With Black Gage Bezel		
	Interior Trim Level, (Grey) Features: Padded Vinyl Headliner		
	Rear Panel With Storage Pouch, Polyurethane Rubber Padded floor Mat		
	2 Cup Holders Mounted At Bottom Of Dash (Center)		
	Chassis Keyed Alike- 4 Keys		
	Heated Mirrors-Exterior, West Coast, Rh & Lh Bright Finish		
	Mirrors – Convex Type, Bright Finish, Lh & Rh 8.0" Dia; Mounted Below Lower Arm Of West Coast Mirror		
	Proximity Mirror Rect Convex Above Rh Door Window		
	Right Side Door Peep Window		
	Exterior Sun Visor Fiberglass (Cab Color)		
	Rear Window (Fixed Type)		
	Seat - Driver, Bostrom Talladega 915 (Mid-Back) Air Suspension		
	Seat – Rider Bostrom Mid Back Stationary with Integral Storage Compartment		
	Seat Covering, All Vinyl		
	Seat Belts, Lap And Shoulder w/Cab Mounted Shoulder Belt		
	Sun visor –Interior, Both Sides (Padded Vinyl)		
	Starter Switch, Key Type		
	Steering Wheel, 18" Two Spoke Urethane Grip		
	Windshield Washers, Electric, Wiper Mounted W/Reservoir Back Of Cab		
CAB **EQUIPMENT:**	Windshield Wipers, Sprague 2 Speed Electric Motor w/Intermittent feature		
	Dash Control/Power Supply/Local Installation Plow Lamps W/Lead Furnish At Grille With 2w/3w Weather Pack		
FRAME EQUIPMENT/ FUEL TANKS:	Bumper – Front, Extended Swept Back -Steel Channel		
	Cross members, Steel Huck Bolted HD Back-To-Back Channel		
	Flaps – Wheel (Front) Black Poly Armor		
	Frame rail End Squared		
	Towing Device – Front, (2) Hooks		
	Fuel Tank – Lh, 72 Gallon Aluminum with 8.7 Gallon Def Fluid Tank-(Clear Back Of Cab Package)		
FRONT AXLE/ EQUIPMENT/ TIRES:	Front Axle, FXL18 - 18,000 Lbs. Capacity-Sealed Kingpins - Maintenance Free		
	Tire Brand/Type – Front, Bridgestone – Tubeless Radial, 315/80R22.5 20 Ply. M860A (All Position)		
	Wheel – Front, Steel Disc 10 Hole Hub Piloted 22.5" x 9.0"		
	Brakes – Front, Meritor "S" Cam Type 16.5" X 6" Q+		
	Brake Drums – Front, Cast Outboard Mounted		

	Dust Shields – Front Brake, Furnish		
	Oil Seals – Front Wheels, Chicago Rawhide (Scotseal)		
	Front Axle Shock Absorbers		
	Slack Adjusters – Front, Haldex – Automatic		
	Springs – Front, Mack Multileaf 18,000 Lb.		
	Spring Build-Up, RH side for Wing Plow Applications		
	Steering Box, Sheppard SD110 with Tilt and Telescopic Steering Column		
REAR AXLE/ EQUIPMENT/ TIRES / RATIOS:	Rear Axle, Meritor RS-30-185 - 30,000 Lbs. Capacity		
	Suspension - Rear, 30,000 Lbs. Multileaf w/Helpers		
	Single Reduction Rear End Gears		
	Locking Main Differential, Driver Controlled		
	Tire Brand/Type – Rear, Bridgestone – Tubeless Radial (4) 315/80R22.5 20 Ply (M860A Tread)		
	Spring Brake Chambers – Vender, Mgm Tr-T Tamper Resistant		
	Spring Brake Chambers, Type 36/36 Rear		
	Carrier/Ratio- Rear Axle, Malleable Housing, 5.63 Ratio		
	Wheels – Rear, Steel Disc 10 Hole Hub Piloted 22.5" x 8.25"		
	Brakes – Rear, Meritor-Cam - 16.5” x 7” P Brakes		
	Brake Drums – Rear, Cast Outboard Mounted		
	Dust Shields – Rear Brake, Furnish		
	Oil Seals, Premium Hub		
	Slack Adjusters – Rear, Haldex – Automatic		
	Spring Brake Chambers-Quantity (2) Chambers Double Diaphragm Type		
AIR/BRAKE:	Air Reservoirs, Steel - One Supply (Wet) Tank		
	Brake Control System-Two Valve Dual Brake System-Trailer Supply With Hand Control For Trailer-Trailer Air Connections To Rear Pintle Plate, Trailer Electrical Harness To Rear For trailer Lights		
	Air Dryer-Meritor/Wabco 1200 Heated With Coalescing Oil Filter		
	Anti-Lock Brake System, Bendix Without Traction Control		
	Automatic Drain Valve, Bendix (Heated) (1) On Supply (Wet) Tank		
ELECTRICAL EQUIPMENT:	Electrical Master Disconnect Switch Mounted in cab.		
	Back-Up Alarm, With Intermittent Feature (Ambient Noise Sensitive)		
	Steel Battery Box with molded plastic cover		
	Whitacker electric jump start system mounted under D/S cab with 20’ cable		
	Daytime Running Lights, Courtesy Light Switch (Headlamp And Clearance)		
	Electric Circuit Protection Package, All Circuits Fuse/Breaker Protected		
	Headlights, Single Mounted Rectangular Halogen Lamps		

	Flush Mtd.		
	Rear Lighting, (2) Combination Stop, Tail Directional and Back-Up Lights-Led Module		
	Signal Flasher Type, Transistorized Turn Signal, Federal Mogul #250		
PTO:	Engine Crankshaft Adapter,1350 Series Flange		
PAINT:	Cab Exterior, Customer Color-Base Coat/Clear coat		
	Frame Color, Black		
ADDITIONAL EQUIPMENT:	Icc Safety Kit (Fire Extinguisher And Road Reflectors)		
	Manuals, Two Complete Set Of Parts And Service Manuals		
	Front Axle Spare Tire And Rim Mounted		
	Front bumper guides poles with bulldogs.		
	Rear Axle spare tire and rim mounted		
WARRANTY:	Basic Vehicle – 12 Months On All Components		
	5 Year /150,000 Miles, Engine Warranty Is To Cover Exhaust After-Treatment System And To Include Turbo Charger, Injectors, And Water Pump.		
	Allison Transmission – 5 Years / Unlimited Miles		

DUMP BODY

A. Dump Body to be heavy duty 201 stainless steel cross memberless Smooth under side type, suitable for use by The Town in street and highway maintenance including snow and ice control with external mounted cylinder. _____

1. Inside length to be 10ft for a 92” CA. 11ft overall with hoist. _____
2. Inside width to be 86” minimum. Outside width 96”. _____
3. Sides (from body floor to top of top rail) to be 30" high. _____
4. Tailgate to be 38" high. _____
5. Head sheet to be minimum 36" high. _____
   a. One (1) 2" x 3" horizontal head sheet channel brace from the floor 24.37”. _____
6. Capacity to be 6.5 sides and 8.1 cubic yards ends at water level. _____
7. Sides, head sheet and tailgate to be 7 gauge Type 201 stainless steel. _____
8. Floor to be a one-piece 1/4" AR400 steel with both side radiuses built into floor. AR450/Hardox 450 is not acceptable. No exceptions. _____
9. All corner posts and sides to be 7 gauge, 201 stainless steel. _____
10. Top rails are to be 4" x 5" seamless, sloping (dirt/salt shedding) and boxed for added strength. There are to be four (4) stainless steel structural channel piece hold downs for spreader mounted on the top rail. Location for two (2) per side to be determined at the time of installation. _____
11. Bottom rails are to be seamless and sloping (dirt/salt shedding). _____
12. Long sills are to be one-piece 5” structural steel I-beam at 12lbs per foot. _____
13. Rear apron to be ¼” 8" formed channel. _____

14. There are to be no cross members. Floor to be skip welded to I-Beam Long sills. _____
15. Rear Corner Post:
    a. To be 7 gauge 201 Stainless Steel. _____
    b. Rear post to be 38” high x 4-3/4” deep x 12” wide. _____
    a. Top of corner post to be dirt shedding. A 14-1/2” one-piece 7 gauge stainless steel shall be break formed front to back at 5-1/2” and a downward slope remaining at 9”. _____
    b. The top of post shall house two (2) ½” stainless steel plate brackets to house the top pivot point. _____
    c. Tailgate reinforcement plate around the tailgate latch assembly must be ¼” thick. Outside must be 16” tall. Bottom must be 8-3/4” long. Inside bottom height shall be 7-3/8” to the floor. Top shall be 4-1/4” from outside to top of floor sheet. All to be continuously welded. _____
    d. Two (2) oval factory cut outs for S/T/T and Reverse. _____
    e. Two (2) Whelen brand strobe light (3 light) boxes to be welded to outside of each rear corner post. Location to be determined at the time of build. _____
16. No front corner posts. Head sheet to have mirrored image of one (1) weld on full length horizontal side brace each side and to be continuously welded to side brace, each side. _____
17. One (1) Intermediate fully welded horizontal side brace, full-length. _____
18. 30” x 86” wide cabshield to have built in tarp deflector full width of body headsheet. Cab shield to house tarp. Five (5) Whelen flush mounted 700 series mounted: Each side, each front corner, and one front center. All Back side of lights must be boxed in with stainless steel. Stainless steel tubing shall be used to protect electrical wires between lights. Tarp system to be recessed into side plates at furthest most rear. See tarp section for details. _____
19. There are to be 2” x 8” hard wood sideboards installed and painted black or to match cab color. Front board side pocket holders must extend full height to bottom edge of cabshield lip. _____
20. The one piece external side sheet must be break formed and wrap under the body floor no less than 10” extended under the body with a continuous welded seam to floor sheet. _____
21. Tailgate design:
    a. To be and double-acting heavy duty. _____
    b. Bracing to be full perimeter box type, 6" top and bottom and 4" sides. _____
    c. There is to be one (1) horizontal brace, mid-section. _____
    d. Top, bottom, and intermediate horizontal braces to be sloped (dirt/salt shedding). _____
    e. Top and bottom tailgate pins to be 1-1/2" diameter 201 Stainless steel, minimum with T-handle. _____
    f. Minimum 3/8" stainless steel coil chains to be long enough to hold tailgate in horizontal position if necessary. _____
    g. Tailgate to be level with dump body floor when in horizontal position. _____
    h. Heavy nylon mesh sleeves to be installed over spreader chains to protect body finish. _____
    i. Lower latch hooks to be flame cut from 3/4" 201 SS plate to

secure against two (2) 3/8" 201 SS corner post mounted latch plates, one (1) set each side of the ¾" latch hook per side. _____

j. There is to be a full width 1" 201 stainless steel diameter (min.) tailgate release rod at rear of body. _____

k. Air tailgate release with spring parking brake chamber mounted center rear of body with dash control. _____

l. All 201 stainless steel hardware. _____

m. One (1) SS d-ring lift hook mounted on top of tailgate. _____

n. Three (3) coal doors, 13" wide, recessed flush with interior tailgate sheet. _____

o. Two (2) safety turnbuckle latches, one per side, for safety of holding tailgate shut. No exceptions. _____

p. Two (2) tailgate latch bar safety mechanisms, one per side bottom, per North Hempstead's approved drawing. No exceptions. _____

22. Continuous welded body shell (except long sills to floor sheet that are skip welded), cab protector & tailgate. _____
23. Stationary 2-1/2" x 20" long grip strut stainless steel steps (one step) mounted to the front drivers side as far forward as possible on the horizontal side brace. _____
24. Full length 2-1/2" grip strut stainless steel walk rail to be mounted full length on bottom rub rails. _____
25. Three (3) step stainless steel pull out ladder mounted under floor and under 20" grip strut step on horizontal brace. _____
26. One (1) Pull Tarp brand tarp system with asphalt rated tarp. Must be mounted on top of cabshield as far rearward and recessed into side vertical supports of cabshield. 7GA Stainless steel cover mounted over the existing Pull Tarp housing to be bolt on. _____
27. Two (2) one-piece stainless steel rod grab handles must be mounted on each side of the 20" step. _____
28. Front corner of bottom rub rail must be capped with 7GA stainless steel and be on an approximate 60 degree angle. _____
29. Six (6) stainless steel J-Hooks mounted upside down. Three (3) per side and evenly spaced and welded on. _____
30. One (1) 12" bolt on stainless steel rear apron. _____
31. Two (2) stainless steel lift loops mounted to top dirt sheet rail, evenly spaced. _____
32. Stationary two (2) ¾" stainless steel rebar mounted on 45 degree from front head sheet to sides at spacing as the outsides steps. _____
33. Body must have any welded burn marks removed prior to delivery. _____

HOIST AND REAR HINGE ASSEMBLY

B. Heavy duty front telescopic type hoist suitable for use with a Dump body on a road and highway maintenance truck used for snow and ice control, externally mounted of headsheet. No exceptions. _____

1. NTEA rated Class 50 with 17.5 tons capacity minimum. No exceptions. _____
2. Forty three thousand pound (43,000 LB.) capacity minimum @ 2000 PSI. _____
3. Double-acting (power up and down full length of stroke). _____

4. Largest diameter stage must be at bottom. Inverted cylinder not acceptable. _____
5. 4.5" inside diameter cylinder base tube (minimum). _____
6. 100" stroke (minimum). _____
7. All cylinder stages to be nitrated for corrosion resistance and wear resistance. _____
8. Internal bore seal design so no packing adjustment or bleeding is required. _____
9. Hoist cylinder to be mounted inside pivoting, trunnion mounted cylinder cover tube. _____
10. Subframe for body to be structural 4" C-Channel. Full width cradle must be made of 201 stainless steel that houses hoist, hydraulic reservoir and valve enclosure. No exception. _____
11. Mounting height not to exceed 9" from the top of chassis frame to dump body floor. No exceptions. _____
12. 5" x 6" x ½" x 38" long formed angle with 1-1/2" 303 stainless steel pins with greaseable pins. Each pin is secured by nut/bolt. _____
13. Each pin mounts into two (2) 1/2" plates mounted on two sides to the 6' x 8" x ½" formed angle. Outside plate for each set must be 1.125" from end angle with pin centers at 32". _____
14. Each rear hinge block must be a 2-1/2" wide and 3.25" tall plate steel with 5.88" length mounting surface of body to top of block. Each block must accept a 1-1/2" dumping stainless steel pivot pin and have a grease zerk. _____
15. Overhang from the center of the rear pivot is to be 12" to the end of the floor plate. _____
16. Externally mounted hoist design must show, upon request, at least fifteen (15) current systems of this same design in the NJ/NY market. No exceptions. _____

SNOW PLOW HITCH

A. **Heavy front frame side plate low profile snow plow hitch.** _____
1. To be engineered, designed and built by a recognized snow plow manufacturer. Hitch to be a low profile configuration. The design will limit the amount of front overhang to a minimum. _____
2. A truck frame extension is not required for the mounting of hitch but recommended. _____
3. Heavy front frame hitch of modular design shall allow the cab hood to tilt completely forward for engine access. _____
4. Side plates will transmit plowing forces directly to the truck frame side rails and will custom fit the specified year, make and model of the truck. _____
5. The side plates are custom fitted 5/8" steel plate of proper length and construction for heavy duty service and shall provide adequate clearance for steering mechanisms and spring suspensions. _____
6. Side plate mounting angles or plates shall mount flush to the truck frame for maximum strength. Pipe spacers are not acceptable. _____
7. The front section of the hitch assembly: lift frame, center section and the lower push plate shall all be welded to the two (2) vertical

tubular supports. The two (2) vertical supports are to be constructed of 6" x 3" x 1/4" thick wall. The length of each support shall be 38-1/4". No exceptions. _____

8. The front two (2) vertical supports are to be spaced evenly 26-3/4" apart. No exceptions. Overall mounting width is 32-3/4". _____
9. The front two (2) vertical supports are to be mounted to vertical structural angles of 5" x 4" x ½", full height of tubes. _____
10. Each vertical tube must have three (3) 3" wide gussets tying in the vertical tube to the structural angle. Each gusset is 3" x 4" x 5" x 7ga. _____
11. The vertical tubes and structural angles are mounted to a horizontal 6" x 4" x ½" x 39" wide structural angle mounted at the top of the two (2) vertical structural angles. _____
12. The center cylinder tube to be built with a 6" x 3" x 1/4" tubes x 26-5/8" long and mounted centered to the vertical tubes. Two (2) 1/2" x 3" x 4" lift cylinder ears to be welded to this tube along with a 1/2" x 3" flat reinforcement bar. _____
13. The telescopic lift arm shall be manufactured of 4" x 4" x 3/8" square outer tubing and 3" x 3" x 3/8" square inner tubing. _____
14. The lift arm and lift frame shall be designed to accept 2.5", 3" or 4"x10" lift cylinder . Cylinder pins are to be 1" cold rolled steel. Inner lift arm must accept clevis and pin. _____
15. Truck and plow portion hitch must be Torloc/Arrowhead style and work interchangeably with The Town of North Hempstead's fleet. _____
16. Mounted under the telescopic outer tubing is to be a white poly block 1-1/2" x 3" and arced to hold a 4" x 10" lift cylinder. _____
17. The quick hitch shall provide self-alignment with the mating plow section while being engaged. _____
18. Re-mount OEM bumper. Bumper shall be split to accommodate plow hitch and must be bolted on and utilize stabilizer arm per section. _____
19. The plow hoist cylinder shall be of premium grade and shall be a double acting 4" bore x 10" stroke. _____
20. The piston rod is to be of steel construction treated with a nitro steel process. _____
21. The ram sleeve or outer barrel will be such that the rod packing may be maintained or replaced as required. A positive stop must be incorporated that will help prevent mechanical pressure being applied to the packing when the rod is fully extended. _____
22. The cylinder shall be capable of 14,137 pounds of thrust @ 2,000 PSI and 16,000 pounds of bursting pressure @ 2,000 PSI. Minimum weight of the cylinder shall be 28 pounds. Ports to be 3/8" _____

SNOW PLOW

A. MOLDBOARD:

1. The moldboard shall be heavy duty torsion trip edge design type Snowplow with level lift without additional mechanical mechanism. _____
2. Moldboard will be an integral shield with trip edge. _____
   a. Length to be 10'. _____
   b. Height to be 40" (not including rubber deflector) in dead center And 54" each end. No exceptions. _____
   c. 36" side plastic markers mounted to plow. _____

d. Two (2) lift hooks to be mounted on moldboard top. _____

3. The moldboard shall be reinforced at the top with a 3-1/2" x 2-1/2" x 3/8" with holes to allow moisture to escape with poly 36" markers. _____
4. 10 GA. 201 Stainless Steel rolled moldboard with eight (8) ½" x 3-1/2" ribs for extra strength and rigidity. Plow must have all welded burn marks removed prior to delivery. No exceptions. _____
5. All welds must be continuous (skip welds not acceptable). _____
6. Bottom angle must be 4"x 4" x ¾" with an additional 4" x 3" x ½" trip edge angle. _____
7. Top moldboard angle must be constructed of 3-1/2" x 2-1/2" x 3/8" with holes to allow moisture to escape. _____
8. Two horizontal structural angle braces ¼' x 3" x 3" added for rigidity. _____
9. Attack angle of moldboard shall have adjustments of 5, 10, and 20 degree. _____

B. CUTTING EDGE:

1. The cutting edge must be 6" carbide cutting edge with cover plate. No exceptions. Must be AASHO standard punched, mounted flush with moldboard and be easily replaceable. _____
2. Cutting edge face must have wrap around curb guards mounted on both ends with same bolts/nuts as cutting edge. No Exceptions. _____

C. TRIPPING MECHANISM:

1. Adjustable torsional one piece cutting edge trip. From bottom of new 8" cutting edge to top trip edge is no less than 14.75". _____
2. Springs must have a zero insertion force for increased safety while servicing. No Exceptions. _____
3. Bottom moldboard angle must be 4" x 3" x ½". Fully welded to bottom edge of moldboard. _____
4. 4" x 4" x ¾" backer angle with (6) ¾" trip ears welded to angle. _____
5. Full length trip edge pivot tube, must be constructed of schedule 80, 1.50" OD black pipe. End of each plow cutting edge is to include a 4.5"OD x 1.5" thick curb guard. _____
6. Cutting edge tripping must be controlled by (5) torsion springs. Springs constructed of a minimum of .75 square bar with 14 active coils. Minimum spring dimensions shall be 3.75OD x 2.25ID x 11.75. Springs must be produced to meet Rockwell C hardness. Hardness shall be produced from oil quenching with a minimum temperature of 1550°F. Spring preload shall be a minimum of 35°. Springs shall have a trip load capability of 8228 INCH-LBS. Typical spring material composition shall be Carbon=0.40, Manganese=.70, Phosphorous=.020, sulfur=.020, silicon=.25, chromium=.80, Nickel=1.75, Molybdenum=.25. _____
7. Three (3) position adjustment on each individual torsion spring on the trip assembly to allow adjustment in various settings for road conditions. No exceptions. _____
8. Face of cutting edge trip section must be 201 Stainless Steel. No exceptions. _____

D. PUSH TUBE ASSEMBLY:

1. Push tube to be constructed of 4" x 4" x .38 square tube, 107.5"

in length. Each end of the push tube shall be capped with a 10ga 3.25” x 3.25” plate. _____

2. Welded to the moldboard pushtube shall be (8) 5/8” x 3.5” x 7” pivot ears. Each ear shall be further reinforced with a 2” x 2” x .38 gusset. Pivot ears shall pin to moldboard assembly with 1-1/4” thick pins. _____
3. (2) Moldboard stabilizer strut mounting ears each constructed of (2) 5/8” plate approximately 10” x 13”. _____
4. Center pushframe pivot constructed of (2) .38 x 36.5” x 8.5” plates. There shall be a 3.5” hole in each plate for a 5-1/2” x 3-1/2” OD x 2.52” ID bushing. Bushing shall be drilled and tapped for a 1/8” grease zerk. _____
5. Center pushframe pivot assembly shall also have (2) 3.75” stops for the a-frame assembly. _____
6. Push tube cylinder lugs, located on left and righ hand sides shall each be constructed of (2) 5/8” x 8-1/4” x 3-5/8” plates complete with a 1-1/4” pin hole. _____
7. Cylinder lugs shall be further reinforced with 3/8” x 2-3/4” x 3-1/4” gusset. _____
8. There shall be (2) chain lift lugs welded to the top of the push tube constructed of ½” x 3” x 4” plates. _____
9. Moldboard reversing shall be accomplished by (2) 3” rod x 3.5” bore x 16” stroke single acting cylinders. _____
10. Cylinder rods shall be nitride for increased corrosion resistance. Chromed rods shall be unacceptable. _____
11. Cylinder working pressure shall be 3000 PSI. _____
12. Cylinder shall be plumbed to an 1800 PSI cushioning valve to prevent damage when hitting obstructions. _____

E. A-FRAME:

1. Pivot capture plates shall consist of (2) plates constructed of 1” x 11” x 12-7/8” plates. These plates will be flame cute and have a 2.53” hole to pin the a-frame assembly the push-tube assembly. The top pivot capture plate shall be drilled and threaded for a ¾” capture bolt to prevent pin rotation. _____
2. Top main A-frame plate shall be constructed of 3/8” x 28” x 25-5/8” flame cut plate. The narrowest portion of the top plate shall remain a minimum of 12”. Top plate shall also be flame cut to accept the reversing cylinder pins. Pin hole shall be 1.281” in diameter. Each pin holes shall be further reinforced with a 1” thick plate which is flame cut to accept reversing cylinder pin. _____
3. Bottom main a-frame plate shall be constructed of 3/8” x 28” x 25-5/8” flame cut plate. The narrowest portion of the top plate shall remain a minimum of 12”. Bottom plate shall also be flame cut to accept the reversing cylinder pins. Pin hole shall be 1.281” in diameter. There shall be a 6” access hole for attaching the hitch swivel bolt. _____
4. The A-frame vertical side plates which tie the top and bottom plates into a boxed formation shall be constructed of ½” x 4” x 32” plate and formed to follow the contour the top and bottom plates. _____
5. The rear A-frame push plate shall be constructed of 1” x 6-3/4” x 33-5/8” plate. This plate shall be flame cut with a 1-9/16” hole to

accept the plow hitch attachment bolt. _____

6. On the top side of the A-frame plate shall be a mounting plate to which attached is the reversing cylinder cushion valve. _____
7. Plow portion hitch must be Torlo/Arrowhead and fit existing Town of North Hempstead truck portion hitches. _____

F. PAINT:

1. All metal surfaces are to be phosphate washed to remove slag, splatter, oxide and oil residue. _____
2. Moldboard frame work must be powder-coated Highway Orange. _____
3. Push frame, "A" frame and other miscellaneous components are powder-coated black for increase paint durability. _____

CENTRAL HYDRAULIC SYSTEM

A. TYPE:

1. System to be of load sensing pressure-compensated type, pumping oil only when needed and in exact volume and pressure required --- no more, no less. _____
2. Pump to automatically revert to standby mode when no oil flow is required (No on/off switch). _____
3. Must be able to operate all equipment on truck simultaneously if necessary. No one function to interfere with any other. _____
4. System controls are to be electronic over hydraulic. _____
5. Operating speed of all functions must-be variable and adjustable. _____
6. One complete system to operate all functions. _____

B. HYDRAULIC PUMP AND FRONT CRANK SHAFT:

1. The hydraulic piston pump shall be a pressure and flow compensated load-sensing type. The pump shall be an Eaton 5.98 CID series 620 have a minimum 2" inch suction line and ½" control drain line plumbed directly back to the reservoir. The pumps compensator shall have rear facing adjustments. Pump shall be a front crank shaft mounted drive shaft and properly mounting. _____

C. HYDRAULIC VALVE:

1. Control valve shall be U.S. manufactured. Valve shall be a load sensing type with o-ring ports. Mid-inlet section porting will be #16 inlet, #20 outlet, #16 hoist section, #4 load sense port, and #10 or #12 for all other sections. The hoist section shall be stacked to one side of the mid-inlet and all other sections will be stacked on the other side. All ports shall be level with each other so as to lay flat on its base. There will be a main relief in the mid-inlet section that will be set at 3500 PSI to protect the system from being over pressurized. _____
2. Valve section to be arranged as follows:
3. Hoist, 4-way for a double acting cylinder with mid-inlet transition section. _____
4. Pressure reducing section., if needed. _____

5. Plow Lift, 4-way for a double acting cylinder with flow control. _____
6. Plow Angle, 4-way for a double acting cylinder with flow control. _____
7. Spreader and spinner section must be able to function Epoke spreaders. No exceptions. _____
8. Liquid Pre-Wet/Anti-Ice Valve 4-way. _____
9. Valve shall be prior approved equal. _____
10. A plow float/balance valve must be provided and controlled with a dash mounted rocker switch for on/off. The plow float/balance can be turned off as needed. When in use, the valve will allow the valve to use a pressure reducing/relieving system to control the float/balance lifting pressure on the plow's lift arm assembly. Two solenoid valves wired together turn the valve off and on. One solenoid valve opens the inlet of the pressure reducing valve to the pump. The other solenoid valve opens the outlet of the pressure reducing/relieving valve to the lift port. Oil flowing in and out of the lift port is restricted with an orifice. _____

D. OPERATOR CONTROLS FOR DUMP BOY HOIST and SNOW PLOW:

1. The valve controls shall be a feathering remote electric control with each joystick. Dump to have one (1) Joystick and Plow to have another Joystick. Force America Joysticks or prior approved equal. Layout to be determined at the time of build. _____

E. RESERVOIR/VALVE COMPARTMENT:

1. One (1) 30 gallon all-welded 201 stainless steel hydraulic oil reservoir mounted on the hoist's cradle on passenger side. Must have site gauge with rubber gasket seal. No exceptions. _____
2. The hydraulic reservoir will be constructed of 10-gauge stainless steel and be internally baffled. _____
3. One (1) 201 stainless steel valve enclosure mounted on the hoist's cradle on the driver's side. Must have a Stainless steel cover with one bolt-on securing mechanism. No exceptions. _____
4. Shall be mounted in a manner as to not transmit any truck torsional loads thru the tank. _____
5. The enclosure will use a gasket-less passive technology. (No rubber seals, gaskets, or weather stripping.) _____
6. The reservoir supplier will provide all valve fittings (JIC connections) and plumb the return line from the valve to the filter. _____
7. The cover will protect from both road and pressure washer spray. _____
8. A 2" full flow brass ball valve shall be plumbed at the suction port of the tank. _____
9. A low oil/high temp sending unit shall be mounted in the reservoir. _____
10. Hydraulic oil filter shall be mounted in the reservoir. Hydraulic filter shall be a 10-micron absolute and rated for no less than 60 GPM. _____

F. Hydraulic Lines and Fittings:

1. Stainless steel tubing to be used under body and cab in lieu of hosing. Only hosing to be used is ends of stainless steel tubing to reach each function's quick couplers or connection. Tubing shall be seamless #201 stainless steel construction with a minimum wall thickness of 0.065". The ends must be flared to accommodate a 37 degree JIC fitting. The use of compression fittings is not

Acceptable. Spacing of each tube to allow for material to fall between each tube. _____

2. All stainless tubing must be mounted in polyurethane poly green tube clamps. _____
3. All hoses to be wire braid reinforced with swaged on high pressure JIC 37 degree tapered seat end fittings. _____
4. All fittings & adapters to be forged steel (No tapered pipe fittings except on suction hose). _____
5. Hoses to front with 1/2" 100% stainless steel (no exceptions) quick couplers for power reversing plow. _____
6. Hoses to rear with 1/2" 100% stainless steel quick couplers for spreader (no exceptions). _____
7. Spreader stainless steel hose couplers to be mounted on either frame rail or pintle plate under dump body at rear. _____
8. Polymer dust plugs or caps on all couplers with retainer straps. _____
9. All pressure hoses except for plow & spinner to be 3/4" I.D. SAE 100R2. _____
10. Plow, spreader spinner, and prewet system pressure hoses to be 1/2" I.D.SAE 100R2. _____
11. Main pressure hose from pump to control valve shall be 1” Didiameter, 4-wire braid. No exception. _____
12. All return hoses to be SAE 100R2. _____
13. Suction hose to be minimum 2" I.D. SAE 100R4 spiral wire reinforced with long radius ells. _____
14. All hoses to be routed away from chassis exhaust whenever possible to protect against heat deterioration. _____
15. All hydraulic quick disconnect couplings must be stainless steel Aero-Quip FD45 series or prior approval; bulkhead mounted, and include attached male and female dust covers. Couplings to be configured so as to eliminate confusion when coupling. No exceptions. _____
16. All stainless steel quick disconnects for spreaders must be mounted under body at passenger rear most corner and mounted to stainless steel encloused housing that is welded to bottom rub rail wrap around portion. Must work with Epoke spreaders. No exceptions. _____

G. Spreader Controller:

1. None. _____

<u>SNOW PLOW LIGHTS:</u>

A. Truck-Lite brand LED model 80880 plow lights. _____

1. Mounted with custom fabricated 100% stainless steel brackets on truck fenders. Brackets must be painted black. _____
2. Plow lights to be wired into the truck’s existing headlight circuit using the factory installed switch. _____
3. Plow lights must function in high and low beam modes using existing truck’s dimmer switch. _____
4. Plow lights and truck chassis headlights must never operate at the same time. _____

LIGHTING & ELECTRICAL

ALL lighting and layout must meet all Fedaral, State, and DOT regulations. No exceptions.

A. LED lighting system. _____

1. All marker, work, S/T/T, backup and strobe lighting to be LED. _____
2. Whelen brand DOT3 System to be Super-LED DOT Light system model 00007DS0 or equal and a current production model of Whelen and made in the USA. _____
3. The two (2) Whelen 704-D three lamp light boxes to be continuously welded to outside of each rear corner post. Rear Super LED Head Assemblies to be 700 Linear-Super-LED two (2) amber heads, two (LED) brake/tail/turn light modules, and two (2)LED back-ups, one set each side. Each head shall be capable of emitting a full 180 degree of light in the vertical plane. The light heads shall be recessed into a heavy duty 7GA stainless steel housing. _____
4. The two rear 700 series heads shall utilize a DOT LED flasher which is mounted and encapusulated in a junction box inside of cab. The DOT LED flasher shall allow the two rear 700's to be controlled independently from the front head assembly. One (1) stainless steel rod mounted vertically in front of each head to protrude out far enough to protect lense. _____
5. The 700 assembly, brake light and back up, including the steel housing, shall be approximately 23-1/2 inches high , 4-7/8 inches deep and 3-1/2 inches wide. _____
6. The modules, as well as the lens, shall be easily replacable. A water proof connector for each module shall be used to connect to the cable harness and shall be located inside the steel housing for weather resistence as well as ease of replacement. _____
7. The 700 lenses shall be made of polycarbonate, amber in color, and have a smooth outer surface for self cleaning. _____
8. There shall be two LED brake/tail/turn modules, one located in the middle positions of each steel housing. Each module must contain a minimum of 72 red LEDs. The module must be in "signal alert" flash pattern, which flickers three times withing 150 milliseconds before becoming steady "on". These modules must meet or exceed SAE requirements. _____
9. There shall be two LED back ups, one located in the bottom position of each steel housing. Each module must contain a minimum of 48 white LEDs for maximum light output. These modules shall be supplied with a clear polycarbonate lens. _____
10. The rear mounted head assemblies shall use stainless steel screws that screw directly into a nylon mounting bracket to eliminate dissimiliar metal corrosion. Units that screw into steel bracket are unacceptable. _____
11. Cable harnesses being supplied from the rear housings must be heavy-duty TPR type cable. Flexible to minus 40 degrees Fahrenheit; abrasion, corrosion and oil/grease resistance. Each conductor shall be a minimum of 14GA, pure copper stranded, and fully tin coated. No less than 30feet of cable shall be provided for each head assembly. All necessary connections shall be provided, including a strain-relief system. _____
12. Cabshield lighting shall be five (5) surface mounted Whelen brand

700 series strobes. Must be synchronized with two (2) rear Whelen brand 700 series on outside of rear corner posts. _____

13. Cabshield Whelen 700 series strobes to be on one (1) chassis dash rocker switch for on/off and labeled. _____
14. Both rear facing and rear side corner mounted Whelen 700 series strobes to be on one (1) chassis dash rocker switch for on/off and labeled. _____
15. Two (2) OEM S/T/T w/ Backup light mounted behind rear apron of dump body. Hole to be cut into apron to allow visibility. Hole to be covered with black trim lock. _____
16. Two (2) OEM S/T/T w/ Backup light mounted on each side of pintle plate. Location and mounting to be determined at the time of installation. _____

B. Electronic Back-Up Alarm provided by chassis dealer and relocated if needed. _____

C. Body Up Indicator Light. _____

1. Sealed weatherproof proximity switch on hoist-frame. _____
2. Whelen model ION-R body up light mounted in cab. _____

D. All non- strobe wiring to be 7 wire trailer cable. Separate cable routed from in-cab to all non-strobe lights with sealed junction box at rear so all wiring connections are made either inside cab and in a sealed junction box. _____

E. One (1) solid stainless steel rod must be mounted under body and all electrical body lighting must be neatly run. Rod will be one piece and full length. No exceptions. _____

F. All wire connections shall be made in the chassis cab or by means of a waterproof junction box. In cab connections shall be made using vinyl coated crimp connectors covered in weather resistant heat shrink tuning. There shall be no wire splices outside the cab. All wiring to junction box shall be resistant to abrasion, ozone, sunlight, chemicals and oil. The outer jacket shall be chlorinated polyethylene and be approved for submersion in water. The outer jacket shall be label with the cable identification wire gauge and number of conductors. Must be MSHA approved. All body lighting shall be supplied by a single sealed harness from the junction box and making the connection at the light by means of weather tight sealed connector. All strobe lights shall be included in the same harness and be connected by means of a Deutsch connector, no exceptions. _____

MISCELLANEOUS

A. 90 degree elbow extension on top of chassis vertical exhaust stack to clear cab protector and still route exhaust upward to be provided by chassis supplier and installed by body company. _____

B. Rear tire poly Fleet Maintenance fenders with stainless steel mounting tubes. _____

C. Upon installation of all components, truck must be delivered to the truck dealer for final inspection and prep. _____

D. Rear pintle plate shall have a Holland model T90 pintle properly Installed and secured. _____

1. Mounted on reinforced 3/4" thick mounting plate at rear of chassis frame at designated clearance height to ground to be 29”. Sides and bottom must be reinforced with ¾” x 2” flat stock

mounted behind the pintle plate. _____

2. Must include Safety two (2) 5/8" D-Rings, one (1) 7-wire flat plug and one (1) 6-wire plug. _____
3. License plate light and bracket mounted to top corner on passenger side. _____

E. DOT approved 2" conspicuity tape on body bottom rub rails, rear corner posts, tailgate perimeter. All DOT necessary reflective decals installed as well. _____

F. Pull Tarp brand asphalt tarping system to be mounted in cabshield rear. Must recess ahead of front head sheet and cut into side plates of cab-shield for lowest possible mounting. _____

G. Two (2) Toolboxes; Heavy duty aluminum 48x18'x18', mounted on frame rails. One (1) per side. _____

INSTALLATION AND WARRANTY

A. Minimum twenty-four (24) months, 100% parts and labor on components and installation. No deductible. _____

B. For warranty considerations and future availability of parts and service, the body company must be an authorized primary distributor for all major components they propose to furnish. Must furnish written proof from such said vendor upon request. _____

C. All equipment must be installed by a single body company, by their employees and at their regular location. _____

D. Installation of components is not to be subcontracted by body company to another installer. _____

E. No welding whatsoever is to be done on chassis frame between front of most forward spring hanger and rear of rearmost spring hanger. _____

F. No drilling whatsoever is to be done in frame rail flanges. _____

G. Body company to furnish operator's parts and service manuals for all components manufacturer's i.e., dump body, hoist, snow plow, salt spreader, central hydraulic system and strobe lights. _____

H. Completed vehicle must be certified by the body company as meeting all federal motor vehicle safety standard in effect at time of chassis production. _____

1. Approved NHTSA/FMVSS certification label must be furnished and located inside cab on driver's side. _____

I. Completed unit to comply with current OSHA regulations. _____

J. Body company must be registered with National Highway Traffic Safety Administration as a final stage manufacturer of motor vehicles as required by Federal Law. _____

K. Body company to conduct operator training session on body and equipment at the The Town garage after delivery of completed truck. _____

L. Delivered of completed vehicle must be within 60 to 75 days after delivery of cab chassis to up-fitter. $75 a day penalty might incur with later delivery. _____

M. Body company must have ASE certified installer/s and show documentation at time of bid. No exceptions. _____

N. Body company to be registered and in good standing with National Truck Equipment Association (NTEA), be a MVP member, and be the authorized distributor for all equipment bid. _____

O. Body company must participate and provide documentation at time of bid

for E-Verify®. This employment verification verification is a United States of America federally accredited verification system to insure all employees are legal residents. List Company ID#_____. No exceptions. _____

P. Dump Body, Snow Plow, and Snow Plow Hitch must be engineered and manufactured in the United States of America and all from the same manufacturer. No exceptions. _____

Q. Hydraulic schematic must be provided and laminated and placed inside the combination valve enclosure/combo tank lid. _____

R. A required pre-build meeting will occur after award of bid and prior to the start of installation. No exceptions. _____

S. The Town will inspect all equipment (plow, hitch, dump body and tailgate spreader) prior to the start of installation. No exceptions. _____

Package "B" for Chassis, Dump Body, Plow, Hydraulics, Spreader Control and Misc Items for V-Box Setup

"BIDDING REQUIREMENTS SECTION"

SECTION	SPECIFICATION DETAIL	COMPLY	
		Comply	Exception
PACKAGE B: 6 WHEEL TRUCK, DUMP BODY, PLOW, HITCH, CENTRAL HYDARAULICS FOR HI-WAY SPREADER			
-			
Description: Chassis Specifications For A New 2016 GU712 Chassis With SCR Technology To Meet 2014 Emissions Of 0.2 Grams Of Nox Or Equal			
Chassis/ Frame & Wheelbase:	Chassis: 2016 Mack GU712 Chassis Or Equal		
	Frame Rails, 11.811" x 3.54" x 0.44" High Strength 120,000 PSI Steel - 20" Integral Front Frame Extension For Snow Plow Mount		
	Single Chassis Rail		
	Section Modulus 23.5 cu In/Rbm 2,820,000 In Lbs. Per Rail		
	Wheelbase - 180"WB, Center of Axle - 92"CA,		
	Platform - 154"LP, After Frame - 62"AF		
MAXIMUM GVW & AXLE RATINGS:	Gross Vehicle Weight Rating Of 48,000lbs.		
	Front Axle Capacity - 18,000 Lbs.		

	Rear Single Drive Axle Capacity - 30,000lbs		
	Front Steer Axle-Gross Axle Weight Rating - 18,000lbs		
	Rear Drive Axle –Gross Axle Weight Rating - 30,000lbs		
ENGINE:	MP7-405M 405 Hp @ 1500-1900 Rpm. Operating range 1100-2100 1480 Lb. Ft. Max. Torque @ 1050-1350 Rpm High Torque Rise 60%		
	11.9 Liter, 659 Cu. In Piston Displacement.		
	EPA Carb Emission Certified For 2014 Utilizing Selective Catalyst Reduction(Scr).Engines Utilizing Government Credits Or Penalties Are Not Acceptable		
ENGINE EQUIPMENT:	Air Compressor, Meritor/Wabco 318 18.7 Cfm		
	Engine Mounted Oil Check And Fill		
	Mack Powerleash Engine Brake		
	Alternator, Delco 12V 130A (24SI) Brush-Type		
	(3) 12volt Mack Grp31 Batteries With 3000 CCA Threaded Post		
	Air Cleaner, 11” x 30” Under Hood Single Element Dry Type		
	12 Volt Heavy Duty Starter-Delco 39mt-Mxt		
	Electronic Starter Interlock System		
	Coolant Protection To Below –34 Degrees Fahrenheit With Coolant Conditioner Filter		
ENGINE EQUIPMENT:	Engine Block Heater, Gomack (Phillips) – 1500 Watt 120 Volt With Intake Grid Heater mounted under driver side door.		
	Starting Aid Engine Electric Preheater		
	Engine Hoses And Tubing, Silicone		
	Diesel Particulate Filter /Scr System Horizontal-Under Right Side Of Cab-Clear Back Of Cab Option		
	Exhaust After –Treatment System Diesel Particulate Filter Ceramic Catalyzed, And Scr Technology To Meet 0.2 Grams Of Nox		
	Exhaust, Side Of Cab Single (R/S) Vertical Straight Exhaust Stack		
	Poly-V Fan Belt With Automatic Tensioner		
	Fan Drive, Behr Fan And Electronic Modulating Fan Drive		
	Flywheel ,Light Weight Aluminum		
	Fuel-Water Separator: Davco 382, (Fluid Heater) Fuel Heater/Water Separator w/vendor Prim & Mack Sec fuel Filter		
	Tether device Furnish Cap Retainer for Oil Fill & Radiator		
	Hand Primer Pump		
	Hoses, Radiator/Heater Mack Brand EPDM Radiator & Heater Hoses		
	Injection Pump- Electronic Engine Control		
	Radiator, Aluminum Core		
TRANSMISSION:	Allison 4500-RDS -6 (4.70/0.67) Rugged Duty Series Gen 5 Includes transmission Cooler, External Oil Cooler, Internal		

	Filter, and Oil Level Sensor		
	Driveline-Main, Meritor 18 MXL "Xtended Lube"		
	Transmission Bell Housing, Aluminum		
	Synthetic Transmission Fluid		
CAB EQUIPMENT:	Air Conditioner/Heater, (Bergstrom) Integral w/heater combination		
	Air Restriction Monitor, Air Cleaner Intake Mtd		
	Instrument Cluster Display, Co-Pilot Driver Display(4.5”Diagonal Graphic Lcd Display W/4-Button Stalk Control)(Includes Guardog Routine Maintenance Monitoring)		
	Conventional Cab (Welded Steel Galvanized Shell) with Air Ride Suspension(Aluminum Cabs Not Acceptable)		
	Fiberglass Tilt Hood With Safety Lock And Hood Hatch For Maintenance Checks		
	Cigar Lighter On Instrument Panel		
	Overhead Console with 2 Storage Compartments and Power Leads		
	Dome Light, (4) W/Self-Contained Switch		
	Diagonal Handle On Driver Side Door Panel		
	AM/FM Premium Stero, CD-Player, MP3, Weatherband, Handsfree Interface, Bluetooth		
	Driver and Passenger side Power door locks and Windows		
	Gauge, Air Pressure		
	Gauge, Voltmeter		
	Gauge Cluster, Exhaust Pyrometer, Engine Oil, And Transmission Oil Temperature Gauges		
CAB EQUIPMENT:	Gauge, Engine Coolant Temperature		
	Gauge, Engine Oil Pressure		
	Gauge, Fuel Level		
	Gauges, English Display		
	Gauge, Speedometer w/Trip Odometer (Electronic 1% Accuracy)		
	Engine Tachometer Electronic With Hourmeter		
	Glass-Cab Window, Safety Tinted Windshield, Side And Rear Windows		
	Grab Handles, Aluminum, Rh & Lh Behind Door		
	Grille, Bright Finish With Bug Screen		
	Headlamp Bezel- Molded Plastic		
	High Beam Indicator Light		
	Body Builder Access Connector Inside Of Cab For Body Controls		
	Horn-Air, (2) Mounted On Cab Roof		
	Horn- Electric, Single Tone		

	Identification/Clearance Lights, (5) TruckLite LED Chrome Bullet Type Lamp		
	Instrument Panel, Gray With Black Gage Bezel		
	Interior Trim Level, (Grey) Features: Padded Vinyl Headliner		
	Rear Panel With Storage Pouch, Polyurethane Rubber Padded floor Mat		
	2 Cup Holders Mounted At Bottom Of Dash (Center)		
	Chassis Keyed Alike- 4 Keys		
	Heated Mirrors-Exterior, West Coast, Rh & Lh Bright Finish		
	Mirrors – Convex Type, Bright Finish, Lh & Rh 8.0” Dia; Mounted Below Lower Arm Of West Coast Mirror		
	Proximity Mirror Rect Convex Above Rh Door Window		
	Right Side Door Peep Window		
	Exterior Sun Visor Fiberglass (Cab Color)		
	Rear Window (Fixed Type)		
	Seat - Driver, Bostrom Talladega 915 (Mid-Back) Air Suspension		
	Seat – Rider Bostrom Mid Back Stationary with Integral Storage Compartment		
	Seat Covering, All Vinyl		
	Seat Belts, Lap And Shoulder w/Cab Mounted Shoulder Belt		
	Sun visor –Interior, Both Sides (Padded Vinyl)		
	Starter Switch, Key Type		
	Steering Wheel, 18” Two Spoke Urethane Grip		
	Windshield Washers, Electric, Wiper Mounted W/Reservoir Back Of Cab		
CAB EQUIPMENT:	Windshield Wipers, Sprague 2 Speed Electric Motor w/Intermittent feature		
	Dash Control/Power Supply/Local Installation Plow Lamps W/Lead Furnish At Grille With 2w/3w Weather Pack		
FRAME EQUIPMENT/ FUEL TANKS:	Bumper – Front, Extended Swept Back -Steel Channel		
	Crossmembers, Steel Huck Bolted HD Back-To-Back Channel		
	Flaps – Wheel (Front) Black Poly Armor		
	Frame rail End Squared		
	Towing Device – Front, (2) Hooks		
	Fuel Tank – Lh, 72 Gallon Aluminum with 8.7 Gallon Def Fluid Tank-(Clear Back Of Cab Package)		
FRONT AXLE/ EQUIPMENT/ TIRES:	Front Axle, FXL18 - 18,000 Lbs. Capacity-Sealed Kingpins - Maintenance Free		
	Tire Brand/Type – Front, Bridgestone – Tubeless Radial, 315/80R22.5 20 Ply. M860A (All Position)		
	Wheel – Front, Steel Disc 10 Hole Hub Piloted 22.5" x 9.0"		
	Brakes – Front, Meritor “S” Cam Type 16.5” X 6” Q+		
	Brake Drums – Front, Cast Outboard Mounted		
	Dust Shields – Front Brake, Furnish		

	Oil Seals – Front Wheels, Chicago Rawhide (Scotseal)		
	Front Axle Shock Absorbers		
	Slack Adjusters – Front, Haldex – Automatic		
	Springs – Front, Mack Multileaf 18,000 Lb.		
	Spring Build-Up, RH side for Wing Plow Applications		
	Steering Box, Sheppard SD110 with Tilt and Telescopic Steering Column		
REAR AXLE/ EQUIPMENT/ TIRES / RATIOS:	Rear Axle, Meritor RS-30-185 - 30,000 Lbs. Capacity		
	Suspension - Rear, 30,000 Lbs. Multileaf w/Helpers		
	Single Reduction Rear End Gears		
	Locking Main Differential, Driver Controlled		
	Tire Brand/Type – Rear, Bridgestone – Tubeless Radial (4) 315/80R22.5 20 Ply (M860A Tread)		
	Spring Brake Chambers – Vender, Mgm Tr-T Tamper Resistant		
	Spring Brake Chambers, Type 36/36 Rear		
	Carrier/Ratio- Rear Axle, Malleable Housing, 5.63 Ratio		
	Wheels – Rear, Steel Disc 10 Hole Hub Piloted 22.5" x 8.25"		
	Brakes – Rear, Meritor-Cam - 16.5” x 7” P Brakes		
	Brake Drums – Rear, Cast Outboard Mounted		
	Dust Shields – Rear Brake, Furnish		
	Oil Seals, Premium Hub		
	Slack Adjusters – Rear, Haldex – Automatic		
	Spring Brake Chambers-Quantity (2) Chambers Double Diaphragm Type		
AIR/BRAKE:	Air Reservoirs, Steel - One Supply (Wet) Tank		
	Brake Control System-Two Valve Dual Brake System-Trailer Supply With Hand Control For Trailer-Trailer Air Connections To Rear Pintle Plate, Trailer Electrical Harness To Rear For trailer Lights		
	Air Dryer-Meritor/Wabco 1200 Heated With Coalescing Oil Filter		
	Anti-Lock Brake System, Bendix Without Traction Control		
	Automatic Drain Valve, Bendix (Heated) (1) On Supply (Wet) Tank		
ELECTRICAL EQUIPMENT:	Electrical Master Disconnect Switch Mounted in cab.		
	Back-Up Alarm, With Intermittent Feature (Ambient Noise Sensitive)		
	Steel Battery Box with molded plastic cover		
	Whitacker electric jump start system to be mounted D/S cab with 20’ cable		
	Daytime Running Lights, Courtesy Light Switch (Headlamp And Clearance)		
	Electric Circuit Protection Package, All Circuits Fuse/Breaker Protected		
	Headlights, Single Mounted Rectangular Halogen Lamps Flush Mtd.		

	Rear Lighting, (2) Combination Stop, Tail Directional and Back-Up Lights-Led Module		
	Signal Flasher Type, Transistorized Turn Signal, Federal Mogul #250		
PTO:	Engine Crankshaft Adapter,1350 Series Flange		
PAINT:	Cab Exterior, Customer Color-Base Coat/Clear coat		
	Frame Color, Black		
ADDITIONAL EQUIPMENT:	Icc Safety Kit (Fire Extinguisher And Road Reflectors)		
	Manuals, Two Complete Set Of Parts And Service Manuals		
	Front Axle Spare Tire And Rim Mounted		
	Front bumper guides poles with bulldogs.		
	Rear Axle spare tire and rim mounted		
WARRANTY:	Basic Vehicle – 12 Months On All Components		
	5 Year /150,000 Miles, Engine Warranty Is To Cover Exhaust After-Treatment System And To Include Turbo Charger, Injectors, And Water Pump.		
	Allison Transmission – 5 Years / Unlimited Miles		

DUMP BODY

A. Dump Body to be heavy duty 201 stainless steel cross memberless Smooth under side type, suitable for use by The Town in street and highway maintenance including snow and ice control with external mounted cylinder. _____

1. Inside length to be 10ft for a 92” CA. 11ft overall with hoist. _____
2. Inside width to be 86” minimum. Outside width 96”. _____
3. Sides (from body floor to top of top rail) to be 30" high. _____
4. Tailgate to be 38" high. _____
5. Head sheet to be minimum 36" high. _____
   a. One (1) 2" x 3" horizontal head sheet channel brace from the floor 24.37”. _____
6. Capacity to be 6.5 sides and 8.1 cubic yards ends at water level. _____
7. Sides, head sheet and tailgate to be 7 gauge Type 201 stainless steel. _____
8. Floor to be a one-piece 1/4" AR400 steel with both side radiuses built into floor. AR450/Hardox 450 is not acceptable. No exceptions. _____
9. All corner posts and sides to be 7 gauge, 201 stainless steel. _____
10. Top rails are to be 4" x 5" seamless, sloping (dirt/salt shedding) and boxed for added strength. There are to be four (4) stainless steel structural channel piece hold downs for spreader mounted on the top rail. Location for two (2) per side to be determined at the time of installation. _____
11. Bottom rails are to be seamless and sloping (dirt/salt shedding). _____
12. Long sills are to be one-piece 5” structural steel I-beam at 12lbs per foot. _____
13. Rear apron to be ¼” 8" formed channel. _____
14. There are to be no cross members. Floor to be skip welded to

I-Beam Long sills. _____

15. Rear Corner Post:
    a. To be 7 gauge 201 Stainless Steel. _____
    b. Rear post to be 38” high x 4-3/4” deep x 12” wide. _____
    f. Top of corner post to be dirt shedding. A 14-1/2” one-piece 7 gauge stainless steel shall be break formed front to back at 5-1/2” and a downward slope remaining at 9”. _____
    g. The top of post shall house two (2) ½” stainless steel plate brackets to house the top pivot point. _____
    h. Tailgate reinforcement plate around the tailgate latch assembly must be ¼” thick. Outside must be 16” tall. Bottom must be 8-3/4” long. Inside bottom height shall be 7-3/8” to the floor. Top shall be 4-1/4” from outside to top of floor sheet. All to be continuously welded. _____
    i. Two (2) oval factory cut outs for S/T/T and Reverse. _____
    j. Two (2) Whelen brand strobe light (3 light) boxes to be welded to outside of each rear corner post. Location to be determined at the time of build. _____
16. No front corner posts. Head sheet to have mirrored image of one (1) weld on full length horizontal side brace each side and to be continuously welded to side brace, each side. _____
17. One (1) Intermediate fully welded horizontal side brace, full-length. _____
18. 30” x 86” wide cabshield to have built in tarp deflector full width of body headsheet. Cabshield to house tarp. Five (5) Whelen flush mounted 700 series mounted: Each side, each front corner, and one front center. All Back side of lights must be boxed in with stainless steel. Stainless steel tubing shall be used to protect electrical wires between lights. Tarp system to be recessed into side plates at furthest most rear. See tarp section for details. _____
19. There are to be 2” x 8” hard wood sideboards installed and painted black or to match cab color. Front board side pocket holders must extend full height to bottom edge of cabshield lip. _____
20. The one piece external side sheet must be break formed and wrap under the body floor no less than 10” extended under the body with a continuous welded seam to floor sheet. _____
21. Tailgate design:
    a. To be and double-acting heavy duty. _____
    b. Bracing to be full perimeter box type, 6" top and bottom and 4" sides. _____
    j. There is to be one (1) horizontal brace, mid-section. _____
    k. Top, bottom, and intermediate horizontal braces to be sloped (dirt/salt shedding). _____
    l. Top and bottom tailgate pins to be 1-1/2" diameter 201 Stainless steel, minimum with T-handle. _____
    m. Minimum 3/8" stainless steel coil chains to be long enough to hold tailgate in horizontal position if necessary. _____
    n. Tailgate to be level with dump body floor when in horizontal position. _____
    o. Heavy nylon mesh sleeves to be installed over spreader chains to protect body finish. _____
    p. Lower latch hooks to be flame cut from 3/4" 201 SS plate to secure against two (2) 3/8” 201 SS corner post mounted

latch plates, one (1) set each side of the ¾" latch hook per side. _____

j. There is to be a full width 1" 201 stainless steel diameter (min.) tailgate release rod at rear of body. _____

k. Air tailgate release with spring parking brake chamber mounted center rear of body with dash control. _____

l. All 201 stainless steel hardware. _____

m. One (1) SS d-ring lift hook mounted on top of tailgate. _____

n. Three (3) coal doors, 13" wide, recessed flush with interior tailgate sheet. _____

o. Two (2) safety turnbuckle latches, one per side, for safety of holding tailgate shut. No exceptions. _____

p. Two (2) tailgate latch bar safety mechanisms, one per side bottom, per North Hempstead's approved drawing. No exceptions. _____

22. Continuous welded body shell (except long sills to floor sheet that are skip welded), cab protector & tailgate. _____

23. Stationary 2-1/2" x 20" long grip strut stainless steel steps (one step) mounted to the front drivers side as far forward as possible on the horizontal side brace. _____

24. Full length 2-1/2" grip strut stainless steel walk rail to be mounted full length on bottom rub rails. _____

25. Three (3) step stainless steel pull out ladder mounted under floor and under 20" grip strut step on horizontal brace. _____

26. One (1) Pull Tarp brand tarp system with asphalt rated tarp. Must be mounted on top of cabshield as far rearward and recessed into side vertical supports of cabshield. 7GA Stainless steel cover mounted over the existing Pull Tarp housing to be bolt on. _____

27. Two (2) one-piece stainless steel rod grab handles must be mounted on each side of the 20" step. _____

28. Front corner of bottom rub rail must be capped with 7GA stainless steel and be on an approximate 60 degree angle. _____

29. Six (6) stainless steel J-Hooks mounted upside down. Three (3) per side and evenly spaced and welded on. _____

30. One (1) 12" bolt on stainless steel rear apron. _____

31. Two (2) stainless steel lift loops mounted to top dirt sheet rail, evenly spaced. _____

32. Stationary two (2) ¾" stainless steel rebar mounted on 45 degree from front head sheet to sides at spacing as the outsides steps. _____

33. Body must have any welded burn marks removed prior to delivery. _____

HOIST AND REAR HINGE ASSEMBLY

B. Heavy duty front telescopic type hoist suitable for use with a Dump body on a road and highway maintenance truck used for snow and ice control, externally mounted of headsheet. No exceptions. _____

1. NTEA rated Class 50 with 17.5 tons capacity minimum. No exceptions. _____

2. Forty three thousand pound (43,000 LB.) capacity minimum @ 2000 PSI. _____

3. Double-acting (power up and down full length of stroke). _____

4. Largest diameter stage must be at bottom. Inverted cylinder

not acceptable. _____

5. 4.5" inside diameter cylinder base tube (minimum). _____
6. 100" stroke (minimum). _____
7. All cylinder stages to be nitrated for corrosion resistance and wear resistance. _____
8. Internal bore seal design so no packing adjustment or bleeding is required. _____
9. Hoist cylinder to be mounted inside pivoting, trunnion mounted cylinder cover tube. _____
10. Subframe for body to be structural 4” C-Channel. Full width cradle must be made of 201 stainless steel that houses hoist, hydraulic reservoir and valve enclosure. No exception. _____
11. Mounting height not to exceed 9" from the top of chassis frame to dump body floor. No exceptions. _____
12. 5” x 6” x ½” x 38” long formed angle with 1-1/2" 303 stainless steel pins with greaseable pins. Each pin is secured by nut/bolt. _____
13. Each pin mounts into two (2) 1/2” plates mounted on two sides to the 6’ x 8” x ½” formed angle. Outside plate for each set must be 1.125” from end angle with pin centers at 32”. _____
14. Each rear hinge block must be a 2-1/2” wide and 3.25” tall plate steel with 5.88” length mounting surface of body to top of block. Each block must accept a 1-1/2” dumping stainless steel pivot pin and have a grease zerk. _____
15. Overhang from the center of the rear pivot is to be 12” to the end of the floor plate. _____
16. Externally mounted hoist design must show, upon request, at least fifteen (15) current systems of this same design in the NJ/NY market. No exceptions. _____

SNOW PLOW HITCH

A. **Heavy front frame side plate low profile snow plow hitch.** _____

1. To be engineered, designed and built by a recognized snow plow manufacturer. Hitch to be a low profile configuration. The design will limit the amount of front overhang to a minimum. _____
2. A truck frame extension is not required for the mounting of hitch but recommended. _____
3. Heavy front frame hitch of modular design shall allow the cab hood to tilt completely forward for engine access. _____
4. Side plates will transmit plowing forces directly to the truck frame side rails and will custom fit the specified year, make and model of the truck. _____
5. The side plates are custom fitted 5/8" steel plate of proper length and construction for heavy duty service and shall provide adequate clearance for steering mechanisms and spring suspensions. _____
6. Side plate mounting angles or plates shall mount flush to the truck frame for maximum strength. Pipe spacers are not acceptable. _____
7. The front section of the hitch assembly: lift frame, center section and the lower push plate shall all be welded to the two (2) vertical tubular supports. The two (2) vertical supports are to be

constructed of 6" x 3" x 1/4" thick wall. The length of each support shall be 38-1/4". No exceptions. _____

8. The front two (2) vertical supports are to be spaced evenly 26-3/4" apart. No exceptions. Overall mounting width is 32-3/4". _____
9. The front two (2) vertical supports are to be mounted to vertical structural angles of 5" x 4" x ½", full height of tubes. _____
10. Each vertical tube must have three (3) 3" wide gussets tying in the vertical tube to the structural angle. Each gusset is 3" x 4" x 5" x 7ga. _____
11. The vertical tubes and structural angles are mounted to a horizontal 6" x 4" x ½" x 39" wide structural angle mounted at the top of the two (2) vertical structural angles. _____
12. The center cylinder tube to be built with a 6" x 3" x 1/4" tubes x 26-5/8" long and mounted centered to the vertical tubes. Two (2) 1/2" x 3" x 4" lift cylinder ears to be welded to this tube along with a 1/2" x 3" flat reinforcement bar. _____
13. The telescopic lift arm shall be manufactured of 4" x 4" x 3/8" square outer tubing and 3" x 3" x 3/8" square inner tubing. _____
14. The lift arm and lift frame shall be designed to accept 2.5", 3" or 4"x10" lift cylinder . Cylinder pins are to be 1" cold rolled steel. Inner lift arm must accept clevis and pin. _____
15. Truck and plow portion hitch must be Torloc/Arrowhead style and work interchangeably with The Town of North Hempstead's fleet. _____
16. Mounted under the telescopic outer tubing is to be a white poly block 1-1/2" x 3" and arced to hold a 4" x 10" lift cylinder. _____
17. The quick hitch shall provide self-alignment with the mating plow section while being engaged. _____
18. Re-mount OEM bumper. Bumper shall be split to accommodate plow hitch and must be bolted on and utilize stabilizer arm per section. _____
19. The plow hoist cylinder shall be of premium grade and shall be a double acting 4" bore x 10" stroke. _____
20. The piston rod is to be of steel construction treated with a nitro steel process. _____
21. The ram sleeve or outer barrel will be such that the rod packing may be maintained or replaced as required. A positive stop must be incorporated that will help prevent mechanical pressure being applied to the packing when the rod is fully extended. _____
22. The cylinder shall be capable of 14,137 pounds of thrust @ 2,000 PSI and 16,000 pounds of bursting pressure @ 2,000 PSI. Minimum weight of the cylinder shall be 28 pounds. Ports to be 3/8" _____

SNOW PLOW

A. MOLDBOARD:

1. The moldboard shall be heavy duty torsion trip edge design type Snowplow with level lift without additional mechanical mechanism. _____
2. Moldboard will be an integral shield with trip edge. _____
   e. Length to be 10'. _____
   f. Height to be 40" (not including rubber deflector) in dead center And 54" each end. No exceptions. _____
   g. 36" side plastic markers mounted to plow. _____
   h. Two (2) lift hooks to be mounted on moldboard top. _____

5. The moldboard shall be reinforced at the top with a 3-1/2" x 2-1/2" x 3/8" with holes to allow moisture to escape with poly 36" markers. _____
6. 10 GA. 201 Stainless Steel rolled moldboard with eight (8) ½" x 3-1/2" ribs for extra strength and rigidity. Plow must have all welded burn marks removed prior to delivery. No exceptions. _____
5. All welds must be continuous (skip welds not acceptable). _____
6. Bottom angle must be 4"x 4" x ¾" with an additional 4" x 3" x ½" trip edge angle. _____
7. Top moldboard angle must be constructed of 3-1/2" x 2-1/2" x 3/8" with holes to allow moisture to escape. _____
8. Two horizontal structural angle braces ¼' x 3" x 3" added for rigidity. _____
9. Attack angle of moldboard shall have adjustments of 5, 10, and 20 degree. _____

B. CUTTING EDGE:

1. The cutting edge must be 6" carbide cutting edge with cover plate. No exceptions. Must be AASHO standard punched, mounted flush with moldboard and be easily replaceable. _____
2. Cutting edge face must have wrap around curb guards mounted on both ends with same bolts/nuts as cutting edge. No Exceptions. _____

C. TRIPPING MECHANISM:

1. Adjustable torsional one piece cutting edge trip. From bottom of new 8" cutting edge to top trip edge is no less than 14.75". _____
2. Springs must have a zero insertion force for increased safety while servicing. No Exceptions. _____
3. Bottom moldboard angle must be 4" x 3" x ½". Fully welded to bottom edge of moldboard. _____
4. 4" x 4" x ¾" backer angle with (6) ¾" trip ears welded to angle. _____
5. Full length trip edge pivot tube, must be constructed of schedule 80, 1.50" OD black pipe. End of each plow cutting edge is to include a 4.5"OD x 1.5" thick curb guard. _____
6. Cutting edge tripping must be controlled by (5) torsion springs. Springs constructed of a minimum of .75 square bar with 14 active coils. Minimum spring dimensions shall be 3.75OD x 2.25ID x 11.75. Springs must be produced to meet Rockwell C hardness. Hardness shall be produced from oil quenching with a minimum temperature of 1550°F. Spring preload shall be a minimum of 35°. Springs shall have a trip load capability of 8228 INCH-LBS. Typical spring material composition shall be Carbon=0.40, Manganese=.70, Phosphorous=.020, sulfur=.020, silicon=.25, chromium=.80, Nickel=1.75, Molybdenum=.25. _____
7. Three (3) position adjustment on each individual torsion spring on the trip assembly to allow adjustment in various settings for road conditions. No exceptions. _____
8. Face of cutting edge trip section must be 201 Stainless Steel. No exceptions. _____

D. PUSH TUBE ASSEMBLY:

1. Push tube to be constructed of 4" x 4" x .38 square tube, 107.5" in length. Each end of the push tube shall be capped with a 10ga

3.25” x 3.25” plate. _____

2. Welded to the moldboard pushtube shall be (8) 5/8” x 3.5” x 7” pivot ears. Each ear shall be further reinforced with a 2” x 2” x .38 gusset. Pivot ears shall pin to moldboard assembly with 1-1/4” thick pins. _____
3. (2) Moldboard stabilizer strut mounting ears each constructed of (2) 5/8” plate approximately 10” x 13”. _____
4. Center pushframe pivot constructed of (2) .38 x 36.5” x 8.5” plates. There shall be a 3.5” hole in each plate for a 5-1/2” x 3-1/2” OD x 2.52” ID bushing. Bushing shall be drilled and tapped for a 1/8” grease zerk. _____
5. Center pushframe pivot assembly shall also have (2) 3.75” stops for the a-frame assembly. _____
6. Push tube cylinder lugs, located on left and righ hand sides shall each be constructed of (2) 5/8” x 8-1/4” x 3-5/8” plates complete with a 1-1/4” pin hole. _____
7. Cylinder lugs shall be further reinforced with 3/8” x 2-3/4” x 3-1/4” gusset. _____
8. There shall be (2) chain lift lugs welded to the top of the push tube constructed of ½” x 3” x 4” plates. _____
9. Moldboard reversing shall be accomplished by (2) 3” rod x 3.5” bore x 16” stroke single acting cylinders. _____
10. Cylinder rods shall be nitride for increased corrosion resistance. Chromed rods shall be unacceptable. _____
11. Cylinder working pressure shall be 3000 PSI. _____
12. Cylinder shall be plumbed to an 1800 PSI cushioning valve to prevent damage when hitting obstructions. _____

E. A-FRAME:

1. Pivot capture plates shall consist of (2) plates constructed of 1” x 11” x 12-7/8” plates. These plates will be flame cute and have a 2.53” hole to pin the a-frame assembly the push-tube assembly. The top pivot capture plate shall be drilled and threaded for a ¾” capture bolt to prevent pin rotation. _____
2. Top main A-frame plate shall be constructed of 3/8” x 28” x 25-5/8” flame cut plate. The narrowest portion of the top plate shall remain a minimum of 12”. Top plate shall also be flame cut to accept the reversing cylinder pins. Pin hole shall be 1.281” in diameter. Each pin holes shall be further reinforced with a 1” thick plate which is flame cut to accept reversing cylinder pin. _____
3. Bottom main a-frame plate shall be constructed of 3/8” x 28” x 25-5/8” flame cut plate. The narrowest portion of the top plate shall remain a minimum of 12”. Bottom plate shall also be flame cut to accept the reversing cylinder pins. Pin hole shall be 1.281” in diameter. There shall be a 6” access hole for attaching the hitch swivel bolt. _____
4. The A-frame vertical side plates which tie the top and bottom plates into a boxed formation shall be constructed of ½” x 4” x 32” plate and formed to follow the contour the top and bottom plates. _____
5. The rear A-frame push plate shall be constructed of 1” x 6-3/4” x 33-5/8” plate. This plate shall be flame cut with a 1-9/16” hole to accept the plow hitch attachment bolt. _____

6. On the top side of the A-frame plate shall be a mounting plate to which attached is the reversing cylinder cushion valve. _____
7. Plow portion hitch must be Torlo/Arrowhead and fit existing Town of North Hempstead truck portion hitches. _____

F. PAINT:

1. All metal surfaces are to be phosphate washed to remove slag, splatter, oxide and oil residue. _____
2. Moldboard frame work must be powder-coated Highway Orange. _____
3. Push frame, "A" frame and other miscellaneous components are powder-coated black for increase paint durability. _____

CENTRAL HYDRAULIC SYSTEM

A. TYPE:

1. System to be of load sensing pressure-compensated type, pumping oil only when needed and in exact volume and pressure required --- no more, no less. _____
2. Pump to automatically revert to standby mode when no oil flow is required (No on/off switch). _____
3. Must be able to operate all equipment on truck simultaneously if necessary. No one function to interfere with any other. _____
4. System controls are to be electronic over hydraulic. _____
5. Operating speed of all functions must-be variable and adjustable. _____
6. One complete system to operate all functions. _____

B. HYDRAULIC PUMP AND FRONT CRANK SHAFT:

1. The hydraulic piston pump shall be a pressure and flow compensated load-sensing type. The pump shall be an Eaton 5.98 CID series 620 have a minimum 2" inch suction line and ½" control drain line plumbed directly back to the reservoir. The pumps compensator shall have rear facing adjustments. Pump shall be a front crank shaft mounted drive shaft and properly mounting. _____

C. HYDRAULIC VALVE:

1. Control valve shall be U.S. manufactured. Valve shall be a load sensing type with o-ring ports. Mid-inlet section porting will be #16 inlet, #20 outlet, #16 hoist section, #4 load sense port, and #10 or #12 for all other sections. The hoist section shall be stacked to one side of the mid-inlet and all other sections will be stacked on the other side. All ports shall be level with each other so as to lay flat on its base. There will be a main relief in the mid-inlet section that will be set at 3500 PSI to protect the system from being over pressurized. _____
2. Valve section to be arranged as follows:
3. Hoist, 4-way for a double acting cylinder with mid-inlet transition section. _____
4. Pressure reducing section., if needed. _____
5. Plow Lift, 4-way for a double acting cylinder with flow control. _____

6. Plow Angle, 4-way for a double acting cylinder with flow control. _____
7. Spin-A-Veyer section, consisting of two pressure compensated cartridges that are a single piece design with hardened cartridge bores and spools. These shall be operated independently via a 12 VDC pulse width modulated signal. Each valve shall have heavy duty 7/16-20 UNF screw style manual overrides that are adjustable from no flow to full flow. These valves shall be mounted in a housing that is made of aluminum with gray anodizing for corrosion resistance and durability. The auger/conveyor shall be a 15 GPM spool and the spinner shall be a 7 GPM spool. No exceptions. _____
8. Liquid Pre-Wet/Anti-Ice Valve 4-way. _____
9. Valve shall be prior approved equal. _____
10. A plow float/balance valve must be provided and controlled with a dash mounted rocker switch for on/off. The plow float/balance can be turned off as needed. When in use, the valve will allow the valve to use a pressure reducing/relieving system to control the float/balance lifting pressure on the plow's lift arm assembly. Two solenoid valves wired together turn the valve off and on. One solenoid valve opens the inlet of the pressure reducing valve to the pump. The other solenoid valve opens the outlet of the pressure reducing/relieving valve to the lift port. Oil flowing in and out of the lift port is restricted with an orifice. _____

D. OPERATOR CONTROLS FOR DUMP BOY HOIST and SNOW PLOW:

1. The valve controls shall be a feathering remote electric control with each joystick. Dump to have one (1) Joystick and Plow to have another Joystick. Force America Joysticks or prior approved equal. Layout to be determined at the time of build. _____

E. RESERVOIR/VALVE COMPARTMENT:

1. One (1) 30 gallon all-welded 201 stainless steel hydraulic oil reservoir mounted on the hoist's cradle on passenger side. Must have site gauge with rubber gasket seal. No exceptions. _____
2. The hydraulic reservoir will be constructed of 10-gauge stainless steel and be internally baffled. _____
3. One (1) 201 stainless steel valve enclosure mounted on the hoist's cradle on the driver's side. Must have a Stainless steel cover with one bolt-on securing mechanism. No exceptions. _____
4. Shall be mounted in a manner as to not transmit any truck torsional loads thru the tank. _____
5. The enclosure will use a gasket-less passive technology. (No rubber seals, gaskets, or weather stripping.) _____
6. The reservoir supplier will provide all valve fittings (JIC connections) and plumb the return line from the valve to the filter. _____
7. The cover will protect from both road and pressure washer spray. _____
8. A 2" full flow brass ball valve shall be plumbed at the suction port of the tank. _____
9. A low oil/high temp sending unit shall be mounted in the reservoir. _____
10. Hydraulic oil filter shall be mounted in the reservoir. Hydraulic filter shall be a 10-micron absolute and rated for no less than 60 GPM. _____

F. Hydraulic Lines and Fittings:

1. Stainless steel tubing to be used under body and cab in lieu of hosing. Only hosing to be used is ends of stainless steel tubing to reach each function's quick couplers or connection. Tubing shall be seamless #201 stainless steel construction with a minimum wall thickness of 0.065". The ends must be flared to accommodate a 37 degree JIC fitting. The use of compression fittings is not Acceptable. Spacing of each tube to allow for material to fall between each tube. _____
2. All stainless tubing must be mounted in polyurethane poly green tube clamps. _____
3. All hoses to be wire braid reinforced with swaged on high pressure JIC 37 degree tapered seat end fittings. _____
4. All fittings & adapters to be forged steel (No tapered pipe fittings except on suction hose). _____
5. Hoses to front with 1/2" 100% stainless steel (no exceptions) quick couplers for power reversing plow. _____
6. Hoses to rear with 1/2" 100% stainless steel quick couplers for spreader (no exceptions). _____
7. Spreader stainless steel hose couplers to be mounted on either frame rail or pintle plate under dump body at rear. _____
8. Polymer dust plugs or caps on all couplers with retainer straps. _____
9. All pressure hoses except for plow & spinner to be 3/4" I.D. SAE 100R2. _____
10. Plow, spreader spinner, and prewet system pressure hoses to be 1/2" I.D.SAE 100R2. _____
11. Main pressure hose from pump to control valve shall be 1" Didiameter, 4-wire braid. No exception. _____
12. All return hoses to be SAE 100R2. _____
13. Suction hose to be minimum 2" I.D. SAE 100R4 spiral wire reinforced with long radius ells. _____
14. All hoses to be routed away from chassis exhaust whenever possible to protect against heat deterioration. _____
15. All hydraulic quick disconnect couplings must be stainless steel Aero-Quip FD45 series or prior approval; bulkhead mounted, and include attached male and female dust covers. Couplings to be configured so as to eliminate confusion when coupling. No exceptions. _____
16. All stainless steel quick disconnects for spreaders must be mounted under body at passenger rear most corner and mounted to stainless steel encloused housing that is welded to bottom rub rail wrap around portion. No exceptions. _____

G. Spreader Controller:

1. Force America 5100ex open loop controller. No exceptions. _____

SNOW PLOW LIGHTS:

A. Truck-Lite brand LED model 80880 plow lights. _____

1. Mounted with custom fabricated 100% stainless steel brackets on truck fenders. Brackets must be painted black. _____

2. Plow lights to be wired into the truck's existing headlight circuit using the factory installed switch. _____
3. Plow lights must function in high and low beam modes using existing truck's dimmer switch. _____
4. Plow lights and truck chassis headlights must never operate at the same time. _____

LIGHTING & ELECTRICAL

ALL lighting and layout must meet all Fedaral, State, and DOT regulations. No exceptions.

A. LED lighting system. _____

1. All marker, work, S/T/T, backup and strobe lighting to be LED. _____
2. Whelen brand DOT3 System to be Super-LED DOT Light system model 00007DS0 or equal and a current production model of Whelen and made in the USA. _____
3. The two (2) Whelen 704-D three lamp light boxes to be continuously welded to outside of each rear corner post. Rear Super LED Head Assemblies to be 700 Linear-Super-LED two (2) amber heads, two (LED) brake/tail/turn light modules, and two (2)LED back-ups, one set each side. Each head shall be capable of emitting a full 180 degree of light in the vertical plane. The light heads shall be recessed into a heavy duty 7GA stainless steel housing. _____
4. The two rear 700 series heads shall utilize a DOT LED flasher which is mounted and encapusulated in a junction box inside of cab. The DOT LED flasher shall allow the two rear 700's to be controlled independently from the front head assembly. One (1) stainless steel rod mounted vertically in front of each head to protrude out far enough to protect lense. _____
5. The 700 assembly, brake light and back up, including the steel housing, shall be approximately 23-1/2 inches high , 4-7/8 inches deep and 3-1/2 inches wide. _____
6. The modules, as well as the lens, shall be easily replacable. A water proof connector for each module shall be used to connect to the cable harness and shall be located inside the steel housing for weather resistence as well as ease of replacement. _____
7. The 700 lenses shall be made of polycarbonate, amber in color, and have a smooth outer surface for self cleaning. _____
8. There shall be two LED brake/tail/turn modules, one located in the middle positions of each steel housing. Each module must contain a minimum of 72 red LEDs. The module must be in "signal alert" flash pattern, which flickers three times withing 150 milliseconds before becoming steady "on". These modules must meet or exceed SAE requirements. _____
9. There shall be two LED back ups, one located in the bottom position of each steel housing. Each module must contain a minimum of 48 white LEDs for maximum light output. These modules shall be supplied with a clear polycarbonate lens. _____
10. The rear mounted head assemblies shall use stainless steel screws that screw directly into a nylon mounting bracket to eliminate dissimiliar metal corrosion. Units that screw into steel bracket are unacceptable. _____
11. Cable harnesses being supplied from the rear housings must be

heavy-duty TPR type cable. Flexible to minus 40 degrees Fahrenheit; abrasion, corrosion and oil/grease resistance. Each conductor shall be a minimum of 14GA, pure copper stranded, and fully tin coated. No less than 30feet of cable shall be provided for each head assembly. All necessary connections shall be provided, including a strain-relief system. _____

12. Cabshield lighting shall be five (5) surface mounted Whelen brand 700 series strobes. Must be synchronized with two (2) rear Whelen brand 700 series on outside of rear corner posts. _____
13. Cabshield Whelen 700 series strobes to be on one (1) chassis dash rocker switch for on/off and labeled. _____
14. Both rear facing and rear side corner mounted Whelen 700 series strobes to be on one (1) chassis dash rocker switch for on/off and labeled. _____
15. Two (2) OEM S/T/T w/ Backup light mounted behind rear apron of dump body. Hole to be cut into apron to allow visibility. Hole to be covered with black trim lock. _____
16. Two (2) OEM S/T/T w/ Backup light mounted on each side of pintle plate. Location and mounting to be determined at the time of installation. _____

B. Electronic Back-Up Alarm provided by chassis dealer and relocated if needed. _____

C. Body Up Indicator Light. _____

1. Sealed weatherproof proximity switch on hoist-frame. _____
2. Whelen model ION-R body up light mounted in cab. _____

D. All non- strobe wiring to be 7 wire trailer cable. Separate cable routed from in-cab to all non-strobe lights with sealed junction box at rear so all wiring connections are made either inside cab and in a sealed junction box. _____

E. One (1) solid stainless steel rod must be mounted under body and all electrical body lighting must be neatly run. Rod will be one piece and full length. No exceptions. _____

F. All wire connections shall be made in the chassis cab or by means of a waterproof junction box. In cab connections shall be made using vinyl coated crimp connectors covered in weather resistant heat shrink tuning. There shall be no wire splices outside the cab. All wiring to junction box shall be resistant to abrasion, ozone, sunlight, chemicals and oil. The outer jacket shall be chlorinated polyethylene and be approved for submersion in water. The outer jacket shall be label with the cable identification wire gauge and number of conductors. Must be MSHA approved. All body lighting shall be supplied by a single sealed harness from the junction box and making the connection at the light by means of weather tight sealed connector. All strobe lights shall be included in the same harness and be connected by means of a Deutsch connector, no exceptions. _____

MISCELLANEOUS

A. 90 degree elbow extension on top of chassis vertical exhaust stack to clear cab protector and still route exhaust upward to be provided by chassis supplier and installed by body company. _____

B. Rear tire poly Fleet Maintenance fenders with stainless steel mounting tubes. _____

C. Upon installation of all components, truck must be delivered to the truck dealer for final inspection and prep. _____

D. Rear pintle plate shall have a Holland model T90 pintle properly Installed and secured. _____

1. Mounted on reinforced 3/4" thick mounting plate at rear of chassis frame at designated clearance height to ground to be 29". Sides and bottom must be reinforced with ¾" x 2" flat stock mounted behind the pintle plate. _____
2. Must include Safety two (2) 5/8" D-Rings, one (1) 7-wire flat plug and one (1) 6-wire plug. _____
3. License plate light and bracket mounted to top corner on passenger side. _____

E. DOT approved 2" conspicuity tape on body bottom rub rails, rear corner posts, tailgate perimeter. All DOT necessary reflective decals installed as well. _____

F. Pull Tarp brand asphalt tarping system to be mounted in cabshield rear. Must recess ahead of front head sheet and cut into side plates of cab-shield for lowest possible mounting. _____

G. Two (2) Toolboxes; Heavy duty aluminum 48x18'x18', mounted on frame rails. One (1) per side. _____

INSTALLATION AND WARRANTY

A. Minimum twenty-four (24) months, 100% parts and labor on components and installation. No deductible. _____

B. For warranty considerations and future availability of parts and service, the body company must be an authorized primary distributor for all major components they propose to furnish. Must furnish written proof from such said vendor upon request. _____

C. All equipment must be installed by a single body company, by their employees and at their regular location. _____

D. Installation of components is not to be subcontracted by body company to another installer. _____

E. No welding whatsoever is to be done on chassis frame between front of most forward spring hanger and rear of rearmost spring hanger. _____

F. No drilling whatsoever is to be done in frame rail flanges. _____

G. Body company to furnish operator's parts and service manuals for all components manufacturer's i.e., dump body, hoist, snow plow, salt spreader, central hydraulic system and strobe lights. _____

H. Completed vehicle must be certified by the body company as meeting all federal motor vehicle safety standard in effect at time of chassis production. _____

1. Approved NHTSA/FMVSS certification label must be furnished and located inside cab on driver's side. _____

I. Completed unit to comply with current OSHA regulations. _____

J. Body company must be registered with National Highway Traffic Safety Administration as a final stage manufacturer of motor vehicles as required by Federal Law. _____

K. Body company to conduct operator training session on body and equipment at the The Town garage after delivery of completed truck. _____

L. Delivered of completed vehicle must be within 60 to 75 days after delivery of cab chassis to up-fitter. $75 a day penalty might incur with later

delivery. _____

M. Body company must have ASE certified installer/s and show documentation at time of bid. No exceptions. _____

N. Body company to be registered and in good standing with National Truck Equipment Association (NTEA), be a MVP member, and be the authorized distributor for all equipment bid. _____

O. Body company must participate and provide documentation at time of bid for E-Verify®. This employment verification verification is a United States of America federally accredited verification system to insure all employees are legal residents. List Company ID#_____. No exceptions. _____

P. Dump Body, Snow Plow, and Snow Plow Hitch must be engineered and manufactured in the United States of America and all from the same manufacturer. No exceptions. _____

Q. Hydraulic schematic must be provided and laminated and placed inside the combination valve enclosure/combo tank lid. _____

R. A required pre-build meeting will occur after award of bid and prior to the start of installation. No exceptions. _____

S. The Town will inspect all equipment (plow, hitch, dump body and tailgate spreader) prior to the start of installation. No exceptions. _____

Package "C" for Chassis, Combination Body, Plow, Hydraulics, Spreader Control and Misc Items for V-Box Setup

"BIDDING REQUIREMENTS SECTION"

SECTION	SPECIFICATION DETAIL	COMPLY	
		Comply	Exception
PACKAGE C: 6 WHEEL TRUCK, DUMP BODY, PLOW, HITCH, CENTRAL HYDARAULICS FOR HI-WAY SPREADER			
-			
Description: Chassis Specifications For A New 2016 GU712 Chassis With SCR Technology To Meet 2014 Emissions Of 0.2 Grams Of Nox Or Equal			
Chassis/ Frame &	Chassis: 2016 Mack GU712 Chassis Or Equal		

Wheelbase:	Frame Rails, 11.811” x 3.54” x 0.44” High Strength 120,000 PSI Steel - 20” Integral Front Frame Extension For Snow Plow Mount		
	Single Chassis Rail		
	Section Modulus 23.5 cu In/Rbm 2,820,000 In Lbs. Per Rail		
	Wheelbase - 180”WB, Center of Axle - 92”CA,		
	Platform - 154”LP, After Frame - 62"AF		
MAXIMUM GVW & AXLE RATINGS:	Gross Vehicle Weight Rating Of 48,000lbs.		
	Front Axle Capacity - 18,000 Lbs.		
	Rear Single Drive Axle Capacity - 30,000lbs		
	Front Steer Axle-Gross Axle Weight Rating - 18,000lbs		
	Rear Drive Axle –Gross Axle Weight Rating - 30,000lbs		
ENGINE:	MP7-405M 405 Hp @ 1500-1900 Rpm. Operating range 1100-2100 1480 Lb. Ft. Max. Torque @ 1050-1350 Rpm High Torque Rise 60%		
	11.9 Liter, 659 Cu. In Piston Displacement.		
	EPA Carb Emission Certified For 2014 Utilizing Selective Catalyst Reduction(Scr).Engines Utilizing Government Credits Or Penalties Are Not Acceptable		
ENGINE EQUIPMENT:	Air Compressor, Meritor/Wabco 318 18.7 Cfm		
	Engine Mounted Oil Check And Fill		
	Mack Powerleash Engine Brake		
	Alternator, Delco 12V 130A (24SI) Brush-Type		
	(3) 12volt Mack Grp31 Batteries With 3000 CCA Threaded Post		
	Air Cleaner, 11” x 30” Under Hood Single Element Dry Type		
	12 Volt Heavy Duty Starter-Delco 39mt-Mxt		
	Electronic Starter Interlock System		
	Coolant Protection To Below –34 Degrees Fahrenheit With Coolant Conditioner Filter		
ENGINE EQUIPMENT:	Engine Block Heater, Gomack (Phillips) – 1500 Watt 120 Volt With Intake Grid Heater mounted under driver side door.		
	Starting Aid Engine Electric Preheater		
	Engine Hoses And Tubing, Silicone		
	Diesel Particulate Filter /Scr System Horizontal-Under Right Side Of Cab-Clear Back Of Cab Option		
	Exhaust After –Treatment System Diesel Particulate Filter Ceramic Catalyzed, And Scr Technology To Meet 0.2 Grams Of Nox		
	Exhaust, Side Of Cab Single (R/S) Vertical Straight Exhaust Stack		
	Poly-V Fan Belt With Automatic Tensioner		
	Fan Drive, Behr Fan And Electronic Modulating Fan Drive		
	Flywheel ,Light Weight Aluminum		

	Fuel-Water Separator: Davco 382, (Fluid Heater) Fuel Heater/Water Separator w/vendor Prim & Mack Sec fuel Filter		
	Tether device Furnish Cap Retainer for Oil Fill & Radiator		
	Hand Primer Pump		
	Hoses, Radiator/Heater Mack Brand EPDM Radiator & Heater Hoses		
	Injection Pump- Electronic Engine Control		
	Radiator, Aluminum Core		
TRANSMISSION:	Allison 4500-RDS -6 (4.70/0.67) Rugged Duty Series Gen 5 Includes transmission Cooler, External Oil Cooler, Internal Filter, and Oil Level Sensor		
	Driveline-Main, Meritor 18 MXL "Xtended Lube"		
	Transmission Bell Housing, Aluminum		
	Synthetic Transmission Fluid		
CAB EQUIPMENT:	Air Conditioner/Heater, (Bergstrom) Integral w/heater combination		
	Air Restriction Monitor, Air Cleaner Intake Mtd		
	Instrument Cluster Display, Co-Pilot Driver Display(4.5”Diagonal Graphic Lcd Display W/4-Button Stalk Control)(Includes Guardog Routine Maintenance Monitoring)		
	Conventional Cab (Welded Steel Galvanized Shell) with Air Ride Suspension(Aluminum Cabs Not Acceptable)		
	Fiberglass Tilt Hood With Safety Lock And Hood Hatch For Maintenance Checks		
	Cigar Lighter On Instrument Panel		
	Overhead Console with 2 Storage Compartments and Power Leads		
	Dome Light, (4) W/Self-Contained Switch		
	Diagonal Handle On Driver Side Door Panel		
	AM/FM Premium Stero, CD-Player, MP3, Weatherband, Handsfree Interface, Bluetooth		
	Driver and Passenger side Power door locks and Windows		
	Gauge, Air Pressure		
	Gauge, Voltmeter		
	Gauge Cluster, Exhaust Pyrometer, Engine Oil, And Transmission Oil Temperature Gauges		
CAB EQUIPMENT:	Gauge, Engine Coolant Temperature		
	Gauge, Engine Oil Pressure		
	Gauge, Fuel Level		
	Gauges, English Display		
	Gauge, Speedometer w/Trip Odometer (Electronic 1% Accuracy)		
	Engine Tachometer Electronic With Hourmeter		
	Glass-Cab Window, Safety Tinted Windshield, Side And Rear Windows		
	Grab Handles, Aluminum, Rh & Lh Behind Door		

	Grille, Bright Finish With Bug Screen		
	Headlamp Bezel- Molded Plastic		
	High Beam Indicator Light		
	Body Builder Access Connector Inside Of Cab For Body Controls		
	Horn-Air, (2) Mounted On Cab Roof		
	Horn- Electric, Single Tone		
	Identification/Clearance Lights, (5) TruckLite LED Chrome Bullet Type Lamp		
	Instrument Panel, Gray With Black Gage Bezel		
	Interior Trim Level, (Grey) Features: Padded Vinyl Headliner		
	Rear Panel With Storage Pouch, Polyurethane Rubber Padded floor Mat		
	2 Cup Holders Mounted At Bottom Of Dash (Center)		
	Chassis Keyed Alike- 4 Keys		
	Heated Mirrors-Exterior, West Coast, Rh & Lh Bright Finish		
	Mirrors – Convex Type, Bright Finish, Lh & Rh 8.0” Dia; Mounted Below Lower Arm Of West Coast Mirror		
	Proximity Mirror Rect Convex Above Rh Door Window		
	Right Side Door Peep Window		
	Exterior Sun Visor Fiberglass (Cab Color)		
	Rear Window (Fixed Type)		
	Seat - Driver, Bostrom Talladega 915 (Mid-Back) Air Suspension		
	Seat – Rider Bostrom Mid Back Stationary with Integral Storage Compartment		
	Seat Covering, All Vinyl		
	Seat Belts, Lap And Shoulder w/Cab Mounted Shoulder Belt		
	Sun visor –Interior, Both Sides (Padded Vinyl)		
	Starter Switch, Key Type		
	Steering Wheel, 18” Two Spoke Urethane Grip		
	Windshield Washers, Electric, Wiper Mounted W/Reservoir Back Of Cab		
CAB **EQUIPMENT:**	Windshield Wipers, Sprague 2 Speed Electric Motor w/Intermittent feature		
	Dash Control/Power Supply/Local Installation Plow Lamps W/Lead Furnish At Grille With 2w/3w Weather Pack		
FRAME EQUIPMENT/ FUEL TANKS:	Bumper – Front, Extended Swept Back -Steel Channel		
	Crossmembers, Steel Huck Bolted HD Back-To-Back Channel		
	Flaps – Wheel (Front) Black Poly Armor		
	Frame rail End Squared		
	Towing Device – Front, (2) Hooks		
	Fuel Tank – Lh, 72 Gallon Aluminum with 8.7 Gallon Def Fluid Tank-(Clear Back Of Cab Package)		

FRONT AXLE/ EQUIPMENT/ TIRES:	Front Axle, FXL18 - 18,000 Lbs. Capacity-Sealed Kingpins - Maintenance Free		
	Tire Brand/Type – Front, Bridgestone – Tubeless Radial, 315/80R22.5 20 Ply. M860A (All Position)		
	Wheel – Front, Steel Disc 10 Hole Hub Piloted 22.5" x 9.0"		
	Brakes – Front, Meritor “S” Cam Type 16.5” X 6” Q+		
	Brake Drums – Front, Cast Outboard Mounted		
	Dust Shields – Front Brake, Furnish		
	Oil Seals – Front Wheels, Chicago Rawhide (Scotseal)		
	Front Axle Shock Absorbers		
	Slack Adjusters – Front, Haldex – Automatic		
	Springs – Front, Mack Multileaf 18,000 Lb.		
	Spring Build-Up, RH side for Wing Plow Applications		
	Steering Box, Sheppard SD110 with Tilt and Telescopic Steering Column		
REAR AXLE/ EQUIPMENT/ TIRES / RATIOS:	Rear Axle, Meritor RS-30-185 - 30,000 Lbs. Capacity		
	Suspension - Rear, 30,000 Lbs. Multileaf w/Helpers		
	Single Reduction Rear End Gears		
	Locking Main Differential, Driver Controlled		
	Tire Brand/Type – Rear, Bridgestone – Tubeless Radial (4) 315/80R22.5 20 Ply (M860A Tread)		
	Spring Brake Chambers – Vender, Mgm Tr-T Tamper Resistant		
	Spring Brake Chambers, Type 36/36 Rear		
	Carrier/Ratio- Rear Axle, Malleable Housing, 5.63 Ratio		
	Wheels – Rear, Steel Disc 10 Hole Hub Piloted 22.5" x 8.25"		
	Brakes – Rear, Meritor-Cam - 16.5” x 7” P Brakes		
	Brake Drums – Rear, Cast Outboard Mounted		
	Dust Shields – Rear Brake, Furnish		
	Oil Seals, Premium Hub		
	Slack Adjusters – Rear, Haldex – Automatic		
	Spring Brake Chambers-Quantity (2) Chambers Double Diaphragm Type		
AIR/BRAKE:	Air Reservoirs, Steel - One Supply (Wet) Tank		
	Brake Control System-Two Valve Dual Brake System-Trailer Supply With Hand Control For Trailer-Trailer Air Connections To Rear Pintle Plate, Trailer Electrical Harness To Rear For trailer Lights		
	Air Dryer-Meritor/Wabco 1200 Heated With Coalescing Oil Filter		
	Anti-Lock Brake System, Bendix Without Traction Control		
	Automatic Drain Valve, Bendix (Heated) (1) On Supply (Wet) Tank		
ELECTRICAL EQUIPMENT:	Electrical Master Disconnect Switch Mounted in cab.		
	Back-Up Alarm, With Intermittent Feature (Ambient Noise Sensitive)		

	Steel Battery Box with molded plastic cover		
	Whitacker electric jump start system to be mounted by D/S cab and with 20' cable		
	Daytime Running Lights, Courtesy Light Switch (Headlamp And Clearance)		
	Electric Circuit Protection Package, All Circuits Fuse/Breaker Protected		
	Headlights, Single Mounted Rectangular Halogen Lamps Flush Mtd.		
	Rear Lighting, (2) Combination Stop, Tail Directional and Back-Up Lights-Led Module		
	Signal Flasher Type, Transistorized Turn Signal, Federal Mogul #250		
PTO:	Engine Crankshaft Adapter,1350 Series Flange		
PAINT:	Cab Exterior, Customer Color-Base Coat/Clearcoat		
	Frame Color, Black		
ADDITIONAL EQUIPMENT:	Icc Safety Kit (Fire Extinguisher And Road Reflectors)		
	Manuals, Two Complete Set Of Parts And Service Manuals		
	Front Axle Spare Tire And Rim Mounted		
	Front bumper guides poles with bulldogs.		
	Rear Axle spare tire and rim mounted		
WARRANTY:	Basic Vehicle – 12 Months On All Components		
	5 Year /150,000 Miles, Engine Warranty Is To Cover Exhaust After-Treatment System And To Include Turbo Charger, Injectors, And Water Pump.		
	Allison Transmission – 5 Years / Unlimited Miles		

COMBINATION BODY

A. This specification shall describe a 201 stainless steel rear rischarge, combination dump/spreader body or equal. Bidders must submit with their bid complete specifications on the unit they propose to furnish.

1. Inside length to be 10'. _____
2. Inside width to be 95.625" minimum. Outside width to be no more than 96". _____
3. Sides (from body floor to top of top rail) to be 42" high. _____
4. Tailgate to be 54" high. _____
5. Head sheet to be 54" high. _____
6. Water level capacity to be 7.9 cubic yards sides and 10.6 cubic Yard ends. _____
7. Sides, head sheet and tailgate to be 7 gauge Type 201 stainless steel. _____
8. Floor to be 1/4" AR400 rated at approximately 190,000 PSI tensile strength steel. _____
9. 12"x 4-3/4" 7 ga. 201 Stainless steel rear corner posts are tied into a 12" rear apron formed from 7 ga. 201 Stainless Steel. Further reinforcement is provided by a 1/4" 201 Stainless Steel plate that helps prevent flexing in this critical area and strengthens the tailgate latch assembly. Shall have holes cut in the rear of

posts to accept (2) oval shaped lights for LED strobe and LED S/T/T. _____

10. 10 ga. 201 stainless steel boxed top rail seamless and sloped inward to shed debris. This design is critical to providing the specified 96” body width. _____
11. 201 Stainless Steel Integral fenders shall be continuously welded and positioned over wheels of truck chassis and built to accept either Poly pre-wet tanks and tool box. _____
12. Full width, cabshield 53” cabshield. Cabshield to house tarp and four oval cut-outs for LED lights. Two per front corner and two per side corners. Back side of lights shall be boxed in with stainless steel.

_____

13. 10” truck frame to body floor height between chain for lower center of gravity and lower mounting height. _____
14. One piece sides and floor which incorporates a 6” floor to side radius. The floor slopes 22 degrees to the conveyor. A body with any portion of the floor, outside of the main conveyor that is less than 22 degrees, is NOT acceptable due to poor cleanout. _____
15. 7 gauge 201SS formed inner/ 10 gauge 201SS formed outer longsills. _____
16. 2” diameter drive and idler shafts with 8 tooth cast iron sprockets. Drive sprockets are double keyed to shaft. Shall have bearing at each sprocket. _____
17. 25:1 planetary gearcase at the rear of conveyor with a hydraulic piston motor approximately 8 cubic inch displacement. _____
18. Maximum 28” wide conveyor made with D667K pintle chain every link (24,500 lb. tensile/strand). _____
19. Body to have 201 Stainless Steel 15” spreader apron but with bolt on apron in two pieces for access to bearings and drive motor. _____
20. Conveyor extends 12” beyond tailgate to prevent free flow of granular material. _____
21. Tailgate sheet to 7GA 201 stainless steel.:
    a. To be and double-acting heavy duty. _____
    b. Bracing to be full perimeter box type, 6" top and bottom and 4" sides. _____
    k. There is to be two intermediate 6" horizontal brace. No 6-panel tailgate. _____
    l. Bottom and intermediate horizontal braces to be sloped (dirt/salt shedding). _____
    m. Upper hardware to be heavy-duty flush type with minimum 5/8" diameter vertical drop pins on retainer chains. _____
    n. Flush mount, 1/2" flame cut tailgate pivots. _____
    o. Minimum 3/8" stainless steel chains to be long enough to hold tailgate in horizontal position if necessary. _____
    p. Heavy duty offset hinge plates, 1" flame cut. _____
    q. Heavy nylon mesh sleeves to be installed over spreader chains to protect body finish. _____
    r. Lower latch hooks to be flame cut from 3/4" 201SS plate with 3/8" latch plates. _____
    s. 7 gauge 201 Stainless Steel 12” x 26” rear feedgate

operates perpendicular to floor.Sloped-in feed gates NOT acceptable. _____

l. Screwjack type feedgate with handle to passenger side. _____

m. All 201 stainless steel hardware. _____

n. Dual brake chamber air tailgate latches (one on each side) with over-center linkage. Pivot shafts include stainless steel bushings to eliminate seizing. Tailgate latch rods that extend the length of the body or have a cross shaft are not acceptable. _____

o. Stainless lift hook welded to top of tailgate. _____

22. Continuous welded body shell, cab protector & tailgate. _____

23. Fold-up grip strut two-step ladder on left front corner of body with grab/step above. Stainless Steel step inside of body. _____

24. Two (2) shovel holders, one on each side of body, specify exact location at time of installation. _____

25. 2 ½" x 12" hardwood (not pine) sideboards. _____

26. Full length top screens and full length 201 stainless steel under body pan installed under chain. _____

27. 3/16" Hardox 450 cover plate for conveyor chain to be included and mounted at rear. _____

28. 6"x 8 x1/2" formed angle with 2" 303 stainless steel pins with greaseless composite bushings. _____

SPINNER AND SPINNER ASSEMBLY

1. 20" diameter poly spinner disk will be provided. _____

2. Directly driven by high torque, low speed (550 RPM max.) 2.8 C.I.R. Char-lynn hydraulic motor (Char-lynn part # 101-1313). _____

3. Spinner assembly must be adjustable left to right, front to back, and up and down to assure accurate placement of material on spinner disc to facilitate control of spread pattern. _____

4. Spinner assemble shall be self leveling and kept parallel to road surface at all dump angles using a stabilizer bar attached to the truck frame. _____

5. 201 stainless steel stationary shield mounted in from of spinner to protect the truck under carriage from thrown materials. _____

6. Stainless steel spinner assembly to have four (4) adjustable deflectors. _____

HOIST

A. Heavy duty front telescopic type hoist suitable for use with a combination body on a road and highway maintenance truck used for snow and ice control. _____

1. NTEA rated Class 50. _____

2. 17.8 Tons of Lift-Off Capacity at 2000 PSI. _____

3. Double-acting (power up and power down full length of stroke). _____

4. Largest diameter stage must be at bottom-inverted cylinder not acceptable. _____

5. 4.5" inside diameter cylinder base tube (minimum). _____

6. 90" stroke (minimum). _____

7. All cylinder stages to be nitrated for corrosion resistance and wear resistance. _____

8. Internal bore seal design so no packing adjustment or bleeding

is required. _____

9. Hoist cylinder to be mounted inside pivoting, trunnion mounted cylinder cover tube. _____
10. No sub-frame for hoist. Rear hinge assembly to be cut into truck frame rail behind rear spring hanger of rear axle. _____
11. Lowest possible mounting height -- not to exceed 10" (top-of chassis frame to body floor). _____
12. 5 degree oscillating cylinder collar with grease zerk. _____

SNOW PLOW HITCH

A. **Heavy front frame side plate low profile snow plow hitch.** _____

1. To be engineered, designed and built by a recognized snow plow manufacturer. Hitch to be a low profile configuration. The design will limit the amount of front overhang to a minimum. _____
2. A truck frame extension is not required for the mounting of hitch but recommended. _____
3. Heavy front frame hitch of modular design shall allow the cab hood to tilt completely forward for engine access. _____
4. Side plates will transmit plowing forces directly to the truck frame side rails and will custom fit the specified year, make and model of the truck. _____
5. The side plates are custom fitted 5/8" steel plate of proper length and construction for heavy duty service and shall provide adequate clearance for steering mechanisms and spring suspensions. _____
6. Side plate mounting angles or plates shall mount flush to the truck frame for maximum strength. Pipe spacers are not acceptable. _____
7. The front section of the hitch assembly: lift frame, center section and the lower push plate shall all be welded to the two (2) vertical tubular supports. The two (2) vertical supports are to be constructed of 6" x 3" x 1/4" thick wall. The length of each support shall be 38-1/4". No exceptions. _____
8. The front two (2) vertical supports are to be spaced evenly 26-3/4" apart. No exceptions. Overall mounting width is 32-3/4". _____
9. The front two (2) vertical supports are to be mounted to vertical structural angles of 5" x 4" x ½", full height of tubes. _____
10. Each vertical tube must have three (3) 3" wide gussets tying in the vertical tube to the structural angle. Each gusset is 3" x 4" x 5" x 7ga. _____
11. The vertical tubes and structural angles are mounted to a horizontal 6" x 4" x ½" x 39" wide structural angle mounted at the top of the two (2) vertical structural angles. _____
12. The center cylinder tube to be built with a 6" x 3" x 1/4" tubes x 26-5/8" long and mounted centered to the vertical tubes. Two (2) 1/2" x 3" x 4" lift cylinder ears to be welded to this tube along with a 1/2" x 3" flat reinforcement bar. _____
13. The telescopic lift arm shall be manufactured of 4" x 4" x 3/8" square outer tubing and 3" x 3" x 3/8" square inner tubing. _____
14. The lift arm and lift frame shall be designed to accept 2.5", 3" or 4"x10" lift cylinder . Cylinder pins are to be 1" cold rolled steel. Inner lift arm must accept clevis and pin. _____

15. Truck and plow portion hitch must be Torloc/Arrowhead style and work interchangeably with The Town of North Hempstead's fleet. _____
16. Mounted under the telescopic outer tubing is to be a white poly block 1-1/2" x 3" and arced to hold a 4" x 10" lift cylinder. _____
17. The quick hitch shall provide self-alignment with the mating plow section while being engaged. _____
18. Re-mount OEM bumper. Bumper shall be split to accommodate plow hitch and must be bolted on and utilize stabilizer arm per section. _____
19. The plow hoist cylinder shall be of premium grade and shall be a double acting 4" bore x 10" stroke. _____
20. The piston rod is to be of steel construction treated with a nitro steel process. _____
21. The ram sleeve or outer barrel will be such that the rod packing may be maintained or replaced as required. A positive stop must be incorporated that will help prevent mechanical pressure being applied to the packing when the rod is fully extended. _____
22. The cylinder shall be capable of 14,137 pounds of thrust @ 2,000 PSI and 16,000 pounds of bursting pressure @ 2,000 PSI. Minimum weight of the cylinder shall be 28 pounds. Ports to be 3/8" _____

SNOW PLOW

A. MOLDBOARD:

1. The moldboard shall be heavy duty torsion trip edge design type Snowplow with level lift without additional mechanical mechanism. _____
2. Moldboard will be an integral shield with trip edge. _____
   a. Length to be 10'. _____
   b. Height to be 42" (not including rubber deflector). No exceptions. _____
   c. 36" side plastic markers mounted to plow. _____
   d. Two (2) lift hooks to be mounted on moldboard top. _____
3. The moldboard shall be reinforced at the top with a 3-1/2" x 2-1/2" x 3/8" with holes to allow moisture to escape with poly 36" markers. _____
4. 3/8" Poly moldboard with eight (8) ½" x 3-1/2" ribs for extra strength and rigidity. _____
5. All welds must be continuous (skip welds not acceptable). _____
6. Bottom angle must be 4"x 4" x ¾" with an additional 4" x 3" x ½" trip edge angle. _____
7. Top moldboard angle must be constructed of 3-1/2" x 2-1/2" x 3/8" with holes to allow moisture to escape. _____
8. Two horizontal structural angle braces ¼' x 3" x 3" added for rigidity. _____
9. Attack angle of moldboard shall have adjustments of 5, 10, and 20 degree. _____

B. CUTTING EDGE:

1. The cutting edge must be Carbide cutting edge with cover plate. Must be AASHO standard punched, flush with moldboard and be easily replaceable. _____
2. Cutting edge face must have wrap around curb guards mounted on both ends with same bolts/nuts as cutting edge. No Exceptions. _____

C. TRIPPING MECHANISM:

1. Adjustable torsional one piece cutting edge trip. From bottom of new 8" cutting edge to top trip edge is no less than 14.75". _____
2. Springs must have a zero insertion force for increased safety while servicing. No Exceptions. _____
3. Bottom moldboard angle must be 4" x 3" x ½". Fully welded to bottom edge of moldboard. _____
4. 4" x 4" x ¾" backer angle with (6) ¾" trip ears welded to angle. _____
5. Full length trip edge pivot tube, must be constructed of schedule 80, 1.50" OD black pipe. End of each plow cutting edge is to include a 4.5"OD x 1.5" thick curb guard. _____
6. Cutting edge tripping must be controlled by (5) torsion springs. Springs constructed of a minimum of .75 square bar with 14 active coils. Minimum spring dimensions shall be 3.75OD x 2.25ID x 11.75. Springs must be produced to meet Rockwell C hardness. Hardness shall be produced from oil quenching with a minimum temperature of 1550°F. Spring preload shall be a minimum of 35°. Springs shall have a trip load capability of 8228 INCH-LBS. Typical spring material composition shall be Carbon=0.40, Manganese=.70, Phosphorous=.020, sulfur=.020, silicon=.25, chromium=.80, Nickel=1.75, Molybdenum=.25. _____
7. Three (3) position adjustment on each individual torsion spring on the trip assembly to allow adjustment in various settings for road conditions. No exceptions. _____
8. Face of cutting edge trip section must be 201 Stainless Steel. No exceptions. _____

D. PUSH TUBE ASSEMBLY:

1. Push tube to be constructed of 4" x 4" x .38 square tube, 95.5" in length. Each end of the push tube shall be capped with a 10ga 3.25" x 3.25" plate. _____
2. Welded to the moldboard pushtube shall be (8) 5/8" x 3.5" x 7" pivot ears. Each ear shall be further reinforced with a 2" x 2" x .38 gusset. Pivot ears shall pin to moldboard assembly with 1-1/4" thick pins. _____
3. (2) Moldboard stabilizer strut mounting ears each constructed of (2) 5/8" plate approximately 10" x 13". _____
4. Center pushframe pivot constructed of (2) .38 x 36.5" x 8.5" plates. There shall be a 3.5" hole in each plate for a 5-1/2" x 3-1/2" OD x 2.52" ID bushing. Bushing shall be drilled and tapped for a 1/8" grease zerk. _____
5. Center pushframe pivot assembly shall also have (2) 3.75" stops for the a-frame assembly. _____
6. Push tube cylinder lugs, located on left and righ hand sides shall each be constructed of (2) 5/8" x 8-1/4" x 3-5/8" plates complete with a 1-1/4" pin hole. _____
7. Cylinder lugs shall be further reinforced with 3/8" x 2-3/4" x 3-1/4" gusset. _____
8. There shall be (2) chain lift lugs welded to the top of the push tube constructed of ½" x 3" x 4" plates. _____
9. Moldboard reversing shall be accomplished by (2) 3" rod x 3.5" bore x 16" stroke single acting cylinders. _____

10. Cylinder rods shall be nitride for increased corrosion resistance. Chromed rods shall be unacceptable. _____
11. Cylinder working pressure shall be 3000 PSI. _____
12. Cylinder shall be plumbed to an 1800 PSI cushioning valve to prevent damage when hitting obstructions. _____

E. A-FRAME:

1. Pivot capture plates shall consist of (2) plates constructed of 1" x 11" x 12-7/8" plates. These plates will be flame cute and have a 2.53" hole to pin the a-frame assembly the push-tube assembly. The top pivot capture plate shall be drilled and threaded for a ¾" capture bolt to prevent pin rotation. _____
2. Top main A-frame plate shall be constructed of 3/8" x 28" x 25-5/8" flame cut plate. The narrowest portion of the top plate shall remain a minimum of 12". Top plate shall also be flame cut to accept the reversing cylinder pins. Pin hole shall be 1.281" in diameter. Each pin holes shall be further reinforced with a 1" thick plate which is flame cut to accept reversing cylinder pin. _____
3. Bottom main a-frame plate shall be constructed of 3/8" x 28" x 25-5/8" flame cut plate. The narrowest portion of the top plate shall remain a minimum of 12". Bottom plate shall also be flame cut to accept the reversing cylinder pins. Pin hole shall be 1.281" in diameter. There shall be a 6" access hole for attaching the hitch swivel bolt. _____
4. The A-frame vertical side plates which tie the top and bottom plates into a boxed formation shall be constructed of ½" x 4" x 32" plate and formed to follow the contour the top and bottom plates. _____
5. The rear A-frame push plate shall be constructed of 1" x 6-3/4" x 33-5/8" plate. This plate shall be flame cut with a 1-9/16" hole to accept the plow hitch attachment bolt. _____
6. On the top side of the A-frame plate shall be a mounting plate to which attached is the reversing cylinder cushion valve. _____
7. Plow portion hitch must be Torlo/Arrowhead and fit existing Town of North Hempstead truck portion hitches. _____

F. PAINT:

1. All metal surfaces are to be phosphate washed to remove slag, splatter, oxide and oil residue. _____
2. Moldboard frame work must be powder-coated Highway Orange. _____
3. Push frame, "A" frame and other miscellaneous components are powder-coated black for increase paint durability. _____

CENTRAL HYDRAULIC SYSTEM

A. TYPE:

1. System to be of load sensing pressure-compensated type, pumping oil only when needed and in exact volume and pressure required --- no more, no less. _____
2. Pump to automatically revert to standby mode when no oil flow is required (No on/off switch). _____
3. Must be able to operate all equipment on truck simultaneously if necessary. No one function to interfere with any other. _____
4. System controls are to be electronic and air. _____

5. Operating speed of all functions must-be variable and adjustable. _____
6. One complete system to operate all functions. _____

B. HYDRAULIC PUMP AND POWER TAKE-OFF:

1. The hydraulic pump shall be an axial piston pressure and flow compensated load-sensing type. The pump shall have a displacement of 5.61cubic inches per revolution at maximum stroke which will deliver 23.7 GPM @ 1000 engine RPM. The pump shall have a minimum 2" inch suction line and ½" control drain line plumbed directly back to the reservoir. The pumps compensator shall have rear facing adjustments. The pump shall be rated for 5800 PSI maximum and 4800 PSI continuous. The pump shall have a Din type-mounting flange and a Din 5462 8-tooth shaft. Shall be a TXV pump or approved equal. A Chelsea 277 series hot shift PTO or approved equal that is mounted to the transmission shall drive the pump to operate whole system. _____
2. The system shall be designed so that when the float contacts close, the PTO will disengage and stop pump flow. An enunciator in the cab that is on a control panel will alert the driver that the PTO has been disengaged. The control panel will also incorporate an override switch wired to de-energize the shut down system to facilitate diagnostics and equipment storage. _____

C. HYDRAULIC VALVE:

1. Control valve shall be U.S. manufactured. Valve shall be a load sensing type with o-ring ports. Mid-inlet section porting will be #16 inlet, #20 outlet, #16 hoist section, #4 load sense port, and #10 or #12 for all other sections. The hoist section shall be stacked to one side of the mid-inlet and all other sections will be stacked on the other side. All ports shall be level with each other so as to lay flat on its base. There will be a main relief in the mid-inlet section that will be set at 3500 PSI to protect the system from being over pressurized. _____
2. Valve section to be arranged as follows:
3. Hoist, 4-way for a double acting cylinder with mid-inlet transition section. _____
4. Pressure reducing section., if needed. _____
5. Plow Lift, 4-way for a double acting cylinder with flow control. _____
6. Plow Angle, 4-way for a double acting cylinder with flow control. _____
7. Spin-A-Veyer section, consisting of two pressure compensated cartridges that are a single piece design with hardened cartridge bores and spools. These shall be operated independently via a 12 VDC pulse width modulated signal. Each valve shall have

heavy duty 7/16-20 UNF screw style manual overrides that are adjustable from no flow to full flow. These valves shall be mounted in a housing that is made of aluminum with gray anodizing for corrosion resistance and durability. The auger/conveyor shall be a 15 GPM spool and the spinner shall be a 7 GPM spool. No exceptions. _____

8. A plow float/balance valve must be provided and controlled with a dash mounted rocker switch for on/off. The plow float/balance can be turned off as needed. When in use, the valve will allow the valve to use a pressure reducing/relieving system to control the float/balance lifting pressure on the plow's lift arm assembly. Two solenoid valves wired together turn the valve off and on. One solenoid valve opens the inlet of the pressure reducing valve to the pump. The other solenoid valve opens the outlet of the pressure reducing/relieving valve to the lift port. Oil flowing in and out of the lift port is restricted with an orifice. _____

D. OPERATOR CONTROLS FOR DUMP BOY HOIST and SNOW PLOW:

1. The valve controls shall be a feathering remote air control with air shift actuators for valve. The dump lift and plow lift controls shall be single axis controls with lock in the center position to prevent accidental actuation. It shall be mounted in an adjustable tower next to the driver. There shall be a pressure protection valve to protect against loss of pressure in the primary system caused by a broken line or an air leak somewhere in the auxiliary system. There shall also be a FLR (filter, lubricator, and regulator) plumbed into the auxiliary air system to protect the air controls from contamination and being over pressurized. All the air tubing will be color coded to identify each individual hydraulic function from control to valve section. _____
2. The air control joystick must each have an illuminated head. No exceptions. _____

E. RESERVOIR/VALVE COMPARTMENT:

1. To be 35 gallon all-welded 201 stainless steel combination hydraulic oil reservoir and control valve mounting compartment. _____
2. The hydraulic reservoir will be constructed of 10-gauge stainless steel and be internally baffled. _____
3. Mounting bracket is to be designed and supplied by the reservoir supplier. _____
4. Mounting system should allow for a 1" frame clearance for frame obstructions. _____
5. Shall be mounted in a manner as to not transmit any truck torsional loads thru the tank. _____
6. The enclosure will use a gasket-less passive technology. (No rubber seals, gaskets, or weather stripping.) _____
7. The enclosure lid will be removable within seconds by one person without the use of tools. _____
8. All valve fittings, hose ends, filter, filler breather, sending units and any electrical connections are to be protected by enclosure cover. _____
9. The reservoir supplier will provide all valve fittings (JIC connections) and plumb the return line from the valve to the filter. _____

10. The cover will protect from both road and pressure washer spray. _____
11. The directional control valve must be easily accessible from all (6) sides without the use of tools. _____
12. Hose exit and entrance must allow for components to be mounted adjacent to the enclosure. _____
13. A 2” full flow brass ball valve shall be plumbed at the suction port of the tank. _____
14. A low oil/high temp sending unit shall be mounted in the reservoir. _____
15. Hydraulic oil filter shall be mounted in the reservoir. Hydraulic filter shall be a 16-micron absolute and rated for no less than 60 GPM. Filter shall be model TEF31016VG16SP-UG60E115 or prior approved equal and include visual and electrical bypass indicators. A warning light shall be mounted in the cab and wired to the electrical indicator. _____
16. The valve/tank assembly shall be prior approved equal. _____

F. Hydraulic Lines and Fittings:

1. Stainless steel tubing to be used under body and cab in lieu of hosing. Only hosing to be used is ends of stainless steel tubing to reach each function’s quick couplers or connection. Tubing shall be seamless #201 stainless steel construction with a minimum wall thickness of 0.065”. The ends must be flared to accommodate a 37 degree JIC fitting. The use of compression fittings is not Acceptable. Spacing of each tube to allow for material to fall between each tube. _____
2. All stainless tubing must be mounted in polyurethane poly green tube clamps. _____
3. All hoses to be wire braid reinforced with swaged on high pressure JIC 37 degree tapered seat end fittings. _____
4. All fittings & adapters to be forged steel (No tapered pipe fittings except on suction hose). _____
5. Hoses to front with 1/2" 100% stainless steel (no exceptions) quick couplers for power reversing plow. _____
6. Hoses to rear with 1/2" 100% stainless steel quick couplers for spreader (no exceptions). _____
7. Spreader stainless steel hose couplers to be mounted on either frame rail or pintle plate under dump body at rear. _____
8. Polymer dust plugs or caps on all couplers with retainer straps. _____
9. All pressure hoses except for plow & spinner to be 3/4" I.D. SAE 100R2. _____
10. Plow, spreader spinner, and prewet system pressure hoses to be 1/2" I.D.SAE 100R2. _____
11. Main pressure hose from pump to control valve shall be 1” Didiameter, 4-wire braid. No exception. _____
12. All return hoses to be SAE 100R2. _____
13. Suction hose to be minimum 2" I.D. SAE 100R4 spiral wire reinforced with long radius ells. _____
14. All hoses to be routed away from chassis exhaust whenever possible to protect against heat deterioration. _____
15. All hydraulic quick disconnect couplings must be stainless steel Aero-Quip FD45 series or prior approval; bulkhead mounted, and include attached male and female dust covers. Couplings to be

configured so as to eliminate confusion when coupling. No exceptions. _____

G. Spreader Controller:

1. Force America 5100ex open loop controller. No exceptions. _____

SNOW PLOW LIGHTS:

A. Truck-Lite brand LED model 80880 plow lights. _____

1. Mounted with custom fabricated 100% stainless steel brackets on truck fenders. Brackets must be painted black. _____
2. Plow lights to be wired into the truck's existing headlight circuit using the factory installed switch. _____
3. Plow lights must function in high and low beam modes using existing truck's dimmer switch. _____
4. Plow lights and truck chassis headlights must never operate at the same time. _____

LIGHTING & ELECTRICAL

All lighting and layout must meet all Federal, State, and DOT regulations. No exceptions _____

A. LED lighting system. _____

1. All marker, work, S/T/T and strobe lighting to be LED. _____
2. The four (4) spreader lights mounted under rear apron of combination body and must be on an independent rocker switch. _____
3. The two (2) chassis step mounted lights and must be on an independent rocker switch.. _____
4. Whelen brand model 50A03ZAR TIR6 and 5TSMAC surface mount kit, two (2) grill Mounted. Must be on an independent rocker switch with cabshield and rear bolster mounted amber lighting. No exceptions. _____
5. Whelen brand model 50A03ZAR TIR6, six (6) head. Four (4) rubber grommet mounted in cabshield and one (1) each rear bolster. Must be on the same rocker switch with grill mounted amber lighting. No exceptions. _____

B. Electronic Back-Up Alarm to be Preco series 300. _____

1. To automatically change volume to suit background noise. _____
2. Mounted to back side of pintle plate on a stainless bracket. _____

C. Body Up Indicator. _____

1. Sealed weatherproof proximity switch on hoist-frame. _____
2. Body up light shall illuminate using chassis dash mount switch. _____

D. All non- strobe wiring to be 7 wire trailer cable. Separate cable routed from in-cab to all non-strobe lights with sealed junction box at rear so all wiring connections are made either inside cab and in a sealed junction box. _____

E. One (1) solid stainless steel rod must be mounted under body and all electrical body lighting must be neatly run. Rod will be one piece and full length. No exceptions. _____

F. All wire connections shall be made in the chassis cab or by means of a waterproof junction box. In cab connections shall be made using vinyl

coated crimp connectors covered in weather resistant heat shrink tuning. There shall be no wire splices outside the cab. All wiring to junction box shall be resistant to abrasion, ozone, sunlight, chemicals and oil. The outer jacket shall be chlorinated polyethylene and be approved for submersion in water. The outer jacket shall be label with the cable identification wire gauge and number of conductors. Must be MSHA approved. All body lighting shall be supplied by a single sealed harness from the junction box and making the connection at the light by means of weather tight sealed connector. All strobe lights shall be included in the same harness and be connected by means of a Deutsch connector, no exceptions. _____

MISCELLANEOUS

A. 90 degree elbow extension on top of chassis vertical exhaust stack to clear cab protector and still route exhaust upward to be provided by chassis supplier and installed by body company. _____

B. Rear tire poly Fleet Maintenance fenders with stainless steel mounting tubes. _____

C. Upon installation of all components, truck must be delivered to the truck dealer for final inspection and prep. _____

D. Rear pintle plate shall have a 25ton pintle properly installed and secured. _____
   1. Mounted on reinforced 3/4" thick mounting plate at rear of chassis frame at designated clearance height to ground to be 29". Sides and bottom must be reinforced with ¾" x 2" flat stock mounted behind the pintle plate. _____
   2. Must include Safety two (2) 5/8" D-Rings, one (1) 7-wire flat plug and one (1) 6-wire plug. _____
   3. License plate light and bracket mounted to top corner on passenger side. _____

E. DOT approved 2" conspicuity tape on body bottom rub rails, rear corner posts, tailgate perimeter. All DOT necessary reflective decals installed as well. _____

F. Pull Tarp brand asphalt tarping system to be mounted in cabshield rear. Must recess ahead of front head sheet and cut into side plates of cabshield for lowest possible mounting. _____

G. Zeibart under coating to be sprayed up chassis frame rails, pintle plate and under chassis. _____

INSTALLATION AND WARRANTY

A. Minimum twenty-four (24) months, 100% parts and labor on components and installation. No deductible. _____

B. For warranty considerations and future availability of parts and service, the body company must be an authorized primary distributor for all major components they propose to furnish. Must furnish written proof from such said vendor upon request. _____

C. All equipment must be installed by a single body company, by their employees and at their regular location. _____

D. Installation of components is not to be subcontracted by body company to another installer. _____

E. No welding whatsoever is to be done on chassis frame between front of most forward spring hanger and rear of rearmost spring hanger. _____

F. No drilling whatsoever is to be done in frame rail flanges. _____

G. Body company to furnish operator's parts and service manuals for all components manufacturer's i.e., combination body, hoist, snow plow, salt spreader, central hydraulic system and strobe lights. _____

H. Completed vehicle must be certified by the body company as meeting all federal motor vehicle safety standard in effect at time of chassis production. _____

1. Approved NHTSA/FMVSS certification label must be furnished and located inside cab on driver's side. _____

I. Completed unit to comply with current OSHA regulations. _____

J. Body company must be registered with National Highway Traffic Safety Administration as a final stage manufacturer of motor vehicles as required by Federal Law. _____

K. Body company to conduct operator training session on body and equipment at the The Town garage after delivery of completed truck. _____

L. Delivered of completed vehicle must be within 75 days after delivery of cab chassis to up-fitter. _____

M. Body company must have ASE certified installer/s and show documentation at time of bid. No exceptions. _____

N. Body company to be registered and in good standing with National Truck Equipment Association (NTEA), be a MVP member, and be the authorized distributor for all equipment bid. _____

O. Body company must participate and provide documentation at time of bid for E-Verify®. This employment verification verification is a United States of America federally accredited verification system to insure all employees are legal residents. List Company ID#_____. No exceptions. _____

P. Combination Body, Snow Plow, and Snow Plow Hitch must be engineered and manufactured in the United States of America and all from the same manufacturer. No exceptions. _____

Q. Hydraulic schematic must be provided and laminated and placed inside the combination valve enclosure/combo tank lid. _____

R. A required pre-build meeting will occur after award of bid and prior to the start of installation. No exceptions. _____

S. The Town will inspect all equipment (plow, hitch, body etc prior to the start of installation. No exceptions. _____

OPTION # 1: V-Box Spreader Hydraulically Operated with Pre-Wetting, Slurry and Spreader Stand

V-BOX SPREADER

Heavy Duty 201 Stainless Steel V-Box Salt Spreader 3-in-1 V-Box for granular, prewetting and slurry system. No exceptions. _____

1. Capacity to be 6.9 yd^3 struck water level minimum. No exceptions. _____
2. Inside length to be 10 feet and side height of 56". _____
3. Inside top width to be 83-3/4". _____
4. Side slope to be 45^0 minimum. _____
5. Front & rear panels slope; rear 9^0, front 18^0. _____
6. Hopper seams to be continuous welded on inside. _____
7. Sides, ends, & side supports to be 10 gauge 201 SS. _____
8. Top edge of hopper is formed "J" channel 2" x 7/8". _____
9. Dual auger trough is to be 7 gauge 201 SS. _____

10. Long sills to be 7 gauge 201 SS; continuous welded to side sheet. _____
11. Cross sills to be formed 7 gauge 201 SS welded to side supports. _____
12. 7GA 201 SS inverted vee mounted over the dual augers with appropriate frame work for stability. _____
13. Lift hooks on each corner are 1/4" x 2" formed 201 SS plate. _____
14. All hardware shall be 201 stainless steel. _____
15. Hydraulic inter-lock auger shut-off system to shut augers down when cover grates are opened—interlock plumbed at factory. _____
16. 3/8” rod on 3/8” rod top grate screens with anti-freeze hinges are required equipment with auger conveyor v-box units. _____
17. A full width rear 201 stainless steel light bar shall be mounted with nine (9) LED lights. Shall include S/T/T and Amber LED Strobes. Shall have junction box and plug. No exceptions. _____
18. Spinner light mounted on driver’s side rear on the stainless steel bumper. _____
19. Heavy duty lighted rocker switch on control console for spinner light. _____
20. One (1) stainless steel ladder with 8 rear steps mounted at the rear of spreader on right side allowing access from ground to top of spreader. _____
21. Extend front auger bearings grease tubes to rear of spreader. Stainless steel 1/8” piping . No exception. _____

B. Minimum Auger Requirements

1. Dual 7” diameter variable pitch auger conveying system. The augers must be counter rotating to help prevent bridging of material. Dual augers extend 2 feet past end of hopper to allow discharge into spinner chute. No exceptions. _____
2. Each auger is driven at the rear by a 24.7 CIR hydraulic motor which is directly coupled to a 3.6:1 planetary gearcase with 2.5 in. dia. shaft coupled to the end of the auger shaft with a 7/8” cross bolt. _____
3. Gearcase is directly coupled to end of auger shaft. _____
4. Auger shaft connect at front with a 2” 2 bolt flange bearing. _____
5. Must be an one inch OD stainless steel pipe mounted between/above augers and under the inverted vee to allow for future use of liquid. Pipe must have holes evenly spaced on both sides to allow for spraying of liquid. All hardware must be stainless steel. At the rear of the spreader wall, behind the pipe, there must be a Banjo valve manually operated to close and open the liquid system. No exceptions. _____

C. Spinner Assembly

1. 10 gauge 201SS enclosed design. _____
2. (4) position telescopic adjustment; 32-3/4”-41” below mounting surface. _____
3. Two (2) baffles shall be positioned at the bottom of the spinner chute to direct flow of materials onto spinner disc for directional spread pattern adjustment. _____
4. The two (2) spread pattern adjustment baffles shall each have 5 (five) positions of adjustment without the use of tools. The baffle(s) shall utilize a 201SS notched bar that pins into position

for a positive lock. _____

5. Four (4) bottom spinner deflectors shall be over-lapping to prevent loss of granular material when the deflectors are raised. Front deflector is fixed. _____
6. The bottom over-lapping spinner deflectors shall have four (4) positions of rod and pin adjustment without tools. Chain adjustable deflectors are not acceptable. _____
7. The bottom over-lapping spinner deflectors shall have the capability to be easily removed and/or replaced without tools. _____
8. 20" diameter poly spinner disc to have replaceable machined hub. _____
9. Six (6) vanes built into poly spinner disc. _____
10. Spinner hydraulic motor shall mount directly on top of spinner disc. Bottom mount motor or drive shaft with bearings not acceptable. _____
11. The top mounted spinner motor shall be enclosed in the spinner chute to maximize granular material flow to the spinner disc. For serviceability, the spinner chute shall have open access to the spinner motor. _____
12. A spinner bypass chute shall be provided that allows for the stationary unloading of granular material. When in the pivoted "down" position, the chute shall provide complete bypass of the spinner and bottom deflectors. When in the "up" position, the chute shall become part of the enclosed spinner chute providing granular material flow to the spinner. The bypass chute shall have a quick latch system pinning into position without the use of tools. _____

PRE-WETTING and SLURRY SYSTEM

A. Hydraulically driven system of designated valve section. _____

1. All components are mounted in a sealed, corrosion resistant, molded fiberglass housing with hinged cover. _____
2. Hydraulic drive motor is 1.21 CIR geroler type with appropriate sized Flow Meter. _____
3. Liquid pump is a 8.2 GPM @ 1725 RPM Roller Pump of corrosion resistant materials. _____
4. All tubing is stainless steel with corrosion resistant JIC fittings. _____
5. Liquid output is controlled by an adjustable flow control valve with dial on control modular in cab that also houses granular outputs. _____

B. Reservoir

1. (2) 200-gallon rotation molded medium density .375" polyethylene tank with 5" diameter cap. Includes sump for complete drainage. _____
2. Replaceable screen line strainer. _____
3. Corrosion resistant shut off valves. _____
4. Reservoir tank is angle formed to allow for mounting on the side of a slip-in v-box. _____
5. Supplied with bulk tank fill quick couplings. Internal baffle. _____

D. Metering Orifice and Slurry Tube

1. All bolt-on (no welding required) brackets, hardware, and fittings supplied. _____
2. Variable displacement orifice provides an extended range of

material outputs located in spinner chute. _____

3. 2 variable displacement orifice 22” wide, vented internal at top of spinner chute. _____
4. Spreader shall have a provision for a stainless steel liquid injection tube 1-1/2” OD which is to be located on the underside of the inverted vee. The injection tube will provide liquid which will be agitated by the spreader augers to create a salt slurry mixture. The liquid for the slurry generation process shall come from the liquid prewet system. _____

E. Spreader Stand

1. A self-contained storage stand shall be permanently fastened to the spreader by bolting on. The stand shall be fabricated of stainless steel and designed to support the full weight of the spreader when removed from the truck with only small amounts of material remaining in the hopper or tanks. No exceptions. _____
2. The front of the stand shall be equipped with steel caster wheels with appropriate bushings and grease fittings to allow the spreader to roll into the dump body of the truck. _____
3. Front legs shall be a minimum 4” x 3” x ¼” stainless steel tubing designed to fold up along side of the spreader when it is installed in the truck. There shall be a means to lock the legs in a vertical position when the stand is in use. _____
4. Rear legs shall be stainless steel tubing designed to telescope or pivot up and out of the way once the spreader in the dump body. Legs shall be minimum 4” x 4” x ¼”. _____
5. The base of the legs shall provide a big enough footprint to properly support the spreader when in storage. _____
6. The rear shall have a complete stainless steel construction bumper mounted to the spreader stand to protect the spinner assembly. The structure shall form a triangle by mounting on two points to the spreader stand with a stainless steel round tube at the rear. Rear of bumper shall be wider than spinner assembly and have conspicuity tape full width. No exceptions. _____

OPTION # 2: V-Box Spreader Hydraulically Operated

V-BOX SPREADER

Heavy Duty 201 Stainless Steel V-Box Salt Spreader V-Box for granular. No exceptions. _____

1. Capacity to be 6.9 yd^3 struck water level minimum. No exceptions. _____
2. Inside length to be 10 feet and side height of 56”. _____
3. Inside top width to be 83-3/4”. _____
4. Side slope to be 45^0 minimum. _____
5. Front & rear panels slope; rear 9^0, front 18^0. _____
6. Hopper seams to be continuous welded on inside. _____
7. Sides, ends, & side supports to be 10 gauge 201 SS. _____
8. Top edge of hopper is formed "J" channel 2" x 7/8". _____
9. Dual auger trough is to be 7 gauge 201 SS. _____
10. Long sills to be 7 gauge 201 SS; continuous welded to side sheet. _____
11. Cross sills to be formed 7 gauge 201 SS welded to side supports. _____

12. 7GA 201 SS inverted vee mounted over the dual augers with appropriate frame work for stability. _____
13. Lift hooks on each corner are 1/4" x 2" formed 201 SS plate. _____
14. All hardware shall be 201 stainless steel. _____
15. Hydraulic inter-lock auger shut-off system to shut augers down when cover grates are opened—interlock plumbed at factory. _____
16. 3/8” rod on 3/8” rod top grate screens with anti-freeze hinges are required equipment with auger conveyor v-box units. _____
17. A full width rear 201 stainless steel light bar shall be mounted with nine (9) LED lights. Shall include S/T/T and Amber LED Strobes. Shall have junction box and plug. No exceptions. _____
18. Spinner light mounted on driver’s side rear on the stainless steel bumper. _____
19. Heavy duty lighted rocker switch on control console for spinner light. _____
20. One (1) stainless steel ladder with 8 rear steps mounted at the rear of spreader on right side allowing access from ground to top of spreader. _____
22. Extend front auger bearings grease tubes to rear of spreader. Stainless steel 1/8” piping . No exception. _____

B. Minimum Auger Requirements

1. Dual 7” diameter variable pitch auger conveying system. The augers must be counter rotating to help prevent bridging of material. Dual augers extend 2 feet past end of hopper to allow discharge into spinner chute. No exceptions. _____
2. Each auger is driven at the rear by a 24.7 CIR hydraulic motor which is directly coupled to a 3.6:1 planetary gearcase with 2.5 in. dia. shaft coupled to the end of the auger shaft with a 7/8” cross bolt. _____
3. Gearcase is directly coupled to end of auger shaft. _____
4. Auger shaft connect at front with a 2” 2 bolt flange bearing. _____

C. Spinner Assembly

1. 10 gauge 201SS enclosed design. _____
2. (4) position telescopic adjustment; 32-3/4”-41” below mounting surface. _____
3. Two (2) baffles shall be positioned at the bottom of the spinner chute to direct flow of materials onto spinner disc for directional spread pattern adjustment. _____
4. The two (2) spread pattern adjustment baffles shall each have 5 (five) positions of adjustment without the use of tools. The baffle(s) shall utilize a 201SS notched bar that pins into position for a positive lock. _____
5. Four (4) bottom spinner deflectors shall be over-lapping to prevent loss of granular material when the deflectors are raised. Front deflector is fixed. _____
6. The bottom over-lapping spinner deflectors shall have four (4) positions of rod and pin adjustment without tools. Chain adjustable deflectors are not acceptable. _____
7. The bottom over-lapping spinner deflectors shall have the capability to be easily removed and/or replaced without tools. _____

8. 20" diameter poly spinner disc to have replaceable machined hub. _____
9. Six (6) vanes built into poly spinner disc. _____
10. Spinner hydraulic motor shall mount directly on top of spinner disc. Bottom mount motor or drive shaft with bearings not acceptable. _____
11. The top mounted spinner motor shall be enclosed in the spinner chute to maximize granular material flow to the spinner disc. For serviceability, the spinner chute shall have open access to the spinner motor. _____
12. A spinner bypass chute shall be provided that allows for the stationary unloading of granular material. When in the pivoted "down" position, the chute shall provide complete bypass of the spinner and bottom deflectors. When in the "up" position, the chute shall become part of the enclosed spinner chute providing granular material flow to the spinner. The bypass chute shall have a quick latch system pinning into position without the use of tools. _____

OPTION # 3: V-Box Spreader Gas Pony Motor Operated

V-BOX SPREADER

Heavy Duty 201 Stainless Steel V-Box Salt Spreader V-Box for granular. No exceptions. _____

1. Capacity to be 6.9 yd^3 struck water level minimum. No exceptions. _____
2. Inside length to be 10 feet and side height of 56". _____
3. Inside top width to be 83-3/4". _____
4. Side slope to be 45^0 minimum. _____
5. Front & rear panels slope; rear 9^0, front 18^0. _____
6. Hopper seams to be continuous welded on inside. _____
7. Sides, ends, & side supports to be 10 gauge 201 SS. _____
8. Top edge of hopper is formed "J" channel 2" x 7/8". _____
9. Body floor is 7 gauge 201 stainless steel bolt-in replaceable. _____
10. Long sills to be 7 gauge 201 SS; continuous welded to side sheet. _____
11. Cross sills to be formed 7 gauge 201 SS welded to side supports. _____
12. 7GA 201 SS inverted vee mounted over the chain with appropriate frame work for stability. _____
13. Lift hooks on each corner are 1/4" x 2" formed 201 SS plate. _____
14. All hardware shall be 201 stainless steel. _____
15. Feedgate is 10 gauge 201 SS 10" x 18" with screwjack adjustable from curbside. _____
16. 3/8" rod on 3/8" rod top grate screens with anti-freeze hinges are required equipment with auger conveyor v-box units. _____
17. A full width rear 201 stainless steel light bar shall be mounted with nine (9) LED lights. Shall include S/T/T and Amber LED Strobes. Shall have junction box and plug. No exceptions. _____
18. Spinner light mounted on driver's side rear on the stainless steel bumper. _____
19. Heavy duty lighted rocker switch on control console for spinner light. _____
20. One (1) stainless steel ladder with 8 rear steps mounted at the rear of spreader on right side allowing access from ground to top of

spreader. _____

21. Extend front idler bearing grease tubes to rear of spreader. Stainless steel 1/8” piping . No exception. _____
22. Extend idler bearings adjustment to rear of spreader. No exception. _____

B. Minimum Conveyor Requirements

1. Rear discharge pintle chain conveyor to be 24” wide. _____
2. Heat treated alloy steel chain; 21,000 lbs./strand. _____
3. Chain pins to be 7/16" diameter with 2-1/4" pitch. _____
4. Cross bars to be 3/8" x 1-1/2" on 4-1/2" centers and lay flat on floor. _____
5. 4” spring loaded idler adjustment. _____
6. Chain tension adjusting rod to be 5/8" diameter stainless steel. _____
7. Drive shaft to be 2" diameter TG&P alloy steel, 102,000 psi tensile strength, mounted in sealed bearings. _____
8. Idler shaft to be 2” diameter alloy steel mounted in sealed ball. _____
9. Conveyor sprockets to be self-cleaning 8 tooth cast iron, keyed to drive and idler shafts. _____

C. Conveyor Gear Case. _____

1. Hi-tensile cast iron housing; oil tight with breather and oil level Plug. _____
2. 50:1 reduction; steel worm gear to be hardened and ground; aluminum bronze output gear; 90,000 lbs. tensile strength. _____
3. Output bearings to be tapered roller type. _____
4. Extended input shaft to accept optional application rate sensor. _____
5. Hydraulic motor mounts directly to gear-case eliminating torque arms, sprockets, chains, and couplers. _____

D. Spinner Assembly

1. 10 gauge 201SS enclosed design. _____
2. (4) position telescopic adjustment; 32-3/4”-41” below mounting surface. _____
3. Two (2) baffles shall be positioned at the bottom of the spinner chute to direct flow of materials onto spinner disc for directional spread pattern adjustment. _____
4. The two (2) spread pattern adjustment baffles shall each have 5 (five) positions of adjustment without the use of tools. The baffle(s) shall utilize a 201SS notched bar that pins into position for a positive lock. _____
5. Four (4) bottom spinner deflectors shall be over-lapping to prevent loss of granular material when the deflectors are raised. Front deflector is fixed. _____
6. The bottom over-lapping spinner deflectors shall have four (4) positions of rod and pin adjustment without tools. Chain adjustable deflectors are not acceptable. _____
7. The bottom over-lapping spinner deflectors shall have the capability to be easily removed and/or replaced without tools. _____
8. 20" diameter poly spinner disc to have replaceable machined hub. _____
9. Six (6) vanes built into poly spinner disc. _____

10. Spinner hydraulic motor shall mount directly on top of spinner disc. Bottom mount motor or drive shaft with bearings not acceptable. _____
11. The top mounted spinner motor shall be enclosed in the spinner chute to maximize granular material flow to the spinner disc. For serviceability, the spinner chute shall have open access to the spinner motor. _____
12. A spinner bypass chute shall be provided that allows for the stationary unloading of granular material. When in the pivoted "down" position, the chute shall provide complete bypass of the spinner and bottom deflectors. When in the "up" position, the chute shall become part of the enclosed spinner chute providing granular material flow to the spinner. The bypass chute shall have a quick latch system pinning into position without the use of tools. _____

E. Gas Engine Drive

1. 18HP Honda gas engine to operate the V-Box. _____
2. Twin cylinder. _____
3. Air cooled. _____
4. Electric start. _____
5. Battery not included. _____
6. Engine must be plumbed at factory to operate spreader. _____

OPTION # 4: V-Box Spreader Diesel Pony Motor Operated

V-BOX SPREADER

Heavy Duty 201 Stainless Steel V-Box Salt Spreader V-Box for granular. No exceptions. _____

1. Capacity to be 6.9 yd^3 struck water level minimum. No exceptions. _____
2. Inside length to be 10 feet and side height of 56". _____
3. Inside top width to be 83-3/4". _____
4. Side slope to be 45^0 minimum. _____
5. Front & rear panels slope; rear 9^0, front 18^0. _____
6. Hopper seams to be continuous welded on inside. _____
7. Sides, ends, & side supports to be 10 gauge 201 SS. _____
8. Top edge of hopper is formed "J" channel 2" x 7/8". _____
9. Body floor is 7 gauge 201 stainless steel bolt-in replaceable. _____
10. Long sills to be 7 gauge 201 SS; continuous welded to side sheet. _____
11. Cross sills to be formed 7 gauge 201 SS welded to side supports. _____
12. 7GA 201 SS inverted vee mounted over the chain with appropriate frame work for stability. _____
13. Lift hooks on each corner are 1/4" x 2" formed 201 SS plate. _____
14. All hardware shall be 201 stainless steel. _____
15. Feedgate is 10 gauge 201 SS 10" x 18" with screwjack adjustable from curbside. _____
16. 3/8" rod on 3/8" rod top grate screens with anti-freeze hinges are required equipment with auger conveyor v-box units. _____
17. A full width rear 201 stainless steel light bar shall be mounted with nine (9) LED lights. Shall include S/T/T and Amber LED Strobes. Shall have junction box and plug. No exceptions. _____

18. Spinner light mounted on driver's side rear on the stainless steel bumper. _____
19. Heavy duty lighted rocker switch on control console for spinner light. _____
20. One (1) stainless steel ladder with 8 rear steps mounted at the rear of spreader on right side allowing access from ground to top of spreader. _____
21. Extend front idler bearing grease tubes to rear of spreader. Stainless steel 1/8" piping . No exception. _____
23. Extend idler bearings adjustment to rear of spreader. No exception. _____

B. Minimum Conveyor Requirements

1. Rear discharge pintle chain conveyor to be 24" wide. _____
2. Heat treated alloy steel chain; 21,000 lbs./strand. _____
3. Chain pins to be 7/16" diameter with 2-1/4" pitch. _____
4. Cross bars to be 3/8" x 1-1/2" on 4-1/2" centers and lay flat on floor. _____
5. 4" spring loaded idler adjustment. _____
6. Chain tension adjusting rod to be 5/8" diameter stainless steel. _____
7. Drive shaft to be 2" diameter TG&P alloy steel, 102,000 psi tensile strength, mounted in sealed bearings. _____
8. Idler shaft to be 2" diameter alloy steel mounted in sealed ball. _____
9. Conveyor sprockets to be self-cleaning 8 tooth cast iron, keyed to drive and idler shafts. _____

C. Conveyor Gear Case. _____

1. Hi-tensile cast iron housing; oil tight with breather and oil level Plug. _____
2. 50:1 reduction; steel worm gear to be hardened and ground; aluminum bronze output gear; 90,000 lbs. tensile strength. _____
3. Output bearings to be tapered roller type. _____
4. Extended input shaft to accept optional application rate sensor. _____
5. Hydraulic motor mounts directly to gear-case eliminating torque arms, sprockets, chains, and couplers. _____

D. Spinner Assembly

1. 10 gauge 201SS enclosed design. _____
2. (4) position telescopic adjustment; 32-3/4"-41" below mounting surface. _____
3. Two (2) baffles shall be positioned at the bottom of the spinner chute to direct flow of materials onto spinner disc for directional spread pattern adjustment. _____
4. The two (2) spread pattern adjustment baffles shall each have 5 (five) positions of adjustment without the use of tools. The baffle(s) shall utilize a 201SS notched bar that pins into position for a positive lock. _____
5. Four (4) bottom spinner deflectors shall be over-lapping to prevent loss of granular material when the deflectors are raised. Front deflector is fixed. _____
6. The bottom over-lapping spinner deflectors shall have four (4) positions of rod and pin adjustment without tools. Chain adjustable

deflectors are not acceptable. _____

7. The bottom over-lapping spinner deflectors shall have the capability to be easily removed and/or replaced without tools. _____
8. 20" diameter poly spinner disc to have replaceable machined hub. _____
9. Six (6) vanes built into poly spinner disc. _____
10. Spinner hydraulic motor shall mount directly on top of spinner disc. Bottom mount motor or drive shaft with bearings not acceptable. _____
11. The top mounted spinner motor shall be enclosed in the spinner chute to maximize granular material flow to the spinner disc. For serviceability, the spinner chute shall have open access to the spinner motor. _____
12. A spinner bypass chute shall be provided that allows for the stationary unloading of granular material. When in the pivoted "down" position, the chute shall provide complete bypass of the spinner and bottom deflectors. When in the "up" position, the chute shall become part of the enclosed spinner chute providing granular material flow to the spinner. The bypass chute shall have a quick latch system pinning into position without the use of tools. _____

E. Diesel Engine Drive

1. 21.1HP Kohler diesel engine model KD6252 or current model for operating V-Box. _____
2. Twin cylinder four stroke. _____
3. Air cooled. _____
4. Electric start. _____
5. Battery not included. _____
6. Engine must be plumbed at factory to operate spreader. _____
7. Direct injection. _____
8. Peak torque lbs at 38.7ft. _____

OPTION # 5: Spreader Stand

A. Spreader Stand

1. A self-contained storage stand shall be permanently fastened to the spreader by bolting on. The stand shall be fabricated of stain-less steel and designed to support the full weight of the spreader when removed from the truck with only small amounts of material remaining in the hopper or tanks. No exceptions. _____
2. The front of the stand shall be equipped with steel caster wheels with appropriate bushings and grease fittings to allow the spreader to roll into the dump body of the truck. _____
3. Front legs shall be a minimum 4" x 3" x ¼" stainless steel tubing designed to fold up along side of the spreader when it is installed in the truck. There shall be a means to lock the legs in a vertical position when the stand is in use. _____
4. Rear legs shall be stainless steel tubing designed to telescope or pivot up and out of the way once the spreader in the dump body. Legs shall be minimum 4" x 4" x ¼". _____
5. The base of the legs shall provide a big enough footprint to properly support the spreader when in storage. _____

6. The rear shall have a complete stainless steel construction bumper mounted to the spreader stand to protect the spinner assembly. The structure shall form a triangle by mounting on two points to the spreader stand with a stainless steel round tube at the rear. Rear of bumper shall be wider than spinner assembly and have conspicuity tape full width. No exceptions. _____

OPTION # 6: For Package "C" Combination Body

A. Combination Body Dual 7" augers in lieu of chain drive system.

1. Dual 7" diameter variable pitch auger conveying system. The augers must be counter rotating to help prevent bridging of material. Dual augers extend 2 feet past end of hopper to allow discharge into spinner chute. No exceptions. _____
2. Each auger is driven at the rear by a 24.7 CIR hydraulic motor which is directly coupled to a 3.6:1 planetary gearcase with 2.5 in. dia. shaft coupled to the end of the auger shaft with a 7/8" cross bolt. _____
3. Gearcase is directly coupled to end of auger shaft. _____
4. Auger shaft connect at front with a 2" 2 bolt flange bearing. _____

EXCEPTION (LIST ALL BY SECTION AND ITEM #):

_____

_____

_____

_____

_____

The Town of North Hempstead reserves the right to award the base bid and none or some of the options.

Notice to all Bidders:

- Bidder must make notations at each item indicating compliance or deviation by writing "Comply" or "Exception" next to each line item.
- Do not use "check marks" or "X marks" as "Comply" or "Exception."
- All "exceptions" and "Deviations" must be explained in detail on as described in this bid packet.
- These specifications are not intended to preclude bidding components with exceptions that are equal in quality and performance to the products described in the specifications.
- All factory standard equipment and parts should be used where possible.
- The Town of North Hempstead reserves the right to reject any and all bids, waive any informalities or irregularities in the bids received and to accept any bid which it deems most favorable to The Town.

Following these instructions is essential for proper bid evaluation. Failure to do so will result in the rejection of a bid for lack of information. Town of North Hempstead will take all necessary steps to properly evaluate each bid including contacting one or more bidders for clarification and/or consultation.

SECTION	SPECIFICATION DETAIL	COMPLY	
		Comply	Exception
PACKAGE A: 6 WHEEL TRUCK, DUMP BODY, PLOW, HITCH, CENTRAL HYDARAULICS FOR HI-WAY SPREADER			
Description: Chassis Specifications For A New 2016 GU712 Chassis With SCR Technology To Meet 2014 Emissions Of 0.2 Grams Of Nox Or Equal			
Chassis/ Frame & Wheelbase:	Chassis: 2016 Mack GU712 Chassis Or Equal		
	Frame Rails, 11.811" x 3.54" x 0.44" High Strength 120,000 PSI Steel - 20" Integral Front Frame Extension For Snow Plow Mount		
	Single Chassis Rail		
	Section Modulus 23.5 cu In/Rbm 2,820,000 In Lbs. Per Rail		
	Wheelbase - 180"WB, Center of Axle - 92"CA,		
	Platform - 154"LP, After Frame - 62"AF		
MAXIMUM GVW & AXLE RATINGS:	Gross Vehicle Weight Rating Of 48,000lbs.		
	Front Axle Capacity - 18,000 Lbs.		
	Rear Single Drive Axle Capacity - 30,000lbs		
	Front Steer Axle-Gross Axle Weight Rating - 18,000lbs		
	Rear Drive Axle –Gross Axle Weight Rating - 30,000lbs		
ENGINE:	MP7-405M 405 Hp @ 1500-1900 Rpm. Operating range 1100-2100 1480 Lb. Ft. Max. Torque @ 1050-1350 Rpm High Torque Rise 60%		
	11.9 Liter, 659 Cu. In Piston Displacement.		
	EPA Carb Emission Certified For 2014 Utilizing Selective Catalyst Reduction(Scr).Engines Utilizing Government Credits Or Penalties Are Not Acceptable		
ENGINE EQUIPMENT:	Air Compressor, Meritor/Wabco 318 18.7 Cfm		
	Engine Mounted Oil Check And Fill		
	Mack Powerleash Engine Brake		
	Alternator, Delco 12V 130A (24SI) Brush-Type		
	(3) 12volt Mack Grp31 Batteries With 3000 CCA Threaded Post		
	Air Cleaner, 11" x 30" Under Hood Single Element Dry Type		
	12 Volt Heavy Duty Starter-Delco 39mt-Mxt		
	Electronic Starter Interlock System		

	Coolant Protection To Below –34 Degrees Fahrenheit With Coolant Conditioner Filter		
ENGINE EQUIPMENT:	Engine Block Heater, Gomack (Phillips) – 1500 Watt 120 Volt With Intake Grid Heater mounted under driver side door.		
	Starting Aid Engine Electric Preheater		
	Engine Hoses And Tubing, Silicone		
	Diesel Particulate Filter /Scr System Horizontal-Under Right Side Of Cab-Clear Back Of Cab Option		
	Exhaust After –Treatment System Diesel Particulate Filter Ceramic Catalyzed, And Scr Technology To Meet 0.2 Grams Of Nox		
	Exhaust, Side Of Cab Single (R/S) Vertical Straight Exhaust Stack		
	Poly-V Fan Belt With Automatic Tensioner		
	Fan Drive, Behr Fan And Electronic Modulating Fan Drive		
	Flywheel ,Light Weight Aluminum		
	Fuel-Water Separator: Davco 382, (Fluid Heater) Fuel Heater/Water Separator w/vendor Prim & Mack Sec fuel Filter		
	Tether device Furnish Cap Retainer for Oil Fill & Radiator		
	Hand Primer Pump		
	Hoses, Radiator/Heater Mack Brand EPDM Radiator & Heater Hoses		
	Injection Pump- Electronic Engine Control		
	Radiator, Aluminum Core		
TRANSMISSION:	Allison 4500-RDS -6 (4.70/0.67) Rugged Duty Series Gen 5 Includes transmission Cooler, External Oil Cooler, Internal Filter, and Oil Level Sensor		
	Driveline-Main, Meritor 18 MXL "Xtended Lube"		
	Transmission Bell Housing, Aluminum		
	Synthetic Transmission Fluid		
CAB EQUIPMENT:	Air Conditioner/Heater, (Bergstrom) Integral w/heater combination		
	Air Restriction Monitor, Air Cleaner Intake Mtd		
	Instrument Cluster Display, Co-Pilot Driver Display(4.5”Diagonal Graphic Lcd Display W/4-Button Stalk Control)(Includes Guardog Routine Maintenance Monitoring)		
	Conventional Cab (Welded Steel Galvanized Shell) with Air Ride Suspension(Aluminum Cabs Not Acceptable)		
	Fiberglass Tilt Hood With Safety Lock And Hood Hatch For Maintenance Checks		
	Cigar Lighter On Instrument Panel		
	Overhead Console with 2 Storage Compartments and Power Leads		
	Dome Light, (4) W/Self-Contained Switch		
	Diagonal Handle On Driver Side Door Panel		
	AM/FM Premium Stero, CD-Player, MP3, Weatherband, Handsfree Interface, Bluetooth		
	Driver and Passenger side Power door locks and Windows		
	Gauge, Air Pressure		
	Gauge, Voltmeter		

	Gauge Cluster, Exhaust Pyrometer, Engine Oil, And Transmission Oil Temperature Gauges		
CAB EQUIPMENT:	Gauge, Engine Coolant Temperature		
	Gauge, Engine Oil Pressure		
	Gauge, Fuel Level		
	Gauges, English Display		
	Gauge, Speedometer w/Trip Odometer (Electronic 1% Accuracy)		
	Engine Tachometer Electronic With Hourmeter		
	Glass-Cab Window, Safety Tinted Windshield, Side And Rear Windows		
	Grab Handles, Aluminum, Rh & Lh Behind Door		
	Grille, Bright Finish With Bug Screen		
	Headlamp Bezel- Molded Plastic		
	High Beam Indicator Light		
	Body Builder Access Connector Inside Of Cab For Body Controls		
	Horn-Air, (2) Mounted On Cab Roof		
	Horn- Electric, Single Tone		
	Identification/Clearance Lights, (5) TruckLite LED Chrome Bullet Type Lamp		
	Instrument Panel, Gray With Black Gage Bezel		
	Interior Trim Level, (Grey) Features: Padded Vinyl Headliner		
	Rear Panel With Storage Pouch, Polyurethane Rubber Padded floor Mat		
	2 Cup Holders Mounted At Bottom Of Dash (Center)		
	Chassis Keyed Alike- 4 Keys		
	Heated Mirrors-Exterior, West Coast, Rh & Lh Bright Finish		
	Mirrors – Convex Type, Bright Finish, Lh & Rh 8.0” Dia; Mounted Below Lower Arm Of West Coast Mirror		
	Proximity Mirror Rect Convex Above Rh Door Window		
	Right Side Door Peep Window		
	Exterior Sun Visor Fiberglass (Cab Color)		
	Rear Window (Fixed Type)		
	Seat - Driver, Bostrom Talladega 915 (Mid-Back) Air Suspension		
	Seat – Rider Bostrom Mid Back Stationary with Integral Storage Compartment		
	Seat Covering, All Vinyl		
	Seat Belts, Lap And Shoulder w/Cab Mounted Shoulder Belt		
	Sun visor –Interior, Both Sides (Padded Vinyl)		
	Starter Switch, Key Type		
	Steering Wheel, 18” Two Spoke Urethane Grip		
	Windshield Washers, Electric, Wiper Mounted W/Reservoir Back Of Cab		
CAB EQUIPMENT:	Windshield Wipers, Sprague 2 Speed Electric Motor w/Intermittent feature		
	Dash Control/Power Supply/Local Installation Plow Lamps W/Lead Furnish At Grille With 2w/3w Weather Pack		
FRAME EQUIPMENT/ FUEL TANKS:	Bumper – Front, Extended Swept Back -Steel Channel		
	Crossmembers, Steel Huck Bolted HD Back-To-Back Channel		

	Flaps – Wheel (Front) Black Poly Armor		
	Frame rail End Squared		
	Towing Device – Front, (2) Hooks		
	Fuel Tank – Lh, 72 Gallon Aluminum with 8.7 Gallon Def Fluid Tank-(Clear Back Of Cab Package)		
FRONT AXLE/ EQUIPMENT/ TIRES:	Front Axle, FXL18 - 18,000 Lbs. Capacity-Sealed Kingpins - Maintenance Free		
	Tire Brand/Type – Front, Bridgestone – Tubeless Radial, 315/80R22.5 20 Ply. M860A (All Position)		
	Wheel – Front, Steel Disc 10 Hole Hub Piloted 22.5" x 9.0"		
	Brakes – Front, Meritor “S” Cam Type 16.5” X 6” Q+		
	Brake Drums – Front, Cast Outboard Mounted		
	Dust Shields – Front Brake, Furnish		
	Oil Seals – Front Wheels, Chicago Rawhide (Scotseal)		
	Front Axle Shock Absorbers		
	Slack Adjusters – Front, Haldex – Automatic		
	Springs – Front, Mack Multileaf 18,000 Lb.		
	Spring Build-Up, RH side for Wing Plow Applications		
	Steering Box, Sheppard SD110 with Tilt and Telescopic Steering Column		
REAR AXLE/ EQUIPMENT/ TIRES / RATIOS:	Rear Axle, Meritor RS-30-185 - 30,000 Lbs. Capacity		
	Suspension - Rear, 30,000 Lbs. Multileaf w/Helpers		
	Single Reduction Rear End Gears		
	Locking Main Differential, Driver Controlled		
	Tire Brand/Type – Rear, Bridgestone – Tubeless Radial (4) 315/80R22.5 20 Ply (M860A Tread)		
	Spring Brake Chambers – Vender, Mgm Tr-T Tamper Resistant		
	Spring Brake Chambers, Type 36/36 Rear		
	Carrier/Ratio- Rear Axle, Malleable Housing, 5.63 Ratio		
	Wheels – Rear, Steel Disc 10 Hole Hub Piloted 22.5" x 8.25"		
	Brakes – Rear, Meritor-Cam - 16.5” x 7” P Brakes		
	Brake Drums – Rear, Cast Outboard Mounted		
	Dust Shields – Rear Brake, Furnish		
	Oil Seals, Premium Hub		
	Slack Adjusters – Rear, Haldex – Automatic		
	Spring Brake Chambers-Quantity (2) Chambers Double Diaphragm Type		
AIR/BRAKE:	Air Reservoirs, Steel - One Supply (Wet) Tank		
	Brake Control System-Two Valve Dual Brake System-Trailer Supply With Hand Control For Trailer-Trailer Air Connections To Rear Pintle Plate, Trailer Electrical Harness To Rear For trailer Lights		
	Air Dryer-Meritor/Wabco 1200 Heated With Coalescing Oil Filter		
	Anti-Lock Brake System, Bendix Without Traction Control		
	Automatic Drain Valve, Bendix (Heated) (1) On Supply (Wet) Tank		
ELECTRICAL EQUIPMENT:	Electrical Master Disconnect Switch Mounted in cab.		
	Back-Up Alarm, With Intermittent Feature (Ambient Noise Sensitive)		

	Steel Battery Box with molded plastic cover		
	Courtesy Light Switch (Headlamp And Clearance)		
	Daytime Running Lights,		
	Electric Circuit Protection Package, All Circuits Fuse/Breaker Protected		
	Headlights, Single Mounted Rectangular Halogen Lamps Flush Mtd.		
	Rear Lighting, (2) Combination Stop, Tail Directional and Back-Up Lights-Led Module		
	Signal Flasher Type, Transistorized Turn Signal, Federal Mogul #250		
PTO:	Engine Crankshaft Adapter,1350 Series Flange		
PAINT:	Cab Exterior, Customer Color-Base Coat/Clearcoat		
	Frame Color, Black		
ADDITIONAL EQUIPMENT:	Icc Safety Kit (Fire Extinguisher And Road Reflectors)		
	Manuals, Two Complete Set Of Parts And Service Manuals		
	Front Axle Spare Tire And Rim Mounted		
	Front bumper guides poles with bulldogs.		
WARRANTY:	Basic Vehicle – 12 Months On All Components		
	5 Year /150,000 Miles, Engine Warranty Is To Cover Exhaust After-Treatment System And To Include Turbo Charger, Injectors, And Water Pump.		
	Allison Transmission – 5 Years / Unlimited Miles		

DUMP BODY

C. Dump Body to be heavy duty 201 stainless steel cross memberless Smooth under side type, suitable for use by The Town in street and highway maintenance including snow and ice control with external mounted cylinder. _____

4. Inside length to be 10ft for a 92" CA. 11ft overall with hoist. _____
2. Inside width to be 86" minimum. Outside width 96". _____
3. Sides (from body floor to top of top rail) to be 30" high. _____
4. Tailgate to be 38" high. _____
5. Head sheet to be minimum 36" high. _____
   a. One (1) 2" x 3" horizontal head sheet channel brace from the floor 24.37". _____
6. Capacity to be 6.5 sides and 8.1 cubic yards ends at water level. _____
7. Sides, head sheet and tailgate to be 7 gauge Type 201 stainless steel. _____
8. Floor to be a one-piece 1/4" AR400 steel with both side radiuses built into floor. AR450/Hardox 450 is not acceptable. No exceptions. _____
9. All corner posts and sides to be 7 gauge, 201 stainless steel. _____
10. Top rails are to be 4" x 5" seamless, sloping (dirt/salt shedding) and boxed for added strength. There are to be four (4) stainless steel structural channel piece hold downs for spreader mounted on the top rail. Location for two (2) per side to be determined at the time of installation. _____

11. Bottom rails are to be seamless and sloping (dirt/salt shedding). _____
12. Long sills are to be one-piece 5" structural steel I-beam at 12lbs per foot. _____
13. Rear apron to be ¼" 8" formed channel. _____
14. There are to be no cross members. Floor to be skip welded to I-Beam Long sills. _____
15. Rear Corner Post:
    a. To be 7 gauge 201 Stainless Steel. _____
    b. Rear post to be 38" high x 4-3/4" deep x 12" wide. _____
    t. Top of corner post to be dirt shedding. A 14-1/2" one-piece 7 gauge stainless steel shall be break formed front to back at 5-1/2" and a downward slope remaining at 9". _____
    u. The top of post shall house two (2) ½" stainless steel plate brackets to house the top pivot point. _____
    v. Tailgate reinforcement plate around the tailgate latch assembly must be ¼" thick. Outside must be 16" tall. Bottom must be 8-3/4" long. Inside bottom height shall be 7-3/8" to the floor. Top shall be 4-1/4" from outside to top of floor sheet. All to be continuously welded. _____
    w. Two (2) oval factory cut outs for S/T/T and Reverse. _____
    x. Two (2) Whelen brand strobe light (3 light) boxes to be welded to outside of each rear corner post. Location to be determined at the time of build. _____
16. No front corner posts. Head sheet to have mirrored image of one (1) weld on full length horizontal side brace each side and to be continuously welded to side brace, each side. _____
17. One (1) Intermediate fully welded horizontal side brace, full-length. _____
18. 30" x 86" wide cabshield to have built in tarp deflector full width of body headsheet. Cabshield to house tarp. Five (5) Whelen flush mounted 700 series mounted: Each side, each front corner, and one front center. All Back side of lights must be boxed in with stainless steel. Stainless steel tubing shall be used to protect electrical wires between lights. Tarp system to be recessed into side plates at furthest most rear. See tarp section for details. _____
19. There are to be 2" x 8" hard wood sideboards installed and painted black or to match cab color. Front board side pocket holders must extend full height to bottom edge of cabshield lip. _____
20. The one piece external side sheet must be break formed and wrap under the body floor no less than 10" extended under the body with a continuous welded seam to floor sheet. _____
21. Tailgate design:
    a. To be and double-acting heavy duty. _____
    b. Bracing to be full perimeter box type, 6" top and bottom and 4" sides. _____
    q. There is to be one (1) horizontal brace, mid-section. _____
    r. Top, bottom, and intermediate horizontal braces to be sloped (dirt/salt shedding). _____
    s. Top and bottom tailgate pins to be 1-1/2" diameter 201 Stainless steel, minimum with T-handle. _____
    t. Minimum 3/8" stainless steel coil chains to be long enough to hold tailgate in horizontal position if necessary. _____
    u. Tailgate to be level with dump body floor when in horizontal

position. _____

v. Heavy nylon mesh sleeves to be installed over spreader chains to protect body finish. _____

w. Lower latch hooks to be flame cut from 3/4" 201 SS plate to secure against two (2) 3/8" 201 SS corner post mounted latch plates, one (1) set each side of the ¾" latch hook per side. _____

j. There is to be a full width 1" 304 stainless steel diameter (min.) tailgate release rod at rear of body. _____

k. Air tailgate release with spring parking brake chamber mounted center rear of body with dash control. _____

l. All 201 stainless steel hardware. _____

m. One (1) SS d-ring lift hook mounted on top of tailgate. _____

n. Three (3) coal doors, 13" wide, recessed flush with interior tailgate sheet. _____

o. Two (2) safety turnbuckle latches, one per side, for safety of holding tailgate shut. No exceptions. _____

p. Two (2) tailgate latch bar safety mechanisms, one per side bottom, per North Hempstead's approved drawing. No exceptions. _____

22. Continuous welded body shell (except long sills to floor sheet that are skip welded), cab protector & tailgate. _____

23. Stationary 2-1/2" x 20" long grip strut stainless steel steps (one step) mounted to the front drivers side as far forward as possible on the horizontal side brace. _____

24. Full length 2-1/2" grip strut stainless steel walk rail to be mounted full length on bottom rub rails. _____

25. Three (3) step stainless steel pull out ladder mounted under floor and under 20" grip strut step on horizontal brace. _____

26. One (1) Pull Tarp brand tarp system with asphalt rated tarp. Must be mounted on top of cabshield as far rearward and recessed into side vertical supports of cabshield. 7GA Stainless steel cover mounted over the exist Pull Tarp housing. _____

27. Two (2) one-piece stainless steel rod grab handles must be mounted on each side of the 20" step. _____

28. Front corner of bottom rub rail must be capped with 7GA stainless steel and be on an approximate 60 degree angle. _____

29. Six (6) stainless steel J-Hooks mounted upside down. Three (3) per side and evenly spaced and welded on. _____

30. One (1) 12" bolt on stainless steel rear apron. _____

31. Two (2) stainless steel lift loops mounted to top dirt sheet rail, evenly spaced. _____

32. Stationary two (2) ¾" stainless steel rebar mounted on 45 degree from front head sheet to sides at spacing as the outsides steps. _____

33. Body must have any welded burn marks removed prior to delivery. _____

HOIST AND REAR HINGE ASSEMBLY

D. Heavy duty front telescopic type hoist suitable for use with a Dump body on a road and highway maintenance truck used for snow and ice control, externally mounted of headsheet. No exceptions. _____

2. NTEA rated Class 50 with 17.5 tons capacity minimum. No

exceptions. _____

2. Forty three thousand pound (43,000 LB.) capacity minimum @ 2000 PSI. _____
3. Double-acting (power up and down full length of stroke). _____
4. Largest diameter stage must be at bottom. Inverted cylinder not acceptable. _____
5. 4.5" inside diameter cylinder base tube (minimum). _____
6. 100" stroke (minimum). _____
7. All cylinder stages to be nitrated for corrosion resistance and wear resistance. _____
8. Internal bore seal design so no packing adjustment or bleeding is required. _____
9. Hoist cylinder to be mounted inside pivoting, trunnion mounted cylinder cover tube. _____
10. Subframe for body to be structural 4" C-Channel. Full width cradle must be made of 201 stainless steel that houses hoist, hydraulic reservoir and valve enclosure. _____
17. Mounting height not to exceed 9" from the top of chassis frame to dump body floor. No exceptions. _____
18. 5" x 6" x ½" x 38" long formed angle with 1-1/2" 303 stainless steel pins with greaseable pins. Each pin is secured by nut/bolt. _____
19. Each pin mounts into two (2) 1/2" plates mounted on two sides to the 6' x 8" x ½" formed angle. Outside plate for each set must be 1.125" from end angle with pin centers at 32". _____
20. Each rear hinge block must be a 2-1/2" wide and 3.25" tall plate steel with 5.88" length mounting surface of body to top of block. Each block must accept a 1-1/2" dumping stainless steel pivot pin and have a grease zerk. _____
21. Overhang from the center of the rear pivot is to be 12" to the end of the floor plate. _____
22. Externally mounted hoist design must show, upon request, at least fifteen (15) current systems of this same design in the NJ/NY market. No exceptions. _____

SNOW PLOW HITCH

C. Heavy front frame side plate low profile snow plow hitch. _____

3. To be engineered, designed and built by a recognized snow plow manufacturer. Hitch to be a low profile configuration. The design will limit the amount of front overhang to a minimum. _____
4. A truck frame extension is not required for the mounting of hitch but recommended. _____
3. Heavy front frame hitch of modular design shall allow the cab hood to tilt completely forward for engine access. _____
23. Side plates will transmit plowing forces directly to the truck frame side rails and will custom fit the specified year, make and model of the truck. _____
24. The side plates are custom fitted 5/8" steel plate of proper length and construction for heavy duty service and shall provide adequate clearance for steering mechanisms and spring suspensions. _____
25. Side plate mounting angles or plates shall mount flush to the

truck frame for maximum strength. Pipe spacers are not acceptable. _____

26. The front section of the hitch assembly: lift frame, center section and the lower push plate shall all be welded to the two (2) vertical tubular supports. The two (2) vertical supports are to be constructed of 6" x 3" x 1/4" thick wall. The length of each support shall be 38-1/4". No exceptions. _____
27. The front two (2) vertical supports are to be spaced evenly 26-3/4" apart. No exceptions. Overall mounting width is 32-3/4". _____
28. The front two (2) vertical supports are to be mounted to vertical structural angles of 5" x 4" x ½", full height of tubes. _____
29. Each vertical tube must have three (3) 3" wide gussets tying in the vertical tube to the structural angle. Each gusset is 3" x 4" x 5" x 7ga. _____
30. The vertical tubes and structural angles are mounted to a horizontal 6" x 4" x ½" x 39" wide structural angle mounted at the top of the two (2) vertical structural angles. _____
31. The center cylinder tube to be built with a 6" x 3" x 1/4" tubes x 26-5/8" long and mounted centered to the vertical tubes. Two (2) 1/2" x 3" x 4" lift cylinder ears to be welded to this tube along with a 1/2" x 3" flat reinforcement bar. _____
32. The telescopic lift arm shall be manufactured of 4" x 4" x 3/8" square outer tubing and 3" x 3" x 3/8" square inner tubing. _____
33. The lift arm and lift frame shall be designed to accept 2.5", 3" or 4"x10" lift cylinder . Cylinder pins are to be 1" cold rolled steel. Inner lift arm must accept clevis and pin. _____
34. Truck and plow portion hitch must be Torloc/Arrowhead style and work interchangeably with The Town of North Hempstead's fleet. _____
35. Mounted under the telescopic outer tubing is to be a white poly block 1-1/2" x 3" and arced to hold a 4" x 10" lift cylinder. _____
36. The quick hitch shall provide self-alignment with the mating plow section while being engaged. _____
37. Re-mount OEM bumper. Bumper shall be split to accommodate plow hitch and must be bolted on and utilize stabilizer arm per section. _____
38. The plow hoist cylinder shall be of premium grade and shall be a double acting 4" bore x 10" stroke. _____
39. The piston rod is to be of steel construction treated with a nitro steel process. _____
40. The ram sleeve or outer barrel will be such that the rod packing may be maintained or replaced as required. A positive stop must be incorporated that will help prevent mechanical pressure being applied to the packing when the rod is fully extended. _____
41. The cylinder shall be capable of 14,137 pounds of thrust @ 2,000 PSI and 16,000 pounds of bursting pressure @ 2,000 PSI. Minimum weight of the cylinder shall be 28 pounds. Ports to be 3/8" _____

SNOW PLOW

A. MOLDBOARD:

1. The moldboard shall be heavy duty torsion trip edge design type Snowplow with level lift without additional mechanical mechanism. _____
2. Moldboard will be an integral shield with trip edge. _____

i. Length to be 10'. _____

j. Height to be 40" (not including rubber deflector) in dead center And 54" each end. No exceptions. _____

k. 36" side plastic markers mounted to plow. _____

l. Two (2) lift hooks to be mounted on moldboard top. _____

7. The moldboard shall be reinforced at the top with a 3-1/2" x 2-1/2" x 3/8" with holes to allow moisture to escape with poly 36" markers. _____

8. 10 GA. 201 Stainless Steel rolled moldboard with eight (8) ½" x 3-1/2" ribs for extra strength and rigidity. Plow must have all welded burn marks removed prior to delivery. No exceptions. _____

5. All welds must be continuous (skip welds not acceptable). _____

6. Bottom angle must be 4"x 4" x ¾" with an additional 4" x 3" x ½" trip edge angle. _____

11. Top moldboard angle must be constructed of 3-1/2" x 2-1/2" x 3/8" with holes to allow moisture to escape. _____

12. Two horizontal structural angle braces ¼' x 3" x 3" added for rigidity. _____

13. Attack angle of moldboard shall have adjustments of 5, 10, and 20 degree. _____

B. CUTTING EDGE:

1. The cutting edge must be 6" carbide cutting edge with cover plate. No exceptions. Must be AASHO standard punched, mounted flush with moldboard and be easily replaceable. _____

3. Cutting edge face must have wrap around curb guards mounted on both ends with same bolts/nuts as cutting edge. No Exceptions. _____

C. TRIPPING MECHANISM:

1. Adjustable torsional one piece cutting edge trip. From bottom of new 8" cutting edge to top trip edge is no less than 14.75". _____

4. Springs must have a zero insertion force for increased safety while servicing. No Exceptions. _____

5. Bottom moldboard angle must be 4" x 3" x ½". Fully welded to bottom edge of moldboard. _____

4. 4" x 4" x ¾" backer angle with (6) ¾" trip ears welded to angle. _____

5. Full length trip edge pivot tube, must be constructed of schedule 80, 1.50" OD black pipe. End of each plow cutting edge is to include a 4.5"OD x 1.5" thick curb guard. _____

6. Cutting edge tripping must be controlled by (5) torsion springs. Springs constructed of a minimum of .75 square bar with 14 active coils. Minimum spring dimensions shall be 3.75OD x 2.25ID x 11.75. Springs must be produced to meet Rockwell C hardness. Hardness shall be produced from oil quenching with a minimum temperature of 1550°F. Spring preload shall be a minimum of 35°. Springs shall have a trip load capability of 8228 INCH-LBS. Typical spring material composition shall be Carbon=0.40, Manganese=.70, Phosphorous=.020, sulfur=.020, silicon=.25, chromium=.80, Nickel=1.75, Molybdenum=.25. _____

7. Three (3) position adjustment on each individual torsion spring on the trip assembly to allow adjustment in various settings for road conditions. No exceptions. _____

8. Face of cutting edge trip section must be 201 Stainless Steel. No

exceptions. _____

D. PUSH TUBE ASSEMBLY:

1. Push tube to be constructed of 4" x 4" x .38 square tube, 107.5" in length. Each end of the push tube shall be capped with a 10ga 3.25" x 3.25" plate. _____
2. Welded to the moldboard pushtube shall be (8) 5/8" x 3.5" x 7" pivot ears. Each ear shall be further reinforced with a 2" x 2" x .38 gusset. Pivot ears shall pin to moldboard assembly with 1-1/4" thick pins. _____
13. (2) Moldboard stabilizer strut mounting ears each constructed of (2) 5/8" plate approximately 10" x 13". _____
14. Center pushframe pivot constructed of (2) .38 x 36.5" x 8.5" plates. There shall be a 3.5" hole in each plate for a 5-1/2" x 3-1/2" OD x 2.52" ID bushing. Bushing shall be drilled and tapped for a 1/8" grease zerk. _____
15. Center pushframe pivot assembly shall also have (2) 3.75" stops for the a-frame assembly. _____
16. Push tube cylinder lugs, located on left and righ hand sides shall each be constructed of (2) 5/8" x 8-1/4" x 3-5/8" plates complete with a 1-1/4" pin hole. _____
17. Cylinder lugs shall be further reinforced with 3/8" x 2-3/4" x 3-1/4" gusset. _____
18. There shall be (2) chain lift lugs welded to the top of the push tube constructed of ½" x 3" x 4" plates. _____
19. Moldboard reversing shall be accomplished by (2) 3" rod x 3.5" bore x 16" stroke single acting cylinders. _____
20. Cylinder rods shall be nitride for increased corrosion resistance. Chromed rods shall be unacceptable. _____
21. Cylinder working pressure shall be 3000 PSI. _____
22. Cylinder shall be plumbed to an 1800 PSI cushioning valve to prevent damage when hitting obstructions. _____

E. A-FRAME:

1. Pivot capture plates shall consist of (2) plates constructed of 1" x 11" x 12-7/8" plates. These plates will be flame cute and have a 2.53" hole to pin the a-frame assembly the push-tube assembly. The top pivot capture plate shall be drilled and threaded for a ¾" capture bolt to prevent pin rotation. _____
3. Top main A-frame plate shall be constructed of 3/8" x 28" x 25-5/8" flame cut plate. The narrowest portion of the top plate shall remain a minimum of 12". Top plate shall also be flame cut to accept the reversing cylinder pins. Pin hole shall be 1.281" in diameter. Each pin holes shall be further reinforced with a 1" thick plate which is flame cut to accept reversing cylinder pin. _____
8. Bottom main a-frame plate shall be constructed of 3/8" x 28" x 25-5/8" flame cut plate. The narrowest portion of the top plate shall remain a minimum of 12". Bottom plate shall also be flame cut to accept the reversing cylinder pins. Pin hole shall be 1.281" in diameter. There shall be a 6" access hole for attaching the hitch swivel bolt. _____
9. The A-frame vertical side plates which tie the top and bottom plates

into a boxed formation shall be constructed of ½" x 4" x 32" plate and formed to follow the contour the top and bottom plates. _____

10. The rear A-frame push plate shall be constructed of 1" x 6-3/4" x 33-5/8" plate. This plate shall be flame cut with a 1-9/16" hole to accept the plow hitch attachment bolt. _____

11. On the top side of the A-frame plate shall be a mounting plate to which attached is the reversing cylinder cushion valve. _____

12. Plow portion hitch must be Torlo/Arrowhead and fit existing Town of North Hempstead truck portion hitches. _____

F. PAINT:

4. All metal surfaces are to be phosphate washed to remove slag, splatter, oxide and oil residue. _____

5. Moldboard frame work must be powder-coated Highway Orange. _____

6. Push frame, "A" frame and other miscellaneous components are powder-coated black for increase paint durability. _____

CENTRAL HYDRAULIC SYSTEM

A. TYPE:

1. System to be of load sensing pressure-compensated type, pumping oil only when needed and in exact volume and pressure required --- no more, no less. _____

2. Pump to automatically revert to standby mode when no oil flow is required (No on/off switch). _____

4. Must be able to operate all equipment on truck simultaneously if necessary. No one function to interfere with any other. _____

4. System controls are to be electronic over hydraulic. _____

5. Operating speed of all functions must-be variable and adjustable. _____

6. One complete system to operate all functions. _____

B. HYDRAULIC PUMP AND FRONT CRANK SHAFT:

1. The hydraulic piston pump shall be a pressure and flow compensated load-sensing type. The pump shall be an Eaton 5.98 CID series 620 have a minimum 2" inch suction line and ½" control drain line plumbed directly back to the reservoir. The pumps compensator shall have rear facing adjustments. Pump shall be a front crank shaft mounted drive shaft and properly mounting. _____

C. HYDRAULIC VALVE:

1. Control valve shall be U.S. manufactured. Valve shall be a load sensing type with o-ring ports. Mid-inlet section porting will be #16 inlet, #20 outlet, #16 hoist section, #4 load sense port, and #10 or #12 for all other sections. The hoist section shall be stacked to one side of the mid-inlet and all other sections will be stacked on the other side. All ports shall be level with each other so as to lay flat on its base. There will be a main relief in the mid-inlet section that will be set at 3500 PSI to protect the system from being over pressurized. _____

2. Valve section to be arranged as follows:

3. Hoist, 4-way for a double acting cylinder with mid-inlet transition section. _____
4. Pressure reducing section., if needed. _____
5. Plow Lift, 4-way for a double acting cylinder with flow control. _____
6. Plow Angle, 4-way for a double acting cylinder with flow control. _____
7. Spreader and spinner section must be able to function Epoke spreaders. No exceptions. _____
8. Liquid Pre-Wet/Anti-Ice Valve 4-way. _____
9. Valve shall be prior approved equal. _____
14. A plow float/balance valve must be provided and controlled with a dash mounted rocker switch for on/off. The plow float/balance can be turned off as needed. When in use, the valve will allow the valve to use a pressure reducing/relieving system to control the float/balance lifting pressure on the plow's lift arm assembly. Two solenoid valves wired together turn the valve off and on. One solenoid valve opens the inlet of the pressure reducing valve to the pump. The other solenoid valve opens the outlet of the pressure reducing/relieving valve to the lift port. Oil flowing in and out of the lift port is restricted with an orifice. _____

D. OPERATOR CONTROLS FOR DUMP BOY HOIST and SNOW PLOW:

1. The valve controls shall be a feathering remote electric control with each joystick. Dump to have one (1) Joystick and Plow to have another Joystick. Force America Joysticks or prior approved equal. Layout to be determined at the time of build. _____

E. RESERVOIR/VALVE COMPARTMENT:

7. One (1) 30 gallon all-welded 304 stainless steel hydraulic oil reservoir mounted on the hoist's cradle on passenger side. Must have site gauge with rubber gasket seal. No exceptions. _____
8. The hydraulic reservoir will be constructed of 10-gauge stainless steel and be internally baffled. _____
9. One (1) 304 stainless steel valve enclosure mounted on the hoist's cradle on the driver's side. Must have a Stainless steel cover with one bolt-on securing mechanism. No exceptions. _____
10. Shall be mounted in a manner as to not transmit any truck torsional loads thru the tank. _____
11. The enclosure will use a gasket-less passive technology. (No rubber seals, gaskets, or weather stripping.) _____
12. The reservoir supplier will provide all valve fittings (JIC connections) and plumb the return line from the valve to the filter. _____
7. The cover will protect from both road and pressure washer spray. _____
8. A 2" full flow brass ball valve shall be plumbed at the suction port of the tank. _____
9. A low oil/high temp sending unit shall be mounted in the reservoir. _____
10. Hydraulic oil filter shall be mounted in the reservoir. Hydraulic filter shall be a 10-micron absolute and rated for no less than 60 GPM. _____

F. Hydraulic Lines and Fittings:

1. Stainless steel tubing to be used under body and cab in lieu of hosing. Only hosing to be used is ends of stainless steel tubing to reach each function's quick couplers or connection. Tubing shall be seamless #304 stainless steel construction with a minimum wall

thickness of 0.065". The ends must be flared to accommodate a 37 degree JIC fitting. The use of compression fittings is not Acceptable. Spacing of each tube to allow for material to fall between each tube. _____

17. All stainless tubing must be mounted in polyurethane poly green tube clamps. _____
18. All hoses to be wire braid reinforced with swaged on high pressure JIC 37 degree tapered seat end fittings. _____
19. All fittings & adapters to be forged steel (No tapered pipe fittings except on suction hose). _____
20. Hoses to front with 1/2" 100% stainless steel (no exceptions) quick couplers for power reversing plow. _____
21. Hoses to rear with 1/2" 100% stainless steel quick couplers for spreader (no exceptions). _____
22. Spreader stainless steel hose couplers to be mounted on either frame rail or pintle plate under dump body at rear. _____
23. Polymer dust plugs or caps on all couplers with retainer straps. _____
24. All pressure hoses except for plow & spinner to be 3/4" I.D. SAE 100R2. _____
25. Plow, spreader spinner, and prewet system pressure hoses to be 1/2" I.D.SAE 100R2. _____
26. Main pressure hose from pump to control valve shall be 1" Didiameter, 4-wire braid. No exception. _____
27. All return hoses to be SAE 100R2. _____
28. Suction hose to be minimum 2" I.D. SAE 100R4 spiral wire reinforced with long radius ells. _____
29. All hoses to be routed away from chassis exhaust whenever possible to protect against heat deterioration. _____
30. All hydraulic quick disconnect couplings must be stainless steel Aero-Quip FD45 series or prior approval; bulkhead mounted, and include attached male and female dust covers. Couplings to be configured so as to eliminate confusion when coupling. No exceptions. _____
31. All stainless steel quick disconnects for spreaders must be mounted under body at passenger rear most corner and mounted to stainless steel encloused housing that is welded to bottom rub rail wrap around portion. Must work with Epoke spreaders. No exceptions. _____

G. Spreader Controller:

1. None. _____

SNOW PLOW LIGHTS:

A. Truck-Lite brand LED model 80880 plow lights. _____

5. Mounted with custom fabricated 100% stainless steel brackets on truck fenders. Brackets must be painted black. _____
6. Plow lights to be wired into the truck's existing headlight circuit using the factory installed switch. _____
7. Plow lights must function in high and low beam modes using existing truck's dimmer switch. _____
8. Plow lights and truck chassis headlights must never operate at the same time. _____

LIGHTING & ELECTRICAL

ALL lighting and layout must meet all Fedaral, State, and DOT regulations. No exceptions.

A. LED lighting system. _____

1. All marker, work, S/T/T, backup and strobe lighting to be LED. _____

17. Whelen brand DOT3 System to be Super-LED DOT Light system model 00007DS0 or equal and a current production model of Whelen and made in the USA. _____

18. The two (2) Whelen 704-D three lamp light boxes to be continuously welded to outside of each rear corner post. Rear Super LED Head Assemblies to be 700 Linear-Super-LED two (2) amber heads, two (LED) brake/tail/turn light modules, and two (2)LED back-ups, one set each side. Each head shall be capable of emitting a full 180 degree of light in the vertical plane. The light heads shall be recessed into a heavy duty 7GA stainless steel housing. _____

19. The two rear 700 series heads shall utilize a DOT LED flasher which is mounted and encapusulated in a junction box inside of cab. The DOT LED flasher shall allow the two rear 700's to be controlled independently from the front head assembly. One (1) stainless steel rod mounted vertically in front of each head to protrude out far enough to protect lense. _____

20. The 700 assembly, brake light and back up, including the steel housing, shall be approximately 23-1/2 inches high , 4-7/8 inches deep and 3-1/2 inches wide. _____

21. The modules, as well as the lens, shall be easily replacable. A water proof connector for each module shall be used to connect to the cable harness and shall be located inside the steel housing for weather resistence as well as ease of replacement. _____

22. The 700 lenses shall be made of polycarbonate, amber in color, and have a smooth outer surface for self cleaning. _____

23. There shall be two LED brake/tail/turn modules, one located in the middle positions of each steel housing. Each module must contain a minimum of 72 red LEDs. The module must be in "signal alert" flash pattern, which flickers three times withing 150 milliseconds before becoming steady "on". These modules must meet or exceed SAE requirements. _____

24. There shall be two LED back ups, one located in the bottom position of each steel housing. Each module must contain a minimum of 48 white LEDs for maximum light output. These modules shall be supplied with a clear polycarbonate lens. _____

25. The rear mounted head assemblies shall use stainless steel screws that screw directly into a nylon mounting bracket to eliminate dissimiliar metal corrosion. Units that screw into steel bracket are unacceptable. _____

26. Cable harnesses being supplied from the rear housings must be heavy-duty TPR type cable. Flexible to minus 40 degrees Fahrenheit; abrasion, corrosion and oil/grease resistance. Each conductor shall be a minimum of 14GA, pure copper stranded, and fully tin coated. No less than 30feet of cable shall be provided for each head assembly. All necessary connections shall be provided, including a strain-relief system. _____

27. Cabshield lighting shall be five (5) surface mounted Whelen brand

700 series strobes. Must be synchronized with two (2) rear Whelen brand 700 series on outside of rear corner posts. _____

28. Cabshield Whelen 700 series strobes to be on one (1) chassis dash rocker switch for on/off and labeled. _____

29. Both rear facing and rear side corner mounted Whelen 700 series strobes to be on one (1) chassis dash rocker switch for on/off and labeled. _____

30. Two (2) OEM S/T/T w/ Backup light mounted behind rear apron of dump body. Hole to be cut into apron to allow visibility. Hole to be covered with black trim lock. _____

31. Two (2) OEM S/T/T w/ Backup light mounted on each side of pintle plate. Location and mounting to be determined at the time of installation. _____

B. Electronic Back-Up Alarm provided by chassis dealer and relocated if needed. _____

C. Body Up Indicator Light. _____

1. Sealed weatherproof proximity switch on hoist-frame. _____
2. Whelen model ION-R body up light mounted in cab. _____

D. All non- strobe wiring to be 7 wire trailer cable. Separate cable routed from in-cab to all non-strobe lights with sealed junction box at rear so all wiring connections are made either inside cab and in a sealed junction box. _____

E. One (1) solid stainless steel rod must be mounted under body and all electrical body lighting must be neatly run. Rod will be one piece and full length. No exceptions. _____

F. All wire connections shall be made in the chassis cab or by means of a waterproof junction box. In cab connections shall be made using vinyl coated crimp connectors covered in weather resistant heat shrink tuning. There shall be no wire splices outside the cab. All wiring to junction box shall be resistant to abrasion, ozone, sunlight, chemicals and oil. The outer jacket shall be chlorinated polyethylene and be approved for submersion in water. The outer jacket shall be label with the cable identification wire gauge and number of conductors. Must be MSHA approved. All body lighting shall be supplied by a single sealed harness from the junction box and making the connection at the light by means of weather tight sealed connector. All strobe lights shall be included in the same harness and be connected by means of a Deutsch connector, no exceptions. _____

MISCELLANEOUS

A. 90 degree elbow extension on top of chassis vertical exhaust stack to clear cab protector and still route exhaust upward to be provided by chassis supplier and installed by body company. _____

D. Rear tire poly Fleet Maintenance fenders with stainless steel mounting tubes. _____

C. Upon installation of all components, truck must be delivered to the truck dealer for final inspection and prep. _____

D. Rear pintle plate shall have a Holland model T90 pintle properly Installed and secured. _____

1. Mounted on reinforced 3/4" thick mounting plate at rear of chassis frame at designated clearance height to ground to be 29". Sides and bottom must be reinforced with ¾" x 2" flat stock

mounted behind the pintle plate. _____

5. Must include Safety two (2) 5/8" D-Rings, one (1) 7-wire flat plug and one (1) 6-wire plug. _____

6. License plate light and bracket mounted to top corner on passenger side. _____

E. DOT approved 2" conspicuity tape on body bottom rub rails, rear corner posts, tailgate perimeter. All DOT necessary reflective decals installed as well. _____

F. Pull Tarp brand asphalt tarping system to be mounted in cabshield rear. Must recess ahead of front head sheet and cut into side plates of cab-shield for lowest possible mounting. _____

H. Two (2) Toolboxes; Heavy duty aluminum 48x18'x18', mounted on frame rails. One (1) per side. _____

INSTALLATION AND WARRANTY

F. Minimum twenty-four (24) months, 100% parts and labor on components and installation. No deductible. _____

G. For warranty considerations and future availability of parts and service, the body company must be an authorized primary distributor for all major components they propose to furnish. Must furnish written proof from such said vendor upon request. _____

H. All equipment must be installed by a single body company, by their employees and at their regular location. _____

I. Installation of components is not to be subcontracted by body company to another installer. _____

J. No welding whatsoever is to be done on chassis frame between front of most forward spring hanger and rear of rearmost spring hanger. _____

F. No drilling whatsoever is to be done in frame rail flanges. _____

I. Body company to furnish operator's parts and service manuals for all components manufacturer's i.e., dump body, hoist, snow plow, salt spreader, central hydraulic system and strobe lights. _____

J. Completed vehicle must be certified by the body company as meeting all federal motor vehicle safety standard in effect at time of chassis production. _____

2. Approved NHTSA/FMVSS certification label must be furnished and located inside cab on driver's side. _____

I. Completed unit to comply with current OSHA regulations. _____

J. Body company must be registered with National Highway Traffic Safety Administration as a final stage manufacturer of motor vehicles as required by Federal Law. _____

K. Body company to conduct operator training session on body and equipment at the The Town garage after delivery of completed truck. _____

L. Delivered of completed vehicle must be within 60 to 75 days after delivery of cab chassis to up-fitter. $75 a day penalty might incur with later delivery. _____

M. Body company must have ASE certified installer/s and show documentation at time of bid. No exceptions. _____

N. Body company to be registered and in good standing with National Truck Equipment Association (NTEA), be a MVP member, and be the authorized distributor for all equipment bid. _____

O. Body company must participate and provide documentation at time of bid

for E-Verify®. This employment verification verification is a United States of America federally accredited verification system to insure all employees are legal residents. List Company ID#_____. No exceptions . _____

P. Dump Body, Snow Plow, and Snow Plow Hitch must be engineered and manufactured in the United States of America and all from the same manufacturer. No exceptions. _____

Q. Hydraulic schematic must be provided and laminated and placed inside the combination valve enclosure/combo tank lid. _____

R. A required pre-build meeting will occur after award of bid and prior to the start of installation. No exceptions. _____

S. The Town will inspect all equipment (plow, hitch, dump body and tailgate spreader) prior to the start of installation. No exceptions. _____

Package "B" for Chassis, Dump Body, Plow, Hydraulics, Spreader Control and Misc Items for V-Box Setup

"BIDDING REQUIREMENTS SECTION"

SECTION	SPECIFICATION DETAIL	COMPLY	
		Comply	Exception
PACKAGE B: 6 WHEEL TRUCK, DUMP BODY, PLOW, HITCH, CENTRAL HYDARAULICS FOR HI-WAY SPREADER			
-			
Description: Chassis Specifications For A New 2016 GU712 Chassis With SCR Technology To Meet 2014 Emissions Of 0.2 Grams Of Nox Or Equal			
Chassis/ Frame & Wheelbase:	Chassis: 2016 Mack GU712 Chassis Or Equal		
	Frame Rails, 11.811" x 3.54" x 0.44" High Strength 120,000 PSI Steel - 20" Integral Front Frame Extension For Snow Plow Mount		
	Single Chassis Rail		
	Section Modulus 23.5 cu In/Rbm 2,820,000 In Lbs. Per Rail		
	Wheelbase - 180"WB, Center of Axle - 92"CA,		
	Platform - 154"LP, After Frame - 62"AF		
MAXIMUM GVW & AXLE RATINGS:	Gross Vehicle Weight Rating Of 48,000lbs.		
	Front Axle Capacity - 18,000 Lbs.		
	Rear Single Drive Axle Capacity - 30,000lbs		
	Front Steer Axle-Gross Axle Weight Rating - 18,000lbs		
	Rear Drive Axle –Gross Axle Weight Rating - 30,000lbs		
ENGINE:	MP7-405M 405 Hp @ 1500-1900 Rpm. Operating range 1100-2100 1480 Lb. Ft. Max. Torque @ 1050-1350 Rpm High Torque Rise 60%		
	11.9 Liter, 659 Cu. In Piston Displacement.		

	EPA Carb Emission Certified For 2014 Utilizing Selective Catalyst Reduction(Scr).Engines Utilizing Government Credits Or Penalties Are Not Acceptable		
ENGINE EQUIPMENT:	Air Compressor, Meritor/Wabco 318 18.7 Cfm		
	Engine Mounted Oil Check And Fill		
	Mack Powerleash Engine Brake		
	Alternator, Delco 12V 130A (24SI) Brush-Type		
	(3) 12volt Mack Grp31 Batteries With 3000 CCA Threaded Post		
	Air Cleaner, 11" x 30" Under Hood Single Element Dry Type		
	12 Volt Heavy Duty Starter-Delco 39mt-Mxt		
	Electronic Starter Interlock System		
	Coolant Protection To Below –34 Degrees Fahrenheit With Coolant Conditioner Filter		
ENGINE EQUIPMENT:	Engine Block Heater, Gomack (Phillips) – 1500 Watt 120 Volt With Intake Grid Heater mounted under driver side door.		
	Starting Aid Engine Electric Preheater		
	Engine Hoses And Tubing, Silicone		
	Diesel Particulate Filter /Scr System Horizontal-Under Right Side Of Cab-Clear Back Of Cab Option		
	Exhaust After –Treatment System Diesel Particulate Filter Ceramic Catalyzed, And Scr Technology To Meet 0.2 Grams Of Nox		
	Exhaust, Side Of Cab Single (R/S) Vertical Straight Exhaust Stack		
	Poly-V Fan Belt With Automatic Tensioner		
	Fan Drive, Behr Fan And Electronic Modulating Fan Drive		
	Flywheel ,Light Weight Aluminum		
	Fuel-Water Separator: Davco 382, (Fluid Heater) Fuel Heater/Water Separator w/vendor Prim & Mack Sec fuel Filter		
	Tether device Furnish Cap Retainer for Oil Fill & Radiator		
	Hand Primer Pump		
	Hoses, Radiator/Heater Mack Brand EPDM Radiator & Heater Hoses		
	Injection Pump- Electronic Engine Control		
	Radiator, Aluminum Core		
TRANSMISSION:	Allison 4500-RDS -6 (4.70/0.67) Rugged Duty Series Gen 5 Includes transmission Cooler, External Oil Cooler, Internal Filter, and Oil Level Sensor		
	Driveline-Main, Meritor 18 MXL "Xtended Lube"		
	Transmission Bell Housing, Aluminum		
	Synthetic Transmission Fluid		
CAB EQUIPMENT:	Air Conditioner/Heater, (Bergstrom) Integral w/heater combination		
	Air Restriction Monitor, Air Cleaner Intake Mtd		
	Instrument Cluster Display, Co-Pilot Driver Display(4.5"Diagonal Graphic Lcd Display W/4-Button Stalk Control)(Includes Guardog Routine Maintenance Monitoring)		
	Conventional Cab (Welded Steel Galvanized Shell) with Air Ride Suspension(Aluminum Cabs Not Acceptable)		

	Fiberglass Tilt Hood With Safety Lock And Hood Hatch For Maintenance Checks		
	Cigar Lighter On Instrument Panel		
	Overhead Console with 2 Storage Compartments and Power Leads		
	Dome Light, (4) W/Self-Contained Switch		
	Diagonal Handle On Driver Side Door Panel		
	AM/FM Premium Stero, CD-Player, MP3, Weatherband, Handsfree Interface, Bluetooth		
	Driver and Passenger side Power door locks and Windows		
	Gauge, Air Pressure		
	Gauge, Voltmeter		
	Gauge Cluster, Exhaust Pyrometer, Engine Oil, And Transmission Oil Temperature Gauges		
CAB EQUIPMENT:	Gauge, Engine Coolant Temperature		
	Gauge, Engine Oil Pressure		
	Gauge, Fuel Level		
	Gauges, English Display		
	Gauge, Speedometer w/Trip Odometer (Electronic 1% Accuracy)		
	Engine Tachometer Electronic With Hourmeter		
	Glass-Cab Window, Safety Tinted Windshield, Side And Rear Windows		
	Grab Handles, Aluminum, Rh & Lh Behind Door		
	Grille, Bright Finish With Bug Screen		
	Headlamp Bezel- Molded Plastic		
	High Beam Indicator Light		
	Body Builder Access Connector Inside Of Cab For Body Controls		
	Horn-Air, (2) Mounted On Cab Roof		
	Horn- Electric, Single Tone		
	Identification/Clearance Lights, (5) TruckLite LED Chrome Bullet Type Lamp		
	Instrument Panel, Gray With Black Gage Bezel		
	Interior Trim Level, (Grey) Features: Padded Vinyl Headliner		
	Rear Panel With Storage Pouch, Polyurethane Rubber Padded floor Mat		
	2 Cup Holders Mounted At Bottom Of Dash (Center)		
	Chassis Keyed Alike- 4 Keys		
	Heated Mirrors-Exterior, West Coast, Rh & Lh Bright Finish		
	Mirrors – Convex Type, Bright Finish, Lh & Rh 8.0” Dia; Mounted Below Lower Arm Of West Coast Mirror		
	Proximity Mirror Rect Convex Above Rh Door Window		
	Right Side Door Peep Window		
	Exterior Sun Visor Fiberglass (Cab Color)		
	Rear Window (Fixed Type)		
	Seat - Driver, Bostrom Talladega 915 (Mid-Back) Air Suspension		
	Seat – Rider Bostrom Mid Back Stationary with Integral Storage Compartment		

	Seat Covering, All Vinyl		
	Seat Belts, Lap And Shoulder w/Cab Mounted Shoulder Belt		
	Sun visor –Interior, Both Sides (Padded Vinyl)		
	Starter Switch, Key Type		
	Steering Wheel, 18” Two Spoke Urethane Grip		
	Windshield Washers, Electric, Wiper Mounted W/Reservoir Back Of Cab		
CAB EQUIPMENT:	Windshield Wipers, Sprague 2 Speed Electric Motor w/Intermittent feature		
	Dash Control/Power Supply/Local Installation Plow Lamps W/Lead Furnish At Grille With 2w/3w Weather Pack		
FRAME EQUIPMENT/ FUEL TANKS:	Bumper – Front, Extended Swept Back -Steel Channel		
	Crossmembers, Steel Huck Bolted HD Back-To-Back Channel		
	Flaps – Wheel (Front) Black Poly Armor		
	Frame rail End Squared		
	Towing Device – Front, (2) Hooks		
	Fuel Tank – Lh, 72 Gallon Aluminum with 8.7 Gallon Def Fluid Tank-(Clear Back Of Cab Package)		
FRONT AXLE/ EQUIPMENT/ TIRES:	Front Axle, FXL18 - 18,000 Lbs. Capacity-Sealed Kingpins - Maintenance Free		
	Tire Brand/Type – Front, Bridgestone – Tubeless Radial, 315/80R22.5 20 Ply. M860A (All Position)		
	Wheel – Front, Steel Disc 10 Hole Hub Piloted 22.5" x 9.0"		
	Brakes – Front, Meritor “S” Cam Type 16.5” X 6” Q+		
	Brake Drums – Front, Cast Outboard Mounted		
	Dust Shields – Front Brake, Furnish		
	Oil Seals – Front Wheels, Chicago Rawhide (Scotseal)		
	Front Axle Shock Absorbers		
	Slack Adjusters – Front, Haldex – Automatic		
	Springs – Front, Mack Multileaf 18,000 Lb.		
	Spring Build-Up, RH side for Wing Plow Applications		
	Steering Box, Sheppard SD110 with Tilt and Telescopic Steering Column		
REAR AXLE/ EQUIPMENT/ TIRES / RATIOS:	Rear Axle, Meritor RS-30-185 - 30,000 Lbs. Capacity		
	Suspension - Rear, 30,000 Lbs. Multileaf w/Helpers		
	Single Reduction Rear End Gears		
	Locking Main Differential, Driver Controlled		
	Tire Brand/Type – Rear, Bridgestone – Tubeless Radial (4) 315/80R22.5 20 Ply (M860A Tread)		
	Spring Brake Chambers – Vender, Mgm Tr-T Tamper Resistant		
	Spring Brake Chambers, Type 36/36 Rear		
	Carrier/Ratio- Rear Axle, Malleable Housing, 5.63 Ratio		
	Wheels – Rear, Steel Disc 10 Hole Hub Piloted 22.5" x 8.25"		
	Brakes – Rear, Meritor-Cam - 16.5” x 7” P Brakes		
	Brake Drums – Rear, Cast Outboard Mounted		
	Dust Shields – Rear Brake, Furnish		
	Oil Seals, Premium Hub		

	Slack Adjusters – Rear, Haldex – Automatic		
	Spring Brake Chambers-Quantity (2) Chambers Double Diaphragm Type		
AIR/BRAKE:	Air Reservoirs, Steel - One Supply (Wet) Tank		
	Brake Control System-Two Valve Dual Brake System-Trailer Supply With Hand Control For Trailer-Trailer Air Connections To Rear Pintle Plate, Trailer Electrical Harness To Rear For trailer Lights		
	Air Dryer-Meritor/Wabco 1200 Heated With Coalescing Oil Filter		
	Anti-Lock Brake System, Bendix Without Traction Control		
	Automatic Drain Valve, Bendix (Heated) (1) On Supply (Wet) Tank		
ELECTRICAL EQUIPMENT:	Electrical Master Disconnect Switch Mounted in cab.		
	Back-Up Alarm, With Intermittent Feature (Ambient Noise Sensitive)		
	Steel Battery Box with molded plastic cover		
	Courtesy Light Switch (Headlamp And Clearance)		
	Daytime Running Lights,		
	Electric Circuit Protection Package, All Circuits Fuse/Breaker Protected		
	Headlights, Single Mounted Rectangular Halogen Lamps Flush Mtd.		
	Rear Lighting, (2) Combination Stop, Tail Directional and Back-Up Lights-Led Module		
	Signal Flasher Type, Transistorized Turn Signal, Federal Mogul #250		
PTO:	Engine Crankshaft Adapter,1350 Series Flange		
PAINT:	Cab Exterior, Customer Color-Base Coat/Clearcoat		
	Frame Color, Black		
ADDITIONAL EQUIPMENT:	Icc Safety Kit (Fire Extinguisher And Road Reflectors)		
	Manuals, Two Complete Set Of Parts And Service Manuals		
	Front Axle Spare Tire And Rim Mounted		
	Front bumper guides poles with bulldogs.		
WARRANTY:	Basic Vehicle – 12 Months On All Components		
	5 Year /150,000 Miles, Engine Warranty Is To Cover Exhaust After-Treatment System And To Include Turbo Charger, Injectors, And Water Pump.		
	Allison Transmission – 5 Years / Unlimited Miles		

DUMP BODY

C. Dump Body to be heavy duty 201 stainless steel cross memberless Smooth under side type, suitable for use by The Town in street and highway maintenance including snow and ice control with external mounted cylinder.

4. Inside length to be 10ft for a 92" CA. 11ft overall with hoist. _____
2. Inside width to be 86" minimum. Outside width 96". _____
3. Sides (from body floor to top of top rail) to be 30" high. _____
4. Tailgate to be 38" high. _____
5. Head sheet to be minimum 36" high. _____
   a. One (1) 2" x 3" horizontal head sheet channel brace from the floor 24.37". _____

6. Capacity to be 6.5 sides and 8.1 cubic yards ends at water level. _____
7. Sides, head sheet and tailgate to be 7 gauge Type 201 stainless steel. _____
8. Floor to be a one-piece 1/4" AR400 steel with both side radiuses built into floor. AR450/Hardox 450 is not acceptable. No exceptions. _____
9. All corner posts and sides to be 7 gauge, 201 stainless steel. _____
10. Top rails are to be 4" x 5" seamless, sloping (dirt/salt shedding) and boxed for added strength. There are to be four (4) stainless steel structural channel piece hold downs for spreader mounted on the top rail. Location for two (2) per side to be determined at the time of installation. _____
11. Bottom rails are to be seamless and sloping (dirt/salt shedding). _____
12. Long sills are to be one-piece 5" structural steel I-beam at 12lbs per foot. _____
13. Rear apron to be ¼" 8" formed channel. _____
14. There are to be no cross members. Floor to be skip welded to I-Beam Long sills. _____
15. Rear Corner Post:
    a. To be 7 gauge 201 Stainless Steel. _____
    b. Rear post to be 38" high x 4-3/4" deep x 12" wide. _____
    y. Top of corner post to be dirt shedding. A 14-1/2" one-piece 7 gauge stainless steel shall be break formed front to back at 5-1/2" and a downward slope remaining at 9". _____
    z. The top of post shall house two (2) ½" stainless steel plate brackets to house the top pivot point. _____
    aa. Tailgate reinforcement plate around the tailgate latch assembly must be ¼" thick. Outside must be 16" tall. Bottom must be 8-3/4" long. Inside bottom height shall be 7-3/8" to the floor. Top shall be 4-1/4" from outside to top of floor sheet. All to be continuously welded. _____
    bb. Two (2) oval factory cut outs for S/T/T and Reverse. _____
    cc. Two (2) Whelen brand strobe light (3 light) boxes to be welded to outside of each rear corner post. Location to be determined at the time of build. _____
16. No front corner posts. Head sheet to have mirrored image of one (1) weld on full length horizontal side brace each side and to be continuously welded to side brace, each side. _____
17. One (1) Intermediate fully welded horizontal side brace, full-length. _____
18. 30" x 86" wide cabshield to have built in tarp deflector full width of body headsheet. Cabshield to house tarp. Five (5) Whelen flush mounted 700 series mounted: Each side, each front corner, and one front center. All Back side of lights must be boxed in with stainless steel. Stainless steel tubing shall be used to protect electrical wires between lights. Tarp system to be recessed into side plates at furthest most rear. See tarp section for details. _____
19. There are to be 2" x 8" hard wood sideboards installed and painted black or to match cab color. Front board side pocket holders must extend full height to bottom edge of cabshield lip. _____
20. The one piece external side sheet must be break formed and wrap under the body floor no less than 10" extended under the body with

a continuous welded seam to floor sheet. _____

21. Tailgate design:
    a. To be and double-acting heavy duty. _____
    b. Bracing to be full perimeter box type, 6" top and bottom and 4" sides. _____
    x. There is to be one (1) horizontal brace, mid-section. _____
    y. Top, bottom, and intermediate horizontal braces to be sloped (dirt/salt shedding). _____
    z. Top and bottom tailgate pins to be 1-1/2" diameter 201 Stainless steel, minimum with T-handle. _____
    aa. Minimum 3/8" stainless steel coil chains to be long enough to hold tailgate in horizontal position if necessary. _____
    bb. Tailgate to be level with dump body floor when in horizontal position. _____
    cc. Heavy nylon mesh sleeves to be installed over spreader chains to protect body finish. _____
    dd. Lower latch hooks to be flame cut from 3/4" 201 SS plate to secure against two (2) 3/8" 201 SS corner post mounted latch plates, one (1) set each side of the ¾" latch hook per side. _____
    j. There is to be a full width 1" 304 stainless steel diameter (min.) tailgate release rod at rear of body. _____
    k. Air tailgate release with spring parking brake chamber mounted center rear of body with dash control. _____
    l. All 201 stainless steel hardware. _____
    m. One (1) SS d-ring lift hook mounted on top of tailgate. _____
    n. Three (3) coal doors, 13" wide, recessed flush with interior tailgate sheet. _____
    o. Two (2) safety turnbuckle latches, one per side, for safety of holding tailgate shut. No exceptions. _____
    p. Two (2) tailgate latch bar safety mechanisms, one per side bottom, per North Hempstead's approved drawing. No exceptions. _____
22. Continuous welded body shell (except long sills to floor sheet that are skip welded), cab protector & tailgate. _____
23. Stationary 2-1/2" x 20" long grip strut stainless steel steps (one step) mounted to the front drivers side as far forward as possible on the horizontal side brace. _____
24. Full length 2-1/2" grip strut stainless steel walk rail to be mounted full length on bottom rub rails. _____
25. Three (3) step stainless steel pull out ladder mounted under floor and under 20" grip strut step on horizontal brace. _____
26. One (1) Pull Tarp brand tarp system with asphalt rated tarp. Must be mounted on top of cabshield as far rearward and recessed into side vertical supports of cabshield. 7GA Stainless steel cover mounted over the exist Pull Tarp housing. _____
27. Two (2) one-piece stainless steel rod grab handles must be mounted on each side of the 20" step. _____
28. Front corner of bottom rub rail must be capped with 7GA stainless steel and be on an approximate 60 degree angle. _____
29. Six (6) stainless steel J-Hooks mounted upside down. Three (3) per side and evenly spaced and welded on. _____

30. One (1) 12” bolt on stainless steel rear apron. _____
31. Two (2) stainless steel lift loops mounted to top dirt sheet rail, evenly spaced. _____
32. Stationary two (2) ¾” stainless steel rebar mounted on 45 degree from front head sheet to sides at spacing as the outsides steps. _____
33. Body must have any welded burn marks removed prior to delivery. _____

HOIST AND REAR HINGE ASSEMBLY

D. Heavy duty front telescopic type hoist suitable for use with a Dump body on a road and highway maintenance truck used for snow and ice control, externally mounted of headsheet. No exceptions. _____

3. NTEA rated Class 50 with 17.5 tons capacity minimum. No exceptions. _____
2. Forty three thousand pound (43,000 LB.) capacity minimum @ 2000 PSI. _____
3. Double-acting (power up and down full length of stroke). _____
4. Largest diameter stage must be at bottom. Inverted cylinder not acceptable. _____
5. 4.5" inside diameter cylinder base tube (minimum). _____
6. 100" stroke (minimum). _____
7. All cylinder stages to be nitrated for corrosion resistance and wear resistance. _____
8. Internal bore seal design so no packing adjustment or bleeding is required. _____
9. Hoist cylinder to be mounted inside pivoting, trunnion mounted cylinder cover tube. _____
10. Subframe for hoist and body. _____
17. Mounting height not to exceed 9" from the top of chassis frame to dump body floor. No exceptions. _____
18. 5” x 6” x ½” x 38” long formed angle with 1-1/2" 303 stainless steel pins with greaseable pins. Each pin is secured by nut/bolt. _____
19. Each pin mounts into two (2) 1/2” plates mounted on two sides to the 6’ x 8” x ½” formed angle. Outside plate for each set must be 1.125” from end angle with pin centers at 32”. _____
20. Each rear hinge block must be a 2-1/2” wide and 3.25” tall plate steel with 5.88” length mounting surface of body to top of block. Each block must accept a 1-1/2” dumping stainless steel pivot pin and have a grease zerk. _____
21. Overhang from the center of the rear pivot is to be 12” to the end of the floor plate. _____
22. Externally mounted hoist design must show, upon request, at least fifteen (15) current systems of this same design in the NJ/NY market. No exceptions. _____

SNOW PLOW HITCH

C. Heavy front frame side plate low profile snow plow hitch. _____

3. To be engineered, designed and built by a recognized snow plow manufacturer. Hitch to be a low profile configuration. The design will limit the amount of front overhang to a minimum. _____
4. A truck frame extension is not required for the mounting of hitch but

recommended. _____

3. Heavy front frame hitch of modular design shall allow the cab hood to tilt completely forward for engine access. _____

23. Side plates will transmit plowing forces directly to the truck frame side rails and will custom fit the specified year, make and model of the truck. _____

24. The side plates are custom fitted 5/8" steel plate of proper length and construction for heavy duty service and shall provide adequate clearance for steering mechanisms and spring suspensions. _____

25. Side plate mounting angles or plates shall mount flush to the truck frame for maximum strength. Pipe spacers are not acceptable. _____

26. The front section of the hitch assembly: lift frame, center section and the lower push plate shall all be welded to the two (2) vertical tubular supports. The two (2) vertical supports are to be constructed of 6" x 3" x 1/4" thick wall. The length of each support shall be 38-1/4". No exceptions. _____

27. The front two (2) vertical supports are to be spaced evenly 26-3/4" apart. No exceptions. Overall mounting width is 32-3/4". _____

28. The front two (2) vertical supports are to be mounted to vertical structural angles of 5" x 4" x ½", full height of tubes. _____

29. Each vertical tube must have three (3) 3" wide gussets tying in the vertical tube to the structural angle. Each gusset is 3" x 4" x 5" x 7ga. _____

30. The vertical tubes and structural angles are mounted to a horizontal 6" x 4" x ½" x 39" wide structural angle mounted at the top of the two (2) vertical structural angles. _____

31. The center cylinder tube to be built with a 6" x 3" x 1/4" tubes x 26-5/8" long and mounted centered to the vertical tubes. Two (2) 1/2" x 3" x 4" lift cylinder ears to be welded to this tube along with a 1/2" x 3" flat reinforcement bar. _____

32. The telescopic lift arm shall be manufactured of 4" x 4" x 3/8" square outer tubing and 3" x 3" x 3/8" square inner tubing. _____

33. The lift arm and lift frame shall be designed to accept 2.5", 3" or 4"x10" lift cylinder . Cylinder pins are to be 1" cold rolled steel. Inner lift arm must accept clevis and pin. _____

34. Truck and plow portion hitch must be Torloc/Arrowhead style and work interchangeably with The Town of North Hempstead's fleet. _____

35. Mounted under the telescopic outer tubing is to be a white poly block 1-1/2" x 3" and arced to hold a 4" x 10" lift cylinder. _____

36. The quick hitch shall provide self-alignment with the mating plow section while being engaged. _____

37. Re-mount OEM bumper. Bumper shall be split to accommodate plow hitch and must be bolted on and utilize stabilizer arm per section. _____

38. The plow hoist cylinder shall be of premium grade and shall be a double acting 4" bore x 10" stroke. _____

39. The piston rod is to be of steel construction treated with a nitro steel process. _____

40. The ram sleeve or outer barrel will be such that the rod packing may be maintained or replaced as required. A positive stop must

be incorporated that will help prevent mechanical pressure being applied to the packing when the rod is fully extended. _____

41. The cylinder shall be capable of 14,137 pounds of thrust @ 2,000 PSI and 16,000 pounds of bursting pressure @ 2,000 PSI. Minimum weight of the cylinder shall be 28 pounds. Ports to be 3/8" _____

SNOW PLOW

A. MOLDBOARD:

1. The moldboard shall be heavy duty torsion trip edge design type Snowplow with level lift without additional mechanical mechanism. _____
2. Moldboard will be an integral shield with trip edge. _____
   m. Length to be 10'. _____
   n. Height to be 40" (not including rubber deflector) in dead center And 54" each end. No exceptions. _____
   o. 36" side plastic markers mounted to plow. _____
   p. Two (2) lift hooks to be mounted on moldboard top. _____
9. The moldboard shall be reinforced at the top with a 3-1/2" x 2-1/2" x 3/8" with holes to allow moisture to escape with poly 36" markers. _____
10. 10 GA. 201 Stainless Steel rolled moldboard with eight (8) ½" x 3-1/2" ribs for extra strength and rigidity. Plow must have all welded burn marks removed prior to delivery. No exceptions. _____
5. All welds must be continuous (skip welds not acceptable). _____
6. Bottom angle must be 4"x 4" x ¾" with an additional 4" x 3" x ½" trip edge angle. _____
10. Top moldboard angle must be constructed of 3-1/2" x 2-1/2" x 3/8" with holes to allow moisture to escape. _____
11. Two horizontal structural angle braces ¼' x 3" x 3" added for rigidity. _____
12. Attack angle of moldboard shall have adjustments of 5, 10, and 20 degree. _____

B. CUTTING EDGE:

1. The cutting edge must be Kuper Tuca SX Wave Carbide cutting edge. No exceptions. Must be AASHO standard punched, flush with moldboard and be easily replaceable. _____
3. Cutting edge face must have wrap around curb guards mounted on both ends with same bolts/nuts as cutting edge. No Exceptions. _____

C. TRIPPING MECHANISM:

1. Adjustable torsional one piece cutting edge trip. From bottom of new 8" cutting edge to top trip edge is no less than 14.75". _____
4. Springs must have a zero insertion force for increased safety while servicing. No Exceptions. _____
5. Bottom moldboard angle must be 4" x 3" x ½". Fully welded to bottom edge of moldboard. _____
4. 4" x 4" x ¾" backer angle with (6) ¾" trip ears welded to angle. _____
5. Full length trip edge pivot tube, must be constructed of schedule 80, 1.50" OD black pipe. End of each plow cutting edge is to include a 4.5"OD x 1.5" thick curb guard. _____
6. Cutting edge tripping must be controlled by (5) torsion springs. Springs constructed of a minimum of .75 square bar with 14 active coils. Minimum spring dimensions shall be 3.75OD x

2.25ID x 11.75. Springs must be produced to meet Rockwell C hardness. Hardness shall be produced from oil quenching with a minimum temperature of 1550°F. Spring preload shall be a minimum of 35°. Springs shall have a trip load capability of 8228 INCH-LBS. Typical spring material composition shall be Carbon=0.40, Manganese=.70, Phosphorous=.020, sulfur=.020, silicon=.25, chromium=.80, Nickel=1.75, Molybdenum=.25. _____

7. Three (3) position adjustment on each individual torsion spring on the trip assembly to allow adjustment in various settings for road conditions. No exceptions. _____
8. Face of cutting edge trip section must be 201 Stainless Steel. No exceptions. _____

D. PUSH TUBE ASSEMBLY:

1. Push tube to be constructed of 4" x 4" x .38 square tube, 107.5" in length. Each end of the push tube shall be capped with a 10ga 3.25" x 3.25" plate. _____
2. Welded to the moldboard pushtube shall be (8) 5/8" x 3.5" x 7" pivot ears. Each ear shall be further reinforced with a 2" x 2" x .38 gusset. Pivot ears shall pin to moldboard assembly with 1-1/4" thick pins. _____
13. (2) Moldboard stabilizer strut mounting ears each constructed of (2) 5/8" plate approximately 10" x 13". _____
14. Center pushframe pivot constructed of (2) .38 x 36.5" x 8.5" plates. There shall be a 3.5" hole in each plate for a 5-1/2" x 3-1/2" OD x 2.52" ID bushing. Bushing shall be drilled and tapped for a 1/8" grease zerk. _____
15. Center pushframe pivot assembly shall also have (2) 3.75" stops for the a-frame assembly. _____
16. Push tube cylinder lugs, located on left and righ hand sides shall each be constructed of (2) 5/8" x 8-1/4" x 3-5/8" plates complete with a 1-1/4" pin hole. _____
17. Cylinder lugs shall be further reinforced with 3/8" x 2-3/4" x 3-1/4" gusset. _____
18. There shall be (2) chain lift lugs welded to the top of the push tube constructed of ½" x 3" x 4" plates. _____
19. Moldboard reversing shall be accomplished by (2) 3" rod x 3.5" bore x 16" stroke single acting cylinders. _____
20. Cylinder rods shall be nitride for increased corrosion resistance. Chromed rods shall be unacceptable. _____
21. Cylinder working pressure shall be 3000 PSI. _____
22. Cylinder shall be plumbed to an 1800 PSI cushioning valve to prevent damage when hitting obstructions. _____

E. A-FRAME:

1. Pivot capture plates shall consist of (2) plates constructed of 1" x 11" x 12-7/8" plates. These plates will be flame cute and have a 2.53" hole to pin the a-frame assembly the push-tube assembly. The top pivot capture plate shall be drilled and threaded for a ¾" capture bolt to prevent pin rotation. _____
3. Top main A-frame plate shall be constructed of 3/8" x 28" x 25-5/8" flame cut plate. The narrowest portion of the top plate shall remain

a minimum of 12". Top plate shall also be flame cut to accept the reversing cylinder pins. Pin hole shall be 1.281" in diameter. Each pin holes shall be further reinforced with a 1" thick plate which is flame cut to accept reversing cylinder pin. _____

8. Bottom main a-frame plate shall be constructed of 3/8" x 28" x 25-5/8" flame cut plate. The narrowest portion of the top plate shall remain a minimum of 12". Bottom plate shall also be flame cut to accept the reversing cylinder pins. Pin hole shall be 1.281" in diameter. There shall be a 6" access hole for attaching the hitch swivel bolt. _____
9. The A-frame vertical side plates which tie the top and bottom plates into a boxed formation shall be constructed of ½" x 4" x 32" plate and formed to follow the contour the top and bottom plates. _____
10. The rear A-frame push plate shall be constructed of 1" x 6-3/4" x 33-5/8" plate. This plate shall be flame cut with a 1-9/16" hole to accept the plow hitch attachment bolt. _____
11. On the top side of the A-frame plate shall be a mounting plate to which attached is the reversing cylinder cushion valve. _____
12. Plow portion hitch must be Torlo/Arrowhead and fit existing Town of North Hempstead truck portion hitches. _____

F. PAINT:

4. All metal surfaces are to be phosphate washed to remove slag, splatter, oxide and oil residue. _____
5. Moldboard frame work must be powder-coated Highway Orange. _____
6. Push frame, "A" frame and other miscellaneous components are powder-coated black for increase paint durability. _____

<u>CENTRAL HYDRAULIC SYSTEM</u>

A. TYPE:

1. System to be of load sensing pressure-compensated type, pumping oil only when needed and in exact volume and pressure required --- no more, no less. _____
2. Pump to automatically revert to standby mode when no oil flow is required (No on/off switch). _____
4. Must be able to operate all equipment on truck simultaneously if necessary. No one function to interfere with any other. _____
4. System controls are to be electronic over hydraulic. _____
5. Operating speed of all functions must-be variable and adjustable. _____
6. One complete system to operate all functions. _____

B. HYDRAULIC PUMP AND FRONT CRANK SHAFT:

1. The hydraulic piston pump shall be a pressure and flow compensated load-sensing type. The pump shall be an Eaton 5.98 CID series 620 have a minimum 2" inch suction line and ½" control drain line plumbed directly back to the reservoir. The pumps compensator shall have rear facing adjustments. Pump shall be a front crank shaft mounted drive shaft and properly mounting. _____

C. HYDRAULIC VALVE:

1. Control valve shall be U.S. manufactured. Valve shall be a load sensing type with o-ring ports. Mid-inlet section porting will be #16 inlet, #20 outlet, #16 hoist section, #4 load sense port, and #10 or #12 for all other sections. The hoist section shall be stacked to one side of the mid-inlet and all other sections will be stacked on the other side. All ports shall be level with each other so as to lay flat on its base. There will be a main relief in the mid-inlet section that will be set at 3500 PSI to protect the system from being over pressurized. _____
2. Valve section to be arranged as follows:
3. Hoist, 4-way for a double acting cylinder with mid-inlet transition section. _____
4. Pressure reducing section., if needed. _____
5. Plow Lift, 4-way for a double acting cylinder with flow control. _____
6. Plow Angle, 4-way for a double acting cylinder with flow control. _____
7. Spin-A-Veyer section, consisting of two pressure compensated cartridges that are a single piece design with hardened cartridge bores and spools. These shall be operated independently via a 12 VDC pulse width modulated signal. Each valve shall have heavy duty 7/16-20 UNF screw style manual overrides that are adjustable from no flow to full flow. These valves shall be mounted in a housing that is made of aluminum with gray anodizing for corrosion resistance and durability. The auger/conveyor shall be a 15 GPM spool and the spinner shall be a 7 GPM spool. No exceptions. _____
8. Liquid Pre-Wet/Anti-Ice Valve 4-way. _____
9. Valve shall be prior approved equal. _____
11. A plow float/balance valve must be provided and controlled with a dash mounted rocker switch for on/off. The plow float/balance can be turned off as needed. When in use, the valve will allow the valve to use a pressure reducing/relieving system to control the float/balance lifting pressure on the plow's lift arm assembly. Two solenoid valves wired together turn the valve off and on. One solenoid valve opens the inlet of the pressure reducing valve to the pump. The other solenoid valve opens the outlet of the pressure reducing/relieving valve to the lift port. Oil flowing in and out of the lift port is restricted with an orifice. _____

D. OPERATOR CONTROLS FOR DUMP BOY HOIST and SNOW PLOW:

1. The valve controls shall be a feathering remote electric control with each joystick. Dump to have one (1) Joystick and Plow to have another Joystick. Force America Joysticks or prior approved equal. Layout to be determined at the time of build. _____

E. RESERVOIR/VALVE COMPARTMENT:

7. One (1) 30 gallon all-welded 304 stainless steel hydraulic oil reservoir mounted on the hoist's cradle on passenger side. Must have site gauge with rubber gasket seal. No exceptions. _____
8. The hydraulic reservoir will be constructed of 10-gauge stainless steel and be internally baffled. _____

9. One (1) 304 stainless steel valve enclosure mounted on the hoist's cradle on the driver's side. Must have a Stainless steel cover with one bolt-on securing mechanism. No exceptions. _____
10. Shall be mounted in a manner as to not transmit any truck torsional loads thru the tank. _____
11. The enclosure will use a gasket-less passive technology. (No rubber seals, gaskets, or weather stripping.) _____
12. The reservoir supplier will provide all valve fittings (JIC connections) and plumb the return line from the valve to the filter. _____
7. The cover will protect from both road and pressure washer spray. _____
8. A 2" full flow brass ball valve shall be plumbed at the suction port of the tank. _____
9. A low oil/high temp sending unit shall be mounted in the reservoir. _____
10. Hydraulic oil filter shall be mounted in the reservoir. Hydraulic filter shall be a 10-micron absolute and rated for no less than 60 GPM. _____

F. Hydraulic Lines and Fittings:

1. Stainless steel tubing to be used under body and cab in lieu of hosing. Only hosing to be used is ends of stainless steel tubing to reach each function's quick couplers or connection. Tubing shall be seamless #304 stainless steel construction with a minimum wall thickness of 0.065". The ends must be flared to accommodate a 37 degree JIC fitting. The use of compression fittings is not Acceptable. Spacing of each tube to allow for material to fall between each tube. _____
17. All stainless tubing must be mounted in polyurethane poly green tube clamps. _____
18. All hoses to be wire braid reinforced with swaged on high pressure JIC 37 degree tapered seat end fittings. _____
19. All fittings & adapters to be forged steel (No tapered pipe fittings except on suction hose). _____
20. Hoses to front with 1/2" 100% stainless steel (no exceptions) quick couplers for power reversing plow. _____
21. Hoses to rear with 1/2" 100% stainless steel quick couplers for spreader (no exceptions). _____
22. Spreader stainless steel hose couplers to be mounted on either frame rail or pintle plate under dump body at rear. _____
23. Polymer dust plugs or caps on all couplers with retainer straps. _____
24. All pressure hoses except for plow & spinner to be 3/4" I.D. SAE 100R2. _____
25. Plow, spreader spinner, and prewet system pressure hoses to be 1/2" I.D.SAE 100R2. _____
26. Main pressure hose from pump to control valve shall be 1" Didiameter, 4-wire braid. No exception. _____
27. All return hoses to be SAE 100R2. _____
28. Suction hose to be minimum 2" I.D. SAE 100R4 spiral wire reinforced with long radius ells. _____
29. All hoses to be routed away from chassis exhaust whenever possible to protect against heat deterioration. _____
30. All hydraulic quick disconnect couplings must be stainless steel Aero-Quip FD45 series or prior approval; bulkhead mounted, and include attached male and female dust covers. Couplings to be

configured so as to eliminate confusion when coupling. No exceptions. _____

31. All stainless steel quick disconnects for spreaders must be mounted under body at passenger rear most corner and mounted to stainless steel encloused housing that is welded to bottom rub rail wrap around portion. No exceptions. _____

G. Spreader Controller:

2. Force America 5100ex open loop controller. No exceptions. _____

SNOW PLOW LIGHTS:

A. Truck-Lite brand LED model 80880 plow lights. _____

5. Mounted with custom fabricated 100% stainless steel brackets on truck fenders. Brackets must be painted black. _____
6. Plow lights to be wired into the truck's existing headlight circuit using the factory installed switch. _____
7. Plow lights must function in high and low beam modes using existing truck's dimmer switch. _____
8. Plow lights and truck chassis headlights must never operate at the same time. _____

LIGHTING & ELECTRICAL

ALL lighting and layout must meet all Fedaral, State, and DOT regulations. No exceptions.

A. LED lighting system. _____

1. All marker, work, S/T/T, backup and strobe lighting to be LED. _____
17. Whelen brand DOT3 System to be Super-LED DOT Light system model 00007DS0 or equal and a current production model of Whelen and made in the USA. _____
18. The two (2) Whelen 704-D three lamp light boxes to be continuously welded to outside of each rear corner post. Rear Super LED Head Assemblies to be 700 Linear-Super-LED two (2) amber heads, two (LED) brake/tail/turn light modules, and two (2)LED back-ups, one set each side. Each head shall be capable of emitting a full 180 degree of light in the vertical plane. The light heads shall be recessed into a heavy duty 7GA stainless steel housing. _____
19. The two rear 700 series heads shall utilize a DOT LED flasher which is mounted and encapusulated in a junction box inside of cab. The DOT LED flasher shall allow the two rear 700's to be controlled independently from the front head assembly. One (1) stainless steel rod mounted vertically in front of each head to protrude out far enough to protect lense. _____
20. The 700 assembly, brake light and back up, including the steel housing, shall be approximately 23-1/2 inches high , 4-7/8 inches deep and 3-1/2 inches wide. _____
21. The modules, as well as the lens, shall be easily replacable. A water proof connector for each module shall be used to connect to the cable harness and shall be located inside the steel housing for weather resistence as well as ease of replacement. _____
22. The 700 lenses shall be made of polycarbonate, amber in color,

and have a smooth outer surface for self cleaning. _____

23. There shall be two LED brake/tail/turn modules, one located in the middle positions of each steel housing. Each module must contain a minimum of 72 red LEDs. The module must be in “signal alert” flash pattern, which flickers three times withing 150 milliseconds before becoming steady “on”. These modules must meet or exceed SAE requirements. _____
24. There shall be two LED back ups, one located in the bottom position of each steel housing. Each module must contain a minimum of 48 white LEDs for maximum light output. These modules shall be supplied with a clear polycarbonate lens. _____
25. The rear mounted head assemblies shall use stainless steel screws that screw directly into a nylon mounting bracket to eliminate dissimiliar metal corrosion. Units that screw into steel bracket are unacceptable. _____
26. Cable harnesses being supplied from the rear housings must be heavy-duty TPR type cable. Flexible to minus 40 degrees Fahrenheit; abrasion, corrosion and oil/grease resistance. Each conductor shall be a minimum of 14GA, pure copper stranded, and fully tin coated. No less than 30feet of cable shall be provided for each head assembly. All necessary connections shall be provided, including a strain-relief system. _____
27. Cabshield lighting shall be five (5) surface mounted Whelen brand 700 series strobes. Must be synchronized with two (2) rear Whelen brand 700 series on outside of rear corner posts. _____
28. Cabshield Whelen 700 series strobes to be on one (1) chassis dash rocker switch for on/off and labeled. _____
29. Both rear facing and rear side corner mounted Whelen 700 series strobes to be on one (1) chassis dash rocker switch for on/off and labeled. _____
30. Two (2) OEM S/T/T w/ Backup light mounted behind rear apron of dump body. Hole to be cut into apron to allow visibility. Hole to be covered with black trim lock. _____
31. Two (2) OEM S/T/T w/ Backup light mounted on each side of pintle plate. Location and mounting to be determined at the time of installation. _____

B. Electronic Back-Up Alarm provided by chassis dealer and relocated if needed. _____
C. Body Up Indicator Light. _____
   1. Sealed weatherproof proximity switch on hoist-frame. _____
   2. Whelen model ION-R body up light mounted in cab. _____
D. All non- strobe wiring to be 7 wire trailer cable. Separate cable routed from in-cab to all non-strobe lights with sealed junction box at rear so all wiring connections are made either inside cab and in a sealed junction box. _____
E. One (1) solid stainless steel rod must be mounted under body and all electrical body lighting must be neatly run. Rod will be one piece and full length. No exceptions. _____
F. All wire connections shall be made in the chassis cab or by means of a waterproof junction box. In cab connections shall be made using vinyl coated crimp connectors covered in weather resistant heat shrink tuning. There shall be no wire splices outside the cab. All wiring to

junction box shall be resistant to abrasion, ozone, sunlight, chemicals and oil. The outer jacket shall be chlorinated polyethylene and be approved for submersion in water. The outer jacket shall be label with the cable identification wire gauge and number of conductors. Must be MSHA approved. All body lighting shall be supplied by a single sealed harness from the junction box and making the connection at the light by means of weather tight sealed connector. All strobe lights shall be included in the same harness and be connected by means of a Deutsch connector, no exceptions. _____

MISCELLANEOUS

A. 90 degree elbow extension on top of chassis vertical exhaust stack to clear cab protector and still route exhaust upward to be provided by chassis supplier and installed by body company. _____

D. Rear tire poly Fleet Maintenance fenders with stainless steel mounting tubes. _____

C. Upon installation of all components, truck must be delivered to the truck dealer for final inspection and prep. _____

D. Rear pintle plate shall have a Holland model T90 pintle properly Installed and secured. _____

1. Mounted on reinforced 3/4" thick mounting plate at rear of chassis frame at designated clearance height to ground to be 29". Sides and bottom must be reinforced with ¾" x 2" flat stock mounted behind the pintle plate. _____

5. Must include Safety two (2) 5/8" D-Rings, one (1) 7-wire flat plug and one (1) 6-wire plug. _____

6. License plate light and bracket mounted to top corner on passenger side. _____

E. DOT approved 2" conspicuity tape on body bottom rub rails, rear corner posts, tailgate perimeter. All DOT necessary reflective decals installed as well. _____

F. Pull Tarp brand asphalt tarping system to be mounted in cabshield rear. Must recess ahead of front head sheet and cut into side plates of cabshield for lowest possible mounting. _____

H. Two (2) Toolboxes; Heavy duty aluminum 48x18'x18', mounted on frame rails. One (1) per side. _____

INSTALLATION AND WARRANTY

F. Minimum twenty-four (24) months, 100% parts and labor on components and installation. No deductible. _____

G. For warranty considerations and future availability of parts and service, the body company must be an authorized primary distributor for all major components they propose to furnish. Must furnish written proof from such said vendor upon request. _____

H. All equipment must be installed by a single body company, by their employees and at their regular location. _____

I. Installation of components is not to be subcontracted by body company to another installer. _____

J. No welding whatsoever is to be done on chassis frame between front of most forward spring hanger and rear of rearmost spring hanger. _____

F. No drilling whatsoever is to be done in frame rail flanges. _____

I. Body company to furnish operator's parts and service manuals for all components manufacturer's i.e., dump body, hoist, snow plow, salt spreader, central hydraulic system and strobe lights. _____

J. Completed vehicle must be certified by the body company as meeting all federal motor vehicle safety standard in effect at time of chassis production. _____

2. Approved NHTSA/FMVSS certification label must be furnished and located inside cab on driver's side. _____

I. Completed unit to comply with current OSHA regulations. _____

J. Body company must be registered with National Highway Traffic Safety Administration as a final stage manufacturer of motor vehicles as required by Federal Law. _____

K. Body company to conduct operator training session on body and equipment at the The Town garage after delivery of completed truck. _____

L. Delivered of completed vehicle must be within 60 to 75 days after delivery of cab chassis to up-fitter. $75 a day penalty might incur with later delivery. _____

M. Body company must have ASE certified installer/s and show documentation at time of bid. No exceptions. _____

N. Body company to be registered and in good standing with National Truck Equipment Association (NTEA), be a MVP member, and be the authorized distributor for all equipment bid. _____

O. Body company must participate and provide documentation at time of bid for E-Verify®. This employment verification verification is a United States of America federally accredited verification system to insure all employees are legal residents. List Company ID#_____. No exceptions. _____

P. Dump Body, Snow Plow, and Snow Plow Hitch must be engineered and manufactured in the United States of America and all from the same manufacturer. No exceptions. _____

Q. Hydraulic schematic must be provided and laminated and placed inside the combination valve enclosure/combo tank lid. _____

R. A required pre-build meeting will occur after award of bid and prior to the start of installation. No exceptions. _____

S. The Town will inspect all equipment (plow, hitch, dump body and tailgate spreader) prior to the start of installation. No exceptions. _____

Package "C" for Chassis, Combination Body, Plow, Hydraulics, Spreader Control and Misc Items for V-Box Setup

"BIDDING REQUIREMENTS SECTION"

SECTION	SPECIFICATION DETAIL	COMPLY	
		Comply	Exception
PACKAGE C: 6 WHEEL TRUCK, DUMP BODY, PLOW, HITCH, CENTRAL HYDARAULICS FOR HI-WAY SPREADER			
-			

Description: Chassis Specifications For A New 2016 GU712 Chassis With SCR Technology To Meet 2014 Emissions Of 0.2 Grams Of Nox Or Equal			
Chassis/ Frame & Wheelbase:	Chassis: 2016 Mack GU712 Chassis Or Equal		
	Frame Rails, 11.811" x 3.54" x 0.44" High Strength 120,000 PSI Steel - 20" Integral Front Frame Extension For Snow Plow Mount		
	Single Chassis Rail		
	Section Modulus 23.5 cu In/Rbm 2,820,000 In Lbs. Per Rail		
	Wheelbase - 180"WB, Center of Axle - 92"CA,		
	Platform - 154"LP, After Frame - 62"AF		
MAXIMUM GVW & AXLE RATINGS:	Gross Vehicle Weight Rating Of 48,000lbs.		
	Front Axle Capacity - 18,000 Lbs.		
	Rear Single Drive Axle Capacity - 30,000lbs		
	Front Steer Axle-Gross Axle Weight Rating - 18,000lbs		
	Rear Drive Axle –Gross Axle Weight Rating - 30,000lbs		
ENGINE:	MP7-405M 405 Hp @ 1500-1900 Rpm. Operating range 1100-2100 1480 Lb. Ft. Max. Torque @ 1050-1350 Rpm High Torque Rise 60%		
	11.9 Liter, 659 Cu. In Piston Displacement.		
	EPA Carb Emission Certified For 2014 Utilizing Selective Catalyst Reduction(Scr).Engines Utilizing Government Credits Or Penalties Are Not Acceptable		
ENGINE EQUIPMENT:	Air Compressor, Meritor/Wabco 318 18.7 Cfm		
	Engine Mounted Oil Check And Fill		
	Mack Powerleash Engine Brake		
	Alternator, Delco 12V 130A (24SI) Brush-Type		
	(3) 12volt Mack Grp31 Batteries With 3000 CCA Threaded Post		
	Air Cleaner, 11" x 30" Under Hood Single Element Dry Type		
	12 Volt Heavy Duty Starter-Delco 39mt-Mxt		
	Electronic Starter Interlock System		
	Coolant Protection To Below –34 Degrees Fahrenheit With Coolant Conditioner Filter		
ENGINE EQUIPMENT:	Engine Block Heater, Gomack (Phillips) – 1500 Watt 120 Volt With Intake Grid Heater mounted under driver side door.		
	Starting Aid Engine Electric Preheater		
	Engine Hoses And Tubing, Silicone		
	Diesel Particulate Filter /Scr System Horizontal-Under Right Side Of Cab-Clear Back Of Cab Option		
	Exhaust After –Treatment System Diesel Particulate Filter Ceramic Catalyzed, And Scr Technology To Meet 0.2 Grams Of Nox		
	Exhaust, Side Of Cab Single (R/S) Vertical Straight Exhaust Stack		
	Poly-V Fan Belt With Automatic Tensioner		

	Fan Drive, Behr Fan And Electronic Modulating Fan Drive		
	Flywheel ,Light Weight Aluminum		
	Fuel-Water Separator: Davco 382, (Fluid Heater) Fuel Heater/Water Separator w/vendor Prim & Mack Sec fuel Filter		
	Tether device Furnish Cap Retainer for Oil Fill & Radiator		
	Hand Primer Pump		
	Hoses, Radiator/Heater Mack Brand EPDM Radiator & Heater Hoses		
	Injection Pump- Electronic Engine Control		
	Radiator, Aluminum Core		
TRANSMISSION:	Allison 4500-RDS -6 (4.70/0.67) Rugged Duty Series Gen 5 Includes transmission Cooler, External Oil Cooler, Internal Filter, and Oil Level Sensor		
	Driveline-Main, Meritor 18 MXL "Xtended Lube"		
	Transmission Bell Housing, Aluminum		
	Synthetic Transmission Fluid		
CAB EQUIPMENT:	Air Conditioner/Heater, (Bergstrom) Integral w/heater combination		
	Air Restriction Monitor, Air Cleaner Intake Mtd		
	Instrument Cluster Display, Co-Pilot Driver Display(4.5”Diagonal Graphic Lcd Display W/4-Button Stalk Control)(Includes Guardog Routine Maintenance Monitoring)		
	Conventional Cab (Welded Steel Galvanized Shell) with Air Ride Suspension(Aluminum Cabs Not Acceptable)		
	Fiberglass Tilt Hood With Safety Lock And Hood Hatch For Maintenance Checks		
	Cigar Lighter On Instrument Panel		
	Overhead Console with 2 Storage Compartments and Power Leads		
	Dome Light, (4) W/Self-Contained Switch		
	Diagonal Handle On Driver Side Door Panel		
	AM/FM Premium Stero, CD-Player, MP3, Weatherband, Handsfree Interface, Bluetooth		
	Driver and Passenger side Power door locks and Windows		
	Gauge, Air Pressure		
	Gauge, Voltmeter		
	Gauge Cluster, Exhaust Pyrometer, Engine Oil, And Transmission Oil Temperature Gauges		
CAB EQUIPMENT:	Gauge, Engine Coolant Temperature		
	Gauge, Engine Oil Pressure		
	Gauge, Fuel Level		
	Gauges, English Display		
	Gauge, Speedometer w/Trip Odometer (Electronic 1% Accuracy)		
	Engine Tachometer Electronic With Hourmeter		
	Glass-Cab Window, Safety Tinted Windshield, Side And Rear Windows		
	Grab Handles, Aluminum, Rh & Lh Behind Door		
	Grille, Bright Finish With Bug Screen		

	Headlamp Bezel- Molded Plastic		
	High Beam Indicator Light		
	Body Builder Access Connector Inside Of Cab For Body Controls		
	Horn-Air, (2) Mounted On Cab Roof		
	Horn- Electric, Single Tone		
	Identification/Clearance Lights, (5) TruckLite LED Chrome Bullet Type Lamp		
	Instrument Panel, Gray With Black Gage Bezel		
	Interior Trim Level, (Grey) Features: Padded Vinyl Headliner		
	Rear Panel With Storage Pouch, Polyurethane Rubber Padded floor Mat		
	2 Cup Holders Mounted At Bottom Of Dash (Center)		
	Chassis Keyed Alike- 4 Keys		
	Heated Mirrors-Exterior, West Coast, Rh & Lh Bright Finish		
	Mirrors – Convex Type, Bright Finish, Lh & Rh 8.0" Dia; Mounted Below Lower Arm Of West Coast Mirror		
	Proximity Mirror Rect Convex Above Rh Door Window		
	Right Side Door Peep Window		
	Exterior Sun Visor Fiberglass (Cab Color)		
	Rear Window (Fixed Type)		
	Seat - Driver, Bostrom Talladega 915 (Mid-Back) Air Suspension		
	Seat – Rider Bostrom Mid Back Stationary with Integral Storage Compartment		
	Seat Covering, All Vinyl		
	Seat Belts, Lap And Shoulder w/Cab Mounted Shoulder Belt		
	Sun visor –Interior, Both Sides (Padded Vinyl)		
	Starter Switch, Key Type		
	Steering Wheel, 18" Two Spoke Urethane Grip		
	Windshield Washers, Electric, Wiper Mounted W/Reservoir Back Of Cab		
CAB EQUIPMENT:	Windshield Wipers, Sprague 2 Speed Electric Motor w/Intermittent feature		
	Dash Control/Power Supply/Local Installation Plow Lamps W/Lead Furnish At Grille With 2w/3w Weather Pack		
FRAME EQUIPMENT/ FUEL TANKS:	Bumper – Front, Extended Swept Back -Steel Channel		
	Crossmembers, Steel Huck Bolted HD Back-To-Back Channel		
	Flaps – Wheel (Front) Black Poly Armor		
	Frame rail End Squared		
	Towing Device – Front, (2) Hooks		
	Fuel Tank – Lh, 72 Gallon Aluminum with 8.7 Gallon Def Fluid Tank-(Clear Back Of Cab Package)		
FRONT AXLE/ EQUIPMENT/ TIRES:	Front Axle, FXL18 - 18,000 Lbs. Capacity-Sealed Kingpins - Maintenance Free		
	Tire Brand/Type – Front, Bridgestone – Tubeless Radial, 315/80R22.5 20 Ply. M860A (All Position)		
	Wheel – Front, Steel Disc 10 Hole Hub Piloted 22.5" x 9.0"		
	Brakes – Front, Meritor "S" Cam Type 16.5" X 6" Q+		

	Brake Drums – Front, Cast Outboard Mounted		
	Dust Shields – Front Brake, Furnish		
	Oil Seals – Front Wheels, Chicago Rawhide (Scotseal)		
	Front Axle Shock Absorbers		
	Slack Adjusters – Front, Haldex – Automatic		
	Springs – Front, Mack Multileaf 18,000 Lb.		
	Spring Build-Up, RH side for Wing Plow Applications		
	Steering Box, Sheppard SD110 with Tilt and Telescopic Steering Column		
REAR AXLE/ EQUIPMENT/ TIRES / RATIOS:	Rear Axle, Meritor RS-30-185 - 30,000 Lbs. Capacity		
	Suspension - Rear, 30,000 Lbs. Multileaf w/Helpers		
	Single Reduction Rear End Gears		
	Locking Main Differential, Driver Controlled		
	Tire Brand/Type – Rear, Bridgestone – Tubeless Radial (4) 315/80R22.5 20 Ply (M860A Tread)		
	Spring Brake Chambers – Vender, Mgm Tr-T Tamper Resistant		
	Spring Brake Chambers, Type 36/36 Rear		
	Carrier/Ratio- Rear Axle, Malleable Housing, 5.63 Ratio		
	Wheels – Rear, Steel Disc 10 Hole Hub Piloted 22.5" x 8.25"		
	Brakes – Rear, Meritor-Cam - 16.5” x 7” P Brakes		
	Brake Drums – Rear, Cast Outboard Mounted		
	Dust Shields – Rear Brake, Furnish		
	Oil Seals, Premium Hub		
	Slack Adjusters – Rear, Haldex – Automatic		
	Spring Brake Chambers-Quantity (2) Chambers Double Diaphragm Type		
AIR/BRAKE:	Air Reservoirs, Steel - One Supply (Wet) Tank		
	Brake Control System-Two Valve Dual Brake System-Trailer Supply With Hand Control For Trailer-Trailer Air Connections To Rear Pintle Plate, Trailer Electrical Harness To Rear For trailer Lights		
	Air Dryer-Meritor/Wabco 1200 Heated With Coalescing Oil Filter		
	Anti-Lock Brake System, Bendix Without Traction Control		
	Automatic Drain Valve, Bendix (Heated) (1) On Supply (Wet) Tank		
ELECTRICAL EQUIPMENT:	Electrical Master Disconnect Switch Mounted in cab.		
	Back-Up Alarm, With Intermittent Feature (Ambient Noise Sensitive)		
	Steel Battery Box with molded plastic cover		
	Courtesy Light Switch (Headlamp And Clearance)		
	Daytime Running Lights,		
	Electric Circuit Protection Package, All Circuits Fuse/Breaker Protected		
	Headlights, Single Mounted Rectangular Halogen Lamps Flush Mtd.		
	Rear Lighting, (2) Combination Stop, Tail Directional and Back-Up Lights-Led Module		
	Signal Flasher Type, Transistorized Turn Signal, Federal Mogul #250		
PTO:	Engine Crankshaft Adapter,1350 Series Flange		
PAINT:	Cab Exterior, Customer Color-Base Coat/Clearcoat		
	Frame Color, Black		

ADDITIONAL EQUIPMENT:	Icc Safety Kit (Fire Extinguisher And Road Reflectors)		
	Manuals, Two Complete Set Of Parts And Service Manuals		
	Front Axle Spare Tire And Rim Mounted		
	Front bumper guides poles with bulldogs.		
WARRANTY:	Basic Vehicle – 12 Months On All Components		
	5 Year /150,000 Miles, Engine Warranty Is To Cover Exhaust After-Treatment System And To Include Turbo Charger, Injectors, And Water Pump.		
	Allison Transmission – 5 Years / Unlimited Miles		

COMBINATION BODY

B. This specification shall describe a 201 stainless steel rear rischarge, combination dump/spreader body or equal. Bidders must submit with their bid complete specifications on the unit they propose to furnish. _____

3. Inside length to be 10'. _____
4. Inside width to be 95.625” minimum. Outside width to be no more than 96”. _____
3. Sides (from body floor to top of top rail) to be 42" high. _____
4. Tailgate to be 54" high. _____
5. Head sheet to be 54" high. _____
6. Water level capacity to be 7.9 cubic yards sides and 10.6 cubic Yard ends. _____
7. Sides, head sheet and tailgate to be 7 gauge Type 201 stainless steel. _____
8. Floor to be 1/4" AR400 rated at approximately 190,000 PSI tensile strength steel. _____
9. 12”x 4-3/4” 7 ga. 201 Stainless steel rear corner posts are tied into a 12” rear apron formed from 7 ga. 201 Stainless Steel. Further reinforcement is provided by a 1/4" 201 Stainless Steel plate that helps prevent flexing in this critical area and strengthens the tailgate latch assembly. Shall have holes cut in the rear of posts to accept (2) oval shaped lights for LED strobe and LED S/T/T. _____
10. 10 ga. 201 stainless steel boxed top rail seamless and sloped inward to shed debris. This design is critical to providing the specified 96” body width. _____
19. 201 Stainless Steel Integral fenders shall be continuously welded and positioned over wheels of truck chassis and built to accept either Poly pre-wet tanks and tool box. _____
20. Full width, cabshield 53” cabshield. Cabshield to house tarp and four oval cut-outs for LED lights. Two per front corner and two per side corners. Back side of lights shall be boxed in with stainless steel.

_____

21. 10” truck frame to body floor height between chain for lower center of gravity and lower mounting height. _____
22. One piece sides and floor which incorporates a 6” floor to side

radius. The floor slopes 22 degrees to the conveyor. A body with any portion of the floor, outside of the main conveyor that is less than 22 degrees, is NOT acceptable due to poor cleanout. _____

23. 7 gauge 201SS formed inner/ 10 gauge 201SS formed outer longsills. _____
24. 2" diameter drive and idler shafts with 8 tooth cast iron sprockets. Drive sprockets are double keyed to shaft. Shall have bearing at each sprocket. _____
25. 25:1 planetary gearcase at the rear of conveyor with a hydraulic piston motor approximately 8 cubic inch displacement. _____
26. Maximum 28" wide conveyor made with D667K pintle chain every link (24,500 lb. tensile/strand). _____

19. Body to have 201 Stainless Steel 15" spreader apron but with bolt on apron in two pieces for access to bearings and drive motor. _____
20. Conveyor extends 12" beyond tailgate to prevent free flow of granular material. _____
21. Tailgate sheet to 7GA 201 stainless steel.:
    a. To be and double-acting heavy duty. _____
    b. Bracing to be full perimeter box type, 6" top and bottom and 4" sides. _____
    dd. There is to be two intermediate 6" horizontal brace. No 6-panel tailgate. _____
    ee. Bottom and intermediate horizontal braces to be sloped (dirt/salt shedding). _____
    ff. Upper hardware to be heavy-duty flush type with minimum 5/8" diameter vertical drop pins on retainer chains. _____
    gg. Flush mount, 1/2" flame cut tailgate pivots. _____
    hh. Minimum 3/8" stainless steel chains to be long enough to hold tailgate in horizontal position if necessary. _____
    ii. Heavy duty offset hinge plates, 1" flame cut. _____
    jj. Heavy nylon mesh sleeves to be installed over spreader chains to protect body finish. _____
    kk. Lower latch hooks to be flame cut from 3/4" 201SS plate with 3/8" latch plates. _____
    ll. 7 gauge 201 Stainless Steel 12" x 26" rear feedgate operates perpendicular to floor.Sloped-in feed gates NOT acceptable. _____
    l. Screwjack type feedgate with handle to passenger side. _____
    m. All 201 stainless steel hardware. _____
    n. Dual brake chamber air tailgate latches (one on each side) with over-center linkage. Pivot shafts include stainless steel bushings to eliminate seizing. Tailgate latch rods that extend the length of the body or have a cross shaft are not acceptable. _____
    o. Stainless lift hook welded to top of tailgate. _____
22. Continuous welded body shell, cab protector & tailgate. _____
23. Fold-up grip strut two-step ladder on left front corner of body with grab/step above. Stainless Steel step inside of body. _____
24. Two (2) shovel holders, one on each side of body, specify exact location at time of installation. _____
25. 2 ½" x 12" hardwood (not pine) sideboards. _____
26. Full length top screens and full length 201 stainless steel under

body pan installed under chain. _____

27. 3/16" Hardox 450 cover plate for conveyor chain to be included and mounted at rear. _____

28. 6"x 8 x1/2" formed angle with 2" 303 stainless steel pins with greaseless composite bushings. _____

SPINNER AND SPINNER ASSEMBLY

3. 20" diameter poly spinner disk will be provided. _____

4. Directly driven by high torque, low speed (550 RPM max.) 2.8 C.I.R. Char-lynn hydraulic motor (Char-lynn part # 101-1313). _____

3. Spinner assembly must be adjustable left to right, front to back, and up and down to assure accurate placement of material on spinner disc to facilitate control of spread pattern. _____

4. Spinner assemble shall be self leveling and kept parallel to road surface at all dump angles using a stabilizer bar attached to the truck frame. _____

7. 201 stainless steel stationary shield mounted in from of spinner to protect the truck under carriage from thrown materials. _____

8. Stainless steel spinner assembly to have four (4) adjustable deflectors. _____

HOIST

B. Heavy duty front telescopic type hoist suitable for use with a combination body on a road and highway maintenance truck used for snow and ice control. _____

1. NTEA rated Class 50. _____
2. 17.8 Tons of Lift-Off Capacity at 2000 PSI. _____
3. Double-acting (power up and power down full length of stroke). _____
4. Largest diameter stage must be at bottom-inverted cylinder not acceptable. _____
5. 4.5" inside diameter cylinder base tube (minimum). _____
6. 90" stroke (minimum). _____
7. All cylinder stages to be nitrated for corrosion resistance and wear resistance. _____
8. Internal bore seal design so no packing adjustment or bleeding is required. _____
9. Hoist cylinder to be mounted inside pivoting, trunnion mounted cylinder cover tube. _____
10. No sub-frame for hoist. Rear hinge assembly to be cut into truck frame rail behind rear spring hanger of rear axle. _____
13. Lowest possible mounting height -- not to exceed 10" (top-of chassis frame to body floor). _____
14. 5 degree oscillating cylinder collar with grease zerk. _____

SNOW PLOW HITCH

C. Heavy front frame side plate low profile snow plow hitch. _____

3. To be engineered, designed and built by a recognized snow plow manufacturer. Hitch to be a low profile configuration. The design will limit the amount of front overhang to a minimum. _____

4. A truck frame extension is not required for the mounting of hitch but recommended. _____

3. Heavy front frame hitch of modular design shall allow the cab

hood to tilt completely forward for engine access. _____

23. Side plates will transmit plowing forces directly to the truck frame side rails and will custom fit the specified year, make and model of the truck. _____

24. The side plates are custom fitted 5/8" steel plate of proper length and construction for heavy duty service and shall provide adequate clearance for steering mechanisms and spring suspensions. _____

25. Side plate mounting angles or plates shall mount flush to the truck frame for maximum strength. Pipe spacers are not acceptable. _____

26. The front section of the hitch assembly: lift frame, center section and the lower push plate shall all be welded to the two (2) vertical tubular supports. The two (2) vertical supports are to be constructed of 6" x 3" x 1/4" thick wall. The length of each support shall be 38-1/4". No exceptions. _____

27. The front two (2) vertical supports are to be spaced evenly 26-3/4" apart. No exceptions. Overall mounting width is 32-3/4". _____

28. The front two (2) vertical supports are to be mounted to vertical structural angles of 5" x 4" x ½", full height of tubes. _____

29. Each vertical tube must have three (3) 3" wide gussets tying in the vertical tube to the structural angle. Each gusset is 3" x 4" x 5" x 7ga. _____

30. The vertical tubes and structural angles are mounted to a horizontal 6" x 4" x ½" x 39" wide structural angle mounted at the top of the two (2) vertical structural angles. _____

31. The center cylinder tube to be built with a 6" x 3" x 1/4" tubes x 26-5/8" long and mounted centered to the vertical tubes. Two (2) 1/2" x 3" x 4" lift cylinder ears to be welded to this tube along with a 1/2" x 3" flat reinforcement bar. _____

32. The telescopic lift arm shall be manufactured of 4" x 4" x 3/8" square outer tubing and 3" x 3" x 3/8" square inner tubing. _____

33. The lift arm and lift frame shall be designed to accept 2.5", 3" or 4"x10" lift cylinder . Cylinder pins are to be 1" cold rolled steel. Inner lift arm must accept clevis and pin. _____

34. Truck and plow portion hitch must be Torloc/Arrowhead style and work interchangeably with The Town of North Hempstead's fleet. _____

35. Mounted under the telescopic outer tubing is to be a white poly block 1-1/2" x 3" and arced to hold a 4" x 10" lift cylinder. _____

36. The quick hitch shall provide self-alignment with the mating plow section while being engaged. _____

37. Re-mount OEM bumper. Bumper shall be split to accommodate plow hitch and must be bolted on and utilize stabilizer arm per section. _____

38. The plow hoist cylinder shall be of premium grade and shall be a double acting 4" bore x 10" stroke. _____

39. The piston rod is to be of steel construction treated with a nitro steel process. _____

40. The ram sleeve or outer barrel will be such that the rod packing may be maintained or replaced as required. A positive stop must be incorporated that will help prevent mechanical pressure being applied to the packing when the rod is fully extended. _____

41. The cylinder shall be capable of 14,137 pounds of thrust @ 2,000 PSI and 16,000 pounds of bursting pressure @ 2,000 PSI. Minimum weight of the cylinder shall be 28 pounds. Ports to be 3/8" _____

SNOW PLOW

A. MOLDBOARD:

1. The moldboard shall be heavy duty torsion trip edge design type Snowplow with level lift without additional mechanical mechanism._____
2. Moldboard will be an integral shield with trip edge. _____
   e. Length to be 10'. _____
   f. Height to be 42" (not including rubber deflector). No exceptions. _____
   g. 36" side plastic markers mounted to plow. _____
   h. Two (2) lift hooks to be mounted on moldboard top. _____
5. The moldboard shall be reinforced at the top with a 3-1/2" x 2-1/2" x 3/8" with holes to allow moisture to escape with poly 36" markers. _____
6. 3/8" Poly moldboard with eight (8) ½" x 3-1/2" ribs for extra strength and rigidity. _____
5. All welds must be continuous (skip welds not acceptable). _____
6. Bottom angle must be 4"x 4" x ¾" with an additional 4" x 3" x ½" trip edge angle. _____
10. Top moldboard angle must be constructed of 3-1/2" x 2-1/2" x 3/8" with holes to allow moisture to escape. _____
11. Two horizontal structural angle braces ¼' x 3" x 3" added for rigidity. _____
12. Attack angle of moldboard shall have adjustments of 5, 10, and 20 degree. _____

B. CUTTING EDGE:

1. The cutting edge must be Carbide cutting edge with cover plate. Must be AASHO standard punched, flush with moldboard and be easily replaceable. _____
3. Cutting edge face must have wrap around curb guards mounted on both ends with same bolts/nuts as cutting edge. No Exceptions. _____

C. TRIPPING MECHANISM:

1. Adjustable torsional one piece cutting edge trip. From bottom of new 8" cutting edge to top trip edge is no less than 14.75". _____
4. Springs must have a zero insertion force for increased safety while servicing. No Exceptions. _____
5. Bottom moldboard angle must be 4" x 3" x ½". Fully welded to bottom edge of moldboard. _____
4. 4" x 4" x ¾" backer angle with (6) ¾" trip ears welded to angle. _____
5. Full length trip edge pivot tube, must be constructed of schedule 80, 1.50" OD black pipe. End of each plow cutting edge is to include a 4.5"OD x 1.5" thick curb guard. _____
6. Cutting edge tripping must be controlled by (5) torsion springs. Springs constructed of a minimum of .75 square bar with 14 active coils. Minimum spring dimensions shall be 3.75OD x 2.25ID x 11.75. Springs must be produced to meet Rockwell C hardness. Hardness shall be produced from oil quenching with a minimum temperature of 1550°F. Spring preload shall be

a minimum of 35°. Springs shall have a trip load capability of 8228 INCH-LBS. Typical spring material composition shall be Carbon=0.40, Manganese=.70, Phosphorous=.020, sulfur=.020, silicon=.25, chromium=.80, Nickel=1.75, Molybdenum=.25. _____

7. Three (3) position adjustment on each individual torsion spring on the trip assembly to allow adjustment in various settings for road conditions. No exceptions. _____
8. Face of cutting edge trip section must be 201 Stainless Steel. No exceptions. _____

D. PUSH TUBE ASSEMBLY:

1. Push tube to be constructed of 4" x 4" x .38 square tube, 95.5" in length. Each end of the push tube shall be capped with a 10ga 3.25" x 3.25" plate. _____
2. Welded to the moldboard pushtube shall be (8) 5/8" x 3.5" x 7" pivot ears. Each ear shall be further reinforced with a 2" x 2" x .38 gusset. Pivot ears shall pin to moldboard assembly with 1-1/4" thick pins. _____
13. (2) Moldboard stabilizer strut mounting ears each constructed of (2) 5/8" plate approximately 10" x 13". _____
14. Center pushframe pivot constructed of (2) .38 x 36.5" x 8.5" plates. There shall be a 3.5" hole in each plate for a 5-1/2" x 3-1/2" OD x 2.52" ID bushing. Bushing shall be drilled and tapped for a 1/8" grease zerk. _____
15. Center pushframe pivot assembly shall also have (2) 3.75" stops for the a-frame assembly. _____
16. Push tube cylinder lugs, located on left and righ hand sides shall each be constructed of (2) 5/8" x 8-1/4" x 3-5/8" plates complete with a 1-1/4" pin hole. _____
17. Cylinder lugs shall be further reinforced with 3/8" x 2-3/4" x 3-1/4" gusset. _____
18. There shall be (2) chain lift lugs welded to the top of the push tube constructed of ½" x 3" x 4" plates. _____
19. Moldboard reversing shall be accomplished by (2) 3" rod x 3.5" bore x 16" stroke single acting cylinders. _____
20. Cylinder rods shall be nitride for increased corrosion resistance. Chromed rods shall be unacceptable. _____
21. Cylinder working pressure shall be 3000 PSI. _____
22. Cylinder shall be plumbed to an 1800 PSI cushioning valve to prevent damage when hitting obstructions. _____

E. A-FRAME:

1. Pivot capture plates shall consist of (2) plates constructed of 1" x 11" x 12-7/8" plates. These plates will be flame cute and have a 2.53" hole to pin the a-frame assembly the push-tube assembly. The top pivot capture plate shall be drilled and threaded for a ¾" capture bolt to prevent pin rotation. _____
3. Top main A-frame plate shall be constructed of 3/8" x 28" x 25-5/8" flame cut plate. The narrowest portion of the top plate shall remain a minimum of 12". Top plate shall also be flame cut to accept the reversing cylinder pins. Pin hole shall be 1.281" in diameter. Each pin holes shall be further reinforced with a 1" thick plate which is

flame cut to accept reversing cylinder pin. _____

8. Bottom main a-frame plate shall be constructed of 3/8" x 28" x 25-5/8" flame cut plate. The narrowest portion of the top plate shall remain a minimum of 12". Bottom plate shall also be flame cut to accept the reversing cylinder pins. Pin hole shall be 1.281" in diameter. There shall be a 6" access hole for attaching the hitch swivel bolt. _____
9. The A-frame vertical side plates which tie the top and bottom plates into a boxed formation shall be constructed of ½" x 4" x 32" plate and formed to follow the contour the top and bottom plates. _____
10. The rear A-frame push plate shall be constructed of 1" x 6-3/4" x 33-5/8" plate. This plate shall be flame cut with a 1-9/16" hole to accept the plow hitch attachment bolt. _____
11. On the top side of the A-frame plate shall be a mounting plate to which attached is the reversing cylinder cushion valve. _____
12. Plow portion hitch must be Torlo/Arrowhead and fit existing Town of North Hempstead truck portion hitches. _____

F. PAINT:

4. All metal surfaces are to be phosphate washed to remove slag, splatter, oxide and oil residue. _____
5. Moldboard frame work must be powder-coated Highway Orange. _____
6. Push frame, "A" frame and other miscellaneous components are powder-coated black for increase paint durability. _____

CENTRAL HYDRAULIC SYSTEM

A. TYPE:

1. System to be of load sensing pressure-compensated type, pumping oil only when needed and in exact volume and pressure required --- no more, no less. _____
2. Pump to automatically revert to standby mode when no oil flow is required (No on/off switch). _____
4. Must be able to operate all equipment on truck simultaneously if necessary. No one function to interfere with any other. _____
4. System controls are to be electronic and air. _____
5. Operating speed of all functions must-be variable and adjustable. _____
6. One complete system to operate all functions. _____

B. HYDRAULIC PUMP AND POWER TAKE-OFF:

1. The hydraulic pump shall be an axial piston pressure and flow compensated load-sensing type. The pump shall have a displacement of 5.61cubic inches per revolution at maximum stroke which will deliver 23.7 GPM @ 1000 engine RPM. The pump shall have a minimum 2" inch suction line and ½" control drain line plumbed directly back to the reservoir. The pumps compensator shall have rear facing adjustments. The pump shall be rated for 5800 PSI maximum and 4800 PSI continuous. The pump shall have a Din type-mounting flange and a Din 5462 8-tooth

shaft. Shall be a TXV pump or approved equal. A Chelsea 277 series hot shift PTO or approved equal that is mounted to the transmission shall drive the pump to operate whole system. _____

2. The system shall be designed so that when the float contacts close, the PTO will disengage and stop pump flow. An enunciator in the cab that is on a control panel will alert the driver that the PTO has been disengaged. The control panel will also incorporate an override switch wired to de-energize the shut down system to facilitate diagnostics and equipment storage. _____

C. HYDRAULIC VALVE:

1. Control valve shall be U.S. manufactured. Valve shall be a load sensing type with o-ring ports. Mid-inlet section porting will be #16 inlet, #20 outlet, #16 hoist section, #4 load sense port, and #10 or #12 for all other sections. The hoist section shall be stacked to one side of the mid-inlet and all other sections will be stacked on the other side. All ports shall be level with each other so as to lay flat on its base. There will be a main relief in the mid-inlet section that will be set at 3500 PSI to protect the system from being over pressurized. _____
2. Valve section to be arranged as follows:
3. Hoist, 4-way for a double acting cylinder with mid-inlet transition section. _____
4. Pressure reducing section., if needed. _____
5. Plow Lift, 4-way for a double acting cylinder with flow control. _____
6. Plow Angle, 4-way for a double acting cylinder with flow control. _____
7. Spin-A-Veyer section, consisting of two pressure compensated cartridges that are a single piece design with hardened cartridge bores and spools. These shall be operated independently via a 12 VDC pulse width modulated signal. Each valve shall have heavy duty 7/16-20 UNF screw style manual overrides that are adjustable from no flow to full flow. These valves shall be mounted in a housing that is made of aluminum with gray anodizing for corrosion resistance and durability. The auger/conveyor shall be a 15 GPM spool and the spinner shall be a 7 GPM spool. No exceptions. _____
9. A plow float/balance valve must be provided and controlled with a dash mounted rocker switch for on/off. The plow float/balance can be turned off as needed. When in use, the valve will allow the valve to use a pressure reducing/relieving system to control the float/balance lifting pressure on the plow's lift arm assembly. Two solenoid valves wired together turn the valve off and on. One solenoid valve opens the inlet of the pressure reducing valve to the pump. The other solenoid valve opens the outlet of the pressure reducing/relieving valve to the lift port. Oil flowing in and out of the lift port is restricted with an orifice. _____

D. OPERATOR CONTROLS FOR DUMP BOY HOIST and SNOW PLOW:

1. The valve controls shall be a feathering remote air control with air shift actuators for valve. The dump lift and plow lift controls shall be single axis controls with lock in the center position to prevent accidental actuation. It shall be mounted in an adjustable tower next to the driver. There shall be a pressure protection valve to protect against loss of pressure in the primary system caused by a broken line or an air leak somewhere in the auxiliary system. There shall also be a FLR (filter, lubricator, and regulator) plumbed into the auxiliary air system to protect the air controls from contamination and being over pressurized. All the air tubing will be color coded to identify each individual hydraulic function from control to valve section. _____

3. The air control joystick must each have an illuminated head. No exceptions. _____

E. RESERVOIR/VALVE COMPARTMENT:

10. To be 35 gallon all-welded 304 stainless steel combination hydraulic oil reservoir and control valve mounting compartment. _____
11. The hydraulic reservoir will be constructed of 10-gauge stainless steel and be internally baffled. _____
12. Mounting bracket is to be designed and supplied by the reservoir supplier. _____
13. Mounting system should allow for a 1" frame clearance for frame obstructions. _____
14. Shall be mounted in a manner as to not transmit any truck torsional loads thru the tank. _____
15. The enclosure will use a gasket-less passive technology. (No rubber seals, gaskets, or weather stripping.) _____
16. The enclosure lid will be removable within seconds by one person without the use of tools. _____
17. All valve fittings, hose ends, filter, filler breather, sending units and any electrical connections are to be protected by enclosure cover. _____
18. The reservoir supplier will provide all valve fittings (JIC connections) and plumb the return line from the valve to the filter. _____
10. The cover will protect from both road and pressure washer spray. _____
11. The directional control valve must be easily accessible from all (6) sides without the use of tools. _____
12. Hose exit and entrance must allow for components to be mounted adjacent to the enclosure. _____
13. A 2" full flow brass ball valve shall be plumbed at the suction port of the tank. _____
14. A low oil/high temp sending unit shall be mounted in the reservoir. _____
15. Hydraulic oil filter shall be mounted in the reservoir. Hydraulic filter shall be a 16-micron absolute and rated for no less than 60 GPM. Filter shall be model TEF31016VG16SP-UG60E115 or prior approved equal and include visual and electrical bypass indicators. A warning light shall be mounted in the cab and wired to the electrical indicator. _____
16. The valve/tank assembly shall be prior approved equal. _____

F. Hydraulic Lines and Fittings:

1. Stainless steel tubing to be used under body and cab in lieu of hosing. Only hosing to be used is ends of stainless steel tubing to reach each function's quick couplers or connection. Tubing shall be seamless #304 stainless steel construction with a minimum wall thickness of 0.065". The ends must be flared to accommodate a 37 degree JIC fitting. The use of compression fittings is not Acceptable. Spacing of each tube to allow for material to fall between each tube. _____
16. All stainless tubing must be mounted in polyurethane poly green tube clamps. _____
17. All hoses to be wire braid reinforced with swaged on high pressure JIC 37 degree tapered seat end fittings. _____
18. All fittings & adapters to be forged steel (No tapered pipe fittings except on suction hose). _____
19. Hoses to front with 1/2" 100% stainless steel (no exceptions) quick couplers for power reversing plow. _____
20. Hoses to rear with 1/2" 100% stainless steel quick couplers for spreader (no exceptions). _____
21. Spreader stainless steel hose couplers to be mounted on either frame rail or pintle plate under dump body at rear. _____
22. Polymer dust plugs or caps on all couplers with retainer straps. _____
23. All pressure hoses except for plow & spinner to be 3/4" I.D. SAE 100R2. _____
24. Plow, spreader spinner, and prewet system pressure hoses to be 1/2" I.D.SAE 100R2. _____
25. Main pressure hose from pump to control valve shall be 1" Didiameter, 4-wire braid. No exception. _____
26. All return hoses to be SAE 100R2. _____
27. Suction hose to be minimum 2" I.D. SAE 100R4 spiral wire reinforced with long radius ells. _____
28. All hoses to be routed away from chassis exhaust whenever possible to protect against heat deterioration. _____
29. All hydraulic quick disconnect couplings must be stainless steel Aero-Quip FD45 series or prior approval; bulkhead mounted, and include attached male and female dust covers. Couplings to be configured so as to eliminate confusion when coupling. No exceptions. _____

G. Spreader Controller:

2. Force America 5100ex open loop controller. No exceptions. _____

SNOW PLOW LIGHTS:

A. Truck-Lite brand LED model 80880 plow lights. _____

5. Mounted with custom fabricated 100% stainless steel brackets on truck fenders. Brackets must be painted black. _____
6. Plow lights to be wired into the truck's existing headlight circuit using the factory installed switch. _____
7. Plow lights must function in high and low beam modes using existing truck's dimmer switch. _____
8. Plow lights and truck chassis headlights must never operate at the

same time. _____

LIGHTING & ELECTRICAL

All lighting and layout must meet all Federal, State, and DOT regulations.
No exceptions _____

A. LED lighting system. _____
   1. All marker, work, S/T/T and strobe lighting to be LED. _____
   6. The four (4) spreader lights mounted under rear apron of combination body and must be on an independent rocker switch. _____
   7. The two (2) chassis step mounted lights and must be on an independent rocker switch.. _____
   8. Whelen brand model 50A03ZAR TIR6 and 5TSMAC surface mount kit, two (2) grill Mounted. Must be on an independent rocker switch with cabshield and rear bolster mounted amber lighting. No exceptions. _____
   9. Whelen brand model 50A03ZAR TIR6, six (6) head. Four (4) rubber grommet mounted in cabshield and one (1) each rear bolster. Must be on the same rocker switch with grill mounted amber lighting. No exceptions. _____

B. Electronic Back-Up Alarm to be Preco series 300. _____
   1. To automatically change volume to suit background noise. _____
   2. Mounted to back side of pintle plate on a stainless bracket. _____

C. Body Up Indicator. _____
   1. Sealed weatherproof proximity switch on hoist-frame. _____
   2. Body up light shall illuminate using chassis dash mount switch. _____

D. All non- strobe wiring to be 7 wire trailer cable. Separate cable routed from in-cab to all non-strobe lights with sealed junction box at rear so all wiring connections are made either inside cab and in a sealed junction box. _____

E. One (1) solid stainless steel rod must be mounted under body and all electrical body lighting must be neatly run. Rod will be one piece and full length. No exceptions. _____

F. All wire connections shall be made in the chassis cab or by means of a waterproof junction box. In cab connections shall be made using vinyl coated crimp connectors covered in weather resistant heat shrink tuning. There shall be no wire splices outside the cab. All wiring to junction box shall be resistant to abrasion, ozone, sunlight, chemicals and oil. The outer jacket shall be chlorinated polyethylene and be approved for submersion in water. The outer jacket shall be label with the cable identification wire gauge and number of conductors. Must be MSHA approved. All body lighting shall be supplied by a single sealed harness from the junction box and making the connection at the light by means of weather tight sealed connector. All strobe lights shall be included in the same harness and be connected by means of a Deutsch connector, no exceptions. _____

MISCELLANEOUS

A. 90 degree elbow extension on top of chassis vertical exhaust stack to clear cab protector and still route exhaust upward to be provided by chassis supplier and installed by body company. _____

D. Rear tire poly Fleet Maintenance fenders with stainless steel mounting

tubes. _____

C. Upon installation of all components, truck must be delivered to the truck dealer for final inspection and prep. _____

D. Rear pintle plate shall have a 25ton pintle properly installed and secured. _____

1. Mounted on reinforced 3/4" thick mounting plate at rear of chassis frame at designated clearance height to ground to be 29". Sides and bottom must be reinforced with ¾" x 2" flat stock mounted behind the pintle plate. _____

4. Must include Safety two (2) 5/8" D-Rings, one (1) 7-wire flat plug and one (1) 6-wire plug. _____

5. License plate light and bracket mounted to top corner on passenger side. _____

E. DOT approved 2" conspicuity tape on body bottom rub rails, rear corner posts, tailgate perimeter. All DOT necessary reflective decals installed as well. _____

F. Pull Tarp brand asphalt tarping system to be mounted in cabshield rear. Must recess ahead of front head sheet and cut into side plates of cab-shield for lowest possible mounting. _____

H. Zeibart under coating to be sprayed up chassis frame rails, pintle plate and under chassis. _____

INSTALLATION AND WARRANTY

F. Minimum twenty-four (24) months, 100% parts and labor on components and installation. No deductible. _____

G. For warranty considerations and future availability of parts and service, the body company must be an authorized primary distributor for all major components they propose to furnish. Must furnish written proof from such said vendor upon request. _____

H. All equipment must be installed by a single body company, by their employees and at their regular location. _____

I. Installation of components is not to be subcontracted by body company to another installer. _____

J. No welding whatsoever is to be done on chassis frame between front of most forward spring hanger and rear of rearmost spring hanger. _____

F. No drilling whatsoever is to be done in frame rail flanges. _____

I. Body company to furnish operator's parts and service manuals for all components manufacturer's i.e., combination body, hoist, snow plow, salt spreader, central hydraulic system and strobe lights. _____

J. Completed vehicle must be certified by the body company as meeting all federal motor vehicle safety standard in effect at time of chassis production. _____

2. Approved NHTSA/FMVSS certification label must be furnished and located inside cab on driver's side. _____

I. Completed unit to comply with current OSHA regulations. _____

J. Body company must be registered with National Highway Traffic Safety Administration as a final stage manufacturer of motor vehicles as required by Federal Law. _____

K. Body company to conduct operator training session on body and equipment at the The Town garage after delivery of completed truck. _____

L. Delivered of completed vehicle must be within 75 days after delivery of cab chassis to up-fitter. _____

M. Body company must have ASE certified installer/s and show documentation at time of bid. No exceptions. _____

N. Body company to be registered and in good standing with National Truck Equipment Association (NTEA), be a MVP member, and be the authorized distributor for all equipment bid. _____

O. Body company must participate and provide documentation at time of bid for E-Verify®. This employment verification verification is a United States of America federally accredited verification system to insure all employees are legal residents. List Company ID#_____. No exceptions. _____

P. Combination Body, Snow Plow, and Snow Plow Hitch must be engineered and manufactured in the United States of America and all from the same manufacturer. No exceptions. _____

Q. Hydraulic schematic must be provided and laminated and placed inside the combination valve enclosure/combo tank lid. _____

R. A required pre-build meeting will occur after award of bid and prior to the start of installation. No exceptions. _____

S. The Town will inspect all equipment (plow, hitch, body etc prior to the start of installation. No exceptions. _____

OPTION # 1: V-Box Spreader

V-BOX SPREADER

Heavy Duty 304 Stainless Steel V-Box Salt Spreader 3-in-1 V-Box for granular, prewetting and slurry system. No exceptions. _____

5. Capacity to be 6.9 yd^3 struck water level minimum. No exceptions. _____
6. Inside length to be 10 feet and side height of 56". _____
7. Inside top width to be 83-3/4". _____
8. Side slope to be 45^0 minimum. _____
5. Front & rear panels slope; rear 9^0, front 18^0. _____
10. Hopper seams to be continuous welded on inside. _____
11. Sides, ends, & side supports to be 10 gauge 304 SS. _____
18. Top edge of hopper is formed "J" channel 2" x 7/8". _____
19. Dual auger trough is to be 7 gauge 304 SS. _____
20. Long sills to be 7 gauge 304 SS; continuous welded to side sheet. _____
21. Cross sills to be formed 7 gauge 304 SS welded to side supports. _____
22. 7GA 304 SS inverted vee mounted over the dual augers with appropriate frame work for stability. _____
23. Lift hooks on each corner are 1/4" x 2" formed 304 SS plate. _____
24. All hardware shall be 304 stainless steel. _____
25. Hydraulic inter-lock auger shut-off system to shut augers down when cover grates are opened—interlock plumbed at factory. _____
26. 3/8" rod on 3/8" rod top grate screens with anti-freeze hinges are required equipment with auger conveyor v-box units. _____
27. A full width rear 304 stainless steel light bar shall be mounted with nine (9) LED lights. Shall include S/T/T and Amber LED Strobes. Shall have junction box and plug. No exceptions. _____
18. Spinner light mounted on driver's side rear on the stainless steel bumper. _____
19. Heavy duty lighted rocker switch on control console for spinner light. _____

20. One (1) stainless steel ladder with 8 rear steps mounted at the rear of spreader on right side allowing access from ground to top of spreader. _____

B. Minimum Auger Requirements

1. Dual 7" diameter variable pitch auger conveying system. The augers must be counter rotating to help prevent bridging of material. Dual augers extend 2 feet past end of hopper to allow discharge into spinner chute. No exceptions. _____
2. Each auger is driven at the rear by a 24.7 CIR hydraulic motor which is directly coupled to a 3.6:1 planetary gearcase with 2.5 in. dia. shaft coupled to the end of the auger shaft with a 7/8" cross bolt. _____
3. Gearcase is directly coupled to end of auger shaft. _____
4. Auger shaft connect at front with a 2" 2 bolt flange bearing. _____
5. Auger shafts utilize a polyurethane bushing at both ends of each auger to eliminate seizing and ensure ease of maintenance. _____
6. Must be an one inch OD stainless steel pipe mounted between/above augers and under the inverted vee to allow for future use of liquid. Pipe must have holes evenly spaced on both sides to allow for spraying of liquid. All hardware must be stainless steel. At the rear of the spreader wall, behind the pipe, there must be a Banjo valve manually operated to close and open the liquid system. No exceptions. _____

C. Spinner Assembly

1. 10 gauge 304SS enclosed design. _____
2. (4) position telescopic adjustment; 32-3/4"-41" below mounting surface. _____
3. Two (2) baffles shall be positioned at the bottom of the spinner chute to direct flow of materials onto spinner disc for directional spread pattern adjustment. _____
13. The two (2) spread pattern adjustment baffles shall each have 5 (five) positions of adjustment without the use of tools. The baffle(s) shall utilize a 304SS notched bar that pins into position for a positive lock. _____
14. Four (4) bottom spinner deflectors shall be over-lapping to prevent loss of granular material when the deflectors are raised. Front deflector is fixed. _____
15. The bottom over-lapping spinner deflectors shall have four (4) positions of rod and pin adjustment without tools. Chain adjustable deflectors are not acceptable. _____
16. The bottom over-lapping spinner deflectors shall have the capability to be easily removed and/or replaced without tools. _____
17. 20" diameter poly spinner disc to have replaceable machined hub. _____
18. Six (6) vanes built into poly spinner disc. _____
19. Spinner hydraulic motor shall mount directly on top of spinner disc. Bottom mount motor or drive shaft with bearings not acceptable. _____
20. The top mounted spinner motor shall be enclosed in the spinner

chute to maximize granular material flow to the spinner disc. For serviceability, the spinner chute shall have open access to the spinner motor. _____

21. A spinner bypass chute shall be provided that allows for the stationary unloading of granular material. When in the pivoted "down" position, the chute shall provide complete bypass of the spinner and bottom deflectors. When in the "up" position, the chute shall become part of the enclosed spinner chute providing granular material flow to the spinner. The bypass chute shall have a quick latch system pinning into position without the use of tools. _____

PRE-WETTING and SLURRY SYSTEM

A. Hydraulically driven system of designated valve section. _____

6. All components are mounted in a sealed, corrosion resistant, molded fiberglass housing with hinged cover. _____
7. Hydraulic drive motor is 1.21 CIR geroler type with appropriate sized Flow Meter. _____
8. Liquid pump is a 8.2 GPM @ 1725 RPM Roller Pump of corrosion resistant materials. _____
9. All tubing is stainless steel with corrosion resistant JIC fittings. _____
10. Liquid output is controlled by an adjustable flow control valve with dial on control modular in cab that also houses granular outputs. _____

B. Reservoir

1. (2) 200-gallon rotation molded medium density .375" polyethylene tank with 5" diameter cap. Includes sump for complete drainage. _____
2. Replaceable screen line strainer. _____
3. Corrosion resistant shut off valves. _____
4. Reservoir tank is angle formed to allow for mounting on the side of a slip-in v-box. _____
5. Supplied with bulk tank fill quick couplings. Internal baffle. _____

D. Metering Orifice and Slurry Tube

1. All bolt-on (no welding required) brackets, hardware, and fittings supplied. _____
2. Variable displacement orifice provides an extended range of material outputs located in spinner chute. _____
3. 2 variable displacement orifice 22" wide, vented internal at top of spinner chute. _____
4. Spreader shall have a provision for a stainless steel liquid injection tube 1-1/2" OD which is to be located on the underside of the inverted vee. The injection tube will provide liquid which will be agitated by the spreader augers to create a salt slurry mixture. The liquid for the slurry generation process shall come from the liquid prewet system. _____

E. Spreader Stand

1. A self-contained storage stand shall be permanently fastened to the spreader by bolting on. The stand shall be fabricated of stainless steel and designed to support the full weight of the spreader when removed from the truck with only small amounts of material remaining in the hopper or tanks. No exceptions. _____

4. The front of the stand shall be equipped with steel caster wheels with appropriate bushings and grease fittings to allow the spreader to roll into the dump body of the truck. _____

7. Front legs shall be a minimum 4" x 3" x ¼" stainlesssteel tubing designed to fold up along side of the spreader when it is installed in the truck. There shall be a means to lock the legs in a vertical position when the stand is in use. _____

8. Rear legs shall be stainless steel tubing designed to telescope or pivot up and out of the way once the spreader in the dump body. Legs shall be minimum 4" x 4" x ¼". _____

9. The base of the legs shall provide a big enough footprint to properly support the spreader when in storage. _____

10. The rear shall have a complete stainless steel construction bumper mounted to the spreader stand to protect the spinner assembly. The structure shall form a triangle by mounting on two points to the spreader stand with a stainless steel round tube at the rear. Rear of bumper shall be wider than spinner assembly and have conspicuity tape full width. No exceptions. _____

OPTION # 2: For Package "C" Combination Body

Combination Body

Dual 7" augers in lieu of chain drive system. _____

EXCEPTION (LIST ALL BY SECTION AND ITEM #):

_____

_____

_____

_____

_____

_____

_____

_____

Item 14- 2016 Mack Truck with options
Notice to all Bidders:

- Bidder must make notations at each item indicating compliance or deviation by writing "Comply" or "Exception" next to each line item.
- **Do not use** "check marks" or "X marks" as "Comply" or "Exception."
- All "exceptions" and "Deviations" must be explained in detail on as described in this bid packet.
- These specifications are not intended to preclude bidding components with exceptions that are equal in quality and performance to the products described in the specifications.
- All factory standard equipment and parts should be used where possible.
- The Town of North Hempstead reserves the right to reject any and all bids, waive any informalities or irregularities in the bids received and to accept any bid which it deems most favorable to The Town.

Following these instructions is essential for proper bid evaluation. Failure to do so will result in the rejection of a bid for lack of information. Town of North Hempstead will take all necessary steps to properly evaluate each bid including contacting one or more bidders for clarification and/or consultation.

Package "A" for Chassis, Dump Body, Plow, Hydraulics and Misc Items for Epoke Setup

"BIDDING REQUIREMENTS SECTION"

SECTION	SPECIFICATION DETAIL	COMPLY	
		Comply	Exception
PACKAGE A: 6 WHEEL TRUCK, DUMP BODY, PLOW, HITCH, CENTRAL HYDARAULICS FOR HI-WAY SPREADER			
Description: Chassis Specifications For A New 2016 GU712 Chassis With SCR Technology To Meet 2014 Emissions Of 0.2 Grams Of Nox Or Equal			
Chassis/ Frame & Wheelbase:	Chassis: 2016 Mack GU712 Chassis Or Equal		
	Frame Rails, 11.811" x 3.54" x 0.44" High Strength 120,000 PSI Steel - 20" Integral Front Frame Extension For Snow Plow Mount		
	Single Chassis Rail		
	Section Modulus 23.5 cu In/Rbm 2,820,000 In Lbs. Per Rail		
	Wheelbase - 180"WB, Center of Axle - 92"CA,		

	Platform - 154”LP, After Frame - 62"AF		
MAXIMUM GVW & AXLE RATINGS:	Gross Vehicle Weight Rating Of 48,000lbs.		
	Front Axle Capacity - 18,000 Lbs.		
	Rear Single Drive Axle Capacity - 30,000lbs		
	Front Steer Axle-Gross Axle Weight Rating - 18,000lbs		
	Rear Drive Axle –Gross Axle Weight Rating - 30,000lbs		
ENGINE:	MP7-405M 405 Hp @ 1500-1900 Rpm. Operating range 1100-2100 1480 Lb. Ft. Max. Torque @ 1050-1350 Rpm High Torque Rise 60%		
	11.9 Liter, 659 Cu. In Piston Displacement.		
	EPA Carb Emission Certified For 2014 Utilizing Selective Catalyst Reduction(Scr).Engines Utilizing Government Credits Or Penalties Are Not Acceptable		
ENGINE EQUIPMENT:	Air Compressor, Meritor/Wabco 318 18.7 Cfm		
	Engine Mounted Oil Check And Fill		
	Mack Powerleash Engine Brake		
	Alternator, Delco 12V 130A (24SI) Brush-Type		
	(3) 12volt Mack Grp31 Batteries With 3000 CCA Threaded Post		
	Air Cleaner, 11” x 30” Under Hood Single Element Dry Type		
	12 Volt Heavy Duty Starter-Delco 39mt-Mxt		
	Electronic Starter Interlock System		
	Coolant Protection To Below –34 Degrees Fahrenheit With Coolant Conditioner Filter		
ENGINE EQUIPMENT:	Engine Block Heater, Gomack (Phillips) – 1500 Watt 120 Volt With Intake Grid Heater mounted under driver side door.		
	Starting Aid Engine Electric Preheater		
	Engine Hoses And Tubing, Silicone		
	Diesel Particulate Filter /Scr System Horizontal-Under Right Side Of Cab-Clear Back Of Cab Option		
	Exhaust After –Treatment System Diesel Particulate Filter Ceramic Catalyzed, And Scr Technology To Meet 0.2 Grams Of Nox		
	Exhaust, Side Of Cab Single (R/S) Vertical Straight Exhaust Stack		
	Poly-V Fan Belt With Automatic Tensioner		
	Fan Drive, Behr Fan And Electronic Modulating Fan Drive		
	Flywheel ,Light Weight Aluminum		
	Fuel-Water Separator: Davco 382, (Fluid Heater) Fuel Heater/Water Separator w/vendor Prim & Mack Sec fuel Filter		
	Tether device Furnish Cap Retainer for Oil Fill & Radiator		
	Hand Primer Pump		
	Hoses, Radiator/Heater Mack Brand EPDM Radiator & Heater Hoses		
	Injection Pump- Electronic Engine Control		

	Radiator, Aluminum Core		
TRANSMISSION:	Allison 4500-RDS -6 (4.70/0.67) Rugged Duty Series Gen 5 Includes transmission Cooler, External Oil Cooler, Internal Filter, and Oil Level Sensor		
	Driveline-Main, Meritor 18 MXL "Xtended Lube"		
	Transmission Bell Housing, Aluminum		
	Synthetic Transmission Fluid		
CAB EQUIPMENT:	Air Conditioner/Heater, (Bergstrom) Integral w/heater combination		
	Air Restriction Monitor, Air Cleaner Intake Mtd		
	Instrument Cluster Display, Co-Pilot Driver Display(4.5”Diagonal Graphic Lcd Display W/4-Button Stalk Control)(Includes Guardog Routine Maintenance Monitoring)		
	Conventional Cab (Welded Steel Galvanized Shell) with Air Ride Suspension(Aluminum Cabs Not Acceptable)		
	Fiberglass Tilt Hood With Safety Lock And Hood Hatch For Maintenance Checks		
	Cigar Lighter On Instrument Panel		
	Overhead Console with 2 Storage Compartments and Power Leads		
	Dome Light, (4) W/Self-Contained Switch		
	Diagonal Handle On Driver Side Door Panel		
	AM/FM Premium Stero, CD-Player, MP3, Weatherband, Handsfree Interface, Bluetooth		
	Driver and Passenger side Power door locks and Windows		
	Gauge, Air Pressure		
	Gauge, Voltmeter		
	Gauge Cluster, Exhaust Pyrometer, Engine Oil, And Transmission Oil Temperature Gauges		
CAB EQUIPMENT:	Gauge, Engine Coolant Temperature		
	Gauge, Engine Oil Pressure		
	Gauge, Fuel Level		
	Gauges, English Display		
	Gauge, Speedometer w/Trip Odometer (Electronic 1% Accuracy)		
	Engine Tachometer Electronic With Hourmeter		
	Glass-Cab Window, Safety Tinted Windshield, Side And Rear Windows		
	Grab Handles, Aluminum, Rh & Lh Behind Door		
	Grille, Bright Finish With Bug Screen		
	Headlamp Bezel- Molded Plastic		
	High Beam Indicator Light		
	Body Builder Access Connector Inside Of Cab For Body Controls		
	Horn-Air, (2) Mounted On Cab Roof		
	Horn- Electric, Single Tone		

	Identification/Clearance Lights, (5) TruckLite LED Chrome Bullet Type Lamp		
	Instrument Panel, Gray With Black Gage Bezel		
	Interior Trim Level, (Grey) Features: Padded Vinyl Headliner		
	Rear Panel With Storage Pouch, Polyurethane Rubber Padded floor Mat		
	2 Cup Holders Mounted At Bottom Of Dash (Center)		
	Chassis Keyed Alike- 4 Keys		
	Heated Mirrors-Exterior, West Coast, Rh & Lh Bright Finish		
	Mirrors – Convex Type, Bright Finish, Lh & Rh 8.0" Dia; Mounted Below Lower Arm Of West Coast Mirror		
	Proximity Mirror Rect Convex Above Rh Door Window		
	Right Side Door Peep Window		
	Exterior Sun Visor Fiberglass (Cab Color)		
	Rear Window (Fixed Type)		
	Seat - Driver, Bostrom Talladega 915 (Mid-Back) Air Suspension		
	Seat – Rider Bostrom Mid Back Stationary with Integral Storage Compartment		
	Seat Covering, All Vinyl		
	Seat Belts, Lap And Shoulder w/Cab Mounted Shoulder Belt		
	Sun visor –Interior, Both Sides (Padded Vinyl)		
	Starter Switch, Key Type		
	Steering Wheel, 18" Two Spoke Urethane Grip		
	Windshield Washers, Electric, Wiper Mounted W/Reservoir Back Of Cab		
CAB EQUIPMENT:	Windshield Wipers, Sprague 2 Speed Electric Motor w/Intermittent feature		
	Dash Control/Power Supply/Local Installation Plow Lamps W/Lead Furnish At Grille With 2w/3w Weather Pack		
FRAME EQUIPMENT/ FUEL TANKS:	Bumper – Front, Extended Swept Back -Steel Channel		
	Cross members, Steel Huck Bolted HD Back-To-Back Channel		
	Flaps – Wheel (Front) Black Poly Armor		
	Frame rail End Squared		
	Towing Device – Front, (2) Hooks		
	Fuel Tank – Lh, 72 Gallon Aluminum with 8.7 Gallon Def Fluid Tank-(Clear Back Of Cab Package)		
FRONT AXLE/ EQUIPMENT/ TIRES:	Front Axle, FXL18 - 18,000 Lbs. Capacity-Sealed Kingpins - Maintenance Free		
	Tire Brand/Type – Front, Bridgestone – Tubeless Radial, 315/80R22.5 20 Ply. M860A (All Position)		
	Wheel – Front, Steel Disc 10 Hole Hub Piloted 22.5" x 9.0"		
	Brakes – Front, Meritor "S" Cam Type 16.5" X 6" Q+		
	Brake Drums – Front, Cast Outboard Mounted		
	Dust Shields – Front Brake, Furnish		

	Oil Seals – Front Wheels, Chicago Rawhide (Scotseal)		
	Front Axle Shock Absorbers		
	Slack Adjusters – Front, Haldex – Automatic		
	Springs – Front, Mack Multileaf 18,000 Lb.		
	Spring Build-Up, RH side for Wing Plow Applications		
	Steering Box, Sheppard SD110 with Tilt and Telescopic Steering Column		
REAR AXLE/ EQUIPMENT/ TIRES / RATIOS:	Rear Axle, Meritor RS-30-185 - 30,000 Lbs. Capacity		
	Suspension - Rear, 30,000 Lbs. Multileaf w/Helpers		
	Single Reduction Rear End Gears		
	Locking Main Differential, Driver Controlled		
	Tire Brand/Type – Rear, Bridgestone – Tubeless Radial (4) 315/80R22.5 20 Ply (M860A Tread)		
	Spring Brake Chambers – Vender, Mgm Tr-T Tamper Resistant		
	Spring Brake Chambers, Type 36/36 Rear		
	Carrier/Ratio- Rear Axle, Malleable Housing, 5.63 Ratio		
	Wheels – Rear, Steel Disc 10 Hole Hub Piloted 22.5" x 8.25"		
	Brakes – Rear, Meritor-Cam - 16.5” x 7” P Brakes		
	Brake Drums – Rear, Cast Outboard Mounted		
	Dust Shields – Rear Brake, Furnish		
	Oil Seals, Premium Hub		
	Slack Adjusters – Rear, Haldex – Automatic		
	Spring Brake Chambers-Quantity (2) Chambers Double Diaphragm Type		
AIR/BRAKE:	Air Reservoirs, Steel - One Supply (Wet) Tank		
	Brake Control System-Two Valve Dual Brake System-Trailer Supply With Hand Control For Trailer-Trailer Air Connections To Rear Pintle Plate, Trailer Electrical Harness To Rear For trailer Lights		
	Air Dryer-Meritor/Wabco 1200 Heated With Coalescing Oil Filter		
	Anti-Lock Brake System, Bendix Without Traction Control		
	Automatic Drain Valve, Bendix (Heated) (1) On Supply (Wet) Tank		
ELECTRICAL EQUIPMENT:	Electrical Master Disconnect Switch Mounted in cab.		
	Back-Up Alarm, With Intermittent Feature (Ambient Noise Sensitive)		
	Steel Battery Box with molded plastic cover		
	Whitacker electric jump start system mounted under D/S cab with 20’ cable		
	Daytime Running Lights, Courtesy Light Switch (Headlamp And Clearance)		
	Electric Circuit Protection Package, All Circuits Fuse/Breaker Protected		
	Headlights, Single Mounted Rectangular Halogen Lamps Flush Mtd.		

	Rear Lighting, (2) Combination Stop, Tail Directional and Back-Up Lights-Led Module		
	Signal Flasher Type, Transistorized Turn Signal, Federal Mogul #250		
PTO:	Engine Crankshaft Adapter,1350 Series Flange		
PAINT:	Cab Exterior, Customer Color-Base Coat/Clear coat		
	Frame Color, Black		
ADDITIONAL EQUIPMENT:	Icc Safety Kit (Fire Extinguisher And Road Reflectors)		
	Manuals, Two Complete Set Of Parts And Service Manuals		
	Front Axle Spare Tire And Rim Mounted		
	Front bumper guides poles with bulldogs.		
	Rear Axle spare tire and rim mounted		
WARRANTY:	Basic Vehicle – 12 Months On All Components		
	5 Year /150,000 Miles, Engine Warranty Is To Cover Exhaust After-Treatment System And To Include Turbo Charger, Injectors, And Water Pump.		
	Allison Transmission – 5 Years / Unlimited Miles		

DUMP BODY

E. Dump Body to be heavy duty 201 stainless steel cross memberless Smooth under side type, suitable for use by The Town in street and highway maintenance including snow and ice control with external mounted cylinder. _____

7. Inside length to be 10ft for a 92” CA. 11ft overall with hoist. _____
2. Inside width to be 86” minimum. Outside width 96”. _____
3. Sides (from body floor to top of top rail) to be 30" high. _____
4. Tailgate to be 38" high. _____
5. Head sheet to be minimum 36" high. _____
   a. One (1) 2" x 3" horizontal head sheet channel brace from the floor 24.37”. _____
6. Capacity to be 6.5 sides and 8.1 cubic yards ends at water level. _____
7. Sides, head sheet and tailgate to be 7 gauge Type 201 stainless steel. _____
8. Floor to be a one-piece 1/4" AR400 steel with both side radiuses built into floor. AR450/Hardox 450 is not acceptable. No exceptions. _____
9. All corner posts and sides to be 7 gauge, 201 stainless steel. _____
10. Top rails are to be 4" x 5" seamless, sloping (dirt/salt shedding) and boxed for added strength. There are to be four (4) stainless steel structural channel piece hold downs for spreader mounted on the top rail. Location for two (2) per side to be determined at the time of installation. _____
11. Bottom rails are to be seamless and sloping (dirt/salt shedding). _____
12. Long sills are to be one-piece 5” structural steel I-beam at 12lbs per foot. _____
13. Rear apron to be ¼” 8" formed channel. _____
14. There are to be no cross members. Floor to be skip welded to

I-Beam Long sills. _____

15. Rear Corner Post:
    a. To be 7 gauge 201 Stainless Steel. _____
    b. Rear post to be 38” high x 4-3/4” deep x 12” wide. _____
    mm. Top of corner post to be dirt shedding. A 14-1/2” one-piece 7 gauge stainless steel shall be break formed front to back at 5-1/2” and a downward slope remaining at 9”. _____
    nn. The top of post shall house two (2) ½” stainless steel plate brackets to house the top pivot point. _____
    oo. Tailgate reinforcement plate around the tailgate latch assembly must be ¼” thick. Outside must be 16” tall. Bottom must be 8-3/4” long. Inside bottom height shall be 7-3/8” to the floor. Top shall be 4-1/4” from outside to top of floor sheet. All to be continuously welded. _____
    pp. Two (2) oval factory cut outs for S/T/T and Reverse. _____
    qq. Two (2) Whelen brand strobe light (3 light) boxes to be welded to outside of each rear corner post. Location to be determined at the time of build. _____
16. No front corner posts. Head sheet to have mirrored image of one (1) weld on full length horizontal side brace each side and to be continuously welded to side brace, each side. _____
17. One (1) Intermediate fully welded horizontal side brace, full-length. _____
18. 30” x 86” wide cabshield to have built in tarp deflector full width of body headsheet. Cab shield to house tarp. Five (5) Whelen flush mounted 700 series mounted: Each side, each front corner, and one front center. All Back side of lights must be boxed in with stainless steel. Stainless steel tubing shall be used to protect electrical wires between lights. Tarp system to be recessed into side plates at furthest most rear. See tarp section for details. _____
19. There are to be 2” x 8” hard wood sideboards installed and painted black or to match cab color. Front board side pocket holders must extend full height to bottom edge of cabshield lip. _____
20. The one piece external side sheet must be break formed and wrap under the body floor no less than 10” extended under the body with a continuous welded seam to floor sheet. _____
21. Tailgate design:
    a. To be and double-acting heavy duty. _____
    b. Bracing to be full perimeter box type, 6" top and bottom and 4" sides. _____
    ee. There is to be one (1) horizontal brace, mid-section. _____
    ff. Top, bottom, and intermediate horizontal braces to be sloped (dirt/salt shedding). _____
    gg. Top and bottom tailgate pins to be 1-1/2" diameter 201 Stainless steel, minimum with T-handle. _____
    hh. Minimum 3/8" stainless steel coil chains to be long enough to hold tailgate in horizontal position if necessary. _____
    ii. Tailgate to be level with dump body floor when in horizontal position. _____
    jj. Heavy nylon mesh sleeves to be installed over spreader chains to protect body finish. _____
    kk. Lower latch hooks to be flame cut from 3/4" 201 SS plate to secure against two (2) 3/8” 201 SS corner post mounted

latch plates, one (1) set each side of the ¾" latch hook per side. _____

j. There is to be a full width 1" 201 stainless steel diameter (min.) tailgate release rod at rear of body. _____

k. Air tailgate release with spring parking brake chamber mounted center rear of body with dash control. _____

l. All 201 stainless steel hardware. _____

m. One (1) SS d-ring lift hook mounted on top of tailgate. _____

n. Three (3) coal doors, 13" wide, recessed flush with interior tailgate sheet. _____

o. Two (2) safety turnbuckle latches, one per side, for safety of holding tailgate shut. No exceptions. _____

p. Two (2) tailgate latch bar safety mechanisms, one per side bottom, per North Hempstead's approved drawing. No exceptions. _____

22. Continuous welded body shell (except long sills to floor sheet that are skip welded), cab protector & tailgate. _____

23. Stationary 2-1/2" x 20" long grip strut stainless steel steps (one step) mounted to the front drivers side as far forward as possible on the horizontal side brace. _____

24. Full length 2-1/2" grip strut stainless steel walk rail to be mounted full length on bottom rub rails. _____

25. Three (3) step stainless steel pull out ladder mounted under floor and under 20" grip strut step on horizontal brace. _____

26. One (1) Pull Tarp brand tarp system with asphalt rated tarp. Must be mounted on top of cabshield as far rearward and recessed into side vertical supports of cabshield. 7GA Stainless steel cover mounted over the existing Pull Tarp housing to be bolt on. _____

27. Two (2) one-piece stainless steel rod grab handles must be mounted on each side of the 20" step. _____

28. Front corner of bottom rub rail must be capped with 7GA stainless steel and be on an approximate 60 degree angle. _____

29. Six (6) stainless steel J-Hooks mounted upside down. Three (3) per side and evenly spaced and welded on. _____

30. One (1) 12" bolt on stainless steel rear apron. _____

31. Two (2) stainless steel lift loops mounted to top dirt sheet rail, evenly spaced. _____

32. Stationary two (2) ¾" stainless steel rebar mounted on 45 degree from front head sheet to sides at spacing as the outsides steps. _____

33. Body must have any welded burn marks removed prior to delivery. _____

HOIST AND REAR HINGE ASSEMBLY

F. Heavy duty front telescopic type hoist suitable for use with a Dump body on a road and highway maintenance truck used for snow and ice control, externally mounted of headsheet. No exceptions. _____

3. NTEA rated Class 50 with 17.5 tons capacity minimum. No exceptions. _____

2. Forty three thousand pound (43,000 LB.) capacity minimum @ 2000 PSI. _____

3. Double-acting (power up and down full length of stroke). _____

4. Largest diameter stage must be at bottom. Inverted cylinder

not acceptable. _____

5. 4.5" inside diameter cylinder base tube (minimum). _____
6. 100" stroke (minimum). _____
7. All cylinder stages to be nitrated for corrosion resistance and wear resistance. _____
8. Internal bore seal design so no packing adjustment or bleeding is required. _____
9. Hoist cylinder to be mounted inside pivoting, trunnion mounted cylinder cover tube. _____
10. Subframe for body to be structural 4” C-Channel. Full width cradle must be made of 201 stainless steel that houses hoist, hydraulic reservoir and valve enclosure. No exception. _____
23. Mounting height not to exceed 9" from the top of chassis frame to dump body floor. No exceptions. _____
24. 5” x 6” x ½” x 38” long formed angle with 1-1/2" 303 stainless steel pins with greaseable pins. Each pin is secured by nut/bolt. _____
25. Each pin mounts into two (2) 1/2” plates mounted on two sides to the 6’ x 8” x ½” formed angle. Outside plate for each set must be 1.125” from end angle with pin centers at 32”. _____
26. Each rear hinge block must be a 2-1/2” wide and 3.25” tall plate steel with 5.88” length mounting surface of body to top of block. Each block must accept a 1-1/2” dumping stainless steel pivot pin and have a grease zerk. _____
27. Overhang from the center of the rear pivot is to be 12” to the end of the floor plate. _____
28. Externally mounted hoist design must show, upon request, at least fifteen (15) current systems of this same design in the NJ/NY market. No exceptions. _____

SNOW PLOW HITCH

E. **Heavy front frame side plate low profile snow plow hitch.** _____

5. To be engineered, designed and built by a recognized snow plow manufacturer. Hitch to be a low profile configuration. The design will limit the amount of front overhang to a minimum. _____
6. A truck frame extension is not required for the mounting of hitch but recommended. _____
3. Heavy front frame hitch of modular design shall allow the cab hood to tilt completely forward for engine access. _____
42. Side plates will transmit plowing forces directly to the truck frame side rails and will custom fit the specified year, make and model of the truck. _____
43. The side plates are custom fitted 5/8" steel plate of proper length and construction for heavy duty service and shall provide adequate clearance for steering mechanisms and spring suspensions. _____
44. Side plate mounting angles or plates shall mount flush to the truck frame for maximum strength. Pipe spacers are not acceptable. _____
45. The front section of the hitch assembly: lift frame, center section and the lower push plate shall all be welded to the two (2) vertical tubular supports. The two (2) vertical supports are to be

constructed of 6" x 3" x 1/4" thick wall. The length of each support shall be 38-1/4". No exceptions. _____

46. The front two (2) vertical supports are to be spaced evenly 26-3/4" apart. No exceptions. Overall mounting width is 32-3/4". _____
47. The front two (2) vertical supports are to be mounted to vertical structural angles of 5" x 4" x ½", full height of tubes. _____
48. Each vertical tube must have three (3) 3" wide gussets tying in the vertical tube to the structural angle. Each gusset is 3" x 4" x 5" x 7ga. _____
49. The vertical tubes and structural angles are mounted to a horizontal 6" x 4" x ½" x 39" wide structural angle mounted at the top of the two (2) vertical structural angles. _____
50. The center cylinder tube to be built with a 6" x 3" x 1/4" tubes x 26-5/8" long and mounted centered to the vertical tubes. Two (2) 1/2" x 3" x 4" lift cylinder ears to be welded to this tube along with a 1/2" x 3" flat reinforcement bar. _____
51. The telescopic lift arm shall be manufactured of 4" x 4" x 3/8" square outer tubing and 3" x 3" x 3/8" square inner tubing. _____
52. The lift arm and lift frame shall be designed to accept 2.5", 3" or 4"x10" lift cylinder . Cylinder pins are to be 1" cold rolled steel. Inner lift arm must accept clevis and pin. _____
53. Truck and plow portion hitch must be Torloc/Arrowhead style and work interchangeably with The Town of North Hempstead's fleet. _____
54. Mounted under the telescopic outer tubing is to be a white poly block 1-1/2" x 3" and arced to hold a 4" x 10" lift cylinder. _____
55. The quick hitch shall provide self-alignment with the mating plow section while being engaged. _____
56. Re-mount OEM bumper. Bumper shall be split to accommodate plow hitch and must be bolted on and utilize stabilizer arm per section. _____
57. The plow hoist cylinder shall be of premium grade and shall be a double acting 4" bore x 10" stroke. _____
58. The piston rod is to be of steel construction treated with a nitro steel process. _____
59. The ram sleeve or outer barrel will be such that the rod packing may be maintained or replaced as required. A positive stop must be incorporated that will help prevent mechanical pressure being applied to the packing when the rod is fully extended. _____
60. The cylinder shall be capable of 14,137 pounds of thrust @ 2,000 PSI and 16,000 pounds of bursting pressure @ 2,000 PSI. Minimum weight of the cylinder shall be 28 pounds. Ports to be 3/8" _____

SNOW PLOW

A. MOLDBOARD:

1. The moldboard shall be heavy duty torsion trip edge design type Snowplow with level lift without additional mechanical mechanism. _____
2. Moldboard will be an integral shield with trip edge. _____
   q. Length to be 10'. _____
   r. Height to be 40" (not including rubber deflector) in dead center And 54" each end. No exceptions. _____
   s. 36" side plastic markers mounted to plow. _____
   t. Two (2) lift hooks to be mounted on moldboard top. _____

11. The moldboard shall be reinforced at the top with a 3-1/2" x 2-1/2" x 3/8" with holes to allow moisture to escape with poly 36" markers. _____
12. 10 GA. 201 Stainless Steel rolled moldboard with eight (8) ½" x 3-1/2" ribs for extra strength and rigidity. Plow must have all welded burn marks removed prior to delivery. No exceptions. _____
5. All welds must be continuous (skip welds not acceptable). _____
6. Bottom angle must be 4"x 4" x ¾" with an additional 4" x 3" x ½" trip edge angle. _____
15. Top moldboard angle must be constructed of 3-1/2" x 2-1/2" x 3/8" with holes to allow moisture to escape. _____
16. Two horizontal structural angle braces ¼' x 3" x 3" added for rigidity. _____
17. Attack angle of moldboard shall have adjustments of 5, 10, and 20 degree. _____

B. CUTTING EDGE:

1. The cutting edge must be 6" carbide cutting edge with cover plate. No exceptions. Must be AASHO standard punched, mounted flush with moldboard and be easily replaceable. _____
4. Cutting edge face must have wrap around curb guards mounted on both ends with same bolts/nuts as cutting edge. No Exceptions. _____

C. TRIPPING MECHANISM:

1. Adjustable torsional one piece cutting edge trip. From bottom of new 8" cutting edge to top trip edge is no less than 14.75". _____
6. Springs must have a zero insertion force for increased safety while servicing. No Exceptions. _____
7. Bottom moldboard angle must be 4" x 3" x ½". Fully welded to bottom edge of moldboard. _____
4. 4" x 4" x ¾" backer angle with (6) ¾" trip ears welded to angle. _____
5. Full length trip edge pivot tube, must be constructed of schedule 80, 1.50" OD black pipe. End of each plow cutting edge is to include a 4.5"OD x 1.5" thick curb guard. _____
6. Cutting edge tripping must be controlled by (5) torsion springs. Springs constructed of a minimum of .75 square bar with 14 active coils. Minimum spring dimensions shall be 3.75OD x 2.25ID x 11.75. Springs must be produced to meet Rockwell C hardness. Hardness shall be produced from oil quenching with a minimum temperature of 1550°F. Spring preload shall be a minimum of 35°. Springs shall have a trip load capability of 8228 INCH-LBS. Typical spring material composition shall be Carbon=0.40, Manganese=.70, Phosphorous=.020, sulfur=.020, silicon=.25, chromium=.80, Nickel=1.75, Molybdenum=.25. _____
7. Three (3) position adjustment on each individual torsion spring on the trip assembly to allow adjustment in various settings for road conditions. No exceptions. _____
8. Face of cutting edge trip section must be 201 Stainless Steel. No exceptions. _____

D. PUSH TUBE ASSEMBLY:

1. Push tube to be constructed of 4" x 4" x .38 square tube, 107.5" in length. Each end of the push tube shall be capped with a 10ga

3.25” x 3.25” plate. _____

2. Welded to the moldboard pushtube shall be (8) 5/8” x 3.5” x 7” pivot ears. Each ear shall be further reinforced with a 2” x 2” x .38 gusset. Pivot ears shall pin to moldboard assembly with 1-1/4” thick pins. _____

23. (2) Moldboard stabilizer strut mounting ears each constructed of (2) 5/8” plate approximately 10” x 13”. _____

24. Center pushframe pivot constructed of (2) .38 x 36.5” x 8.5” plates. There shall be a 3.5” hole in each plate for a 5-1/2” x 3-1/2” OD x 2.52” ID bushing. Bushing shall be drilled and tapped for a 1/8” grease zerk. _____

25. Center pushframe pivot assembly shall also have (2) 3.75” stops for the a-frame assembly. _____

26. Push tube cylinder lugs, located on left and righ hand sides shall each be constructed of (2) 5/8” x 8-1/4” x 3-5/8” plates complete with a 1-1/4” pin hole. _____

27. Cylinder lugs shall be further reinforced with 3/8” x 2-3/4” x 3-1/4” gusset. _____

28. There shall be (2) chain lift lugs welded to the top of the push tube constructed of ½” x 3” x 4” plates. _____

29. Moldboard reversing shall be accomplished by (2) 3” rod x 3.5” bore x 16” stroke single acting cylinders. _____

30. Cylinder rods shall be nitride for increased corrosion resistance. Chromed rods shall be unacceptable. _____

31. Cylinder working pressure shall be 3000 PSI. _____

32. Cylinder shall be plumbed to an 1800 PSI cushioning valve to prevent damage when hitting obstructions. _____

E. A-FRAME:

1. Pivot capture plates shall consist of (2) plates constructed of 1” x 11” x 12-7/8” plates. These plates will be flame cute and have a 2.53” hole to pin the a-frame assembly the push-tube assembly. The top pivot capture plate shall be drilled and threaded for a ¾” capture bolt to prevent pin rotation. _____

4. Top main A-frame plate shall be constructed of 3/8” x 28” x 25-5/8” flame cut plate. The narrowest portion of the top plate shall remain a minimum of 12”. Top plate shall also be flame cut to accept the reversing cylinder pins. Pin hole shall be 1.281” in diameter. Each pin holes shall be further reinforced with a 1” thick plate which is flame cut to accept reversing cylinder pin. _____

13. Bottom main a-frame plate shall be constructed of 3/8” x 28” x 25-5/8” flame cut plate. The narrowest portion of the top plate shall remain a minimum of 12”. Bottom plate shall also be flame cut to accept the reversing cylinder pins. Pin hole shall be 1.281” in diameter. There shall be a 6” access hole for attaching the hitch swivel bolt. _____

14. The A-frame vertical side plates which tie the top and bottom plates into a boxed formation shall be constructed of ½” x 4” x 32” plate and formed to follow the contour the top and bottom plates. _____

15. The rear A-frame push plate shall be constructed of 1” x 6-3/4” x 33-5/8” plate. This plate shall be flame cut with a 1-9/16” hole to accept the plow hitch attachment bolt. _____

16. On the top side of the A-frame plate shall be a mounting plate to which attached is the reversing cylinder cushion valve. _____
17. Plow portion hitch must be Torlo/Arrowhead and fit existing Town of North Hempstead truck portion hitches. _____

F. PAINT:

7. All metal surfaces are to be phosphate washed to remove slag, splatter, oxide and oil residue. _____
8. Moldboard frame work must be powder-coated Highway Orange. _____
9. Push frame, "A" frame and other miscellaneous components are powder-coated black for increase paint durability. _____

CENTRAL HYDRAULIC SYSTEM

A. TYPE:

1. System to be of load sensing pressure-compensated type, pumping oil only when needed and in exact volume and pressure required --- no more, no less. _____
2. Pump to automatically revert to standby mode when no oil flow is required (No on/off switch). _____
5. Must be able to operate all equipment on truck simultaneously if necessary. No one function to interfere with any other. _____
4. System controls are to be electronic over hydraulic. _____
5. Operating speed of all functions must-be variable and adjustable. _____
6. One complete system to operate all functions. _____

B. HYDRAULIC PUMP AND FRONT CRANK SHAFT:

1. The hydraulic piston pump shall be a pressure and flow compensated load-sensing type. The pump shall be an Eaton 5.98 CID series 620 have a minimum 2" inch suction line and ½" control drain line plumbed directly back to the reservoir. The pumps compensator shall have rear facing adjustments. Pump shall be a front crank shaft mounted drive shaft and properly mounting. _____

C. HYDRAULIC VALVE:

1. Control valve shall be U.S. manufactured. Valve shall be a load sensing type with o-ring ports. Mid-inlet section porting will be #16 inlet, #20 outlet, #16 hoist section, #4 load sense port, and #10 or #12 for all other sections. The hoist section shall be stacked to one side of the mid-inlet and all other sections will be stacked on the other side. All ports shall be level with each other so as to lay flat on its base. There will be a main relief in the mid-inlet section that will be set at 3500 PSI to protect the system from being over pressurized. _____
2. Valve section to be arranged as follows:
3. Hoist, 4-way for a double acting cylinder with mid-inlet transition section. _____
4. Pressure reducing section., if needed. _____
5. Plow Lift, 4-way for a double acting cylinder with flow control. _____

6. Plow Angle, 4-way for a double acting cylinder with flow control. _____
7. Spreader and spinner section must be able to function Epoke spreaders. No exceptions. _____
8. Liquid Pre-Wet/Anti-Ice Valve 4-way. _____
9. Valve shall be prior approved equal. _____
18. A plow float/balance valve must be provided and controlled with a dash mounted rocker switch for on/off. The plow float/balance can be turned off as needed. When in use, the valve will allow the valve to use a pressure reducing/relieving system to control the float/balance lifting pressure on the plow's lift arm assembly. Two solenoid valves wired together turn the valve off and on. One solenoid valve opens the inlet of the pressure reducing valve to the pump. The other solenoid valve opens the outlet of the pressure reducing/relieving valve to the lift port. Oil flowing in and out of the lift port is restricted with an orifice. _____

D. OPERATOR CONTROLS FOR DUMP BOY HOIST and SNOW PLOW:

1. The valve controls shall be a feathering remote electric control with each joystick. Dump to have one (1) Joystick and Plow to have another Joystick. Force America Joysticks or prior approved equal. Layout to be determined at the time of build. _____

E. RESERVOIR/VALVE COMPARTMENT:

13. One (1) 30 gallon all-welded 201 stainless steel hydraulic oil reservoir mounted on the hoist's cradle on passenger side. Must have site gauge with rubber gasket seal. No exceptions. _____
14. The hydraulic reservoir will be constructed of 10-gauge stainless steel and be internally baffled. _____
15. One (1) 201 stainless steel valve enclosure mounted on the hoist's cradle on the driver's side. Must have a Stainless steel cover with one bolt-on securing mechanism. No exceptions. _____
16. Shall be mounted in a manner as to not transmit any truck torsional loads thru the tank. _____
17. The enclosure will use a gasket-less passive technology. (No rubber seals, gaskets, or weather stripping.) _____
18. The reservoir supplier will provide all valve fittings (JIC connections) and plumb the return line from the valve to the filter. _____
7. The cover will protect from both road and pressure washer spray. _____
8. A 2" full flow brass ball valve shall be plumbed at the suction port of the tank. _____
9. A low oil/high temp sending unit shall be mounted in the reservoir. _____
10. Hydraulic oil filter shall be mounted in the reservoir. Hydraulic filter shall be a 10-micron absolute and rated for no less than 60 GPM. _____

F. Hydraulic Lines and Fittings:

1. Stainless steel tubing to be used under body and cab in lieu of hosing. Only hosing to be used is ends of stainless steel tubing to reach each function's quick couplers or connection. Tubing shall be seamless #201 stainless steel construction with a minimum wall thickness of 0.065". The ends must be flared to accommodate a 37 degree JIC fitting. The use of compression fittings is not Acceptable. Spacing of each tube to allow for material to fall

between each tube. _____

32. All stainless tubing must be mounted in polyurethane poly green tube clamps. _____
33. All hoses to be wire braid reinforced with swaged on high pressure JIC 37 degree tapered seat end fittings. _____
34. All fittings & adapters to be forged steel (No tapered pipe fittings except on suction hose). _____
35. Hoses to front with 1/2" 100% stainless steel (no exceptions) quick couplers for power reversing plow. _____
36. Hoses to rear with 1/2" 100% stainless steel quick couplers for spreader (no exceptions). _____
37. Spreader stainless steel hose couplers to be mounted on either frame rail or pintle plate under dump body at rear. _____
38. Polymer dust plugs or caps on all couplers with retainer straps. _____
39. All pressure hoses except for plow & spinner to be 3/4" I.D. SAE 100R2. _____
40. Plow, spreader spinner, and prewet system pressure hoses to be 1/2" I.D.SAE 100R2. _____
41. Main pressure hose from pump to control valve shall be 1" Didiameter, 4-wire braid. No exception. _____
42. All return hoses to be SAE 100R2. _____
43. Suction hose to be minimum 2" I.D. SAE 100R4 spiral wire reinforced with long radius ells. _____
44. All hoses to be routed away from chassis exhaust whenever possible to protect against heat deterioration. _____
45. All hydraulic quick disconnect couplings must be stainless steel Aero-Quip FD45 series or prior approval; bulkhead mounted, and include attached male and female dust covers. Couplings to be configured so as to eliminate confusion when coupling. No exceptions. _____
46. All stainless steel quick disconnects for spreaders must be mounted under body at passenger rear most corner and mounted to stainless steel encloused housing that is welded to bottom rub rail wrap around portion. Must work with Epoke spreaders. No exceptions. _____

G. Spreader Controller:

1. None. _____

SNOW PLOW LIGHTS:

A. Truck-Lite brand LED model 80880 plow lights. _____

9. Mounted with custom fabricated 100% stainless steel brackets on truck fenders. Brackets must be painted black. _____
10. Plow lights to be wired into the truck's existing headlight circuit using the factory installed switch. _____
11. Plow lights must function in high and low beam modes using existing truck's dimmer switch. _____
12. Plow lights and truck chassis headlights must never operate at the same time. _____

LIGHTING & ELECTRICAL

ALL lighting and layout must meet all Fedaral, State, and DOT regulations. No

exceptions.

A. LED lighting system.

1. All marker, work, S/T/T, backup and strobe lighting to be LED.

32. Whelen brand DOT3 System to be Super-LED DOT Light system model 00007DS0 or equal and a current production model of Whelen and made in the USA.

33. The two (2) Whelen 704-D three lamp light boxes to be continuously welded to outside of each rear corner post. Rear Super LED Head Assemblies to be 700 Linear-Super-LED two (2) amber heads, two (LED) brake/tail/turn light modules, and two (2)LED back-ups, one set each side. Each head shall be capable of emitting a full 180 degree of light in the vertical plane. The light heads shall be recessed into a heavy duty 7GA stainless steel housing.

34. The two rear 700 series heads shall utilize a DOT LED flasher which is mounted and encapusulated in a junction box inside of cab. The DOT LED flasher shall allow the two rear 700's to be controlled independently from the front head assembly. One (1) stainless steel rod mounted vertically in front of each head to protrude out far enough to protect lense.

35. The 700 assembly, brake light and back up, including the steel housing, shall be approximately 23-1/2 inches high , 4-7/8 inches deep and 3-1/2 inches wide.

36. The modules, as well as the lens, shall be easily replacable. A water proof connector for each module shall be used to connect to the cable harness and shall be located inside the steel housing for weather resistence as well as ease of replacement.

37. The 700 lenses shall be made of polycarbonate, amber in color, and have a smooth outer surface for self cleaning.

38. There shall be two LED brake/tail/turn modules, one located in the middle positions of each steel housing. Each module must contain a minimum of 72 red LEDs. The module must be in "signal alert" flash pattern, which flickers three times withing 150 milliseconds before becoming steady "on". These modules must meet or exceed SAE requirements.

39. There shall be two LED back ups, one located in the bottom position of each steel housing. Each module must contain a minimum of 48 white LEDs for maximum light output. These modules shall be supplied with a clear polycarbonate lens.

40. The rear mounted head assemblies shall use stainless steel screws that screw directly into a nylon mounting bracket to eliminate dissimiliar metal corrosion. Units that screw into steel bracket are unacceptable.

41. Cable harnesses being supplied from the rear housings must be heavy-duty TPR type cable. Flexible to minus 40 degrees Fahrenheit; abrasion, corrosion and oil/grease resistance. Each conductor shall be a minimum of 14GA, pure copper stranded, and fully tin coated. No less than 30feet of cable shall be provided for each head assembly. All necessary connections shall be provided, including a strain-relief system.

42. Cabshield lighting shall be five (5) surface mounted Whelen brand 700 series strobes. Must be synchronized with two (2) rear Whelen brand 700 series on outside of rear corner posts.

43. Cabshield Whelen 700 series strobes to be on one (1) chassis dash rocker switch for on/off and labeled. _____

44. Both rear facing and rear side corner mounted Whelen 700 series strobes to be on one (1) chassis dash rocker switch for on/off and labeled. _____

45. Two (2) OEM S/T/T w/ Backup light mounted behind rear apron of dump body. Hole to be cut into apron to allow visibility. Hole to be covered with black trim lock. _____

46. Two (2) OEM S/T/T w/ Backup light mounted on each side of pintle plate. Location and mounting to be determined at the time of installation. _____

B. Electronic Back-Up Alarm provided by chassis dealer and relocated if needed. _____

C. Body Up Indicator Light. _____

1. Sealed weatherproof proximity switch on hoist-frame. _____
2. Whelen model ION-R body up light mounted in cab. _____

D. All non- strobe wiring to be 7 wire trailer cable. Separate cable routed from in-cab to all non-strobe lights with sealed junction box at rear so all wiring connections are made either inside cab and in a sealed junction box. _____

E. One (1) solid stainless steel rod must be mounted under body and all electrical body lighting must be neatly run. Rod will be one piece and full length. No exceptions. _____

F. All wire connections shall be made in the chassis cab or by means of a waterproof junction box. In cab connections shall be made using vinyl coated crimp connectors covered in weather resistant heat shrink tuning. There shall be no wire splices outside the cab. All wiring to junction box shall be resistant to abrasion, ozone, sunlight, chemicals and oil. The outer jacket shall be chlorinated polyethylene and be approved for submersion in water. The outer jacket shall be label with the cable identification wire gauge and number of conductors. Must be MSHA approved. All body lighting shall be supplied by a single sealed harness from the junction box and making the connection at the light by means of weather tight sealed connector. All strobe lights shall be included in the same harness and be connected by means of a Deutsch connector, no exceptions. _____

MISCELLANEOUS

A. 90 degree elbow extension on top of chassis vertical exhaust stack to clear cab protector and still route exhaust upward to be provided by chassis supplier and installed by body company. _____

F. Rear tire poly Fleet Maintenance fenders with stainless steel mounting tubes. _____

C. Upon installation of all components, truck must be delivered to the truck dealer for final inspection and prep. _____

D. Rear pintle plate shall have a Holland model T90 pintle properly Installed and secured. _____

1. Mounted on reinforced 3/4" thick mounting plate at rear of chassis frame at designated clearance height to ground to be 29". Sides and bottom must be reinforced with ¾" x 2" flat stock mounted behind the pintle plate. _____

8. Must include Safety two (2) 5/8" D-Rings, one (1) 7-wire flat plug

and one (1) 6-wire plug. _____

9. License plate light and bracket mounted to top corner on passenger side. _____

E. DOT approved 2” conspicuity tape on body bottom rub rails, rear corner posts, tailgate perimeter. All DOT necessary reflective decals installed as well. _____

F. Pull Tarp brand asphalt tarping system to be mounted in cabshield rear. Must recess ahead of front head sheet and cut into side plates of cab-shield for lowest possible mounting. _____

I. Two (2) Toolboxes; Heavy duty aluminum 48x18’x18’, mounted on frame rails. One (1) per side. _____

INSTALLATION AND WARRANTY

K. Minimum twenty-four (24) months, 100% parts and labor on components and installation. No deductible. _____

L. For warranty considerations and future availability of parts and service, the body company must be an authorized primary distributor for all major components they propose to furnish. Must furnish written proof from such said vendor upon request. _____

M. All equipment must be installed by a single body company, by their employees and at their regular location. _____

N. Installation of components is not to be subcontracted by body company to another installer. _____

O. No welding whatsoever is to be done on chassis frame between front of most forward spring hanger and rear of rearmost spring hanger. _____

F. No drilling whatsoever is to be done in frame rail flanges. _____

K. Body company to furnish operator’s parts and service manuals for all components manufacturer's i.e., dump body, hoist, snow plow, salt spreader, central hydraulic system and strobe lights. _____

L. Completed vehicle must be certified by the body company as meeting all federal motor vehicle safety standard in effect at time of chassis production. _____

3. Approved NHTSA/FMVSS certification label must be furnished and located inside cab on driver's side. _____

I. Completed unit to comply with current OSHA regulations. _____

J. Body company must be registered with National Highway Traffic Safety Administration as a final stage manufacturer of motor vehicles as required by Federal Law. _____

K. Body company to conduct operator training session on body and equipment at the The Town garage after delivery of completed truck. _____

L. Delivered of completed vehicle must be within 60 to 75 days after delivery of cab chassis to up-fitter. $75 a day penalty might incur with later delivery. _____

M. Body company must have ASE certified installer/s and show documentation at time of bid. No exceptions. _____

N. Body company to be registered and in good standing with National Truck Equipment Association (NTEA), be a MVP member, and be the authorized distributor for all equipment bid. _____

O. Body company must participate and provide documentation at time of bid for E-Verify®. This employment verification verification is a United States of America federally accredited verification system to insure all employees

are legal residents. List Company ID#_____. No exceptions. _____

P. Dump Body, Snow Plow, and Snow Plow Hitch must be engineered and manufactured in the United States of America and all from the same manufacturer. No exceptions. _____

Q. Hydraulic schematic must be provided and laminated and placed inside the combination valve enclosure/combo tank lid. _____

R. A required pre-build meeting will occur after award of bid and prior to the start of installation. No exceptions. _____

S. The Town will inspect all equipment (plow, hitch, dump body and tailgate spreader) prior to the start of installation. No exceptions. _____

Package "B" for Chassis, Dump Body, Plow, Hydraulics, Spreader Control and Misc Items for V-Box Setup

"BIDDING REQUIREMENTS SECTION"

SECTION	SPECIFICATION DETAIL	COMPLY	
		Comply	Exception
PACKAGE B: 6 WHEEL TRUCK, DUMP BODY, PLOW, HITCH, CENTRAL HYDARAULICS FOR HI-WAY SPREADER			
Description: Chassis Specifications For A New 2016 GU712 Chassis With SCR Technology To Meet 2014 Emissions Of 0.2 Grams Of Nox Or Equal			
Chassis/ Frame & Wheelbase:	Chassis: 2016 Mack GU712 Chassis Or Equal		
	Frame Rails, 11.811" x 3.54" x 0.44" High Strength 120,000 PSI Steel - 20" Integral Front Frame Extension For Snow Plow Mount		
	Single Chassis Rail		
	Section Modulus 23.5 cu In/Rbm 2,820,000 In Lbs. Per Rail		
	Wheelbase - 180"WB, Center of Axle - 92"CA,		
	Platform - 154"LP, After Frame - 62"AF		
MAXIMUM GVW & AXLE RATINGS:	Gross Vehicle Weight Rating Of 48,000lbs.		
	Front Axle Capacity - 18,000 Lbs.		
	Rear Single Drive Axle Capacity - 30,000lbs		
	Front Steer Axle-Gross Axle Weight Rating - 18,000lbs		
	Rear Drive Axle –Gross Axle Weight Rating - 30,000lbs		

ENGINE:	MP7-405M 405 Hp @ 1500-1900 Rpm. Operating range 1100-2100 1480 Lb. Ft. Max. Torque @ 1050-1350 Rpm High Torque Rise 60%		
	11.9 Liter, 659 Cu. In Piston Displacement.		
	EPA Carb Emission Certified For 2014 Utilizing Selective Catalyst Reduction(Scr).Engines Utilizing Government Credits Or Penalties Are Not Acceptable		
ENGINE EQUIPMENT:	Air Compressor, Meritor/Wabco 318 18.7 Cfm		
	Engine Mounted Oil Check And Fill		
	Mack Powerleash Engine Brake		
	Alternator, Delco 12V 130A (24SI) Brush-Type		
	(3) 12volt Mack Grp31 Batteries With 3000 CCA Threaded Post		
	Air Cleaner, 11” x 30” Under Hood Single Element Dry Type		
	12 Volt Heavy Duty Starter-Delco 39mt-Mxt		
	Electronic Starter Interlock System		
	Coolant Protection To Below –34 Degrees Fahrenheit With Coolant Conditioner Filter		
ENGINE EQUIPMENT:	Engine Block Heater, Gomack (Phillips) – 1500 Watt 120 Volt With Intake Grid Heater mounted under driver side door.		
	Starting Aid Engine Electric Preheater		
	Engine Hoses And Tubing, Silicone		
	Diesel Particulate Filter /Scr System Horizontal-Under Right Side Of Cab-Clear Back Of Cab Option		
	Exhaust After –Treatment System Diesel Particulate Filter Ceramic Catalyzed, And Scr Technology To Meet 0.2 Grams Of Nox		
	Exhaust, Side Of Cab Single (R/S) Vertical Straight Exhaust Stack		
	Poly-V Fan Belt With Automatic Tensioner		
	Fan Drive, Behr Fan And Electronic Modulating Fan Drive		
	Flywheel ,Light Weight Aluminum		
	Fuel-Water Separator: Davco 382, (Fluid Heater) Fuel Heater/Water Separator w/vendor Prim & Mack Sec fuel Filter		
	Tether device Furnish Cap Retainer for Oil Fill & Radiator		
	Hand Primer Pump		
	Hoses, Radiator/Heater Mack Brand EPDM Radiator & Heater Hoses		
	Injection Pump- Electronic Engine Control		
	Radiator, Aluminum Core		
TRANSMISSION:	Allison 4500-RDS -6 (4.70/0.67) Rugged Duty Series Gen 5 Includes transmission Cooler, External Oil Cooler, Internal Filter, and Oil Level Sensor		
	Driveline-Main, Meritor 18 MXL "Xtended Lube"		
	Transmission Bell Housing, Aluminum		

	Synthetic Transmission Fluid		
CAB EQUIPMENT:	Air Conditioner/Heater, (Bergstrom) Integral w/heater combination		
	Air Restriction Monitor, Air Cleaner Intake Mtd		
	Instrument Cluster Display, Co-Pilot Driver Display(4.5”Diagonal Graphic Lcd Display W/4-Button Stalk Control)(Includes Guardog Routine Maintenance Monitoring)		
	Conventional Cab (Welded Steel Galvanized Shell) with Air Ride Suspension(Aluminum Cabs Not Acceptable)		
	Fiberglass Tilt Hood With Safety Lock And Hood Hatch For Maintenance Checks		
	Cigar Lighter On Instrument Panel		
	Overhead Console with 2 Storage Compartments and Power Leads		
	Dome Light, (4) W/Self-Contained Switch		
	Diagonal Handle On Driver Side Door Panel		
	AM/FM Premium Stero, CD-Player, MP3, Weatherband, Handsfree Interface, Bluetooth		
	Driver and Passenger side Power door locks and Windows		
	Gauge, Air Pressure		
	Gauge, Voltmeter		
	Gauge Cluster, Exhaust Pyrometer, Engine Oil, And Transmission Oil Temperature Gauges		
CAB EQUIPMENT:	Gauge, Engine Coolant Temperature		
	Gauge, Engine Oil Pressure		
	Gauge, Fuel Level		
	Gauges, English Display		
	Gauge, Speedometer w/Trip Odometer (Electronic 1% Accuracy)		
	Engine Tachometer Electronic With Hourmeter		
	Glass-Cab Window, Safety Tinted Windshield, Side And Rear Windows		
	Grab Handles, Aluminum, Rh & Lh Behind Door		
	Grille, Bright Finish With Bug Screen		
	Headlamp Bezel- Molded Plastic		
	High Beam Indicator Light		
	Body Builder Access Connector Inside Of Cab For Body Controls		
	Horn-Air, (2) Mounted On Cab Roof		
	Horn- Electric, Single Tone		
	Identification/Clearance Lights, (5) TruckLite LED Chrome Bullet Type Lamp		
	Instrument Panel, Gray With Black Gage Bezel		
	Interior Trim Level, (Grey) Features: Padded Vinyl Headliner		
	Rear Panel With Storage Pouch, Polyurethane Rubber Padded floor Mat		

	2 Cup Holders Mounted At Bottom Of Dash (Center)		
	Chassis Keyed Alike- 4 Keys		
	Heated Mirrors-Exterior, West Coast, Rh & Lh Bright Finish		
	Mirrors – Convex Type, Bright Finish, Lh & Rh 8.0” Dia; Mounted Below Lower Arm Of West Coast Mirror		
	Proximity Mirror Rect Convex Above Rh Door Window		
	Right Side Door Peep Window		
	Exterior Sun Visor Fiberglass (Cab Color)		
	Rear Window (Fixed Type)		
	Seat - Driver, Bostrom Talladega 915 (Mid-Back) Air Suspension		
	Seat – Rider Bostrom Mid Back Stationary with Integral Storage Compartment		
	Seat Covering, All Vinyl		
	Seat Belts, Lap And Shoulder w/Cab Mounted Shoulder Belt		
	Sun visor –Interior, Both Sides (Padded Vinyl)		
	Starter Switch, Key Type		
	Steering Wheel, 18” Two Spoke Urethane Grip		
	Windshield Washers, Electric, Wiper Mounted W/Reservoir Back Of Cab		
CAB **EQUIPMENT:**	Windshield Wipers, Sprague 2 Speed Electric Motor w/Intermittent feature		
	Dash Control/Power Supply/Local Installation Plow Lamps W/Lead Furnish At Grille With 2w/3w Weather Pack		
FRAME EQUIPMENT/ FUEL TANKS:	Bumper – Front, Extended Swept Back -Steel Channel		
	Crossmembers, Steel Huck Bolted HD Back-To-Back Channel		
	Flaps – Wheel (Front) Black Poly Armor		
	Frame rail End Squared		
	Towing Device – Front, (2) Hooks		
	Fuel Tank – Lh, 72 Gallon Aluminum with 8.7 Gallon Def Fluid Tank-(Clear Back Of Cab Package)		
FRONT AXLE/ EQUIPMENT/ TIRES:	Front Axle, FXL18 - 18,000 Lbs. Capacity-Sealed Kingpins - Maintenance Free		
	Tire Brand/Type – Front, Bridgestone – Tubeless Radial, 315/80R22.5 20 Ply. M860A (All Position)		
	Wheel – Front, Steel Disc 10 Hole Hub Piloted 22.5" x 9.0"		
	Brakes – Front, Meritor “S” Cam Type 16.5” X 6” Q+		
	Brake Drums – Front, Cast Outboard Mounted		
	Dust Shields – Front Brake, Furnish		
	Oil Seals – Front Wheels, Chicago Rawhide (Scotseal)		
	Front Axle Shock Absorbers		
	Slack Adjusters – Front, Haldex – Automatic		
	Springs – Front, Mack Multileaf 18,000 Lb.		
	Spring Build-Up, RH side for Wing Plow Applications		
	Steering Box, Sheppard SD110 with Tilt and Telescopic		

	Steering Column		
REAR AXLE/ EQUIPMENT/ TIRES / RATIOS:	Rear Axle, Meritor RS-30-185 - 30,000 Lbs. Capacity		
	Suspension - Rear, 30,000 Lbs. Multileaf w/Helpers		
	Single Reduction Rear End Gears		
	Locking Main Differential, Driver Controlled		
	Tire Brand/Type – Rear, Bridgestone – Tubeless Radial (4) 315/80R22.5 20 Ply (M860A Tread)		
	Spring Brake Chambers – Vender, Mgm Tr-T Tamper Resistant		
	Spring Brake Chambers, Type 36/36 Rear		
	Carrier/Ratio- Rear Axle, Malleable Housing, 5.63 Ratio		
	Wheels – Rear, Steel Disc 10 Hole Hub Piloted 22.5" x 8.25"		
	Brakes – Rear, Meritor-Cam - 16.5” x 7” P Brakes		
	Brake Drums – Rear, Cast Outboard Mounted		
	Dust Shields – Rear Brake, Furnish		
	Oil Seals, Premium Hub		
	Slack Adjusters – Rear, Haldex – Automatic		
	Spring Brake Chambers-Quantity (2) Chambers Double Diaphragm Type		
AIR/BRAKE:	Air Reservoirs, Steel - One Supply (Wet) Tank		
	Brake Control System-Two Valve Dual Brake System-Trailer Supply With Hand Control For Trailer-Trailer Air Connections To Rear Pintle Plate, Trailer Electrical Harness To Rear For trailer Lights		
	Air Dryer-Meritor/Wabco 1200 Heated With Coalescing Oil Filter		
	Anti-Lock Brake System, Bendix Without Traction Control		
	Automatic Drain Valve, Bendix (Heated) (1) On Supply (Wet) Tank		
ELECTRICAL EQUIPMENT:	Electrical Master Disconnect Switch Mounted in cab.		
	Back-Up Alarm, With Intermittent Feature (Ambient Noise Sensitive)		
	Steel Battery Box with molded plastic cover		
	Whitacker electric jump start system to be mounted D/S cab with 20’ cable		
	Daytime Running Lights, Courtesy Light Switch (Headlamp And Clearance)		
	Electric Circuit Protection Package, All Circuits Fuse/Breaker Protected		
	Headlights, Single Mounted Rectangular Halogen Lamps Flush Mtd.		
	Rear Lighting, (2) Combination Stop, Tail Directional and Back-Up Lights-Led Module		
	Signal Flasher Type, Transistorized Turn Signal, Federal Mogul #250		
PTO:	Engine Crankshaft Adapter,1350 Series Flange		
PAINT:	Cab Exterior, Customer Color-Base Coat/Clear coat		

	Frame Color, Black		
ADDITIONAL EQUIPMENT:	Icc Safety Kit (Fire Extinguisher And Road Reflectors)		
	Manuals, Two Complete Set Of Parts And Service Manuals		
	Front Axle Spare Tire And Rim Mounted		
	Front bumper guides poles with bulldogs.		
	Rear Axle spare tire and rim mounted		
WARRANTY:	Basic Vehicle – 12 Months On All Components		
	5 Year /150,000 Miles, Engine Warranty Is To Cover Exhaust After-Treatment System And To Include Turbo Charger, Injectors, And Water Pump.		
	Allison Transmission – 5 Years / Unlimited Miles		

DUMP BODY

E. Dump Body to be heavy duty 201 stainless steel cross memberless Smooth under side type, suitable for use by The Town in street and highway maintenance including snow and ice control with external mounted cylinder. _____

7. Inside length to be 10ft for a 92” CA. 11ft overall with hoist. _____
2. Inside width to be 86” minimum. Outside width 96”. _____
3. Sides (from body floor to top of top rail) to be 30" high. _____
4. Tailgate to be 38" high. _____
5. Head sheet to be minimum 36" high. _____
   a. One (1) 2" x 3" horizontal head sheet channel brace from the floor 24.37”. _____
6. Capacity to be 6.5 sides and 8.1 cubic yards ends at water level. _____
7. Sides, head sheet and tailgate to be 7 gauge Type 201 stainless steel. _____
8. Floor to be a one-piece 1/4" AR400 steel with both side radiuses built into floor. AR450/Hardox 450 is not acceptable. No exceptions. _____
9. All corner posts and sides to be 7 gauge, 201 stainless steel. _____
10. Top rails are to be 4" x 5" seamless, sloping (dirt/salt shedding) and boxed for added strength. There are to be four (4) stainless steel structural channel piece hold downs for spreader mounted on the top rail. Location for two (2) per side to be determined at the time of installation. _____
11. Bottom rails are to be seamless and sloping (dirt/salt shedding). _____
12. Long sills are to be one-piece 5” structural steel I-beam at 12lbs per foot. _____
13. Rear apron to be ¼” 8" formed channel. _____
14. There are to be no cross members. Floor to be skip welded to I-Beam Long sills. _____
15. Rear Corner Post:
    a. To be 7 gauge 201 Stainless Steel. _____
    b. Rear post to be 38” high x 4-3/4” deep x 12” wide. _____
    rr. Top of corner post to be dirt shedding. A 14-1/2” one-piece 7 gauge stainless steel shall be break formed front to back at 5-1/2” and a downward slope remaining at 9”. _____

ss. The top of post shall house two (2) ½" stainless steel plate brackets to house the top pivot point. _____

tt. Tailgate reinforcement plate around the tailgate latch assembly must be ¼" thick. Outside must be 16" tall. Bottom must be 8-3/4" long. Inside bottom height shall be 7-3/8" to the floor. Top shall be 4-1/4" from outside to top of floor sheet. All to be continuously welded. _____

uu. Two (2) oval factory cut outs for S/T/T and Reverse. _____

vv. Two (2) Whelen brand strobe light (3 light) boxes to be welded to outside of each rear corner post. Location to be determined at the time of build. _____

16. No front corner posts. Head sheet to have mirrored image of one (1) weld on full length horizontal side brace each side and to be continuously welded to side brace, each side. _____

17. One (1) Intermediate fully welded horizontal side brace, full-length. _____

18. 30" x 86" wide cabshield to have built in tarp deflector full width of body headsheet. Cabshield to house tarp. Five (5) Whelen flush mounted 700 series mounted: Each side, each front corner, and one front center. All Back side of lights must be boxed in with stainless steel. Stainless steel tubing shall be used to protect electrical wires between lights. Tarp system to be recessed into side plates at furthest most rear. See tarp section for details. _____

19. There are to be 2" x 8" hard wood sideboards installed and painted black or to match cab color. Front board side pocket holders must extend full height to bottom edge of cabshield lip. _____

20. The one piece external side sheet must be break formed and wrap under the body floor no less than 10" extended under the body with a continuous welded seam to floor sheet. _____

21. Tailgate design:

a. To be and double-acting heavy duty. _____

b. Bracing to be full perimeter box type, 6" top and bottom and 4" sides. _____

ll. There is to be one (1) horizontal brace, mid-section. _____

mm. Top, bottom, and intermediate horizontal braces to be sloped (dirt/salt shedding). _____

nn. Top and bottom tailgate pins to be 1-1/2" diameter 201 Stainless steel, minimum with T-handle. _____

oo. Minimum 3/8" stainless steel coil chains to be long enough to hold tailgate in horizontal position if necessary. _____

pp. Tailgate to be level with dump body floor when in horizontal position. _____

qq. Heavy nylon mesh sleeves to be installed over spreader chains to protect body finish. _____

rr. Lower latch hooks to be flame cut from 3/4" 201 SS plate to secure against two (2) 3/8" 201 SS corner post mounted latch plates, one (1) set each side of the ¾" latch hook per side. _____

j. There is to be a full width 1" 201 stainless steel diameter (min.) tailgate release rod at rear of body. _____

k. Air tailgate release with spring parking brake chamber mounted center rear of body with dash control. _____

l. All 201 stainless steel hardware. _____

m. One (1) SS d-ring lift hook mounted on top of tailgate. _____

n. Three (3) coal doors, 13” wide, recessed flush with interior tailgate sheet. _____

o. Two (2) safety turnbuckle latches, one per side, for safety of holding tailgate shut. No exceptions. _____

p. Two (2) tailgate latch bar safety mechanisms, one per side bottom, per North Hempstead’s approved drawing. No exceptions. _____

22. Continuous welded body shell (except long sills to floor sheet that are skip welded), cab protector & tailgate. _____
23. Stationary 2-1/2” x 20” long grip strut stainless steel steps (one step) mounted to the front drivers side as far forward as possible on the horizontal side brace. _____
24. Full length 2-1/2” grip strut stainless steel walk rail to be mounted full length on bottom rub rails. _____
25. Three (3) step stainless steel pull out ladder mounted under floor and under 20” grip strut step on horizontal brace. _____
26. One (1) Pull Tarp brand tarp system with asphalt rated tarp. Must be mounted on top of cabshield as far rearward and recessed into side vertical supports of cabshield. 7GA Stainless steel cover mounted over the existing Pull Tarp housing to be bolt on. _____
27. Two (2) one-piece stainless steel rod grab handles must be mounted on each side of the 20” step. _____
28. Front corner of bottom rub rail must be capped with 7GA stainless steel and be on an approximate 60 degree angle. _____
29. Six (6) stainless steel J-Hooks mounted upside down. Three (3) per side and evenly spaced and welded on. _____
30. One (1) 12” bolt on stainless steel rear apron. _____
31. Two (2) stainless steel lift loops mounted to top dirt sheet rail, evenly spaced. _____
32. Stationary two (2) ¾” stainless steel rebar mounted on 45 degree from front head sheet to sides at spacing as the outsides steps. _____
33. Body must have any welded burn marks removed prior to delivery. _____

HOIST AND REAR HINGE ASSEMBLY

F. Heavy duty front telescopic type hoist suitable for use with a Dump body on a road and highway maintenance truck used for snow and ice control, externally mounted of headsheet. No exceptions. _____

5. NTEA rated Class 50 with 17.5 tons capacity minimum. No exceptions. _____
2. Forty three thousand pound (43,000 LB.) capacity minimum @ 2000 PSI. _____
3. Double-acting (power up and down full length of stroke). _____
4. Largest diameter stage must be at bottom. Inverted cylinder not acceptable. _____
5. 4.5" inside diameter cylinder base tube (minimum). _____
6. 100" stroke (minimum). _____
7. All cylinder stages to be nitrated for corrosion resistance and wear resistance. _____
8. Internal bore seal design so no packing adjustment or bleeding is required. _____

9. Hoist cylinder to be mounted inside pivoting, trunnion mounted cylinder cover tube. _____
10. Subframe for body to be structural 4” C-Channel. Full width cradle must be made of 201 stainless steel that houses hoist, hydraulic reservoir and valve enclosure. No exception. _____
23. Mounting height not to exceed 9" from the top of chassis frame to dump body floor. No exceptions. _____
24. 5” x 6” x ½” x 38” long formed angle with 1-1/2" 303 stainless steel pins with greaseable pins. Each pin is secured by nut/bolt. _____
25. Each pin mounts into two (2) 1/2” plates mounted on two sides to the 6’ x 8” x ½” formed angle. Outside plate for each set must be 1.125” from end angle with pin centers at 32”. _____
26. Each rear hinge block must be a 2-1/2” wide and 3.25” tall plate steel with 5.88” length mounting surface of body to top of block. Each block must accept a 1-1/2” dumping stainless steel pivot pin and have a grease zerk. _____
27. Overhang from the center of the rear pivot is to be 12” to the end of the floor plate. _____
28. Externally mounted hoist design must show, upon request, at least fifteen (15) current systems of this same design in the NJ/NY market. No exceptions. _____

SNOW PLOW HITCH

E. **Heavy front frame side plate low profile snow plow hitch.** _____

5. To be engineered, designed and built by a recognized snow plow manufacturer. Hitch to be a low profile configuration. The design will limit the amount of front overhang to a minimum. _____
6. A truck frame extension is not required for the mounting of hitch but recommended. _____
3. Heavy front frame hitch of modular design shall allow the cab hood to tilt completely forward for engine access. _____
42. Side plates will transmit plowing forces directly to the truck frame side rails and will custom fit the specified year, make and model of the truck. _____
43. The side plates are custom fitted 5/8" steel plate of proper length and construction for heavy duty service and shall provide adequate clearance for steering mechanisms and spring suspensions. _____
44. Side plate mounting angles or plates shall mount flush to the truck frame for maximum strength. Pipe spacers are not acceptable. _____
45. The front section of the hitch assembly: lift frame, center section and the lower push plate shall all be welded to the two (2) vertical tubular supports. The two (2) vertical supports are to be constructed of 6" x 3" x 1/4" thick wall. The length of each support shall be 38-1/4”. No exceptions. _____
46. The front two (2) vertical supports are to be spaced evenly 26-3/4” apart. No exceptions. Overall mounting width is 32-3/4”. _____
47. The front two (2) vertical supports are to be mounted to vertical structural angles of 5” x 4” x ½”, full height of tubes. _____
48. Each vertical tube must have three (3) 3” wide gussets tying in the

vertical tube to the structural angle. Each gusset is 3” x 4” x 5” x 7ga. _____

49. The vertical tubes and structural angles are mounted to a horizontal 6” x 4” x ½” x 39” wide structural angle mounted at the top of the two (2) vertical structural angles. _____
50. The center cylinder tube to be built with a 6" x 3" x 1/4" tubes x 26-5/8” long and mounted centered to the vertical tubes. Two (2) 1/2" x 3" x 4" lift cylinder ears to be welded to this tube along with a 1/2" x 3" flat reinforcement bar. _____
51. The telescopic lift arm shall be manufactured of 4” x 4” x 3/8” square outer tubing and 3” x 3” x 3/8” square inner tubing. _____
52. The lift arm and lift frame shall be designed to accept 2.5”, 3” or 4”x10” lift cylinder . Cylinder pins are to be 1” cold rolled steel. Inner lift arm must accept clevis and pin. _____
53. Truck and plow portion hitch must be Torloc/Arrowhead style and work interchangeably with The Town of North Hempstead’s fleet. _____
54. Mounted under the telescopic outer tubing is to be a white poly block 1-1/2” x 3” and arced to hold a 4” x 10” lift cylinder. _____
55. The quick hitch shall provide self-alignment with the mating plow section while being engaged. _____
56. Re-mount OEM bumper. Bumper shall be split to accommodate plow hitch and must be bolted on and utilize stabilizer arm per section. _____
57. The plow hoist cylinder shall be of premium grade and shall be a double acting 4" bore x 10" stroke. _____
58. The piston rod is to be of steel construction treated with a nitro steel process. _____
59. The ram sleeve or outer barrel will be such that the rod packing may be maintained or replaced as required. A positive stop must be incorporated that will help prevent mechanical pressure being applied to the packing when the rod is fully extended. _____
60. The cylinder shall be capable of 14,137 pounds of thrust @ 2,000 PSI and 16,000 pounds of bursting pressure @ 2,000 PSI. Minimum weight of the cylinder shall be 28 pounds. Ports to be 3/8" _____

SNOW PLOW

A. MOLDBOARD:

1. The moldboard shall be heavy duty torsion trip edge design type Snowplow with level lift without additional mechanical mechanism. _____
2. Moldboard will be an integral shield with trip edge. _____
   u. Length to be 10’. _____
   v. Height to be 40” (not including rubber deflector) in dead center And 54” each end. No exceptions. _____
   w. 36” side plastic markers mounted to plow. _____
   x. Two (2) lift hooks to be mounted on moldboard top. _____
13. The moldboard shall be reinforced at the top with a 3-1/2" x 2-1/2" x 3/8" with holes to allow moisture to escape with poly 36” markers. _____
14. 10 GA. 201 Stainless Steel rolled moldboard with eight (8) ½” x 3-1/2” ribs for extra strength and rigidity. Plow must have all welded burn marks removed prior to delivery. No exceptions. _____
5. All welds must be continuous (skip welds not acceptable). _____
6. Bottom angle must be 4”x 4” x ¾” with an additional 4” x 3” x

½" trip edge angle. _____

13. Top moldboard angle must be constructed of 3-1/2" x 2-1/2" x 3/8" with holes to allow moisture to escape. _____
14. Two horizontal structural angle braces ¼' x 3" x 3" added for rigidity. _____
15. Attack angle of moldboard shall have adjustments of 5, 10, and 20 degree. _____

B. CUTTING EDGE:

1. The cutting edge must be 6" carbide cutting edge with cover plate. No exceptions. Must be AASHO standard punched, mounted flush with moldboard and be easily replaceable. _____
4. Cutting edge face must have wrap around curb guards mounted on both ends with same bolts/nuts as cutting edge. No Exceptions. _____

C. TRIPPING MECHANISM:

1. Adjustable torsional one piece cutting edge trip. From bottom of new 8" cutting edge to top trip edge is no less than 14.75". _____
6. Springs must have a zero insertion force for increased safety while servicing. No Exceptions. _____
7. Bottom moldboard angle must be 4" x 3" x ½". Fully welded to bottom edge of moldboard. _____
4. 4" x 4" x ¾" backer angle with (6) ¾" trip ears welded to angle. _____
5. Full length trip edge pivot tube, must be constructed of schedule 80, 1.50" OD black pipe. End of each plow cutting edge is to include a 4.5"OD x 1.5" thick curb guard. _____
6. Cutting edge tripping must be controlled by (5) torsion springs. Springs constructed of a minimum of .75 square bar with 14 active coils. Minimum spring dimensions shall be 3.75OD x 2.25ID x 11.75. Springs must be produced to meet Rockwell C hardness. Hardness shall be produced from oil quenching with a minimum temperature of 1550°F. Spring preload shall be a minimum of 35°. Springs shall have a trip load capability of 8228 INCH-LBS. Typical spring material composition shall be Carbon=0.40, Manganese=.70, Phosphorous=.020, sulfur=.020, silicon=.25, chromium=.80, Nickel=1.75, Molybdenum=.25. _____
7. Three (3) position adjustment on each individual torsion spring on the trip assembly to allow adjustment in various settings for road conditions. No exceptions. _____
8. Face of cutting edge trip section must be 201 Stainless Steel. No exceptions. _____

D. PUSH TUBE ASSEMBLY:

1. Push tube to be constructed of 4" x 4" x .38 square tube, 107.5" in length. Each end of the push tube shall be capped with a 10ga 3.25" x 3.25" plate. _____
2. Welded to the moldboard pushtube shall be (8) 5/8" x 3.5" x 7" pivot ears. Each ear shall be further reinforced with a 2" x 2" x .38 gusset. Pivot ears shall pin to moldboard assembly with 1-1/4" thick pins. _____
23. (2) Moldboard stabilizer strut mounting ears each constructed of (2) 5/8" plate approximately 10" x 13". _____

24. Center pushframe pivot constructed of (2) .38 x 36.5” x 8.5” plates. There shall be a 3.5” hole in each plate for a 5-1/2” x 3-1/2” OD x 2.52” ID bushing. Bushing shall be drilled and tapped for a 1/8” grease zerk. _____
25. Center pushframe pivot assembly shall also have (2) 3.75” stops for the a-frame assembly. _____
26. Push tube cylinder lugs, located on left and righ hand sides shall each be constructed of (2) 5/8” x 8-1/4” x 3-5/8” plates complete with a 1-1/4” pin hole. _____
27. Cylinder lugs shall be further reinforced with 3/8” x 2-3/4” x 3-1/4” gusset. _____
28. There shall be (2) chain lift lugs welded to the top of the push tube constructed of ½” x 3” x 4” plates. _____
29. Moldboard reversing shall be accomplished by (2) 3” rod x 3.5” bore x 16” stroke single acting cylinders. _____
30. Cylinder rods shall be nitride for increased corrosion resistance. Chromed rods shall be unacceptable. _____
31. Cylinder working pressure shall be 3000 PSI. _____
32. Cylinder shall be plumbed to an 1800 PSI cushioning valve to prevent damage when hitting obstructions. _____

E. A-FRAME:

1. Pivot capture plates shall consist of (2) plates constructed of 1” x 11” x 12-7/8” plates. These plates will be flame cute and have a 2.53” hole to pin the a-frame assembly the push-tube assembly. The top pivot capture plate shall be drilled and threaded for a ¾” capture bolt to prevent pin rotation. _____
4. Top main A-frame plate shall be constructed of 3/8” x 28” x 25-5/8” flame cut plate. The narrowest portion of the top plate shall remain a minimum of 12”. Top plate shall also be flame cut to accept the reversing cylinder pins. Pin hole shall be 1.281” in diameter. Each pin holes shall be further reinforced with a 1” thick plate which is flame cut to accept reversing cylinder pin. _____
13. Bottom main a-frame plate shall be constructed of 3/8” x 28” x 25-5/8” flame cut plate. The narrowest portion of the top plate shall remain a minimum of 12”. Bottom plate shall also be flame cut to accept the reversing cylinder pins. Pin hole shall be 1.281” in diameter. There shall be a 6” access hole for attaching the hitch swivel bolt. _____
14. The A-frame vertical side plates which tie the top and bottom plates into a boxed formation shall be constructed of ½” x 4” x 32” plate and formed to follow the contour the top and bottom plates. _____
15. The rear A-frame push plate shall be constructed of 1” x 6-3/4” x 33-5/8” plate. This plate shall be flame cut with a 1-9/16” hole to accept the plow hitch attachment bolt. _____
16. On the top side of the A-frame plate shall be a mounting plate to which attached is the reversing cylinder cushion valve. _____
17. Plow portion hitch must be Torlo/Arrowhead and fit existing Town of North Hempstead truck portion hitches. _____

F. PAINT:

7. All metal surfaces are to be phosphate washed to remove slag,

splatter, oxide and oil residue. _____

8. Moldboard frame work must be powder-coated Highway Orange. _____
9. Push frame, “A” frame and other miscellaneous components are powder-coated black for increase paint durability. _____

CENTRAL HYDRAULIC SYSTEM

A. TYPE:

1. System to be of load sensing pressure-compensated type, pumping oil only when needed and in exact volume and pressure required --- no more, no less. _____
2. Pump to automatically revert to standby mode when no oil flow is required (No on/off switch). _____
5. Must be able to operate all equipment on truck simultaneously if necessary. No one function to interfere with any other. _____
4. System controls are to be electronic over hydraulic. _____
5. Operating speed of all functions must-be variable and adjustable. _____
6. One complete system to operate all functions. _____

B. HYDRAULIC PUMP AND FRONT CRANK SHAFT:

1. The hydraulic piston pump shall be a pressure and flow compensated load-sensing type. The pump shall be an Eaton 5.98 CID series 620 have a minimum 2” inch suction line and ½” control drain line plumbed directly back to the reservoir. The pumps compensator shall have rear facing adjustments. Pump shall be a front crank shaft mounted drive shaft and properly mounting. _____

C. HYDRAULIC VALVE:

1. Control valve shall be U.S. manufactured. Valve shall be a load sensing type with o-ring ports. Mid-inlet section porting will be #16 inlet, #20 outlet, #16 hoist section, #4 load sense port, and #10 or #12 for all other sections. The hoist section shall be stacked to one side of the mid-inlet and all other sections will be stacked on the other side. All ports shall be level with each other so as to lay flat on its base. There will be a main relief in the mid-inlet section that will be set at 3500 PSI to protect the system from being over pressurized. _____
2. Valve section to be arranged as follows:
3. Hoist, 4-way for a double acting cylinder with mid-inlet transition section. _____
4. Pressure reducing section., if needed. _____
5. Plow Lift, 4-way for a double acting cylinder with flow control. _____
6. Plow Angle, 4-way for a double acting cylinder with flow control. _____
7. Spin-A-Veyer section, consisting of two pressure compensated cartridges that are a single piece design with hardened cartridge bores and spools. These shall be operated independently via a 12 VDC pulse width modulated signal. Each valve shall have heavy duty 7/16-20 UNF screw style manual overrides that are adjustable from no flow to full flow. These valves shall be mounted

in a housing that is made of aluminum with gray anodizing for corrosion resistance and durability. The auger/conveyor shall be a 15 GPM spool and the spinner shall be a 7 GPM spool. No exceptions. _____

8. Liquid Pre-Wet/Anti-Ice Valve 4-way. _____
9. Valve shall be prior approved equal. _____
12. A plow float/balance valve must be provided and controlled with a dash mounted rocker switch for on/off. The plow float/balance can be turned off as needed. When in use, the valve will allow the valve to use a pressure reducing/relieving system to control the float/balance lifting pressure on the plow's lift arm assembly. Two solenoid valves wired together turn the valve off and on. One solenoid valve opens the inlet of the pressure reducing valve to the pump. The other solenoid valve opens the outlet of the pressure reducing/relieving valve to the lift port. Oil flowing in and out of the lift port is restricted with an orifice. _____

D. OPERATOR CONTROLS FOR DUMP BOY HOIST and SNOW PLOW:

1. The valve controls shall be a feathering remote electric control with each joystick. Dump to have one (1) Joystick and Plow to have another Joystick. Force America Joysticks or prior approved equal. Layout to be determined at the time of build. _____

E. RESERVOIR/VALVE COMPARTMENT:

13. One (1) 30 gallon all-welded 201 stainless steel hydraulic oil reservoir mounted on the hoist's cradle on passenger side. Must have site gauge with rubber gasket seal. No exceptions. _____
14. The hydraulic reservoir will be constructed of 10-gauge stainless steel and be internally baffled. _____
15. One (1) 201 stainless steel valve enclosure mounted on the hoist's cradle on the driver's side. Must have a Stainless steel cover with one bolt-on securing mechanism. No exceptions. _____
16. Shall be mounted in a manner as to not transmit any truck torsional loads thru the tank. _____
17. The enclosure will use a gasket-less passive technology. (No rubber seals, gaskets, or weather stripping.) _____
18. The reservoir supplier will provide all valve fittings (JIC connections) and plumb the return line from the valve to the filter. _____
7. The cover will protect from both road and pressure washer spray. _____
8. A 2" full flow brass ball valve shall be plumbed at the suction port of the tank. _____
9. A low oil/high temp sending unit shall be mounted in the reservoir. _____
10. Hydraulic oil filter shall be mounted in the reservoir. Hydraulic filter shall be a 10-micron absolute and rated for no less than 60 GPM. _____

F. Hydraulic Lines and Fittings:

1. Stainless steel tubing to be used under body and cab in lieu of hosing. Only hosing to be used is ends of stainless steel tubing to reach each function's quick couplers or connection. Tubing shall be seamless #201 stainless steel construction with a minimum wall thickness of 0.065". The ends must be flared to accommodate a 37 degree JIC fitting. The use of compression fittings is not

Acceptable. Spacing of each tube to allow for material to fall between each tube. _____

32. All stainless tubing must be mounted in polyurethane poly green tube clamps. _____
33. All hoses to be wire braid reinforced with swaged on high pressure JIC 37 degree tapered seat end fittings. _____
34. All fittings & adapters to be forged steel (No tapered pipe fittings except on suction hose). _____
35. Hoses to front with 1/2" 100% stainless steel (no exceptions) quick couplers for power reversing plow. _____
36. Hoses to rear with 1/2" 100% stainless steel quick couplers for spreader (no exceptions). _____
37. Spreader stainless steel hose couplers to be mounted on either frame rail or pintle plate under dump body at rear. _____
38. Polymer dust plugs or caps on all couplers with retainer straps. _____
39. All pressure hoses except for plow & spinner to be 3/4" I.D. SAE 100R2. _____
40. Plow, spreader spinner, and prewet system pressure hoses to be 1/2" I.D.SAE 100R2. _____
41. Main pressure hose from pump to control valve shall be 1" Didiameter, 4-wire braid. No exception. _____
42. All return hoses to be SAE 100R2. _____
43. Suction hose to be minimum 2" I.D. SAE 100R4 spiral wire reinforced with long radius ells. _____
44. All hoses to be routed away from chassis exhaust whenever possible to protect against heat deterioration. _____
45. All hydraulic quick disconnect couplings must be stainless steel Aero-Quip FD45 series or prior approval; bulkhead mounted, and include attached male and female dust covers. Couplings to be configured so as to eliminate confusion when coupling. No exceptions. _____
46. All stainless steel quick disconnects for spreaders must be mounted under body at passenger rear most corner and mounted to stainless steel encloused housing that is welded to bottom rub rail wrap around portion. No exceptions. _____

G. Spreader Controller:

3. Force America 5100ex open loop controller. No exceptions. _____

SNOW PLOW LIGHTS:

A. Truck-Lite brand LED model 80880 plow lights. _____

9. Mounted with custom fabricated 100% stainless steel brackets on truck fenders. Brackets must be painted black. _____
10. Plow lights to be wired into the truck's existing headlight circuit using the factory installed switch. _____
11. Plow lights must function in high and low beam modes using existing truck's dimmer switch. _____
12. Plow lights and truck chassis headlights must never operate at the same time. _____

LIGHTING & ELECTRICAL

ALL lighting and layout must meet all Fedaral, State, and DOT regulations. No exceptions.

A. LED lighting system. _____

1. All marker, work, S/T/T, backup and strobe lighting to be LED. _____

32. Whelen brand DOT3 System to be Super-LED DOT Light system model 00007DS0 or equal and a current production model of Whelen and made in the USA. _____

33. The two (2) Whelen 704-D three lamp light boxes to be continuously welded to outside of each rear corner post. Rear Super LED Head Assemblies to be 700 Linear-Super-LED two (2) amber heads, two (LED) brake/tail/turn light modules, and two (2)LED back-ups, one set each side. Each head shall be capable of emitting a full 180 degree of light in the vertical plane. The light heads shall be recessed into a heavy duty 7GA stainless steel housing. _____

34. The two rear 700 series heads shall utilize a DOT LED flasher which is mounted and encapusulated in a junction box inside of cab. The DOT LED flasher shall allow the two rear 700's to be controlled independently from the front head assembly. One (1) stainless steel rod mounted vertically in front of each head to protrude out far enough to protect lense. _____

35. The 700 assembly, brake light and back up, including the steel housing, shall be approximately 23-1/2 inches high , 4-7/8 inches deep and 3-1/2 inches wide. _____

36. The modules, as well as the lens, shall be easily replacable. A water proof connector for each module shall be used to connect to the cable harness and shall be located inside the steel housing for weather resistence as well as ease of replacement. _____

37. The 700 lenses shall be made of polycarbonate, amber in color, and have a smooth outer surface for self cleaning. _____

38. There shall be two LED brake/tail/turn modules, one located in the middle positions of each steel housing. Each module must contain a minimum of 72 red LEDs. The module must be in "signal alert" flash pattern, which flickers three times withing 150 milliseconds before becoming steady "on". These modules must meet or exceed SAE requirements. _____

39. There shall be two LED back ups, one located in the bottom position of each steel housing. Each module must contain a minimum of 48 white LEDs for maximum light output. These modules shall be supplied with a clear polycarbonate lens. _____

40. The rear mounted head assemblies shall use stainless steel screws that screw directly into a nylon mounting bracket to eliminate dissimiliar metal corrosion. Units that screw into steel bracket are unacceptable. _____

41. Cable harnesses being supplied from the rear housings must be heavy-duty TPR type cable. Flexible to minus 40 degrees Fahrenheit; abrasion, corrosion and oil/grease resistance. Each conductor shall be a minimum of 14GA, pure copper stranded, and fully tin coated. No less than 30feet of cable shall be provided for each head assembly. All necessary connections shall be provided, including a strain-relief system. _____

42. Cabshield lighting shall be five (5) surface mounted Whelen brand

700 series strobes. Must be synchronized with two (2) rear Whelen brand 700 series on outside of rear corner posts. _____

43. Cabshield Whelen 700 series strobes to be on one (1) chassis dash rocker switch for on/off and labeled. _____

44. Both rear facing and rear side corner mounted Whelen 700 series strobes to be on one (1) chassis dash rocker switch for on/off and labeled. _____

45. Two (2) OEM S/T/T w/ Backup light mounted behind rear apron of dump body. Hole to be cut into apron to allow visibility. Hole to be covered with black trim lock. _____

46. Two (2) OEM S/T/T w/ Backup light mounted on each side of pintle plate. Location and mounting to be determined at the time of installation. _____

B. Electronic Back-Up Alarm provided by chassis dealer and relocated if needed. _____

C. Body Up Indicator Light. _____

1. Sealed weatherproof proximity switch on hoist-frame. _____
2. Whelen model ION-R body up light mounted in cab. _____

D. All non- strobe wiring to be 7 wire trailer cable. Separate cable routed from in-cab to all non-strobe lights with sealed junction box at rear so all wiring connections are made either inside cab and in a sealed junction box. _____

E. One (1) solid stainless steel rod must be mounted under body and all electrical body lighting must be neatly run. Rod will be one piece and full length. No exceptions. _____

F. All wire connections shall be made in the chassis cab or by means of a waterproof junction box. In cab connections shall be made using vinyl coated crimp connectors covered in weather resistant heat shrink tuning. There shall be no wire splices outside the cab. All wiring to junction box shall be resistant to abrasion, ozone, sunlight, chemicals and oil. The outer jacket shall be chlorinated polyethylene and be approved for submersion in water. The outer jacket shall be label with the cable identification wire gauge and number of conductors. Must be MSHA approved. All body lighting shall be supplied by a single sealed harness from the junction box and making the connection at the light by means of weather tight sealed connector. All strobe lights shall be included in the same harness and be connected by means of a Deutsch connector, no exceptions. _____

MISCELLANEOUS

A. 90 degree elbow extension on top of chassis vertical exhaust stack to clear cab protector and still route exhaust upward to be provided by chassis supplier and installed by body company. _____

F. Rear tire poly Fleet Maintenance fenders with stainless steel mounting tubes. _____

C. Upon installation of all components, truck must be delivered to the truck dealer for final inspection and prep. _____

D. Rear pintle plate shall have a Holland model T90 pintle properly Installed and secured. _____

1. Mounted on reinforced 3/4" thick mounting plate at rear of chassis frame at designated clearance height to ground to be 29”. Sides and bottom must be reinforced with ¾” x 2” flat stock

mounted behind the pintle plate. _____

8. Must include Safety two (2) 5/8" D-Rings, one (1) 7-wire flat plug and one (1) 6-wire plug. _____

9. License plate light and bracket mounted to top corner on passenger side. _____

E. DOT approved 2" conspicuity tape on body bottom rub rails, rear corner posts, tailgate perimeter. All DOT necessary reflective decals installed as well. _____

F. Pull Tarp brand asphalt tarping system to be mounted in cabshield rear. Must recess ahead of front head sheet and cut into side plates of cab-shield for lowest possible mounting. _____

I. Two (2) Toolboxes; Heavy duty aluminum 48x18'x18', mounted on frame rails. One (1) per side. _____

INSTALLATION AND WARRANTY

K. Minimum twenty-four (24) months, 100% parts and labor on components and installation. No deductible. _____

L. For warranty considerations and future availability of parts and service, the body company must be an authorized primary distributor for all major components they propose to furnish. Must furnish written proof from such said vendor upon request. _____

M. All equipment must be installed by a single body company, by their employees and at their regular location. _____

N. Installation of components is not to be subcontracted by body company to another installer. _____

O. No welding whatsoever is to be done on chassis frame between front of most forward spring hanger and rear of rearmost spring hanger. _____

F. No drilling whatsoever is to be done in frame rail flanges. _____

K. Body company to furnish operator's parts and service manuals for all components manufacturer's i.e., dump body, hoist, snow plow, salt spreader, central hydraulic system and strobe lights. _____

L. Completed vehicle must be certified by the body company as meeting all federal motor vehicle safety standard in effect at time of chassis production. _____

3. Approved NHTSA/FMVSS certification label must be furnished and located inside cab on driver's side. _____

I. Completed unit to comply with current OSHA regulations. _____

J. Body company must be registered with National Highway Traffic Safety Administration as a final stage manufacturer of motor vehicles as required by Federal Law. _____

K. Body company to conduct operator training session on body and equipment at the The Town garage after delivery of completed truck. _____

L. Delivered of completed vehicle must be within 60 to 75 days after delivery of cab chassis to up-fitter. $75 a day penalty might incur with later delivery. _____

M. Body company must have ASE certified installer/s and show documentation at time of bid. No exceptions. _____

N. Body company to be registered and in good standing with National Truck Equipment Association (NTEA), be a MVP member, and be the authorized distributor for all equipment bid. _____

O. Body company must participate and provide documentation at time of bid

for E-Verify®. This employment verification verification is a United States of America federally accredited verification system to insure all employees are legal residents. List Company ID#_____. No exceptions. _____

P. Dump Body, Snow Plow, and Snow Plow Hitch must be engineered and manufactured in the United States of America and all from the same manufacturer. No exceptions. _____

Q. Hydraulic schematic must be provided and laminated and placed inside the combination valve enclosure/combo tank lid. _____

R. A required pre-build meeting will occur after award of bid and prior to the start of installation. No exceptions. _____

S. The Town will inspect all equipment (plow, hitch, dump body and tailgate spreader) prior to the start of installation. No exceptions. _____

Package "C" for Chassis, Combination Body, Plow, Hydraulics, Spreader Control and Misc Items for V-Box Setup

"BIDDING REQUIREMENTS SECTION"

SECTION	SPECIFICATION DETAIL	COMPLY	
		Comply	Exception
PACKAGE C: 6 WHEEL TRUCK, DUMP BODY, PLOW, HITCH, CENTRAL HYDARAULICS FOR HI-WAY SPREADER			
-			
Description: Chassis Specifications For A New 2016 GU712 Chassis With SCR Technology To Meet 2014 Emissions Of 0.2 Grams Of Nox Or Equal			
Chassis/ Frame & Wheelbase:	Chassis: 2016 Mack GU712 Chassis Or Equal		
	Frame Rails, 11.811" x 3.54" x 0.44" High Strength 120,000 PSI Steel - 20" Integral Front Frame Extension For Snow Plow Mount		
	Single Chassis Rail		
	Section Modulus 23.5 cu In/Rbm 2,820,000 In Lbs. Per Rail		
	Wheelbase - 180"WB, Center of Axle - 92"CA,		
	Platform - 154"LP, After Frame - 62"AF		
MAXIMUM GVW & AXLE RATINGS:	Gross Vehicle Weight Rating Of 48,000lbs.		
	Front Axle Capacity - 18,000 Lbs.		
	Rear Single Drive Axle Capacity - 30,000lbs		

	Front Steer Axle-Gross Axle Weight Rating - 18,000lbs		
	Rear Drive Axle –Gross Axle Weight Rating - 30,000lbs		
ENGINE:	MP7-405M 405 Hp @ 1500-1900 Rpm. Operating range 1100-2100 1480 Lb. Ft. Max. Torque @ 1050-1350 Rpm High Torque Rise 60%		
	11.9 Liter, 659 Cu. In Piston Displacement.		
	EPA Carb Emission Certified For 2014 Utilizing Selective Catalyst Reduction(Scr).Engines Utilizing Government Credits Or Penalties Are Not Acceptable		
ENGINE EQUIPMENT:	Air Compressor, Meritor/Wabco 318 18.7 Cfm		
	Engine Mounted Oil Check And Fill		
	Mack Powerleash Engine Brake		
	Alternator, Delco 12V 130A (24SI) Brush-Type		
	(3) 12volt Mack Grp31 Batteries With 3000 CCA Threaded Post		
	Air Cleaner, 11” x 30” Under Hood Single Element Dry Type		
	12 Volt Heavy Duty Starter-Delco 39mt-Mxt		
	Electronic Starter Interlock System		
	Coolant Protection To Below –34 Degrees Fahrenheit With Coolant Conditioner Filter		
ENGINE EQUIPMENT:	Engine Block Heater, Gomack (Phillips) – 1500 Watt 120 Volt With Intake Grid Heater mounted under driver side door.		
	Starting Aid Engine Electric Preheater		
	Engine Hoses And Tubing, Silicone		
	Diesel Particulate Filter /Scr System Horizontal-Under Right Side Of Cab-Clear Back Of Cab Option		
	Exhaust After –Treatment System Diesel Particulate Filter Ceramic Catalyzed, And Scr Technology To Meet 0.2 Grams Of Nox		
	Exhaust, Side Of Cab Single (R/S) Vertical Straight Exhaust Stack		
	Poly-V Fan Belt With Automatic Tensioner		
	Fan Drive, Behr Fan And Electronic Modulating Fan Drive		
	Flywheel ,Light Weight Aluminum		
	Fuel-Water Separator: Davco 382, (Fluid Heater) Fuel Heater/Water Separator w/vendor Prim & Mack Sec fuel Filter		
	Tether device Furnish Cap Retainer for Oil Fill & Radiator		
	Hand Primer Pump		
	Hoses, Radiator/Heater Mack Brand EPDM Radiator & Heater Hoses		
	Injection Pump- Electronic Engine Control		
	Radiator, Aluminum Core		
TRANSMISSION:	Allison 4500-RDS -6 (4.70/0.67) Rugged Duty Series Gen 5 Includes transmission Cooler, External Oil Cooler, Internal Filter, and Oil Level Sensor		

	Driveline-Main, Meritor 18 MXL "Xtended Lube"		
	Transmission Bell Housing, Aluminum		
	Synthetic Transmission Fluid		
CAB EQUIPMENT:	Air Conditioner/Heater, (Bergstrom) Integral w/heater combination		
	Air Restriction Monitor, Air Cleaner Intake Mtd		
	Instrument Cluster Display, Co-Pilot Driver Display(4.5”Diagonal Graphic Lcd Display W/4-Button Stalk Control)(Includes Guardog Routine Maintenance Monitoring)		
	Conventional Cab (Welded Steel Galvanized Shell) with Air Ride Suspension(Aluminum Cabs Not Acceptable)		
	Fiberglass Tilt Hood With Safety Lock And Hood Hatch For Maintenance Checks		
	Cigar Lighter On Instrument Panel		
	Overhead Console with 2 Storage Compartments and Power Leads		
	Dome Light, (4) W/Self-Contained Switch		
	Diagonal Handle On Driver Side Door Panel		
	AM/FM Premium Stero, CD-Player, MP3, Weatherband, Handsfree Interface, Bluetooth		
	Driver and Passenger side Power door locks and Windows		
	Gauge, Air Pressure		
	Gauge, Voltmeter		
	Gauge Cluster, Exhaust Pyrometer, Engine Oil, And Transmission Oil Temperature Gauges		
CAB EQUIPMENT:	Gauge, Engine Coolant Temperature		
	Gauge, Engine Oil Pressure		
	Gauge, Fuel Level		
	Gauges, English Display		
	Gauge, Speedometer w/Trip Odometer (Electronic 1% Accuracy)		
	Engine Tachometer Electronic With Hourmeter		
	Glass-Cab Window, Safety Tinted Windshield, Side And Rear Windows		
	Grab Handles, Aluminum, Rh & Lh Behind Door		
	Grille, Bright Finish With Bug Screen		
	Headlamp Bezel- Molded Plastic		
	High Beam Indicator Light		
	Body Builder Access Connector Inside Of Cab For Body Controls		
	Horn-Air, (2) Mounted On Cab Roof		
	Horn- Electric, Single Tone		
	Identification/Clearance Lights, (5) TruckLite LED Chrome Bullet Type Lamp		
	Instrument Panel, Gray With Black Gage Bezel		

	Interior Trim Level, (Grey) Features: Padded Vinyl Headliner		
	Rear Panel With Storage Pouch, Polyurethane Rubber Padded floor Mat		
	2 Cup Holders Mounted At Bottom Of Dash (Center)		
	Chassis Keyed Alike- 4 Keys		
	Heated Mirrors-Exterior, West Coast, Rh & Lh Bright Finish		
	Mirrors – Convex Type, Bright Finish, Lh & Rh 8.0” Dia; Mounted Below Lower Arm Of West Coast Mirror		
	Proximity Mirror Rect Convex Above Rh Door Window		
	Right Side Door Peep Window		
	Exterior Sun Visor Fiberglass (Cab Color)		
	Rear Window (Fixed Type)		
	Seat - Driver, Bostrom Talladega 915 (Mid-Back) Air Suspension		
	Seat – Rider Bostrom Mid Back Stationary with Integral Storage Compartment		
	Seat Covering, All Vinyl		
	Seat Belts, Lap And Shoulder w/Cab Mounted Shoulder Belt		
	Sun visor –Interior, Both Sides (Padded Vinyl)		
	Starter Switch, Key Type		
	Steering Wheel, 18” Two Spoke Urethane Grip		
	Windshield Washers, Electric, Wiper Mounted W/Reservoir Back Of Cab		
CAB **EQUIPMENT:**	Windshield Wipers, Sprague 2 Speed Electric Motor w/Intermittent feature		
	Dash Control/Power Supply/Local Installation Plow Lamps W/Lead Furnish At Grille With 2w/3w Weather Pack		
FRAME EQUIPMENT/ FUEL TANKS:	Bumper – Front, Extended Swept Back -Steel Channel		
	Crossmembers, Steel Huck Bolted HD Back-To-Back Channel		
	Flaps – Wheel (Front) Black Poly Armor		
	Frame rail End Squared		
	Towing Device – Front, (2) Hooks		
	Fuel Tank – Lh, 72 Gallon Aluminum with 8.7 Gallon Def Fluid Tank-(Clear Back Of Cab Package)		
FRONT AXLE/ EQUIPMENT/ TIRES:	Front Axle, FXL18 - 18,000 Lbs. Capacity-Sealed Kingpins - Maintenance Free		
	Tire Brand/Type – Front, Bridgestone – Tubeless Radial, 315/80R22.5 20 Ply. M860A (All Position)		
	Wheel – Front, Steel Disc 10 Hole Hub Piloted 22.5" x 9.0"		
	Brakes – Front, Meritor “S” Cam Type 16.5” X 6” Q+		
	Brake Drums – Front, Cast Outboard Mounted		
	Dust Shields – Front Brake, Furnish		
	Oil Seals – Front Wheels, Chicago Rawhide (Scotseal)		
	Front Axle Shock Absorbers		
	Slack Adjusters – Front, Haldex – Automatic		

	Springs – Front, Mack Multileaf 18,000 Lb.		
	Spring Build-Up, RH side for Wing Plow Applications		
	Steering Box, Sheppard SD110 with Tilt and Telescopic Steering Column		
REAR AXLE/ EQUIPMENT/ TIRES / RATIOS:	Rear Axle, Meritor RS-30-185 - 30,000 Lbs. Capacity		
	Suspension - Rear, 30,000 Lbs. Multileaf w/Helpers		
	Single Reduction Rear End Gears		
	Locking Main Differential, Driver Controlled		
	Tire Brand/Type – Rear, Bridgestone – Tubeless Radial (4) 315/80R22.5 20 Ply (M860A Tread)		
	Spring Brake Chambers – Vender, Mgm Tr-T Tamper Resistant		
	Spring Brake Chambers, Type 36/36 Rear		
	Carrier/Ratio- Rear Axle, Malleable Housing, 5.63 Ratio		
	Wheels – Rear, Steel Disc 10 Hole Hub Piloted 22.5" x 8.25"		
	Brakes – Rear, Meritor-Cam - 16.5” x 7” P Brakes		
	Brake Drums – Rear, Cast Outboard Mounted		
	Dust Shields – Rear Brake, Furnish		
	Oil Seals, Premium Hub		
	Slack Adjusters – Rear, Haldex – Automatic		
	Spring Brake Chambers-Quantity (2) Chambers Double Diaphragm Type		
AIR/BRAKE:	Air Reservoirs, Steel - One Supply (Wet) Tank		
	Brake Control System-Two Valve Dual Brake System-Trailer Supply With Hand Control For Trailer-Trailer Air Connections To Rear Pintle Plate, Trailer Electrical Harness To Rear For trailer Lights		
	Air Dryer-Meritor/Wabco 1200 Heated With Coalescing Oil Filter		
	Anti-Lock Brake System, Bendix Without Traction Control		
	Automatic Drain Valve, Bendix (Heated) (1) On Supply (Wet) Tank		
ELECTRICAL EQUIPMENT:	Electrical Master Disconnect Switch Mounted in cab.		
	Back-Up Alarm, With Intermittent Feature (Ambient Noise Sensitive)		
	Steel Battery Box with molded plastic cover		
	Whitacker electric jump start system to be mounted by D/S cab and with 20’ cable		
	Daytime Running Lights, Courtesy Light Switch (Headlamp And Clearance)		
	Electric Circuit Protection Package, All Circuits Fuse/Breaker Protected		
	Headlights, Single Mounted Rectangular Halogen Lamps Flush Mtd.		
	Rear Lighting, (2) Combination Stop, Tail Directional and Back-Up Lights-Led Module		
	Signal Flasher Type, Transistorized Turn Signal, Federal		

	Mogul #250		
PTO:	Engine Crankshaft Adapter,1350 Series Flange		
PAINT:	Cab Exterior, Customer Color-Base Coat/Clearcoat		
	Frame Color, Black		
ADDITIONAL EQUIPMENT:	Icc Safety Kit (Fire Extinguisher And Road Reflectors)		
	Manuals, Two Complete Set Of Parts And Service Manuals		
	Front Axle Spare Tire And Rim Mounted		
	Front bumper guides poles with bulldogs.		
	Rear Axle spare tire and rim mounted		
WARRANTY:	Basic Vehicle – 12 Months On All Components		
	5 Year /150,000 Miles, Engine Warranty Is To Cover Exhaust After-Treatment System And To Include Turbo Charger, Injectors, And Water Pump.		
	Allison Transmission – 5 Years / Unlimited Miles		

COMBINATION BODY

C. This specification shall describe a 201 stainless steel rear rischarge, combination dump/spreader body or equal. Bidders must submit with their bid complete specifications on the unit they propose to furnish.

5. Inside length to be 10'. _____
6. Inside width to be 95.625” minimum. Outside width to be no more than 96”. _____
3. Sides (from body floor to top of top rail) to be 42" high. _____
4. Tailgate to be 54" high. _____
5. Head sheet to be 54" high. _____
6. Water level capacity to be 7.9 cubic yards sides and 10.6 cubic Yard ends. _____
7. Sides, head sheet and tailgate to be 7 gauge Type 201 stainless steel. _____
8. Floor to be 1/4" AR400 rated at approximately 190,000 PSI tensile strength steel. _____
9. 12”x 4-3/4” 7 ga. 201 Stainless steel rear corner posts are tied into a 12” rear apron formed from 7 ga. 201 Stainless Steel. Further reinforcement is provided by a 1/4" 201 Stainless Steel plate that helps prevent flexing in this critical area and strengthens the tailgate latch assembly. Shall have holes cut in the rear of posts to accept (2) oval shaped lights for LED strobe and LED S/T/T. _____
10. 10 ga. 201 stainless steel boxed top rail seamless and sloped inward to shed debris. This design is critical to providing the specified 96” body width. _____
27. 201 Stainless Steel Integral fenders shall be continuously welded and positioned over wheels of truck chassis and built to accept either Poly pre-wet tanks and tool box. _____
28. Full width, cabshield 53” cabshield. Cabshield to house tarp and four oval cut-outs for LED lights. Two per front corner and two per side corners. Back side of lights shall be boxed in with stainless steel.

29. 10” truck frame to body floor height between chain for lower center of gravity and lower mounting height. _____
30. One piece sides and floor which incorporates a 6” floor to side radius. The floor slopes 22 degrees to the conveyor. A body with any portion of the floor, outside of the main conveyor that is less than 22 degrees, is NOT acceptable due to poor cleanout. _____
31. 7 gauge 201SS formed inner/ 10 gauge 201SS formed outer longsills. _____
32. 2” diameter drive and idler shafts with 8 tooth cast iron sprockets. Drive sprockets are double keyed to shaft. Shall have bearing at each sprocket. _____
33. 25:1 planetary gearcase at the rear of conveyor with a hydraulic piston motor approximately 8 cubic inch displacement. _____
34. Maximum 28” wide conveyor made with D667K pintle chain every link (24,500 lb. tensile/strand). _____
19. Body to have 201 Stainless Steel 15” spreader apron but with bolt on apron in two pieces for access to bearings and drive motor. _____
20. Conveyor extends 12” beyond tailgate to prevent free flow of granular material. _____
21. Tailgate sheet to 7GA 201 stainless steel.:
    a. To be and double-acting heavy duty. _____
    b. Bracing to be full perimeter box type, 6" top and bottom and 4" sides. _____
    ww. There is to be two intermediate 6" horizontal brace. No 6-panel tailgate. _____
    xx. Bottom and intermediate horizontal braces to be sloped (dirt/salt shedding). _____
    yy. Upper hardware to be heavy-duty flush type with minimum 5/8" diameter vertical drop pins on retainer chains. _____
    zz. Flush mount, 1/2" flame cut tailgate pivots. _____
    aaa. Minimum 3/8" stainless steel chains to be long enough to hold tailgate in horizontal position if necessary. _____
    bbb. Heavy duty offset hinge plates, 1" flame cut. _____
    ccc. Heavy nylon mesh sleeves to be installed over spreader chains to protect body finish. _____
    ddd. Lower latch hooks to be flame cut from 3/4" 201SS plate with 3/8" latch plates. _____
    eee. 7 gauge 201 Stainless Steel 12” x 26” rear feedgate operates perpendicular to floor.Sloped-in feed gates NOT acceptable. _____
    l. Screwjack type feedgate with handle to passenger side. _____
    m. All 201 stainless steel hardware. _____
    n. Dual brake chamber air tailgate latches (one on each side) with over-center linkage. Pivot shafts include stainless steel bushings to eliminate seizing. Tailgate latch rods that extend the length of the body or have a cross shaft are not acceptable. _____
    o. Stainless lift hook welded to top of tailgate. _____
22. Continuous welded body shell, cab protector & tailgate. _____
23. Fold-up grip strut two-step ladder on left front corner of body with

grab/step above. Stainless Steel step inside of body. _____

24. Two (2) shovel holders, one on each side of body, specify exact location at time of installation. _____
25. 2 ½" x 12" hardwood (not pine) sideboards. _____
26. Full length top screens and full length 201 stainless steel under body pan installed under chain. _____
27. 3/16" Hardox 450 cover plate for conveyor chain to be included and mounted at rear. _____
28. 6"x 8 x1/2" formed angle with 2" 303 stainless steel pins with greaseless composite bushings. _____

SPINNER AND SPINNER ASSEMBLY

5. 20" diameter poly spinner disk will be provided. _____
6. Directly driven by high torque, low speed (550 RPM max.) 2.8 C.I.R. Char-lynn hydraulic motor (Char-lynn part # 101-1313). _____
3. Spinner assembly must be adjustable left to right, front to back, and up and down to assure accurate placement of material on spinner disc to facilitate control of spread pattern. _____
4. Spinner assemble shall be self leveling and kept parallel to road surface at all dump angles using a stabilizer bar attached to the truck frame. _____
9. 201 stainless steel stationary shield mounted in from of spinner to protect the truck under carriage from thrown materials. _____
10. Stainless steel spinner assembly to have four (4) adjustable deflectors. _____

HOIST

C. Heavy duty front telescopic type hoist suitable for use with a combination body on a road and highway maintenance truck used for snow and ice control. _____

1. NTEA rated Class 50. _____
2. 17.8 Tons of Lift-Off Capacity at 2000 PSI. _____
3. Double-acting (power up and power down full length of stroke). _____
4. Largest diameter stage must be at bottom-inverted cylinder not acceptable. _____
5. 4.5" inside diameter cylinder base tube (minimum). _____
6. 90" stroke (minimum). _____
7. All cylinder stages to be nitrated for corrosion resistance and wear resistance. _____
8. Internal bore seal design so no packing adjustment or bleeding is required. _____
9. Hoist cylinder to be mounted inside pivoting, trunnion mounted cylinder cover tube. _____
10. No sub-frame for hoist. Rear hinge assembly to be cut into truck frame rail behind rear spring hanger of rear axle. _____
15. Lowest possible mounting height -- not to exceed 10" (top-of chassis frame to body floor). _____
16. 5 degree oscillating cylinder collar with grease zerk. _____

SNOW PLOW HITCH

E. **Heavy front frame side plate low profile snow plow hitch.** _____

5. To be engineered, designed and built by a recognized snow

plow manufacturer. Hitch to be a low profile configuration. The design will limit the amount of front overhang to a minimum. _____

6. A truck frame extension is not required for the mounting of hitch but recommended. _____

3. Heavy front frame hitch of modular design shall allow the cab hood to tilt completely forward for engine access. _____

42. Side plates will transmit plowing forces directly to the truck frame side rails and will custom fit the specified year, make and model of the truck. _____

43. The side plates are custom fitted 5/8" steel plate of proper length and construction for heavy duty service and shall provide adequate clearance for steering mechanisms and spring suspensions. _____

44. Side plate mounting angles or plates shall mount flush to the truck frame for maximum strength. Pipe spacers are not acceptable. _____

45. The front section of the hitch assembly: lift frame, center section and the lower push plate shall all be welded to the two (2) vertical tubular supports. The two (2) vertical supports are to be constructed of 6" x 3" x 1/4" thick wall. The length of each support shall be 38-1/4". No exceptions. _____

46. The front two (2) vertical supports are to be spaced evenly 26-3/4" apart. No exceptions. Overall mounting width is 32-3/4". _____

47. The front two (2) vertical supports are to be mounted to vertical structural angles of 5" x 4" x ½", full height of tubes. _____

48. Each vertical tube must have three (3) 3" wide gussets tying in the vertical tube to the structural angle. Each gusset is 3" x 4" x 5" x 7ga. _____

49. The vertical tubes and structural angles are mounted to a horizontal 6" x 4" x ½" x 39" wide structural angle mounted at the top of the two (2) vertical structural angles. _____

50. The center cylinder tube to be built with a 6" x 3" x 1/4" tubes x 26-5/8" long and mounted centered to the vertical tubes. Two (2) 1/2" x 3" x 4" lift cylinder ears to be welded to this tube along with a 1/2" x 3" flat reinforcement bar. _____

51. The telescopic lift arm shall be manufactured of 4" x 4" x 3/8" square outer tubing and 3" x 3" x 3/8" square inner tubing. _____

52. The lift arm and lift frame shall be designed to accept 2.5", 3" or 4"x10" lift cylinder . Cylinder pins are to be 1" cold rolled steel. Inner lift arm must accept clevis and pin. _____

53. Truck and plow portion hitch must be Torloc/Arrowhead style and work interchangeably with The Town of North Hempstead's fleet. _____

54. Mounted under the telescopic outer tubing is to be a white poly block 1-1/2" x 3" and arced to hold a 4" x 10" lift cylinder. _____

55. The quick hitch shall provide self-alignment with the mating plow section while being engaged. _____

56. Re-mount OEM bumper. Bumper shall be split to accommodate plow hitch and must be bolted on and utilize stabilizer arm per section. _____

57. The plow hoist cylinder shall be of premium grade and shall be a double acting 4" bore x 10" stroke. _____

58. The piston rod is to be of steel construction treated with a nitro

steel process. _____

59. The ram sleeve or outer barrel will be such that the rod packing may be maintained or replaced as required. A positive stop must be incorporated that will help prevent mechanical pressure being applied to the packing when the rod is fully extended. _____

60. The cylinder shall be capable of 14,137 pounds of thrust @ 2,000 PSI and 16,000 pounds of bursting pressure @ 2,000 PSI. Minimum weight of the cylinder shall be 28 pounds. Ports to be 3/8" _____

SNOW PLOW

A. MOLDBOARD:

1. The moldboard shall be heavy duty torsion trip edge design type Snowplow with level lift without additional mechanical mechanism. _____
2. Moldboard will be an integral shield with trip edge. _____
   i. Length to be 10'. _____
   j. Height to be 42" (not including rubber deflector). No exceptions. _____
   k. 36" side plastic markers mounted to plow. _____
   l. Two (2) lift hooks to be mounted on moldboard top. _____
7. The moldboard shall be reinforced at the top with a 3-1/2" x 2-1/2" x 3/8" with holes to allow moisture to escape with poly 36" markers. _____
8. 3/8" Poly moldboard with eight (8) ½" x 3-1/2" ribs for extra strength and rigidity. _____
5. All welds must be continuous (skip welds not acceptable). _____
6. Bottom angle must be 4"x 4" x ¾" with an additional 4" x 3" x ½" trip edge angle. _____
13. Top moldboard angle must be constructed of 3-1/2" x 2-1/2" x 3/8" with holes to allow moisture to escape. _____
14. Two horizontal structural angle braces ¼' x 3" x 3" added for rigidity. _____
15. Attack angle of moldboard shall have adjustments of 5, 10, and 20 degree. _____

B. CUTTING EDGE:

1. The cutting edge must be Carbide cutting edge with cover plate. Must be AASHO standard punched, flush with moldboard and be easily replaceable. _____
4. Cutting edge face must have wrap around curb guards mounted on both ends with same bolts/nuts as cutting edge. No Exceptions. _____

C. TRIPPING MECHANISM:

1. Adjustable torsional one piece cutting edge trip. From bottom of new 8" cutting edge to top trip edge is no less than 14.75". _____
6. Springs must have a zero insertion force for increased safety while servicing. No Exceptions. _____
7. Bottom moldboard angle must be 4" x 3" x ½". Fully welded to bottom edge of moldboard. _____
4. 4" x 4" x ¾" backer angle with (6) ¾" trip ears welded to angle. _____
5. Full length trip edge pivot tube, must be constructed of schedule 80, 1.50" OD black pipe. End of each plow cutting edge is to include a 4.5"OD x 1.5" thick curb guard. _____
6. Cutting edge tripping must be controlled by (5) torsion springs.

Springs constructed of a minimum of .75 square bar with 14 active coils. Minimum spring dimensions shall be 3.75OD x 2.25ID x 11.75. Springs must be produced to meet Rockwell C hardness. Hardness shall be produced from oil quenching with a minimum temperature of 1550°F. Spring preload shall be a minimum of 35°. Springs shall have a trip load capability of 8228 INCH-LBS. Typical spring material composition shall be Carbon=0.40, Manganese=.70, Phosphorous=.020, sulfur=.020, silicon=.25, chromium=.80, Nickel=1.75, Molybdenum=.25. _____

7. Three (3) position adjustment on each individual torsion spring on the trip assembly to allow adjustment in various settings for road conditions. No exceptions. _____
8. Face of cutting edge trip section must be 201 Stainless Steel. No exceptions. _____

D. PUSH TUBE ASSEMBLY:

1. Push tube to be constructed of 4” x 4” x .38 square tube, 95.5” in length. Each end of the push tube shall be capped with a 10ga 3.25” x 3.25” plate. _____
2. Welded to the moldboard pushtube shall be (8) 5/8” x 3.5” x 7” pivot ears. Each ear shall be further reinforced with a 2” x 2” x .38 gusset. Pivot ears shall pin to moldboard assembly with 1-1/4” thick pins. _____
23. (2) Moldboard stabilizer strut mounting ears each constructed of (2) 5/8” plate approximately 10” x 13”. _____
24. Center pushframe pivot constructed of (2) .38 x 36.5” x 8.5” plates. There shall be a 3.5” hole in each plate for a 5-1/2” x 3-1/2” OD x 2.52” ID bushing. Bushing shall be drilled and tapped for a 1/8” grease zerk. _____
25. Center pushframe pivot assembly shall also have (2) 3.75” stops for the a-frame assembly. _____
26. Push tube cylinder lugs, located on left and righ hand sides shall each be constructed of (2) 5/8” x 8-1/4” x 3-5/8” plates complete with a 1-1/4” pin hole. _____
27. Cylinder lugs shall be further reinforced with 3/8” x 2-3/4” x 3-1/4” gusset. _____
28. There shall be (2) chain lift lugs welded to the top of the push tube constructed of ½” x 3” x 4” plates. _____
29. Moldboard reversing shall be accomplished by (2) 3” rod x 3.5” bore x 16” stroke single acting cylinders. _____
30. Cylinder rods shall be nitride for increased corrosion resistance. Chromed rods shall be unacceptable. _____
31. Cylinder working pressure shall be 3000 PSI. _____
32. Cylinder shall be plumbed to an 1800 PSI cushioning valve to prevent damage when hitting obstructions. _____

E. A-FRAME:

1. Pivot capture plates shall consist of (2) plates constructed of 1” x 11” x 12-7/8” plates. These plates will be flame cute and have a 2.53” hole to pin the a-frame assembly the push-tube assembly. The top pivot capture plate shall be drilled and threaded for a ¾” capture bolt to prevent pin rotation. _____

4. Top main A-frame plate shall be constructed of 3/8” x 28” x 25-5/8” flame cut plate. The narrowest portion of the top plate shall remain a minimum of 12”. Top plate shall also be flame cut to accept the reversing cylinder pins. Pin hole shall be 1.281” in diameter. Each pin holes shall be further reinforced with a 1” thick plate which is flame cut to accept reversing cylinder pin. _____

13. Bottom main a-frame plate shall be constructed of 3/8” x 28” x 25-5/8” flame cut plate. The narrowest portion of the top plate shall remain a minimum of 12”. Bottom plate shall also be flame cut to accept the reversing cylinder pins. Pin hole shall be 1.281” in diameter. There shall be a 6” access hole for attaching the hitch swivel bolt. _____

14. The A-frame vertical side plates which tie the top and bottom plates into a boxed formation shall be constructed of ½” x 4” x 32” plate and formed to follow the contour the top and bottom plates. _____

15. The rear A-frame push plate shall be constructed of 1” x 6-3/4” x 33-5/8” plate. This plate shall be flame cut with a 1-9/16” hole to accept the plow hitch attachment bolt. _____

16. On the top side of the A-frame plate shall be a mounting plate to which attached is the reversing cylinder cushion valve. _____

17. Plow portion hitch must be Torlo/Arrowhead and fit existing Town of North Hempstead truck portion hitches. _____

F. PAINT:

7. All metal surfaces are to be phosphate washed to remove slag, splatter, oxide and oil residue. _____

8. Moldboard frame work must be powder-coated Highway Orange. _____

9. Push frame, “A” frame and other miscellaneous components are powder-coated black for increase paint durability. _____

CENTRAL HYDRAULIC SYSTEM

A. TYPE:

1. System to be of load sensing pressure-compensated type, pumping oil only when needed and in exact volume and pressure required --- no more, no less. _____

2. Pump to automatically revert to standby mode when no oil flow is required (No on/off switch). _____

5. Must be able to operate all equipment on truck simultaneously if necessary. No one function to interfere with any other. _____

4. System controls are to be electronic and air. _____

5. Operating speed of all functions must-be variable and adjustable. _____

6. One complete system to operate all functions. _____

B. HYDRAULIC PUMP AND POWER TAKE-OFF:

1. The hydraulic pump shall be an axial piston pressure and flow compensated load-sensing type. The pump shall have a displacement of 5.61cubic inches per revolution at maximum stroke which will deliver 23.7 GPM @ 1000 engine RPM. The pump shall have a minimum 2” inch suction line and ½” control drain line plumbed directly back to the reservoir. The pumps

compensator shall have rear facing adjustments. The pump shall be rated for 5800 PSI maximum and 4800 PSI continuous. The pump shall have a Din type-mounting flange and a Din 5462 8-tooth shaft. Shall be a TXV pump or approved equal. A Chelsea 277 series hot shift PTO or approved equal that is mounted to the transmission shall drive the pump to operate whole system. _____

2. The system shall be designed so that when the float contacts close, the PTO will disengage and stop pump flow. An enunciator in the cab that is on a control panel will alert the driver that the PTO has been disengaged. The control panel will also incorporate an override switch wired to de-energize the shut down system to facilitate diagnostics and equipment storage. _____

C. HYDRAULIC VALVE:

1. Control valve shall be U.S. manufactured. Valve shall be a load sensing type with o-ring ports. Mid-inlet section porting will be #16 inlet, #20 outlet, #16 hoist section, #4 load sense port, and #10 or #12 for all other sections. The hoist section shall be stacked to one side of the mid-inlet and all other sections will be stacked on the other side. All ports shall be level with each other so as to lay flat on its base. There will be a main relief in the mid-inlet section that will be set at 3500 PSI to protect the system from being over pressurized. _____
2. Valve section to be arranged as follows:
3. Hoist, 4-way for a double acting cylinder with mid-inlet transition section. _____
4. Pressure reducing section., if needed. _____
5. Plow Lift, 4-way for a double acting cylinder with flow control. _____
6. Plow Angle, 4-way for a double acting cylinder with flow control. _____
7. Spin-A-Veyer section, consisting of two pressure compensated cartridges that are a single piece design with hardened cartridge bores and spools. These shall be operated independently via a 12 VDC pulse width modulated signal. Each valve shall have heavy duty 7/16-20 UNF screw style manual overrides that are adjustable from no flow to full flow. These valves shall be mounted in a housing that is made of aluminum with gray anodizing for corrosion resistance and durability. The auger/conveyor shall be a 15 GPM spool and the spinner shall be a 7 GPM spool. No exceptions. _____
10. A plow float/balance valve must be provided and controlled with a dash mounted rocker switch for on/off. The plow float/balance can be turned off as needed. When in use, the valve will allow the valve to use a pressure reducing/relieving system to control the float/balance lifting pressure on the plow's lift arm assembly. Two solenoid valves wired together turn the valve off and on. One

solenoid valve opens the inlet of the pressure reducing valve to the pump. The other solenoid valve opens the outlet of the pressure reducing/relieving valve to the lift port. Oil flowing in and out of the lift port is restricted with an orifice. _____

D. OPERATOR CONTROLS FOR DUMP BOY HOIST and SNOW PLOW:

1. The valve controls shall be a feathering remote air control with air shift actuators for valve. The dump lift and plow lift controls shall be single axis controls with lock in the center position to prevent accidental actuation. It shall be mounted in an adjustable tower next to the driver. There shall be a pressure protection valve to protect against loss of pressure in the primary system caused by a broken line or an air leak somewhere in the auxiliary system. There shall also be a FLR (filter, lubricator, and regulator) plumbed into the auxiliary air system to protect the air controls from contamination and being over pressurized. All the air tubing will be color coded to identify each individual hydraulic function from control to valve section. _____

4. The air control joystick must each have an illuminated head. No exceptions. _____

E. RESERVOIR/VALVE COMPARTMENT:

19. To be 35 gallon all-welded 201 stainless steel combination hydraulic oil reservoir and control valve mounting compartment. _____
20. The hydraulic reservoir will be constructed of 10-gauge stainless steel and be internally baffled. _____
21. Mounting bracket is to be designed and supplied by the reservoir supplier. _____
22. Mounting system should allow for a 1” frame clearance for frame obstructions. _____
23. Shall be mounted in a manner as to not transmit any truck torsional loads thru the tank. _____
24. The enclosure will use a gasket-less passive technology. (No rubber seals, gaskets, or weather stripping.) _____
25. The enclosure lid will be removable within seconds by one person without the use of tools. _____
26. All valve fittings, hose ends, filter, filler breather, sending units and any electrical connections are to be protected by enclosure cover. _____
27. The reservoir supplier will provide all valve fittings (JIC connections) and plumb the return line from the valve to the filter. _____
10. The cover will protect from both road and pressure washer spray. _____
11. The directional control valve must be easily accessible from all (6) sides without the use of tools. _____
12. Hose exit and entrance must allow for components to be mounted adjacent to the enclosure. _____
13. A 2” full flow brass ball valve shall be plumbed at the suction port of the tank. _____
14. A low oil/high temp sending unit shall be mounted in the reservoir. _____
15. Hydraulic oil filter shall be mounted in the reservoir. Hydraulic filter shall be a 16-micron absolute and rated for no less than 60 GPM. Filter shall be model TEF31016VG16SP-UG60E115 or prior approved equal and include visual and electrical bypass indicators.

A warning light shall be mounted in the cab and wired to the electrical indicator. _____

16. The valve/tank assembly shall be prior approved equal. _____

F. Hydraulic Lines and Fittings:

1. Stainless steel tubing to be used under body and cab in lieu of hosing. Only hosing to be used is ends of stainless steel tubing to reach each function's quick couplers or connection. Tubing shall be seamless #201 stainless steel construction with a minimum wall thickness of 0.065". The ends must be flared to accommodate a 37 degree JIC fitting. The use of compression fittings is not Acceptable. Spacing of each tube to allow for material to fall between each tube. _____

30. All stainless tubing must be mounted in polyurethane poly green tube clamps. _____

31. All hoses to be wire braid reinforced with swaged on high pressure JIC 37 degree tapered seat end fittings. _____

32. All fittings & adapters to be forged steel (No tapered pipe fittings except on suction hose). _____

33. Hoses to front with 1/2" 100% stainless steel (no exceptions) quick couplers for power reversing plow. _____

34. Hoses to rear with 1/2" 100% stainless steel quick couplers for spreader (no exceptions). _____

35. Spreader stainless steel hose couplers to be mounted on either frame rail or pintle plate under dump body at rear. _____

36. Polymer dust plugs or caps on all couplers with retainer straps. _____

37. All pressure hoses except for plow & spinner to be 3/4" I.D. SAE 100R2. _____

38. Plow, spreader spinner, and prewet system pressure hoses to be 1/2" I.D.SAE 100R2. _____

39. Main pressure hose from pump to control valve shall be 1" Didiameter, 4-wire braid. No exception. _____

40. All return hoses to be SAE 100R2. _____

41. Suction hose to be minimum 2" I.D. SAE 100R4 spiral wire reinforced with long radius ells. _____

42. All hoses to be routed away from chassis exhaust whenever possible to protect against heat deterioration. _____

43. All hydraulic quick disconnect couplings must be stainless steel Aero-Quip FD45 series or prior approval; bulkhead mounted, and include attached male and female dust covers. Couplings to be configured so as to eliminate confusion when coupling. No exceptions. _____

G. Spreader Controller:

3. Force America 5100ex open loop controller. No exceptions. _____

<u>SNOW PLOW LIGHTS:</u>

A. Truck-Lite brand LED model 80880 plow lights. _____

9. Mounted with custom fabricated 100% stainless steel brackets on truck fenders. Brackets must be painted black. _____

10. Plow lights to be wired into the truck's existing headlight circuit

using the factory installed switch. _____

11. Plow lights must function in high and low beam modes using existing truck's dimmer switch. _____
12. Plow lights and truck chassis headlights must never operate at the same time. _____

LIGHTING & ELECTRICAL

All lighting and layout must meet all Federal, State, and DOT regulations. No exceptions _____

A. LED lighting system. _____

1. All marker, work, S/T/T and strobe lighting to be LED. _____
10. The four (4) spreader lights mounted under rear apron of combination body and must be on an independent rocker switch. _____
11. The two (2) chassis step mounted lights and must be on an independent rocker switch.. _____
12. Whelen brand model 50A03ZAR TIR6 and 5TSMAC surface mount kit, two (2) grill Mounted. Must be on an independent rocker switch with cabshield and rear bolster mounted amber lighting. No exceptions. _____
13. Whelen brand model 50A03ZAR TIR6, six (6) head. Four (4) rubber grommet mounted in cabshield and one (1) each rear bolster. Must be on the same rocker switch with grill mounted amber lighting. No exceptions. _____

B. Electronic Back-Up Alarm to be Preco series 300. _____

1. To automatically change volume to suit background noise. _____
2. Mounted to back side of pintle plate on a stainless bracket. _____

C. Body Up Indicator. _____

1. Sealed weatherproof proximity switch on hoist-frame. _____
2. Body up light shall illuminate using chassis dash mount switch. _____

D. All non- strobe wiring to be 7 wire trailer cable. Separate cable routed from in-cab to all non-strobe lights with sealed junction box at rear so all wiring connections are made either inside cab and in a sealed junction box. _____

E. One (1) solid stainless steel rod must be mounted under body and all electrical body lighting must be neatly run. Rod will be one piece and full length. No exceptions. _____

F. All wire connections shall be made in the chassis cab or by means of a waterproof junction box. In cab connections shall be made using vinyl coated crimp connectors covered in weather resistant heat shrink tuning. There shall be no wire splices outside the cab. All wiring to junction box shall be resistant to abrasion, ozone, sunlight, chemicals and oil. The outer jacket shall be chlorinated polyethylene and be approved for submersion in water. The outer jacket shall be label with the cable identification wire gauge and number of conductors. Must be MSHA approved. All body lighting shall be supplied by a single sealed harness from the junction box and making the connection at the light by means of weather tight sealed connector. All strobe lights shall be in-cluded in the same harness and be connected by means of a Deutsch connector, no exceptions. _____

MISCELLANEOUS

A. 90 degree elbow extension on top of chassis vertical exhaust stack to clear cab protector and still route exhaust upward to be provided by chassis supplier and installed by body company. _____

F. Rear tire poly Fleet Maintenance fenders with stainless steel mounting tubes. _____

C. Upon installation of all components, truck must be delivered to the truck dealer for final inspection and prep. _____

D. Rear pintle plate shall have a 25ton pintle properly installed and secured. _____

1. Mounted on reinforced 3/4" thick mounting plate at rear of chassis frame at designated clearance height to ground to be 29". Sides and bottom must be reinforced with ¾" x 2" flat stock mounted behind the pintle plate. _____

6. Must include Safety two (2) 5/8" D-Rings, one (1) 7-wire flat plug and one (1) 6-wire plug. _____

7. License plate light and bracket mounted to top corner on passenger side. _____

E. DOT approved 2" conspicuity tape on body bottom rub rails, rear corner posts, tailgate perimeter. All DOT necessary reflective decals installed as well. _____

F. Pull Tarp brand asphalt tarping system to be mounted in cabshield rear. Must recess ahead of front head sheet and cut into side plates of cab-shield for lowest possible mounting. _____

I. Zeibart under coating to be sprayed up chassis frame rails, pintle plate and under chassis. _____

INSTALLATION AND WARRANTY

K. Minimum twenty-four (24) months, 100% parts and labor on components and installation. No deductible. _____

L. For warranty considerations and future availability of parts and service, the body company must be an authorized primary distributor for all major components they propose to furnish. Must furnish written proof from such said vendor upon request. _____

M. All equipment must be installed by a single body company, by their employees and at their regular location. _____

N. Installation of components is not to be subcontracted by body company to another installer. _____

O. No welding whatsoever is to be done on chassis frame between front of most forward spring hanger and rear of rearmost spring hanger. _____

F. No drilling whatsoever is to be done in frame rail flanges. _____

K. Body company to furnish operator's parts and service manuals for all components manufacturer's i.e., combination body, hoist, snow plow, salt spreader, central hydraulic system and strobe lights. _____

L. Completed vehicle must be certified by the body company as meeting all federal motor vehicle safety standard in effect at time of chassis production. _____

3. Approved NHTSA/FMVSS certification label must be furnished and located inside cab on driver's side. _____

I. Completed unit to comply with current OSHA regulations. _____

J. Body company must be registered with National Highway Traffic Safety Administration as a final stage manufacturer of motor vehicles as required

by Federal Law. _____

K. Body company to conduct operator training session on body and equipment at the The Town garage after delivery of completed truck. _____

L. Delivered of completed vehicle must be within 75 days after delivery of cab chassis to up-fitter. _____

M. Body company must have ASE certified installer/s and show documentation at time of bid. No exceptions. _____

N. Body company to be registered and in good standing with National Truck Equipment Association (NTEA), be a MVP member, and be the authorized distributor for all equipment bid. _____

O. Body company must participate and provide documentation at time of bid for E-Verify®. This employment verification verification is a United States of America federally accredited verification system to insure all employees are legal residents. List Company ID#_____. No exceptions. _____

P. Combination Body, Snow Plow, and Snow Plow Hitch must be engineered and manufactured in the United States of America and all from the same manufacturer. No exceptions. _____

Q. Hydraulic schematic must be provided and laminated and placed inside the combination valve enclosure/combo tank lid. _____

R. A required pre-build meeting will occur after award of bid and prior to the start of installation. No exceptions. _____

S. The Town will inspect all equipment (plow, hitch, body etc prior to the start of installation. No exceptions. _____

OPTION # 1: V-Box Spreader Hydraulically Operated with Pre-Wetting, Slurry and Spreader Stand

V-BOX SPREADER

Heavy Duty 201 Stainless Steel V-Box Salt Spreader 3-in-1 V-Box for granular, prewetting and slurry system. No exceptions. _____

9. Capacity to be 6.9 yd^3 struck water level minimum. No exceptions. _____
10. Inside length to be 10 feet and side height of 56". _____
11. Inside top width to be 83-3/4". _____
12. Side slope to be 45^0 minimum. _____
5. Front & rear panels slope; rear 9^0, front 18^0. _____
12. Hopper seams to be continuous welded on inside. _____
13. Sides, ends, & side supports to be 10 gauge 201 SS. _____
28. Top edge of hopper is formed "J" channel 2" x 7/8". _____
29. Dual auger trough is to be 7 gauge 201 SS. _____
30. Long sills to be 7 gauge 201 SS; continuous welded to side sheet. _____
31. Cross sills to be formed 7 gauge 201 SS welded to side supports. _____
32. 7GA 201 SS inverted vee mounted over the dual augers with appropriate frame work for stability. _____
33. Lift hooks on each corner are 1/4" x 2" formed 201 SS plate. _____
34. All hardware shall be 201 stainless steel. _____
35. Hydraulic inter-lock auger shut-off system to shut augers down when cover grates are opened—interlock plumbed at factory. _____
36. 3/8" rod on 3/8" rod top grate screens with anti-freeze hinges are required equipment with auger conveyor v-box units. _____
37. A full width rear 201 stainless steel light bar shall be mounted with nine (9) LED lights. Shall include S/T/T and Amber LED Strobes.

Shall have junction box and plug. No exceptions. _____

18. Spinner light mounted on driver's side rear on the stainless steel bumper. _____
19. Heavy duty lighted rocker switch on control console for spinner light. _____
20. One (1) stainless steel ladder with 8 rear steps mounted at the rear of spreader on right side allowing access from ground to top of spreader. _____
23. Extend front auger bearings grease tubes to rear of spreader. Stainless steel 1/8" piping . No exception. _____

B. Minimum Auger Requirements

1. Dual 7" diameter variable pitch auger conveying system. The augers must be counter rotating to help prevent bridging of material. Dual augers extend 2 feet past end of hopper to allow discharge into spinner chute. No exceptions. _____
2. Each auger is driven at the rear by a 24.7 CIR hydraulic motor which is directly coupled to a 3.6:1 planetary gearcase with 2.5 in. dia. shaft coupled to the end of the auger shaft with a 7/8" cross bolt. _____
3. Gearcase is directly coupled to end of auger shaft. _____
4. Auger shaft connect at front with a 2" 2 bolt flange bearing. _____
6. Must be an one inch OD stainless steel pipe mounted between/above augers and under the inverted vee to allow for future use of liquid. Pipe must have holes evenly spaced on both sides to allow for spraying of liquid. All hardware must be stainless steel. At the rear of the spreader wall, behind the pipe, there must be a Banjo valve manually operated to close and open the liquid system. No exceptions. _____

C. Spinner Assembly

1. 10 gauge 201SS enclosed design. _____
2. (4) position telescopic adjustment; 32-3/4"-41" below mounting surface. _____
3. Two (2) baffles shall be positioned at the bottom of the spinner chute to direct flow of materials onto spinner disc for directional spread pattern adjustment. _____
22. The two (2) spread pattern adjustment baffles shall each have 5 (five) positions of adjustment without the use of tools. The baffle(s) shall utilize a 201SS notched bar that pins into position for a positive lock. _____
23. Four (4) bottom spinner deflectors shall be over-lapping to prevent loss of granular material when the deflectors are raised. Front deflector is fixed. _____
24. The bottom over-lapping spinner deflectors shall have four (4) positions of rod and pin adjustment without tools. Chain adjustable deflectors are not acceptable. _____
25. The bottom over-lapping spinner deflectors shall have the capability to be easily removed and/or replaced without tools. _____
26. 20" diameter poly spinner disc to have replaceable machined hub. _____
27. Six (6) vanes built into poly spinner disc. _____

28. Spinner hydraulic motor shall mount directly on top of spinner disc. Bottom mount motor or drive shaft with bearings not acceptable. _____
29. The top mounted spinner motor shall be enclosed in the spinner chute to maximize granular material flow to the spinner disc. For serviceability, the spinner chute shall have open access to the spinner motor. _____
30. A spinner bypass chute shall be provided that allows for the stationary unloading of granular material. When in the pivoted "down" position, the chute shall provide complete bypass of the spinner and bottom deflectors. When in the "up" position, the chute shall become part of the enclosed spinner chute providing granular material flow to the spinner. The bypass chute shall have a quick latch system pinning into position without the use of tools. _____

PRE-WETTING and SLURRY SYSTEM

A. Hydraulically driven system of designated valve section. _____

11. All components are mounted in a sealed, corrosion resistant, molded fiberglass housing with hinged cover. _____
12. Hydraulic drive motor is 1.21 CIR geroler type with appropriate sized Flow Meter. _____
13. Liquid pump is a 8.2 GPM @ 1725 RPM Roller Pump of corrosion resistant materials. _____
14. All tubing is stainless steel with corrosion resistant JIC fittings. _____
15. Liquid output is controlled by an adjustable flow control valve with dial on control modular in cab that also houses granular outputs. _____

B. Reservoir

1. (2) 200-gallon rotation molded medium density .375" polyethylene tank with 5" diameter cap. Includes sump for complete drainage. _____
2. Replaceable screen line strainer. _____
3. Corrosion resistant shut off valves. _____
4. Reservoir tank is angle formed to allow for mounting on the side of a slip-in v-box. _____
5. Supplied with bulk tank fill quick couplings. Internal baffle. _____

D. Metering Orifice and Slurry Tube

1. All bolt-on (no welding required) brackets, hardware, and fittings supplied. _____
2. Variable displacement orifice provides an extended range of material outputs located in spinner chute. _____
3. 2 variable displacement orifice 22" wide, vented internal at top of spinner chute. _____
4. Spreader shall have a provision for a stainless steel liquid injection tube 1-1/2" OD which is to be located on the underside of the inverted vee. The injection tube will provide liquid which will be agitated by the spreader augers to create a salt slurry mixture. The liquid for the slurry generation process shall come from the liquid prewet system. _____

E. Spreader Stand

1. A self-contained storage stand shall be permanently fastened to

the spreader by bolting on. The stand shall be fabricated of stainless steel and designed to support the full weight of the spreader when removed from the truck with only small amounts of material remaining in the hopper or tanks. No exceptions. _____

6. The front of the stand shall be equipped with steel caster wheels with appropriate bushings and grease fittings to allow the spreader to roll into the dump body of the truck. _____

11. Front legs shall be a minimum 4" x 3" x ¼" stainless steel tubing designed to fold up along side of the spreader when it is installed in the truck. There shall be a means to lock the legs in a vertical position when the stand is in use. _____

12. Rear legs shall be stainless steel tubing designed to telescope or pivot up and out of the way once the spreader in the dump body. Legs shall be minimum 4" x 4" x ¼". _____

13. The base of the legs shall provide a big enough footprint to properly support the spreader when in storage. _____

14. The rear shall have a complete stainless steel construction bumper mounted to the spreader stand to protect the spinner assembly. The structure shall form a triangle by mounting on two points to the spreader stand with a stainless steel round tube at the rear. Rear of bumper shall be wider than spinner assembly and have conspicuity tape full width. No exceptions. _____

OPTION # 2: V-Box Spreader Hydraulically Operated

V-BOX SPREADER

Heavy Duty 201 Stainless Steel V-Box Salt Spreader V-Box for granular. No exceptions. _____

5. Capacity to be 6.9 yd^3 struck water level minimum. No exceptions. _____
6. Inside length to be 10 feet and side height of 56". _____
7. Inside top width to be 83-3/4". _____
8. Side slope to be 45^0 minimum. _____
5. Front & rear panels slope; rear 9^0, front 18^0. _____
8. Hopper seams to be continuous welded on inside. _____
9. Sides, ends, & side supports to be 10 gauge 201 SS. _____
18. Top edge of hopper is formed "J" channel 2" x 7/8". _____
19. Dual auger trough is to be 7 gauge 201 SS. _____
20. Long sills to be 7 gauge 201 SS; continuous welded to side sheet. _____
21. Cross sills to be formed 7 gauge 201 SS welded to side supports. _____
22. 7GA 201 SS inverted vee mounted over the dual augers with appropriate frame work for stability. _____
23. Lift hooks on each corner are 1/4" x 2" formed 201 SS plate. _____
24. All hardware shall be 201 stainless steel. _____
25. Hydraulic inter-lock auger shut-off system to shut augers down when cover grates are opened—interlock plumbed at factory. _____
26. 3/8" rod on 3/8" rod top grate screens with anti-freeze hinges are required equipment with auger conveyor v-box units. _____
27. A full width rear 201 stainless steel light bar shall be mounted with nine (9) LED lights. Shall include S/T/T and Amber LED Strobes. Shall have junction box and plug. No exceptions. _____
18. Spinner light mounted on driver's side rear on the stainless

steel bumper. _____

19. Heavy duty lighted rocker switch on control console for spinner light. _____
20. One (1) stainless steel ladder with 8 rear steps mounted at the rear of spreader on right side allowing access from ground to top of spreader. _____
24. Extend front auger bearings grease tubes to rear of spreader. Stainless steel 1/8" piping . No exception. _____

B. Minimum Auger Requirements

1. Dual 7" diameter variable pitch auger conveying system. The augers must be counter rotating to help prevent bridging of material. Dual augers extend 2 feet past end of hopper to allow discharge into spinner chute. No exceptions. _____
2. Each auger is driven at the rear by a 24.7 CIR hydraulic motor which is directly coupled to a 3.6:1 planetary gearcase with 2.5 in. dia. shaft coupled to the end of the auger shaft with a 7/8" cross bolt. _____
3. Gearcase is directly coupled to end of auger shaft. _____
4. Auger shaft connect at front with a 2" 2 bolt flange bearing. _____

C. Spinner Assembly

1. 10 gauge 201SS enclosed design. _____
2. (4) position telescopic adjustment; 32-3/4"-41" below mounting surface. _____
3. Two (2) baffles shall be positioned at the bottom of the spinner chute to direct flow of materials onto spinner disc for directional spread pattern adjustment. _____
13. The two (2) spread pattern adjustment baffles shall each have 5 (five) positions of adjustment without the use of tools. The baffle(s) shall utilize a 201SS notched bar that pins into position for a positive lock. _____
14. Four (4) bottom spinner deflectors shall be over-lapping to prevent loss of granular material when the deflectors are raised. Front deflector is fixed. _____
15. The bottom over-lapping spinner deflectors shall have four (4) positions of rod and pin adjustment without tools. Chain adjustable deflectors are not acceptable. _____
16. The bottom over-lapping spinner deflectors shall have the capability to be easily removed and/or replaced without tools. _____
17. 20" diameter poly spinner disc to have replaceable machined hub. _____
18. Six (6) vanes built into poly spinner disc. _____
19. Spinner hydraulic motor shall mount directly on top of spinner disc. Bottom mount motor or drive shaft with bearings not acceptable. _____
20. The top mounted spinner motor shall be enclosed in the spinner chute to maximize granular material flow to the spinner disc. For serviceability, the spinner chute shall have open access to the spinner motor. _____
21. A spinner bypass chute shall be provided that allows for the stationary unloading of granular material. When in the pivoted

"down" position, the chute shall provide complete bypass of the spinner and bottom deflectors. When in the "up" position, the chute shall become part of the enclosed spinner chute providing granular material flow to the spinner. The bypass chute shall have a quick latch system pinning into position without the use of tools. _____

OPTION # 3: V-Box Spreader Gas Pony Motor Operated

V-BOX SPREADER

Heavy Duty 201 Stainless Steel V-Box Salt Spreader V-Box for granular. No exceptions. _____

5. Capacity to be 6.9 yd^3 struck water level minimum. No exceptions. _____
6. Inside length to be 10 feet and side height of 56". _____
7. Inside top width to be 83-3/4". _____
8. Side slope to be 45^0 minimum. _____
5. Front & rear panels slope; rear 9^0, front 18^0. _____
8. Hopper seams to be continuous welded on inside. _____
9. Sides, ends, & side supports to be 10 gauge 201 SS. _____
18. Top edge of hopper is formed "J" channel 2" x 7/8". _____
19. Body floor is 7 gauge 201 stainless steel bolt-in replaceable. _____
20. Long sills to be 7 gauge 201 SS; continuous welded to side sheet. _____
21. Cross sills to be formed 7 gauge 201 SS welded to side supports. _____
22. 7GA 201 SS inverted vee mounted over the chain with appropriate frame work for stability. _____
23. Lift hooks on each corner are 1/4" x 2" formed 201 SS plate. _____
24. All hardware shall be 201 stainless steel. _____
25. Feedgate is 10 gauge 201 SS 10" x 18" with screwjack adjustable from curbside. _____
26. 3/8" rod on 3/8" rod top grate screens with anti-freeze hinges are required equipment with auger conveyor v-box units. _____
27. A full width rear 201 stainless steel light bar shall be mounted with nine (9) LED lights. Shall include S/T/T and Amber LED Strobes. Shall have junction box and plug. No exceptions. _____
18. Spinner light mounted on driver's side rear on the stainless steel bumper. _____
19. Heavy duty lighted rocker switch on control console for spinner light. _____
20. One (1) stainless steel ladder with 8 rear steps mounted at the rear of spreader on right side allowing access from ground to top of spreader. _____
24. Extend front idler bearing grease tubes to rear of spreader. Stainless steel 1/8" piping . No exception. _____
25. Extend idler bearings adjustment to rear of spreader. No exception. _____

B. Minimum Conveyor Requirements

1. Rear discharge pintle chain conveyor to be 24" wide. _____
2. Heat treated alloy steel chain; 21,000 lbs./strand. _____
3. Chain pins to be 7/16" diameter with 2-1/4" pitch. _____
4. Cross bars to be 3/8" x 1-1/2" on 4-1/2" centers and lay flat on floor. _____

5. 4” spring loaded idler adjustment. _____
6. Chain tension adjusting rod to be 5/8" diameter stainless steel. _____
7. Drive shaft to be 2" diameter TG&P alloy steel, 102,000 psi tensile strength, mounted in sealed bearings. _____
14. Idler shaft to be 2” diameter alloy steel mounted in sealed ball. _____
15. Conveyor sprockets to be self-cleaning 8 tooth cast iron, keyed to drive and idler shafts. _____

C. Conveyor Gear Case. _____

6. Hi-tensile cast iron housing; oil tight with breather and oil level Plug. _____
7. 50:1 reduction; steel worm gear to be hardened and ground; aluminum bronze output gear; 90,000 lbs. tensile strength. _____
8. Output bearings to be tapered roller type. _____
9. Extended input shaft to accept optional application rate sensor. _____
10. Hydraulic motor mounts directly to gear-case eliminating torque arms, sprockets, chains, and couplers. _____

D. Spinner Assembly

1. 10 gauge 201SS enclosed design. _____
2. (4) position telescopic adjustment; 32-3/4”-41” below mounting surface. _____
3. Two (2) baffles shall be positioned at the bottom of the spinner chute to direct flow of materials onto spinner disc for directional spread pattern adjustment. _____
13. The two (2) spread pattern adjustment baffles shall each have 5 (five) positions of adjustment without the use of tools. The baffle(s) shall utilize a 201SS notched bar that pins into position for a positive lock. _____
14. Four (4) bottom spinner deflectors shall be over-lapping to prevent loss of granular material when the deflectors are raised. Front deflector is fixed. _____
15. The bottom over-lapping spinner deflectors shall have four (4) positions of rod and pin adjustment without tools. Chain adjustable deflectors are not acceptable. _____
16. The bottom over-lapping spinner deflectors shall have the capability to be easily removed and/or replaced without tools. _____
17. 20" diameter poly spinner disc to have replaceable machined hub. _____
18. Six (6) vanes built into poly spinner disc. _____
19. Spinner hydraulic motor shall mount directly on top of spinner disc. Bottom mount motor or drive shaft with bearings not acceptable. _____
20. The top mounted spinner motor shall be enclosed in the spinner chute to maximize granular material flow to the spinner disc. For serviceability, the spinner chute shall have open access to the spinner motor. _____
21. A spinner bypass chute shall be provided that allows for the stationary unloading of granular material. When in the pivoted “down” position, the chute shall provide complete bypass of the spinner and bottom deflectors. When in the “up” position, the chute shall become part of the enclosed spinner chute providing

granular material flow to the spinner. The bypass chute shall have a quick latch system pinning into position without the use of tools. _____

E. Gas Engine Drive

1. 18HP Honda gas engine to operate the V-Box. _____
2. Twin cylinder. _____
3. Air cooled. _____
4. Electric start. _____
5. Battery not included. _____
6. Engine must be plumbed at factory to operate spreader. _____

OPTION # 4: V-Box Spreader Diesel Pony Motor Operated

V-BOX SPREADER

Heavy Duty 201 Stainless Steel V-Box Salt Spreader V-Box for granular. No exceptions. _____

5. Capacity to be 6.9 yd^3 struck water level minimum. No exceptions. _____
6. Inside length to be 10 feet and side height of 56". _____
7. Inside top width to be 83-3/4". _____
8. Side slope to be 45^0 minimum. _____
5. Front & rear panels slope; rear 9^0, front 18^0. _____
10. Hopper seams to be continuous welded on inside. _____
11. Sides, ends, & side supports to be 10 gauge 201 SS. _____
18. Top edge of hopper is formed "J" channel 2" x 7/8". _____
19. Body floor is 7 gauge 201 stainless steel bolt-in replaceable. _____
20. Long sills to be 7 gauge 201 SS; continuous welded to side sheet. _____
21. Cross sills to be formed 7 gauge 201 SS welded to side supports. _____
22. 7GA 201 SS inverted vee mounted over the chain with appropriate frame work for stability. _____
23. Lift hooks on each corner are 1/4" x 2" formed 201 SS plate. _____
24. All hardware shall be 201 stainless steel. _____
25. Feedgate is 10 gauge 201 SS 10" x 18" with screwjack adjustable from curbside. _____
26. 3/8" rod on 3/8" rod top grate screens with anti-freeze hinges are required equipment with auger conveyor v-box units. _____
27. A full width rear 201 stainless steel light bar shall be mounted with nine (9) LED lights. Shall include S/T/T and Amber LED Strobes. Shall have junction box and plug. No exceptions. _____
18. Spinner light mounted on driver's side rear on the stainless steel bumper. _____
19. Heavy duty lighted rocker switch on control console for spinner light. _____
20. One (1) stainless steel ladder with 8 rear steps mounted at the rear of spreader on right side allowing access from ground to top of spreader. _____
22. Extend front idler bearing grease tubes to rear of spreader. Stainless steel 1/8" piping . No exception. _____
26. Extend idler bearings adjustment to rear of spreader. No exception. _____

B. Minimum Conveyor Requirements

1. Rear discharge pintle chain conveyor to be 24” wide. _____
2. Heat treated alloy steel chain; 21,000 lbs./strand. _____
3. Chain pins to be 7/16" diameter with 2-1/4" pitch. _____
4. Cross bars to be 3/8" x 1-1/2" on 4-1/2" centers and lay flat on floor. _____
5. 4” spring loaded idler adjustment. _____
6. Chain tension adjusting rod to be 5/8" diameter stainless steel. _____
7. Drive shaft to be 2" diameter TG&P alloy steel, 102,000 psi tensile strength, mounted in sealed bearings. _____
12. Idler shaft to be 2” diameter alloy steel mounted in sealed ball. _____
13. Conveyor sprockets to be self-cleaning 8 tooth cast iron, keyed to drive and idler shafts. _____

C. Conveyor Gear Case. _____

6. Hi-tensile cast iron housing; oil tight with breather and oil level Plug. _____
7. 50:1 reduction; steel worm gear to be hardened and ground; aluminum bronze output gear; 90,000 lbs. tensile strength. _____
8. Output bearings to be tapered roller type. _____
9. Extended input shaft to accept optional application rate sensor. _____
10. Hydraulic motor mounts directly to gear-case eliminating torque arms, sprockets, chains, and couplers. _____

D. Spinner Assembly

1. 10 gauge 201SS enclosed design. _____
2. (4) position telescopic adjustment; 32-3/4”-41” below mounting surface. _____
3. Two (2) baffles shall be positioned at the bottom of the spinner chute to direct flow of materials onto spinner disc for directional spread pattern adjustment. _____
13. The two (2) spread pattern adjustment baffles shall each have 5 (five) positions of adjustment without the use of tools. The baffle(s) shall utilize a 201SS notched bar that pins into position for a positive lock. _____
14. Four (4) bottom spinner deflectors shall be over-lapping to prevent loss of granular material when the deflectors are raised. Front deflector is fixed. _____
15. The bottom over-lapping spinner deflectors shall have four (4) positions of rod and pin adjustment without tools. Chain adjustable deflectors are not acceptable. _____
16. The bottom over-lapping spinner deflectors shall have the capability to be easily removed and/or replaced without tools. _____
17. 20" diameter poly spinner disc to have replaceable machined hub. _____
18. Six (6) vanes built into poly spinner disc. _____
19. Spinner hydraulic motor shall mount directly on top of spinner disc. Bottom mount motor or drive shaft with bearings not acceptable. _____
20. The top mounted spinner motor shall be enclosed in the spinner chute to maximize granular material flow to the spinner disc. For serviceability, the spinner chute shall have open access to the

spinner motor. _____

21. A spinner bypass chute shall be provided that allows for the stationary unloading of granular material. When in the pivoted "down" position, the chute shall provide complete bypass of the spinner and bottom deflectors. When in the "up" position, the chute shall become part of the enclosed spinner chute providing granular material flow to the spinner. The bypass chute shall have a quick latch system pinning into position without the use of tools. _____

E. Diesel Engine Drive

1. 21.1HP Kohler diesel engine model KD6252 or current model for operating V-Box. _____
2. Twin cylinder four stroke. _____
3. Air cooled. _____
4. Electric start. _____
5. Battery not included. _____
6. Engine must be plumbed at factory to operate spreader. _____
7. Direct injection. _____
8. Peak torque lbs at 38.7ft. _____

OPTION # 5: Spreader Stand

A. Spreader Stand

1. A self-contained storage stand shall be permanently fastened to the spreader by bolting on. The stand shall be fabricated of stainless steel and designed to support the full weight of the spreader when removed from the truck with only small amounts of material remaining in the hopper or tanks. No exceptions. _____
3. The front of the stand shall be equipped with steel caster wheels with appropriate bushings and grease fittings to allow the spreader to roll into the dump body of the truck. _____
7. Front legs shall be a minimum 4" x 3" x ¼" stainless steel tubing designed to fold up along side of the spreader when it is installed in the truck. There shall be a means to lock the legs in a vertical position when the stand is in use. _____
8. Rear legs shall be stainless steel tubing designed to telescope or pivot up and out of the way once the spreader in the dump body. Legs shall be minimum 4" x 4" x ¼". _____
9. The base of the legs shall provide a big enough footprint to properly support the spreader when in storage. _____
10. The rear shall have a complete stainless steel construction bumper mounted to the spreader stand to protect the spinner assembly. The structure shall form a triangle by mounting on two points to the spreader stand with a stainless steel round tube at the rear. Rear of bumper shall be wider than spinner assembly and have conspicuity tape full width. No exceptions. _____

OPTION # 6: For Package "C" Combination Body

A. Combination Body Dual 7" augers in lieu of chain drive system.

1. Dual 7" diameter variable pitch auger conveying system.

The augers must be counter rotating to help prevent bridging of material. Dual augers extend 2 feet past end of hopper to allow discharge into spinner chute. No exceptions. _____

2. Each auger is driven at the rear by a 24.7 CIR hydraulic motor which is directly coupled to a 3.6:1 planetary gearcase with 2.5 in. dia. shaft coupled to the end of the auger shaft with a 7/8" cross bolt. _____
3. Gearcase is directly coupled to end of auger shaft. _____
4. Auger shaft connect at front with a 2" 2 bolt flange bearing. _____

EXCEPTION (LIST ALL BY SECTION AND ITEM #):

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The Town of North Hempstead reserves the right to award the base bid and none or some of the options.

ITEM 15: Mack with Plow

Notice to all Bidders:

- Bidder must make notations at each item indicating compliance or deviation by writing "Comply" or "Exception" next to each line item.
- Do not use "check marks" or "X marks" as "Comply" or "Exception."
- All "exceptions" and "Deviations" must be explained in detail on as described in this bid packet.
- These specifications are not intended to preclude bidding components with exceptions that are equal in quality and performance to the products described in the specifications.
- All factory standard equipment and parts should be used where possible.
- The Town of North Hempstead reserves the right to reject any and all bids, waive any informalities or irregularities in the bids received and to accept any bid which it deems most favorable to The Town.

Following these instructions is essential for proper bid evaluation. Failure to do so will result in the rejection of a bid for lack of information. Town of North Hempstead will take all necessary steps to properly evaluate each bid including contacting one or more bidders for clarification and/or consultation.

Package "A" for Chassis, Dump Body, Plow, Hydraulics and Misc Items for Epoke Setup

"BIDDING REQUIREMENTS SECTION"

SECTION	SPECIFICATION DETAIL	COMPLY	
		Comply	Exception
PACKAGE A: 6 WHEEL TRUCK, DUMP BODY, PLOW, HITCH, CENTRAL HYDARAULICS FOR HI-WAY SPREADER			
Description: Chassis Specifications For A New 2016 GU712 Chassis With SCR Technology To Meet 2014 Emissions Of 0.2 Grams Of Nox Or Equal			
Chassis/ Frame & Wheelbase:	Chassis: 2016 Mack GU712 Chassis Or Equal		
	Frame Rails, 11.811" x 3.54" x 0.44" High Strength 120,000 PSI Steel - 20" Integral Front Frame Extension For Snow Plow Mount		
	Single Chassis Rail		
	Section Modulus 23.5 cu In/Rbm 2,820,000 In Lbs. Per Rail		
	Wheelbase - 180"WB, Center of Axle - 92"CA,		
	Platform - 154"LP, After Frame - 62"AF		
MAXIMUM GVW & AXLE RATINGS:	Gross Vehicle Weight Rating Of 48,000lbs.		
	Front Axle Capacity - 18,000 Lbs.		
	Rear Single Drive Axle Capacity - 30,000lbs		

	Front Steer Axle-Gross Axle Weight Rating - 18,000lbs		
	Rear Drive Axle –Gross Axle Weight Rating - 30,000lbs		
ENGINE:	MP7-405M 405 Hp @ 1500-1900 Rpm. Operating range 1100-2100 1480 Lb. Ft. Max. Torque @ 1050-1350 Rpm High Torque Rise 60%		
	11.9 Liter, 659 Cu. In Piston Displacement.		
	EPA Carb Emission Certified For 2014 Utilizing Selective Catalyst Reduction(Scr).Engines Utilizing Government Credits Or Penalties Are Not Acceptable		
ENGINE EQUIPMENT:	Air Compressor, Meritor/Wabco 318 18.7 Cfm		
	Engine Mounted Oil Check And Fill		
	Mack Powerleash Engine Brake		
	Alternator, Delco 12V 130A (24SI) Brush-Type		
	(3) 12volt Mack Grp31 Batteries With 3000 CCA Threaded Post		
	Air Cleaner, 11” x 30” Under Hood Single Element Dry Type		
	12 Volt Heavy Duty Starter-Delco 39mt-Mxt		
	Electronic Starter Interlock System		
	Coolant Protection To Below –34 Degrees Fahrenheit With Coolant Conditioner Filter		
ENGINE EQUIPMENT:	Engine Block Heater, Gomack (Phillips) – 1500 Watt 120 Volt With Intake Grid Heater mounted under driver side door.		
	Starting Aid Engine Electric Preheater		
	Engine Hoses And Tubing, Silicone		
	Diesel Particulate Filter /Scr System Horizontal-Under Right Side Of Cab-Clear Back Of Cab Option		
	Exhaust After –Treatment System Diesel Particulate Filter Ceramic Catalyzed, And Scr Technology To Meet 0.2 Grams Of Nox		
	Exhaust, Side Of Cab Single (R/S) Vertical Straight Exhaust Stack		
	Poly-V Fan Belt With Automatic Tensioner		
	Fan Drive, Behr Fan And Electronic Modulating Fan Drive		
	Flywheel ,Light Weight Aluminum		
	Fuel-Water Separator: Davco 382, (Fluid Heater) Fuel Heater/Water Separator w/vendor Prim & Mack Sec fuel Filter		
	Tether device Furnish Cap Retainer for Oil Fill & Radiator		
	Hand Primer Pump		
	Hoses, Radiator/Heater Mack Brand EPDM Radiator & Heater Hoses		
	Injection Pump- Electronic Engine Control		
	Radiator, Aluminum Core		
TRANSMISSION:	Allison 4500-RDS -6 (4.70/0.67) Rugged Duty Series Gen 5 Includes transmission Cooler, External Oil Cooler, Internal Filter, and Oil Level Sensor		
	Driveline-Main, Meritor 18 MXL "Xtended Lube"		
	Transmission Bell Housing, Aluminum		
	Synthetic Transmission Fluid		
CAB EQUIPMENT:	Air Conditioner/Heater, (Bergstrom) Integral w/heater combination		
	Air Restriction Monitor, Air Cleaner Intake Mtd		

	Instrument Cluster Display, Co-Pilot Driver Display(4.5”Diagonal Graphic Lcd Display W/4-Button Stalk Control)(Includes Guardog Routine Maintenance Monitoring)		
	Conventional Cab (Welded Steel Galvanized Shell) with Air Ride Suspension(Aluminum Cabs Not Acceptable)		
	Fiberglass Tilt Hood With Safety Lock And Hood Hatch For Maintenance Checks		
	Cigar Lighter On Instrument Panel		
	Overhead Console with 2 Storage Compartments and Power Leads		
	Dome Light, (4) W/Self-Contained Switch		
	Diagonal Handle On Driver Side Door Panel		
	AM/FM Premium Stero, CD-Player, MP3, Weatherband, Handsfree Interface, Bluetooth		
	Driver and Passenger side Power door locks and Windows		
	Gauge, Air Pressure		
	Gauge, Voltmeter		
	Gauge Cluster, Exhaust Pyrometer, Engine Oil, And Transmission Oil Temperature Gauges		
CAB EQUIPMENT:	Gauge, Engine Coolant Temperature		
	Gauge, Engine Oil Pressure		
	Gauge, Fuel Level		
	Gauges, English Display		
	Gauge, Speedometer w/Trip Odometer (Electronic 1% Accuracy)		
	Engine Tachometer Electronic With Hourmeter		
	Glass-Cab Window, Safety Tinted Windshield, Side And Rear Windows		
	Grab Handles, Aluminum, Rh & Lh Behind Door		
	Grille, Bright Finish With Bug Screen		
	Headlamp Bezel- Molded Plastic		
	High Beam Indicator Light		
	Body Builder Access Connector Inside Of Cab For Body Controls		
	Horn-Air, (2) Mounted On Cab Roof		
	Horn- Electric, Single Tone		
	Identification/Clearance Lights, (5) TruckLite LED Chrome Bullet Type Lamp		
	Instrument Panel, Gray With Black Gage Bezel		
	Interior Trim Level, (Grey) Features: Padded Vinyl Headliner		
	Rear Panel With Storage Pouch, Polyurethane Rubber Padded floor Mat		
	2 Cup Holders Mounted At Bottom Of Dash (Center)		
	Chassis Keyed Alike- 4 Keys		
	Heated Mirrors-Exterior, West Coast, Rh & Lh Bright Finish		
	Mirrors – Convex Type, Bright Finish, Lh & Rh 8.0” Dia; Mounted Below Lower Arm Of West Coast Mirror		
	Proximity Mirror Rect Convex Above Rh Door Window		
	Right Side Door Peep Window		

	Exterior Sun Visor Fiberglass (Cab Color)		
	Rear Window (Fixed Type)		
	Seat - Driver, Bostrom Talladega 915 (Mid-Back) Air Suspension		
	Seat – Rider Bostrom Mid Back Stationary with Integral Storage Compartment		
	Seat Covering, All Vinyl		
	Seat Belts, Lap And Shoulder w/Cab Mounted Shoulder Belt		
	Sun visor –Interior, Both Sides (Padded Vinyl)		
	Starter Switch, Key Type		
	Steering Wheel, 18" Two Spoke Urethane Grip		
	Windshield Washers, Electric, Wiper Mounted W/Reservoir Back Of Cab		
CAB EQUIPMENT:	Windshield Wipers, Sprague 2 Speed Electric Motor w/Intermittent feature		
	Dash Control/Power Supply/Local Installation Plow Lamps W/Lead Furnish At Grille With 2w/3w Weather Pack		
FRAME EQUIPMENT/ FUEL TANKS:	Bumper – Front, Extended Swept Back -Steel Channel		
	Crossmembers, Steel Huck Bolted HD Back-To-Back Channel		
	Flaps – Wheel (Front) Black Poly Armor		
	Frame rail End Squared		
	Towing Device – Front, (2) Hooks		
	Fuel Tank – Lh, 72 Gallon Aluminum with 8.7 Gallon Def Fluid Tank-(Clear Back Of Cab Package)		
FRONT AXLE/ EQUIPMENT/ TIRES:	Front Axle, FXL18 - 18,000 Lbs. Capacity-Sealed Kingpins - Maintenance Free		
	Tire Brand/Type – Front, Bridgestone – Tubeless Radial, 315/80R22.5 20 Ply. M860A (All Position)		
	Wheel – Front, Steel Disc 10 Hole Hub Piloted 22.5" x 9.0"		
	Brakes – Front, Meritor "S" Cam Type 16.5" X 6" Q+		
	Brake Drums – Front, Cast Outboard Mounted		
	Dust Shields – Front Brake, Furnish		
	Oil Seals – Front Wheels, Chicago Rawhide (Scotseal)		
	Front Axle Shock Absorbers		
	Slack Adjusters – Front, Haldex – Automatic		
	Springs – Front, Mack Multileaf 18,000 Lb.		
	Spring Build-Up, RH side for Wing Plow Applications		
	Steering Box, Sheppard SD110 with Tilt and Telescopic Steering Column		
REAR AXLE/ EQUIPMENT/ TIRES / RATIOS:	Rear Axle, Meritor RS-30-185 - 30,000 Lbs. Capacity		
	Suspension - Rear, 30,000 Lbs. Multileaf w/Helpers		
	Single Reduction Rear End Gears		
	Locking Main Differential, Driver Controlled		
	Tire Brand/Type – Rear, Bridgestone – Tubeless Radial (4) 315/80R22.5 20 Ply (M860A Tread)		
	Spring Brake Chambers – Vender, Mgm Tr-T Tamper Resistant		
	Spring Brake Chambers, Type 36/36 Rear		
	Carrier/Ratio- Rear Axle, Malleable Housing, 5.63 Ratio		

	Wheels – Rear, Steel Disc 10 Hole Hub Piloted 22.5" x 8.25"		
	Brakes – Rear, Meritor-Cam - 16.5” x 7” P Brakes		
	Brake Drums – Rear, Cast Outboard Mounted		
	Dust Shields – Rear Brake, Furnish		
	Oil Seals, Premium Hub		
	Slack Adjusters – Rear, Haldex – Automatic		
	Spring Brake Chambers-Quantity (2) Chambers Double Diaphragm Type		
AIR/BRAKE:	Air Reservoirs, Steel - One Supply (Wet) Tank		
	Brake Control System-Two Valve Dual Brake System-Trailer Supply With Hand Control For Trailer-Trailer Air Connections To Rear Pintle Plate, Trailer Electrical Harness To Rear For trailer Lights		
	Air Dryer-Meritor/Wabco 1200 Heated With Coalescing Oil Filter		
	Anti-Lock Brake System, Bendix Without Traction Control		
	Automatic Drain Valve, Bendix (Heated) (1) On Supply (Wet) Tank		
ELECTRICAL EQUIPMENT:	Electrical Master Disconnect Switch Mounted in cab.		
	Back-Up Alarm, With Intermittent Feature (Ambient Noise Sensitive)		
	Steel Battery Box with molded plastic cover		
	Courtesy Light Switch (Headlamp And Clearance)		
	Daytime Running Lights,		
	Electric Circuit Protection Package, All Circuits Fuse/Breaker Protected		
	Headlights, Single Mounted Rectangular Halogen Lamps Flush Mtd.		
	Rear Lighting, (2) Combination Stop, Tail Directional and Back-Up Lights-Led Module		
	Signal Flasher Type, Transistorized Turn Signal, Federal Mogul #250		
PTO:	Engine Crankshaft Adapter,1350 Series Flange		
PAINT:	Cab Exterior, Customer Color-Base Coat/Clearcoat		
	Frame Color, Black		
ADDITIONAL EQUIPMENT:	Icc Safety Kit (Fire Extinguisher And Road Reflectors)		
	Manuals, Two Complete Set Of Parts And Service Manuals		
	Front Axle Spare Tire And Rim Mounted		
	Front bumper guides poles with bulldogs.		
WARRANTY:	Basic Vehicle – 12 Months On All Components		
	5 Year /150,000 Miles, Engine Warranty Is To Cover Exhaust After-Treatment System And To Include Turbo Charger, Injectors, And Water Pump.		
	Allison Transmission – 5 Years / Unlimited Miles		

DUMP BODY

G. Dump Body to be heavy duty 201 stainless steel cross memberless Smooth under side type, suitable for use by The Town in street and highway maintenance including snow and ice control with external mounted cylinder.

10. Inside length to be 10ft for a 92” CA. 11ft overall with hoist. _____

2. Inside width to be 86” minimum. Outside width 96”. _____
3. Sides (from body floor to top of top rail) to be 30" high. _____
4. Tailgate to be 38" high. _____
5. Head sheet to be minimum 36" high. _____
   a. One (1) 2" x 3" horizontal head sheet channel brace from the floor 24.37”. _____
6. Capacity to be 6.5 sides and 8.1 cubic yards ends at water level. _____
7. Sides, head sheet and tailgate to be 7 gauge Type 201 stainless steel. _____
8. Floor to be a one-piece 1/4" AR400 steel with both side radiuses built into floor. AR450/Hardox 450 is not acceptable. No exceptions. _____
9. All corner posts and sides to be 7 gauge, 201 stainless steel. _____
10. Top rails are to be 4" x 5" seamless, sloping (dirt/salt shedding) and boxed for added strength. There are to be four (4) stainless steel structural channel piece hold downs for spreader mounted on the top rail. Location for two (2) per side to be determined at the time of installation. _____
11. Bottom rails are to be seamless and sloping (dirt/salt shedding). _____
12. Long sills are to be one-piece 5” structural steel I-beam at 12lbs per foot. _____
13. Rear apron to be ¼” 8" formed channel. _____
14. There are to be no cross members. Floor to be skip welded to I-Beam Long sills. _____
15. Rear Corner Post:
    a. To be 7 gauge 201 Stainless Steel. _____
    b. Rear post to be 38” high x 4-3/4” deep x 12” wide. _____
    fff. Top of corner post to be dirt shedding. A 14-1/2” one-piece 7 gauge stainless steel shall be break formed front to back at 5-1/2” and a downward slope remaining at 9”. _____
    ggg. The top of post shall house two (2) ½” stainless steel plate brackets to house the top pivot point. _____
    hhh. Tailgate reinforcement plate around the tailgate latch assembly must be ¼” thick. Outside must be 16” tall. Bottom must be 8-3/4” long. Inside bottom height shall be 7-3/8” to the floor. Top shall be 4-1/4” from outside to top of floor sheet. All to be continuously welded. _____
    iii. Two (2) oval factory cut outs for S/T/T and Reverse. _____
    jjj. Two (2) Whelen brand strobe light (3 light) boxes to be welded to outside of each rear corner post. Location to be determined at the time of build. _____
16. No front corner posts. Head sheet to have mirrored image of one (1) weld on full length horizontal side brace each side and to be continuously welded to side brace, each side. _____
17. One (1) Intermediate fully welded horizontal side brace, full-length. _____
18. 30” x 86” wide cabshield to have built in tarp deflector full width of body headsheet. Cabshield to house tarp. Five (5) Whelen flush mounted 700 series mounted: Each side, each front corner, and one front center. All Back side of lights must be boxed in with stainless steel. Stainless steel tubing shall be used to protect electrical wires between lights. Tarp system to be recessed into

side plates at furthest most rear. See tarp section for details. _____

19. There are to be 2" x 8" hard wood sideboards installed and painted black or to match cab color. Front board side pocket holders must extend full height to bottom edge of cabshield lip. _____

20. The one piece external side sheet must be break formed and wrap under the body floor no less than 10" extended under the body with a continuous welded seam to floor sheet. _____

21. Tailgate design:
    - a. To be and double-acting heavy duty. _____
    - b. Bracing to be full perimeter box type, 6" top and bottom and 4" sides. _____
    - ss. There is to be one (1) horizontal brace, mid-section. _____
    - tt. Top, bottom, and intermediate horizontal braces to be sloped (dirt/salt shedding). _____
    - uu. Top and bottom tailgate pins to be 1-1/2" diameter 201 Stainless steel, minimum with T-handle. _____
    - vv. Minimum 3/8" stainless steel coil chains to be long enough to hold tailgate in horizontal position if necessary. _____
    - ww. Tailgate to be level with dump body floor when in horizontal position. _____
    - xx. Heavy nylon mesh sleeves to be installed over spreader chains to protect body finish. _____
    - yy. Lower latch hooks to be flame cut from 3/4" 201 SS plate to secure against two (2) 3/8" 201 SS corner post mounted latch plates, one (1) set each side of the ¾" latch hook per side. _____
    - j. There is to be a full width 1" 304 stainless steel diameter (min.) tailgate release rod at rear of body. _____
    - k. Air tailgate release with spring parking brake chamber mounted center rear of body with dash control. _____
    - l. All 201 stainless steel hardware. _____
    - m. One (1) SS d-ring lift hook mounted on top of tailgate. _____
    - n. Three (3) coal doors, 13" wide, recessed flush with interior tailgate sheet. _____
    - o. Two (2) safety turnbuckle latches, one per side, for safety of holding tailgate shut. No exceptions. _____
    - p. Two (2) tailgate latch bar safety mechanisms, one per side bottom, per North Hempstead's approved drawing. No exceptions. _____

22. Continuous welded body shell (except long sills to floor sheet that are skip welded), cab protector & tailgate. _____

23. Stationary 2-1/2" x 20" long grip strut stainless steel steps (one step) mounted to the front drivers side as far forward as possible on the horizontal side brace. _____

24. Full length 2-1/2" grip strut stainless steel walk rail to be mounted full length on bottom rub rails. _____

25. Three (3) step stainless steel pull out ladder mounted under floor and under 20" grip strut step on horizontal brace. _____

26. One (1) Pull Tarp brand tarp system with asphalt rated tarp. Must be mounted on top of cabshield as far rearward and recessed into side vertical supports of cabshield. 7GA Stainless steel cover mounted over the exist Pull Tarp housing. _____

27. Two (2) one-piece stainless steel rod grab handles must be mounted on each side of the 20" step. _____
28. Front corner of bottom rub rail must be capped with 7GA stainless steel and be on an approximate 60 degree angle. _____
29. Six (6) stainless steel J-Hooks mounted upside down. Three (3) per side and evenly spaced and welded on. _____
30. One (1) 12" bolt on stainless steel rear apron. _____
31. Two (2) stainless steel lift loops mounted to top dirt sheet rail, evenly spaced. _____
32. Stationary two (2) ¾" stainless steel rebar mounted on 45 degree from front head sheet to sides at spacing as the outsides steps. _____
33. Body must have any welded burn marks removed prior to delivery. _____

HOIST AND REAR HINGE ASSEMBLY

H. Heavy duty front telescopic type hoist suitable for use with a Dump body on a road and highway maintenance truck used for snow and ice control, externally mounted of headsheet. No exceptions. _____

4. NTEA rated Class 50 with 17.5 tons capacity minimum. No exceptions. _____
2. Forty three thousand pound (43,000 LB.) capacity minimum @ 2000 PSI. _____
3. Double-acting (power up and down full length of stroke). _____
4. Largest diameter stage must be at bottom. Inverted cylinder not acceptable. _____
5. 4.5" inside diameter cylinder base tube (minimum). _____
6. 100" stroke (minimum). _____
7. All cylinder stages to be nitrated for corrosion resistance and wear resistance. _____
8. Internal bore seal design so no packing adjustment or bleeding is required. _____
9. Hoist cylinder to be mounted inside pivoting, trunnion mounted cylinder cover tube. _____
10. Subframe for body to be structural 4" C-Channel. Full width cradle must be made of 201 stainless steel that houses hoist, hydraulic reservoir and valve enclosure. _____
29. Mounting height not to exceed 9" from the top of chassis frame to dump body floor. No exceptions. _____
30. 5" x 6" x ½" x 38" long formed angle with 1-1/2" 303 stainless steel pins with greaseable pins. Each pin is secured by nut/bolt. _____
31. Each pin mounts into two (2) 1/2" plates mounted on two sides to the 6' x 8" x ½" formed angle. Outside plate for each set must be 1.125" from end angle with pin centers at 32". _____
32. Each rear hinge block must be a 2-1/2" wide and 3.25" tall plate steel with 5.88" length mounting surface of body to top of block. Each block must accept a 1-1/2" dumping stainless steel pivot pin and have a grease zerk. _____
33. Overhang from the center of the rear pivot is to be 12" to the end of the floor plate. _____
34. Externally mounted hoist design must show, upon request, at least fifteen (15) current systems of this same design in the NJ/NY

market. No exceptions. _____

SNOW PLOW HITCH

G. Heavy front frame side plate low profile snow plow hitch. _____

7. To be engineered, designed and built by a recognized snow plow manufacturer. Hitch to be a low profile configuration. The design will limit the amount of front overhang to a minimum. _____
8. A truck frame extension is not required for the mounting of hitch but recommended. _____
3. Heavy front frame hitch of modular design shall allow the cab hood to tilt completely forward for engine access. _____
61. Side plates will transmit plowing forces directly to the truck frame side rails and will custom fit the specified year, make and model of the truck. _____
62. The side plates are custom fitted 5/8" steel plate of proper length and construction for heavy duty service and shall provide adequate clearance for steering mechanisms and spring suspensions. _____
63. Side plate mounting angles or plates shall mount flush to the truck frame for maximum strength. Pipe spacers are not acceptable. _____
64. The front section of the hitch assembly: lift frame, center section and the lower push plate shall all be welded to the two (2) vertical tubular supports. The two (2) vertical supports are to be constructed of 6" x 3" x 1/4" thick wall. The length of each support shall be 38-1/4". No exceptions. _____
65. The front two (2) vertical supports are to be spaced evenly 26-3/4" apart. No exceptions. Overall mounting width is 32-3/4". _____
66. The front two (2) vertical supports are to be mounted to vertical structural angles of 5" x 4" x ½", full height of tubes. _____
67. Each vertical tube must have three (3) 3" wide gussets tying in the vertical tube to the structural angle. Each gusset is 3" x 4" x 5" x 7ga. _____
68. The vertical tubes and structural angles are mounted to a horizontal 6" x 4" x ½" x 39" wide structural angle mounted at the top of the two (2) vertical structural angles. _____
69. The center cylinder tube to be built with a 6" x 3" x 1/4" tubes x 26-5/8" long and mounted centered to the vertical tubes. Two (2) 1/2" x 3" x 4" lift cylinder ears to be welded to this tube along with a 1/2" x 3" flat reinforcement bar. _____
70. The telescopic lift arm shall be manufactured of 4" x 4" x 3/8" square outer tubing and 3" x 3" x 3/8" square inner tubing. _____
71. The lift arm and lift frame shall be designed to accept 2.5", 3" or 4"x10" lift cylinder . Cylinder pins are to be 1" cold rolled steel. Inner lift arm must accept clevis and pin. _____
72. Truck and plow portion hitch must be Torloc/Arrowhead style and work interchangeably with The Town of North Hempstead's fleet. _____
73. Mounted under the telescopic outer tubing is to be a white poly block 1-1/2" x 3" and arced to hold a 4" x 10" lift cylinder. _____
74. The quick hitch shall provide self-alignment with the mating plow section while being engaged. _____
75. Re-mount OEM bumper. Bumper shall be split to accommodate

plow hitch and must be bolted on and utilize stabilizer arm per section. _____

76. The plow hoist cylinder shall be of premium grade and shall be a double acting 4" bore x 10" stroke. _____

77. The piston rod is to be of steel construction treated with a nitro steel process. _____

78. The ram sleeve or outer barrel will be such that the rod packing may be maintained or replaced as required. A positive stop must be incorporated that will help prevent mechanical pressure being applied to the packing when the rod is fully extended. _____

79. The cylinder shall be capable of 14,137 pounds of thrust @ 2,000 PSI and 16,000 pounds of bursting pressure @ 2,000 PSI. Minimum weight of the cylinder shall be 28 pounds. Ports to be 3/8" _____

SNOW PLOW

A. MOLDBOARD:

1. The moldboard shall be heavy duty torsion trip edge design type Snowplow with level lift without additional mechanical mechanism._____

2. Moldboard will be an integral shield with trip edge. _____

y. Length to be 10'. _____

z. Height to be 40" (not including rubber deflector) in dead center And 54" each end. No exceptions. _____

aa. 36" side plastic markers mounted to plow. _____

bb. Two (2) lift hooks to be mounted on moldboard top. _____

15. The moldboard shall be reinforced at the top with a 3-1/2" x 2-1/2" x 3/8" with holes to allow moisture to escape with poly 36" markers. _____

16. 10 GA. 201 Stainless Steel rolled moldboard with eight (8) ½" x 3-1/2" ribs for extra strength and rigidity. Plow must have all welded burn marks removed prior to delivery. No exceptions. _____

5. All welds must be continuous (skip welds not acceptable). _____

6. Bottom angle must be 4"x 4" x ¾" with an additional 4" x 3" x ½" trip edge angle. _____

19. Top moldboard angle must be constructed of 3-1/2" x 2-1/2" x 3/8" with holes to allow moisture to escape. _____

20. Two horizontal structural angle braces ¼' x 3" x 3" added for rigidity. _____

21. Attack angle of moldboard shall have adjustments of 5, 10, and 20 degree. _____

B. CUTTING EDGE:

1. The cutting edge must be 6" carbide cutting edge with cover plate. No exceptions. Must be AASHO standard punched, mounted flush with moldboard and be easily replaceable. _____

5. Cutting edge face must have wrap around curb guards mounted on both ends with same bolts/nuts as cutting edge. No Exceptions. _____

C. TRIPPING MECHANISM:

1. Adjustable torsional one piece cutting edge trip. From bottom of new 8" cutting edge to top trip edge is no less than 14.75". _____

8. Springs must have a zero insertion force for increased safety while servicing. No Exceptions. _____

9. Bottom moldboard angle must be 4" x 3" x ½". Fully welded to

bottom edge of moldboard. _____

4. 4" x 4" x ¾" backer angle with (6) ¾" trip ears welded to angle. _____
5. Full length trip edge pivot tube, must be constructed of schedule 80, 1.50" OD black pipe. End of each plow cutting edge is to include a 4.5"OD x 1.5" thick curb guard. _____
6. Cutting edge tripping must be controlled by (5) torsion springs. Springs constructed of a minimum of .75 square bar with 14 active coils. Minimum spring dimensions shall be 3.75OD x 2.25ID x 11.75. Springs must be produced to meet Rockwell C hardness. Hardness shall be produced from oil quenching with a minimum temperature of 1550°F. Spring preload shall be a minimum of 35°. Springs shall have a trip load capability of 8228 INCH-LBS. Typical spring material composition shall be Carbon=0.40, Manganese=.70, Phosphorous=.020, sulfur=.020, silicon=.25, chromium=.80, Nickel=1.75, Molybdenum=.25. _____
7. Three (3) position adjustment on each individual torsion spring on the trip assembly to allow adjustment in various settings for road conditions. No exceptions. _____
8. Face of cutting edge trip section must be 201 Stainless Steel. No exceptions. _____

D. PUSH TUBE ASSEMBLY:

1. Push tube to be constructed of 4" x 4" x .38 square tube, 107.5" in length. Each end of the push tube shall be capped with a 10ga 3.25" x 3.25" plate. _____
2. Welded to the moldboard pushtube shall be (8) 5/8" x 3.5" x 7" pivot ears. Each ear shall be further reinforced with a 2" x 2" x .38 gusset. Pivot ears shall pin to moldboard assembly with 1-1/4" thick pins. _____
33. (2) Moldboard stabilizer strut mounting ears each constructed of (2) 5/8" plate approximately 10" x 13". _____
34. Center pushframe pivot constructed of (2) .38 x 36.5" x 8.5" plates. There shall be a 3.5" hole in each plate for a 5-1/2" x 3-1/2" OD x 2.52" ID bushing. Bushing shall be drilled and tapped for a 1/8" grease zerk. _____
35. Center pushframe pivot assembly shall also have (2) 3.75" stops for the a-frame assembly. _____
36. Push tube cylinder lugs, located on left and righ hand sides shall each be constructed of (2) 5/8" x 8-1/4" x 3-5/8" plates complete with a 1-1/4" pin hole. _____
37. Cylinder lugs shall be further reinforced with 3/8" x 2-3/4" x 3-1/4" gusset. _____
38. There shall be (2) chain lift lugs welded to the top of the push tube constructed of ½" x 3" x 4" plates. _____
39. Moldboard reversing shall be accomplished by (2) 3" rod x 3.5" bore x 16" stroke single acting cylinders. _____
40. Cylinder rods shall be nitride for increased corrosion resistance. Chromed rods shall be unacceptable. _____
41. Cylinder working pressure shall be 3000 PSI. _____
42. Cylinder shall be plumbed to an 1800 PSI cushioning valve to prevent damage when hitting obstructions. _____

E. A-FRAME:

1. Pivot capture plates shall consist of (2) plates constructed of 1" x 11" x 12-7/8" plates. These plates will be flame cute and have a 2.53" hole to pin the a-frame assembly the push-tube assembly. The top pivot capture plate shall be drilled and threaded for a ¾" capture bolt to prevent pin rotation. _____

5. Top main A-frame plate shall be constructed of 3/8" x 28" x 25-5/8" flame cut plate. The narrowest portion of the top plate shall remain a minimum of 12". Top plate shall also be flame cut to accept the reversing cylinder pins. Pin hole shall be 1.281" in diameter. Each pin holes shall be further reinforced with a 1" thick plate which is flame cut to accept reversing cylinder pin. _____

18. Bottom main a-frame plate shall be constructed of 3/8" x 28" x 25-5/8" flame cut plate. The narrowest portion of the top plate shall remain a minimum of 12". Bottom plate shall also be flame cut to accept the reversing cylinder pins. Pin hole shall be 1.281" in diameter. There shall be a 6" access hole for attaching the hitch swivel bolt. _____

19. The A-frame vertical side plates which tie the top and bottom plates into a boxed formation shall be constructed of ½" x 4" x 32" plate and formed to follow the contour the top and bottom plates. _____

20. The rear A-frame push plate shall be constructed of 1" x 6-3/4" x 33-5/8" plate. This plate shall be flame cut with a 1-9/16" hole to accept the plow hitch attachment bolt. _____

21. On the top side of the A-frame plate shall be a mounting plate to which attached is the reversing cylinder cushion valve. _____

22. Plow portion hitch must be Torlo/Arrowhead and fit existing Town of North Hempstead truck portion hitches. _____

F. PAINT:

10. All metal surfaces are to be phosphate washed to remove slag, splatter, oxide and oil residue. _____

11. Moldboard frame work must be powder-coated Highway Orange. _____

12. Push frame, "A" frame and other miscellaneous components are powder-coated black for increase paint durability. _____

<u>CENTRAL HYDRAULIC SYSTEM</u>

A. TYPE:

1. System to be of load sensing pressure-compensated type, pumping oil only when needed and in exact volume and pressure required --- no more, no less. _____

2. Pump to automatically revert to standby mode when no oil flow is required (No on/off switch). _____

6. Must be able to operate all equipment on truck simultaneously if necessary. No one function to interfere with any other. _____

4. System controls are to be electronic over hydraulic. _____

5. Operating speed of all functions must-be variable and adjustable. _____

6. One complete system to operate all functions. _____

B. HYDRAULIC PUMP AND FRONT CRANK SHAFT:

1. The hydraulic piston pump shall be a pressure and flow

compensated load-sensing type. The pump shall be an Eaton 5.98 CID series 620 have a minimum 2" inch suction line and ½" control drain line plumbed directly back to the reservoir. The pumps compensator shall have rear facing adjustments. Pump shall be a front crank shaft mounted drive shaft and properly mounting. _____

C. HYDRAULIC VALVE:

1. Control valve shall be U.S. manufactured. Valve shall be a load sensing type with o-ring ports. Mid-inlet section porting will be #16 inlet, #20 outlet, #16 hoist section, #4 load sense port, and #10 or #12 for all other sections. The hoist section shall be stacked to one side of the mid-inlet and all other sections will be stacked on the other side. All ports shall be level with each other so as to lay flat on its base. There will be a main relief in the mid-inlet section that will be set at 3500 PSI to protect the system from being over pressurized. _____
2. Valve section to be arranged as follows:
3. Hoist, 4-way for a double acting cylinder with mid-inlet transition section. _____
4. Pressure reducing section., if needed. _____
5. Plow Lift, 4-way for a double acting cylinder with flow control. _____
6. Plow Angle, 4-way for a double acting cylinder with flow control. _____
7. Spreader and spinner section must be able to function Epoke spreaders. No exceptions. _____
8. Liquid Pre-Wet/Anti-Ice Valve 4-way. _____
9. Valve shall be prior approved equal. _____
22. A plow float/balance valve must be provided and controlled with a dash mounted rocker switch for on/off. The plow float/balance can be turned off as needed. When in use, the valve will allow the valve to use a pressure reducing/relieving system to control the float/balance lifting pressure on the plow's lift arm assembly. Two solenoid valves wired together turn the valve off and on. One solenoid valve opens the inlet of the pressure reducing valve to the pump. The other solenoid valve opens the outlet of the pressure reducing/relieving valve to the lift port. Oil flowing in and out of the lift port is restricted with an orifice. _____

D. OPERATOR CONTROLS FOR DUMP BOY HOIST and SNOW PLOW:

1. The valve controls shall be a feathering remote electric control with each joystick. Dump to have one (1) Joystick and Plow to have another Joystick. Force America Joysticks or prior approved equal. Layout to be determined at the time of build. _____

E. RESERVOIR/VALVE COMPARTMENT:

19. One (1) 30 gallon all-welded 304 stainless steel hydraulic oil reservoir mounted on the hoist's cradle on passenger side. Must have site gauge with rubber gasket seal. No exceptions. _____
20. The hydraulic reservoir will be constructed of 10-gauge stainless

steel and be internally baffled. _____

21. One (1) 304 stainless steel valve enclosure mounted on the hoist's cradle on the driver's side. Must have a Stainless steel cover with one bolt-on securing mechanism. No exceptions. _____
22. Shall be mounted in a manner as to not transmit any truck torsional loads thru the tank. _____
23. The enclosure will use a gasket-less passive technology. (No rubber seals, gaskets, or weather stripping.) _____
24. The reservoir supplier will provide all valve fittings (JIC connections) and plumb the return line from the valve to the filter. _____
7. The cover will protect from both road and pressure washer spray. _____
8. A 2" full flow brass ball valve shall be plumbed at the suction port of the tank. _____
9. A low oil/high temp sending unit shall be mounted in the reservoir. _____
10. Hydraulic oil filter shall be mounted in the reservoir. Hydraulic filter shall be a 10-micron absolute and rated for no less than 60 GPM. _____

F. Hydraulic Lines and Fittings:

1. Stainless steel tubing to be used under body and cab in lieu of hosing. Only hosing to be used is ends of stainless steel tubing to reach each function's quick couplers or connection. Tubing shall be seamless #304 stainless steel construction with a minimum wall thickness of 0.065". The ends must be flared to accommodate a 37 degree JIC fitting. The use of compression fittings is not Acceptable. Spacing of each tube to allow for material to fall between each tube. _____
47. All stainless tubing must be mounted in polyurethane poly green tube clamps. _____
48. All hoses to be wire braid reinforced with swaged on high pressure JIC 37 degree tapered seat end fittings. _____
49. All fittings & adapters to be forged steel (No tapered pipe fittings except on suction hose). _____
50. Hoses to front with 1/2" 100% stainless steel (no exceptions) quick couplers for power reversing plow. _____
51. Hoses to rear with 1/2" 100% stainless steel quick couplers for spreader (no exceptions). _____
52. Spreader stainless steel hose couplers to be mounted on either frame rail or pintle plate under dump body at rear. _____
53. Polymer dust plugs or caps on all couplers with retainer straps. _____
54. All pressure hoses except for plow & spinner to be 3/4" I.D. SAE 100R2. _____
55. Plow, spreader spinner, and prewet system pressure hoses to be 1/2" I.D.SAE 100R2. _____
56. Main pressure hose from pump to control valve shall be 1" Didiameter, 4-wire braid. No exception. _____
57. All return hoses to be SAE 100R2. _____
58. Suction hose to be minimum 2" I.D. SAE 100R4 spiral wire reinforced with long radius ells. _____
59. All hoses to be routed away from chassis exhaust whenever possible to protect against heat deterioration. _____
60. All hydraulic quick disconnect couplings must be stainless steel Aero-Quip FD45 series or prior approval; bulkhead mounted, and

include attached male and female dust covers. Couplings to be configured so as to eliminate confusion when coupling. No exceptions. _____

61. All stainless steel quick disconnects for spreaders must be mounted under body at passenger rear most corner and mounted to stainless steel encloused housing that is welded to bottom rub rail wrap around portion. Must work with Epoke spreaders. No exceptions. _____

G. Spreader Controller:

1. None. _____

SNOW PLOW LIGHTS:

A. Truck-Lite brand LED model 80880 plow lights. _____

13. Mounted with custom fabricated 100% stainless steel brackets on truck fenders. Brackets must be painted black. _____
14. Plow lights to be wired into the truck's existing headlight circuit using the factory installed switch. _____
15. Plow lights must function in high and low beam modes using existing truck's dimmer switch. _____
16. Plow lights and truck chassis headlights must never operate at the same time. _____

LIGHTING & ELECTRICAL

ALL lighting and layout must meet all Fedaral, State, and DOT regulations. No exceptions.

A. LED lighting system. _____

1. All marker, work, S/T/T, backup and strobe lighting to be LED. _____
47. Whelen brand DOT3 System to be Super-LED DOT Light system model 00007DS0 or equal and a current production model of Whelen and made in the USA. _____
48. The two (2) Whelen 704-D three lamp light boxes to be continuously welded to outside of each rear corner post. Rear Super LED Head Assemblies to be 700 Linear-Super-LED two (2) amber heads, two (LED) brake/tail/turn light modules, and two (2)LED back-ups, one set each side. Each head shall be capable of emitting a full 180 degree of light in the vertical plane. The light heads shall be recessed into a heavy duty 7GA stainless steel housing. _____
49. The two rear 700 series heads shall utilize a DOT LED flasher which is mounted and encapusulated in a junction box inside of cab. The DOT LED flasher shall allow the two rear 700's to be controlled independently from the front head assembly. One (1) stainless steel rod mounted vertically in front of each head to protrude out far enough to protect lense. _____
50. The 700 assembly, brake light and back up, including the steel housing, shall be approximately 23-1/2 inches high , 4-7/8 inches deep and 3-1/2 inches wide. _____
51. The modules, as well as the lens, shall be easily replacable. A water proof connector for each module shall be used to connect to the cable harness and shall be located inside the steel housing for weather resistence as well as ease of replacement. _____
52. The 700 lenses shall be made of polycarbonate, amber in color,

and have a smooth outer surface for self cleaning. _____

53. There shall be two LED brake/tail/turn modules, one located in the middle positions of each steel housing. Each module must contain a minimum of 72 red LEDs. The module must be in "signal alert" flash pattern, which flickers three times withing 150 milliseconds before becoming steady "on". These modules must meet or exceed SAE requirements. _____

54. There shall be two LED back ups, one located in the bottom position of each steel housing. Each module must contain a minimum of 48 white LEDs for maximum light output. These modules shall be supplied with a clear polycarbonate lens. _____

55. The rear mounted head assemblies shall use stainless steel screws that screw directly into a nylon mounting bracket to eliminate dissimiliar metal corrosion. Units that screw into steel bracket are unacceptable. _____

56. Cable harnesses being supplied from the rear housings must be heavy-duty TPR type cable. Flexible to minus 40 degrees Fahrenheit; abrasion, corrosion and oil/grease resistance. Each conductor shall be a minimum of 14GA, pure copper stranded, and fully tin coated. No less than 30feet of cable shall be provided for each head assembly. All necessary connections shall be provided, including a strain-relief system. _____

57. Cabshield lighting shall be five (5) surface mounted Whelen brand 700 series strobes. Must be synchronized with two (2) rear Whelen brand 700 series on outside of rear corner posts. _____

58. Cabshield Whelen 700 series strobes to be on one (1) chassis dash rocker switch for on/off and labeled. _____

59. Both rear facing and rear side corner mounted Whelen 700 series strobes to be on one (1) chassis dash rocker switch for on/off and labeled. _____

60. Two (2) OEM S/T/T w/ Backup light mounted behind rear apron of dump body. Hole to be cut into apron to allow visibility. Hole to be covered with black trim lock. _____

61. Two (2) OEM S/T/T w/ Backup light mounted on each side of pintle plate. Location and mounting to be determined at the time of installation. _____

B. Electronic Back-Up Alarm provided by chassis dealer and relocated if needed. _____

C. Body Up Indicator Light. _____
   1. Sealed weatherproof proximity switch on hoist-frame. _____
   2. Whelen model ION-R body up light mounted in cab. _____

D. All non- strobe wiring to be 7 wire trailer cable. Separate cable routed from in-cab to all non-strobe lights with sealed junction box at rear so all wiring connections are made either inside cab and in a sealed junction box. _____

E. One (1) solid stainless steel rod must be mounted under body and all electrical body lighting must be neatly run. Rod will be one piece and full length. No exceptions. _____

F. All wire connections shall be made in the chassis cab or by means of a waterproof junction box. In cab connections shall be made using vinyl coated crimp connectors covered in weather resistant heat shrink tuning. There shall be no wire splices outside the cab. All wiring to

junction box shall be resistant to abrasion, ozone, sunlight, chemicals and oil. The outer jacket shall be chlorinated polyethylene and be approved for submersion in water. The outer jacket shall be label with the cable identification wire gauge and number of conductors. Must be MSHA approved. All body lighting shall be supplied by a single sealed harness from the junction box and making the connection at the light by means of weather tight sealed connector. All strobe lights shall be included in the same harness and be connected by means of a Deutsch connector, no exceptions. _____

MISCELLANEOUS

A. 90 degree elbow extension on top of chassis vertical exhaust stack to clear cab protector and still route exhaust upward to be provided by chassis supplier and installed by body company. _____

H. Rear tire poly Fleet Maintenance fenders with stainless steel mounting tubes. _____

C. Upon installation of all components, truck must be delivered to the truck dealer for final inspection and prep. _____

D. Rear pintle plate shall have a Holland model T90 pintle properly Installed and secured. _____

1. Mounted on reinforced 3/4" thick mounting plate at rear of chassis frame at designated clearance height to ground to be 29". Sides and bottom must be reinforced with ¾" x 2" flat stock mounted behind the pintle plate. _____

11. Must include Safety two (2) 5/8" D-Rings, one (1) 7-wire flat plug and one (1) 6-wire plug. _____

12. License plate light and bracket mounted to top corner on passenger side. _____

E. DOT approved 2" conspicuity tape on body bottom rub rails, rear corner posts, tailgate perimeter. All DOT necessary reflective decals installed as well. _____

F. Pull Tarp brand asphalt tarping system to be mounted in cabshield rear. Must recess ahead of front head sheet and cut into side plates of cabshield for lowest possible mounting. _____

J. Two (2) Toolboxes; Heavy duty aluminum 48x18'x18', mounted on frame rails. One (1) per side. _____

INSTALLATION AND WARRANTY

P. Minimum twenty-four (24) months, 100% parts and labor on components and installation. No deductible. _____

Q. For warranty considerations and future availability of parts and service, the body company must be an authorized primary distributor for all major components they propose to furnish. Must furnish written proof from such said vendor upon request. _____

R. All equipment must be installed by a single body company, by their employees and at their regular location. _____

S. Installation of components is not to be subcontracted by body company to another installer. _____

T. No welding whatsoever is to be done on chassis frame between front of most forward spring hanger and rear of rearmost spring hanger. _____

F. No drilling whatsoever is to be done in frame rail flanges. _____

M. Body company to furnish operator's parts and service manuals for all components manufacturer's i.e., dump body, hoist, snow plow, salt spreader, central hydraulic system and strobe lights. _____

N. Completed vehicle must be certified by the body company as meeting all federal motor vehicle safety standard in effect at time of chassis production. _____

4. Approved NHTSA/FMVSS certification label must be furnished and located inside cab on driver's side. _____

I. Completed unit to comply with current OSHA regulations. _____

J. Body company must be registered with National Highway Traffic Safety Administration as a final stage manufacturer of motor vehicles as required by Federal Law. _____

K. Body company to conduct operator training session on body and equipment at the The Town garage after delivery of completed truck. _____

L. Delivered of completed vehicle must be within 60 to 75 days after delivery of cab chassis to up-fitter. $75 a day penalty might incur with later delivery. _____

M. Body company must have ASE certified installer/s and show documentation at time of bid. No exceptions. _____

N. Body company to be registered and in good standing with National Truck Equipment Association (NTEA), be a MVP member, and be the authorized distributor for all equipment bid. _____

O. Body company must participate and provide documentation at time of bid for E-Verify®. This employment verification verification is a United States of America federally accredited verification system to insure all employees are legal residents. List Company ID#_____. No exceptions. _____

P. Dump Body, Snow Plow, and Snow Plow Hitch must be engineered and manufactured in the United States of America and all from the same manufacturer. No exceptions. _____

Q. Hydraulic schematic must be provided and laminated and placed inside the combination valve enclosure/combo tank lid. _____

R. A required pre-build meeting will occur after award of bid and prior to the start of installation. No exceptions. _____

S. The Town will inspect all equipment (plow, hitch, dump body and tailgate spreader) prior to the start of installation. No exceptions. _____

Package "B" for Chassis, Dump Body, Plow, Hydraulics, Spreader Control and Misc Items for V-Box Setup

"BIDDING REQUIREMENTS SECTION"

SECTION	SPECIFICATION DETAIL	COMPLY	
		Comply	Exception
PACKAGE B: 6 WHEEL TRUCK, DUMP BODY, PLOW, HITCH, CENTRAL HYDARAULICS FOR HI-WAY SPREADER			

Description: Chassis Specifications For A New 2016 GU712 Chassis With SCR Technology To Meet 2014 Emissions Of 0.2 Grams Of Nox Or Equal			
Chassis/ Frame & Wheelbase:	Chassis: 2016 Mack GU712 Chassis Or Equal		
	Frame Rails, 11.811" x 3.54" x 0.44" High Strength 120,000 PSI Steel - 20" Integral Front Frame Extension For Snow Plow Mount		
	Single Chassis Rail		
	Section Modulus 23.5 cu In/Rbm 2,820,000 In Lbs. Per Rail		
	Wheelbase - 180"WB, Center of Axle - 92"CA,		
	Platform - 154"LP, After Frame - 62"AF		
MAXIMUM GVW & AXLE RATINGS:	Gross Vehicle Weight Rating Of 48,000lbs.		
	Front Axle Capacity - 18,000 Lbs.		
	Rear Single Drive Axle Capacity - 30,000lbs		
	Front Steer Axle-Gross Axle Weight Rating - 18,000lbs		
	Rear Drive Axle –Gross Axle Weight Rating - 30,000lbs		
ENGINE:	MP7-405M 405 Hp @ 1500-1900 Rpm. Operating range 1100-2100 1480 Lb. Ft. Max. Torque @ 1050-1350 Rpm High Torque Rise 60%		
	11.9 Liter, 659 Cu. In Piston Displacement.		
	EPA Carb Emission Certified For 2014 Utilizing Selective Catalyst Reduction(Scr).Engines Utilizing Government Credits Or Penalties Are Not Acceptable		
ENGINE EQUIPMENT:	Air Compressor, Meritor/Wabco 318 18.7 Cfm		
	Engine Mounted Oil Check And Fill		
	Mack Powerleash Engine Brake		
	Alternator, Delco 12V 130A (24SI) Brush-Type		
	(3) 12volt Mack Grp31 Batteries With 3000 CCA Threaded Post		
	Air Cleaner, 11" x 30" Under Hood Single Element Dry Type		
	12 Volt Heavy Duty Starter-Delco 39mt-Mxt		
	Electronic Starter Interlock System		
	Coolant Protection To Below –34 Degrees Fahrenheit With Coolant Conditioner Filter		
ENGINE EQUIPMENT:	Engine Block Heater, Gomack (Phillips) – 1500 Watt 120 Volt With Intake Grid Heater mounted under driver side door.		
	Starting Aid Engine Electric Preheater		
	Engine Hoses And Tubing, Silicone		
	Diesel Particulate Filter /Scr System Horizontal-Under Right Side Of Cab-Clear Back Of Cab Option		
	Exhaust After –Treatment System Diesel Particulate Filter Ceramic Catalyzed, And Scr Technology To Meet 0.2 Grams Of Nox		
	Exhaust, Side Of Cab Single (R/S) Vertical Straight Exhaust Stack		
	Poly-V Fan Belt With Automatic Tensioner		

	Fan Drive, Behr Fan And Electronic Modulating Fan Drive		
	Flywheel ,Light Weight Aluminum		
	Fuel-Water Separator: Davco 382, (Fluid Heater) Fuel Heater/Water Separator w/vendor Prim & Mack Sec fuel Filter		
	Tether device Furnish Cap Retainer for Oil Fill & Radiator		
	Hand Primer Pump		
	Hoses, Radiator/Heater Mack Brand EPDM Radiator & Heater Hoses		
	Injection Pump- Electronic Engine Control		
	Radiator, Aluminum Core		
TRANSMISSION:	Allison 4500-RDS -6 (4.70/0.67) Rugged Duty Series Gen 5 Includes transmission Cooler, External Oil Cooler, Internal Filter, and Oil Level Sensor		
	Driveline-Main, Meritor 18 MXL "Xtended Lube"		
	Transmission Bell Housing, Aluminum		
	Synthetic Transmission Fluid		
CAB EQUIPMENT:	Air Conditioner/Heater, (Bergstrom) Integral w/heater combination		
	Air Restriction Monitor, Air Cleaner Intake Mtd		
	Instrument Cluster Display, Co-Pilot Driver Display(4.5”Diagonal Graphic Lcd Display W/4-Button Stalk Control)(Includes Guardog Routine Maintenance Monitoring)		
	Conventional Cab (Welded Steel Galvanized Shell) with Air Ride Suspension(Aluminum Cabs Not Acceptable)		
	Fiberglass Tilt Hood With Safety Lock And Hood Hatch For Maintenance Checks		
	Cigar Lighter On Instrument Panel		
	Overhead Console with 2 Storage Compartments and Power Leads		
	Dome Light, (4) W/Self-Contained Switch		
	Diagonal Handle On Driver Side Door Panel		
	AM/FM Premium Stero, CD-Player, MP3, Weatherband, Handsfree Interface, Bluetooth		
	Driver and Passenger side Power door locks and Windows		
	Gauge, Air Pressure		
	Gauge, Voltmeter		
	Gauge Cluster, Exhaust Pyrometer, Engine Oil, And Transmission Oil Temperature Gauges		
CAB EQUIPMENT:	Gauge, Engine Coolant Temperature		
	Gauge, Engine Oil Pressure		
	Gauge, Fuel Level		
	Gauges, English Display		
	Gauge, Speedometer w/Trip Odometer (Electronic 1% Accuracy)		
	Engine Tachometer Electronic With Hourmeter		
	Glass-Cab Window, Safety Tinted Windshield, Side And Rear Windows		
	Grab Handles, Aluminum, Rh & Lh Behind Door		
	Grille, Bright Finish With Bug Screen		

	Headlamp Bezel- Molded Plastic		
	High Beam Indicator Light		
	Body Builder Access Connector Inside Of Cab For Body Controls		
	Horn-Air, (2) Mounted On Cab Roof		
	Horn- Electric, Single Tone		
	Identification/Clearance Lights, (5) TruckLite LED Chrome Bullet Type Lamp		
	Instrument Panel, Gray With Black Gage Bezel		
	Interior Trim Level, (Grey) Features: Padded Vinyl Headliner		
	Rear Panel With Storage Pouch, Polyurethane Rubber Padded floor Mat		
	2 Cup Holders Mounted At Bottom Of Dash (Center)		
	Chassis Keyed Alike- 4 Keys		
	Heated Mirrors-Exterior, West Coast, Rh & Lh Bright Finish		
	Mirrors – Convex Type, Bright Finish, Lh & Rh 8.0" Dia; Mounted Below Lower Arm Of West Coast Mirror		
	Proximity Mirror Rect Convex Above Rh Door Window		
	Right Side Door Peep Window		
	Exterior Sun Visor Fiberglass (Cab Color)		
	Rear Window (Fixed Type)		
	Seat - Driver, Bostrom Talladega 915 (Mid-Back) Air Suspension		
	Seat – Rider Bostrom Mid Back Stationary with Integral Storage Compartment		
	Seat Covering, All Vinyl		
	Seat Belts, Lap And Shoulder w/Cab Mounted Shoulder Belt		
	Sun visor –Interior, Both Sides (Padded Vinyl)		
	Starter Switch, Key Type		
	Steering Wheel, 18" Two Spoke Urethane Grip		
	Windshield Washers, Electric, Wiper Mounted W/Reservoir Back Of Cab		
CAB EQUIPMENT:	Windshield Wipers, Sprague 2 Speed Electric Motor w/Intermittent feature		
	Dash Control/Power Supply/Local Installation Plow Lamps W/Lead Furnish At Grille With 2w/3w Weather Pack		
FRAME EQUIPMENT/ FUEL TANKS:	Bumper – Front, Extended Swept Back -Steel Channel		
	Crossmembers, Steel Huck Bolted HD Back-To-Back Channel		
	Flaps – Wheel (Front) Black Poly Armor		
	Frame rail End Squared		
	Towing Device – Front, (2) Hooks		
	Fuel Tank – Lh, 72 Gallon Aluminum with 8.7 Gallon Def Fluid Tank-(Clear Back Of Cab Package)		
FRONT AXLE/ EQUIPMENT/ TIRES:	Front Axle, FXL18 - 18,000 Lbs. Capacity-Sealed Kingpins - Maintenance Free		
	Tire Brand/Type – Front, Bridgestone – Tubeless Radial, 315/80R22.5 20 Ply. M860A (All Position)		
	Wheel – Front, Steel Disc 10 Hole Hub Piloted 22.5" x 9.0"		
	Brakes – Front, Meritor "S" Cam Type 16.5" X 6" Q+		

	Brake Drums – Front, Cast Outboard Mounted		
	Dust Shields – Front Brake, Furnish		
	Oil Seals – Front Wheels, Chicago Rawhide (Scotseal)		
	Front Axle Shock Absorbers		
	Slack Adjusters – Front, Haldex – Automatic		
	Springs – Front, Mack Multileaf 18,000 Lb.		
	Spring Build-Up, RH side for Wing Plow Applications		
	Steering Box, Sheppard SD110 with Tilt and Telescopic Steering Column		
REAR AXLE/ EQUIPMENT/ TIRES / RATIOS:	Rear Axle, Meritor RS-30-185 - 30,000 Lbs. Capacity		
	Suspension - Rear, 30,000 Lbs. Multileaf w/Helpers		
	Single Reduction Rear End Gears		
	Locking Main Differential, Driver Controlled		
	Tire Brand/Type – Rear, Bridgestone – Tubeless Radial (4) 315/80R22.5 20 Ply (M860A Tread)		
	Spring Brake Chambers – Vender, Mgm Tr-T Tamper Resistant		
	Spring Brake Chambers, Type 36/36 Rear		
	Carrier/Ratio- Rear Axle, Malleable Housing, 5.63 Ratio		
	Wheels – Rear, Steel Disc 10 Hole Hub Piloted 22.5" x 8.25"		
	Brakes – Rear, Meritor-Cam - 16.5” x 7” P Brakes		
	Brake Drums – Rear, Cast Outboard Mounted		
	Dust Shields – Rear Brake, Furnish		
	Oil Seals, Premium Hub		
	Slack Adjusters – Rear, Haldex – Automatic		
	Spring Brake Chambers-Quantity (2) Chambers Double Diaphragm Type		
AIR/BRAKE:	Air Reservoirs, Steel - One Supply (Wet) Tank		
	Brake Control System-Two Valve Dual Brake System-Trailer Supply With Hand Control For Trailer-Trailer Air Connections To Rear Pintle Plate, Trailer Electrical Harness To Rear For trailer Lights		
	Air Dryer-Meritor/Wabco 1200 Heated With Coalescing Oil Filter		
	Anti-Lock Brake System, Bendix Without Traction Control		
	Automatic Drain Valve, Bendix (Heated) (1) On Supply (Wet) Tank		
ELECTRICAL EQUIPMENT:	Electrical Master Disconnect Switch Mounted in cab.		
	Back-Up Alarm, With Intermittent Feature (Ambient Noise Sensitive)		
	Steel Battery Box with molded plastic cover		
	Courtesy Light Switch (Headlamp And Clearance)		
	Daytime Running Lights,		
	Electric Circuit Protection Package, All Circuits Fuse/Breaker Protected		
	Headlights, Single Mounted Rectangular Halogen Lamps Flush Mtd.		
	Rear Lighting, (2) Combination Stop, Tail Directional and Back-Up Lights-Led Module		
	Signal Flasher Type, Transistorized Turn Signal, Federal Mogul #250		
PTO:	Engine Crankshaft Adapter,1350 Series Flange		
PAINT:	Cab Exterior, Customer Color-Base Coat/Clearcoat		
	Frame Color, Black		

ADDITIONAL EQUIPMENT:	Icc Safety Kit (Fire Extinguisher And Road Reflectors)		
	Manuals, Two Complete Set Of Parts And Service Manuals		
	Front Axle Spare Tire And Rim Mounted		
	Front bumper guides poles with bulldogs.		
WARRANTY:	Basic Vehicle – 12 Months On All Components		
	5 Year /150,000 Miles, Engine Warranty Is To Cover Exhaust After-Treatment System And To Include Turbo Charger, Injectors, And Water Pump.		
	Allison Transmission – 5 Years / Unlimited Miles		

DUMP BODY

G. Dump Body to be heavy duty 201 stainless steel cross memberless Smooth under side type, suitable for use by The Town in street and highway maintenance including snow and ice control with external mounted cylinder. _____

10. Inside length to be 10ft for a 92" CA. 11ft overall with hoist. _____
2. Inside width to be 86" minimum. Outside width 96". _____
3. Sides (from body floor to top of top rail) to be 30" high. _____
4. Tailgate to be 38" high. _____
5. Head sheet to be minimum 36" high. _____
   a. One (1) 2" x 3" horizontal head sheet channel brace from the floor 24.37". _____
6. Capacity to be 6.5 sides and 8.1 cubic yards ends at water level. _____
7. Sides, head sheet and tailgate to be 7 gauge Type 201 stainless steel. _____
8. Floor to be a one-piece 1/4" AR400 steel with both side radiuses built into floor. AR450/Hardox 450 is not acceptable. No exceptions. _____
9. All corner posts and sides to be 7 gauge, 201 stainless steel. _____
10. Top rails are to be 4" x 5" seamless, sloping (dirt/salt shedding) and boxed for added strength. There are to be four (4) stainless steel structural channel piece hold downs for spreader mounted on the top rail. Location for two (2) per side to be determined at the time of installation. _____
11. Bottom rails are to be seamless and sloping (dirt/salt shedding). _____
12. Long sills are to be one-piece 5" structural steel I-beam at 12lbs per foot. _____
13. Rear apron to be ¼" 8" formed channel. _____
14. There are to be no cross members. Floor to be skip welded to I-Beam Long sills. _____
15. Rear Corner Post:
    a. To be 7 gauge 201 Stainless Steel. _____
    b. Rear post to be 38" high x 4-3/4" deep x 12" wide. _____
    kkk. Top of corner post to be dirt shedding. A 14-1/2" one-piece 7 gauge stainless steel shall be break formed front to back at 5-1/2" and a downward slope remaining at 9". _____
    lll. The top of post shall house two (2) ½" stainless steel plate

brackets to house the top pivot point. _____

mmm. Tailgate reinforcement plate around the tailgate latch assembly must be ¼" thick. Outside must be 16" tall. Bottom must be 8-3/4" long. Inside bottom height shall be 7-3/8" to the floor. Top shall be 4-1/4" from outside to top of floor sheet. All to be continuously welded. _____

nnn. Two (2) oval factory cut outs for S/T/T and Reverse. _____

ooo. Two (2) Whelen brand strobe light (3 light) boxes to be welded to outside of each rear corner post. Location to be determined at the time of build. _____

16. No front corner posts. Head sheet to have mirrored image of one (1) weld on full length horizontal side brace each side and to be continuously welded to side brace, each side. _____

17. One (1) Intermediate fully welded horizontal side brace, full-length. _____

18. 30" x 86" wide cabshield to have built in tarp deflector full width of body headsheet. Cabshield to house tarp. Five (5) Whelen flush mounted 700 series mounted: Each side, each front corner, and one front center. All Back side of lights must be boxed in with stainless steel. Stainless steel tubing shall be used to protect electrical wires between lights. Tarp system to be recessed into side plates at furthest most rear. See tarp section for details. _____

19. There are to be 2" x 8" hard wood sideboards installed and painted black or to match cab color. Front board side pocket holders must extend full height to bottom edge of cabshield lip. _____

20. The one piece external side sheet must be break formed and wrap under the body floor no less than 10" extended under the body with a continuous welded seam to floor sheet. _____

21. Tailgate design:

a. To be and double-acting heavy duty. _____

b. Bracing to be full perimeter box type, 6" top and bottom and 4" sides. _____

zz. There is to be one (1) horizontal brace, mid-section. _____

aaa. Top, bottom, and intermediate horizontal braces to be sloped (dirt/salt shedding). _____

bbb. Top and bottom tailgate pins to be 1-1/2" diameter 201 Stainless steel, minimum with T-handle. _____

ccc. Minimum 3/8" stainless steel coil chains to be long enough to hold tailgate in horizontal position if necessary. _____

ddd. Tailgate to be level with dump body floor when in horizontal position. _____

eee. Heavy nylon mesh sleeves to be installed over spreader chains to protect body finish. _____

fff. Lower latch hooks to be flame cut from 3/4" 201 SS plate to secure against two (2) 3/8" 201 SS corner post mounted latch plates, one (1) set each side of the ¾" latch hook per side. _____

j. There is to be a full width 1" 304 stainless steel diameter (min.) tailgate release rod at rear of body. _____

k. Air tailgate release with spring parking brake chamber mounted center rear of body with dash control. _____

l. All 201 stainless steel hardware. _____

m. One (1) SS d-ring lift hook mounted on top of tailgate. _____

n. Three (3) coal doors, 13" wide, recessed flush with interior tailgate sheet. _____

o. Two (2) safety turnbuckle latches, one per side, for safety of holding tailgate shut. No exceptions. _____

p. Two (2) tailgate latch bar safety mechanisms, one per side bottom, per North Hempstead's approved drawing. No exceptions. _____

22. Continuous welded body shell (except long sills to floor sheet that are skip welded), cab protector & tailgate. _____
23. Stationary 2-1/2" x 20" long grip strut stainless steel steps (one step) mounted to the front drivers side as far forward as possible on the horizontal side brace. _____
24. Full length 2-1/2" grip strut stainless steel walk rail to be mounted full length on bottom rub rails. _____
25. Three (3) step stainless steel pull out ladder mounted under floor and under 20" grip strut step on horizontal brace. _____
26. One (1) Pull Tarp brand tarp system with asphalt rated tarp. Must be mounted on top of cabshield as far rearward and recessed into side vertical supports of cabshield. 7GA Stainless steel cover mounted over the exist Pull Tarp housing. _____
27. Two (2) one-piece stainless steel rod grab handles must be mounted on each side of the 20" step. _____
28. Front corner of bottom rub rail must be capped with 7GA stainless steel and be on an approximate 60 degree angle. _____
29. Six (6) stainless steel J-Hooks mounted upside down. Three (3) per side and evenly spaced and welded on. _____
30. One (1) 12" bolt on stainless steel rear apron. _____
31. Two (2) stainless steel lift loops mounted to top dirt sheet rail, evenly spaced. _____
32. Stationary two (2) ¾" stainless steel rebar mounted on 45 degree from front head sheet to sides at spacing as the outsides steps. _____
33. Body must have any welded burn marks removed prior to delivery. _____

HOIST AND REAR HINGE ASSEMBLY

H. Heavy duty front telescopic type hoist suitable for use with a Dump body on a road and highway maintenance truck used for snow and ice control, externally mounted of headsheet. No exceptions. _____

7. NTEA rated Class 50 with 17.5 tons capacity minimum. No exceptions. _____
2. Forty three thousand pound (43,000 LB.) capacity minimum @ 2000 PSI. _____
3. Double-acting (power up and down full length of stroke). _____
4. Largest diameter stage must be at bottom. Inverted cylinder not acceptable. _____
5. 4.5" inside diameter cylinder base tube (minimum). _____
6. 100" stroke (minimum). _____
7. All cylinder stages to be nitrated for corrosion resistance and wear resistance. _____
8. Internal bore seal design so no packing adjustment or bleeding is required. _____
9. Hoist cylinder to be mounted inside pivoting, trunnion mounted

cylinder cover tube. _____

10. Subframe for hoist and body. _____

29. Mounting height not to exceed 9" from the top of chassis frame to dump body floor. No exceptions. _____

30. 5" x 6" x ½" x 38" long formed angle with 1-1/2" 303 stainless steel pins with greaseable pins. Each pin is secured by nut/bolt. _____

31. Each pin mounts into two (2) 1/2" plates mounted on two sides to the 6' x 8" x ½" formed angle. Outside plate for each set must be 1.125" from end angle with pin centers at 32". _____

32. Each rear hinge block must be a 2-1/2" wide and 3.25" tall plate steel with 5.88" length mounting surface of body to top of block. Each block must accept a 1-1/2" dumping stainless steel pivot pin and have a grease zerk. _____

33. Overhang from the center of the rear pivot is to be 12" to the end of the floor plate. _____

34. Externally mounted hoist design must show, upon request, at least fifteen (15) current systems of this same design in the NJ/NY market. No exceptions. _____

SNOW PLOW HITCH

G. Heavy front frame side plate low profile snow plow hitch. _____

7. To be engineered, designed and built by a recognized snow plow manufacturer. Hitch to be a low profile configuration. The design will limit the amount of front overhang to a minimum. _____

8. A truck frame extension is not required for the mounting of hitch but recommended. _____

3. Heavy front frame hitch of modular design shall allow the cab hood to tilt completely forward for engine access. _____

61. Side plates will transmit plowing forces directly to the truck frame side rails and will custom fit the specified year, make and model of the truck. _____

62. The side plates are custom fitted 5/8" steel plate of proper length and construction for heavy duty service and shall provide adequate clearance for steering mechanisms and spring suspensions. _____

63. Side plate mounting angles or plates shall mount flush to the truck frame for maximum strength. Pipe spacers are not acceptable. _____

64. The front section of the hitch assembly: lift frame, center section and the lower push plate shall all be welded to the two (2) vertical tubular supports. The two (2) vertical supports are to be constructed of 6" x 3" x 1/4" thick wall. The length of each support shall be 38-1/4". No exceptions. _____

65. The front two (2) vertical supports are to be spaced evenly 26-3/4" apart. No exceptions. Overall mounting width is 32-3/4". _____

66. The front two (2) vertical supports are to be mounted to vertical structural angles of 5" x 4" x ½", full height of tubes. _____

67. Each vertical tube must have three (3) 3" wide gussets tying in the vertical tube to the structural angle. Each gusset is 3" x 4" x 5" x 7ga. _____

68. The vertical tubes and structural angles are mounted to a

horizontal 6” x 4” x ½” x 39” wide structural angle mounted at the top of the two (2) vertical structural angles. _____

69. The center cylinder tube to be built with a 6" x 3" x 1/4" tubes x 26-5/8” long and mounted centered to the vertical tubes. Two (2) 1/2" x 3" x 4" lift cylinder ears to be welded to this tube along with a 1/2" x 3" flat reinforcement bar. _____

70. The telescopic lift arm shall be manufactured of 4” x 4” x 3/8” square outer tubing and 3” x 3” x 3/8” square inner tubing. _____

71. The lift arm and lift frame shall be designed to accept 2.5”, 3” or 4”x10” lift cylinder . Cylinder pins are to be 1” cold rolled steel. Inner lift arm must accept clevis and pin. _____

72. Truck and plow portion hitch must be Torloc/Arrowhead style and work interchangeably with The Town of North Hempstead’s fleet. _____

73. Mounted under the telescopic outer tubing is to be a white poly block 1-1/2” x 3” and arced to hold a 4” x 10” lift cylinder. _____

74. The quick hitch shall provide self-alignment with the mating plow section while being engaged. _____

75. Re-mount OEM bumper. Bumper shall be split to accommodate plow hitch and must be bolted on and utilize stabilizer arm per section. _____

76. The plow hoist cylinder shall be of premium grade and shall be a double acting 4" bore x 10" stroke. _____

77. The piston rod is to be of steel construction treated with a nitro steel process. _____

78. The ram sleeve or outer barrel will be such that the rod packing may be maintained or replaced as required. A positive stop must be incorporated that will help prevent mechanical pressure being applied to the packing when the rod is fully extended. _____

79. The cylinder shall be capable of 14,137 pounds of thrust @ 2,000 PSI and 16,000 pounds of bursting pressure @ 2,000 PSI. Minimum weight of the cylinder shall be 28 pounds. Ports to be 3/8" _____

SNOW PLOW

A. MOLDBOARD:

1. The moldboard shall be heavy duty torsion trip edge design type Snowplow with level lift without additional mechanical mechanism._____

2. Moldboard will be an integral shield with trip edge. _____

cc. Length to be 10’. _____

dd. Height to be 40” (not including rubber deflector) in dead center And 54” each end. No exceptions. _____

ee. 36” side plastic markers mounted to plow. _____

ff. Two (2) lift hooks to be mounted on moldboard top. _____

17. The moldboard shall be reinforced at the top with a 3-1/2" x 2-1/2" x 3/8" with holes to allow moisture to escape with poly 36” markers. _____

18. 10 GA. 201 Stainless Steel rolled moldboard with eight (8) ½” x 3-1/2” ribs for extra strength and rigidity. Plow must have all welded burn marks removed prior to delivery. No exceptions. _____

5. All welds must be continuous (skip welds not acceptable). _____

6. Bottom angle must be 4”x 4” x ¾” with an additional 4” x 3” x ½” trip edge angle. _____

16. Top moldboard angle must be constructed of 3-1/2” x 2-1/2” x 3/8” with holes to allow moisture to escape. _____

17. Two horizontal structural angle braces ¼' x 3" x 3" added for rigidity. _____
18. Attack angle of moldboard shall have adjustments of 5, 10, and 20 degree. _____

B. CUTTING EDGE:

1. The cutting edge must be Kuper Tuca SX Wave Carbide cutting edge. No exceptions. Must be AASHO standard punched, flush with moldboard and be easily replaceable. _____
5. Cutting edge face must have wrap around curb guards mounted on both ends with same bolts/nuts as cutting edge. No Exceptions. _____

C. TRIPPING MECHANISM:

1. Adjustable torsional one piece cutting edge trip. From bottom of new 8" cutting edge to top trip edge is no less than 14.75". _____
8. Springs must have a zero insertion force for increased safety while servicing. No Exceptions. _____
9. Bottom moldboard angle must be 4" x 3" x ½". Fully welded to bottom edge of moldboard. _____
4. 4" x 4" x ¾" backer angle with (6) ¾" trip ears welded to angle. _____
5. Full length trip edge pivot tube, must be constructed of schedule 80, 1.50" OD black pipe. End of each plow cutting edge is to include a 4.5"OD x 1.5" thick curb guard. _____
6. Cutting edge tripping must be controlled by (5) torsion springs. Springs constructed of a minimum of .75 square bar with 14 active coils. Minimum spring dimensions shall be 3.75OD x 2.25ID x 11.75. Springs must be produced to meet Rockwell C hardness. Hardness shall be produced from oil quenching with a minimum temperature of 1550°F. Spring preload shall be a minimum of 35°. Springs shall have a trip load capability of 8228 INCH-LBS. Typical spring material composition shall be Carbon=0.40, Manganese=.70, Phosphorous=.020, sulfur=.020, silicon=.25, chromium=.80, Nickel=1.75, Molybdenum=.25. _____
7. Three (3) position adjustment on each individual torsion spring on the trip assembly to allow adjustment in various settings for road conditions. No exceptions. _____
8. Face of cutting edge trip section must be 201 Stainless Steel. No exceptions. _____

D. PUSH TUBE ASSEMBLY:

1. Push tube to be constructed of 4" x 4" x .38 square tube, 107.5" in length. Each end of the push tube shall be capped with a 10ga 3.25" x 3.25" plate. _____
2. Welded to the moldboard pushtube shall be (8) 5/8" x 3.5" x 7" pivot ears. Each ear shall be further reinforced with a 2" x 2" x .38 gusset. Pivot ears shall pin to moldboard assembly with 1-1/4" thick pins. _____
33. (2) Moldboard stabilizer strut mounting ears each constructed of (2) 5/8" plate approximately 10" x 13". _____
34. Center pushframe pivot constructed of (2) .38 x 36.5" x 8.5" plates. There shall be a 3.5" hole in each plate for a 5-1/2" x 3-1/2" OD x 2.52" ID bushing. Bushing shall be drilled and tapped for a 1/8"

grease zerk. _____

35. Center pushframe pivot assembly shall also have (2) 3.75" stops for the a-frame assembly. _____

36. Push tube cylinder lugs, located on left and righ hand sides shall each be constructed of (2) 5/8" x 8-1/4" x 3-5/8" plates complete with a 1-1/4" pin hole. _____

37. Cylinder lugs shall be further reinforced with 3/8" x 2-3/4" x 3-1/4" gusset. _____

38. There shall be (2) chain lift lugs welded to the top of the push tube constructed of ½" x 3" x 4" plates. _____

39. Moldboard reversing shall be accomplished by (2) 3" rod x 3.5" bore x 16" stroke single acting cylinders. _____

40. Cylinder rods shall be nitride for increased corrosion resistance. Chromed rods shall be unacceptable. _____

41. Cylinder working pressure shall be 3000 PSI. _____

42. Cylinder shall be plumbed to an 1800 PSI cushioning valve to prevent damage when hitting obstructions. _____

E. A-FRAME:

1. Pivot capture plates shall consist of (2) plates constructed of 1" x 11" x 12-7/8" plates. These plates will be flame cute and have a 2.53" hole to pin the a-frame assembly the push-tube assembly. The top pivot capture plate shall be drilled and threaded for a ¾" capture bolt to prevent pin rotation. _____

5. Top main A-frame plate shall be constructed of 3/8" x 28" x 25-5/8" flame cut plate. The narrowest portion of the top plate shall remain a minimum of 12". Top plate shall also be flame cut to accept the reversing cylinder pins. Pin hole shall be 1.281" in diameter. Each pin holes shall be further reinforced with a 1" thick plate which is flame cut to accept reversing cylinder pin. _____

18. Bottom main a-frame plate shall be constructed of 3/8" x 28" x 25-5/8" flame cut plate. The narrowest portion of the top plate shall remain a minimum of 12". Bottom plate shall also be flame cut to accept the reversing cylinder pins. Pin hole shall be 1.281" in diameter. There shall be a 6" access hole for attaching the hitch swivel bolt. _____

19. The A-frame vertical side plates which tie the top and bottom plates into a boxed formation shall be constructed of ½" x 4" x 32" plate and formed to follow the contour the top and bottom plates. _____

20. The rear A-frame push plate shall be constructed of 1" x 6-3/4" x 33-5/8" plate. This plate shall be flame cut with a 1-9/16" hole to accept the plow hitch attachment bolt. _____

21. On the top side of the A-frame plate shall be a mounting plate to which attached is the reversing cylinder cushion valve. _____

22. Plow portion hitch must be Torlo/Arrowhead and fit existing Town of North Hempstead truck portion hitches. _____

F. PAINT:

10. All metal surfaces are to be phosphate washed to remove slag, splatter, oxide and oil residue. _____

11. Moldboard frame work must be powder-coated Highway Orange. _____

12. Push frame, "A" frame and other miscellaneous components

are powder-coated black for increase paint durability. _____

CENTRAL HYDRAULIC SYSTEM

A. TYPE:

1. System to be of load sensing pressure-compensated type, pumping oil only when needed and in exact volume and pressure required --- no more, no less. _____
2. Pump to automatically revert to standby mode when no oil flow is required (No on/off switch). _____
6. Must be able to operate all equipment on truck simultaneously if necessary. No one function to interfere with any other. _____
4. System controls are to be electronic over hydraulic. _____
5. Operating speed of all functions must-be variable and adjustable. _____
6. One complete system to operate all functions. _____

B. HYDRAULIC PUMP AND FRONT CRANK SHAFT:

1. The hydraulic piston pump shall be a pressure and flow compensated load-sensing type. The pump shall be an Eaton 5.98 CID series 620 have a minimum 2" inch suction line and ½" control drain line plumbed directly back to the reservoir. The pumps compensator shall have rear facing adjustments. Pump shall be a front crank shaft mounted drive shaft and properly mounting. _____

C. HYDRAULIC VALVE:

1. Control valve shall be U.S. manufactured. Valve shall be a load sensing type with o-ring ports. Mid-inlet section porting will be #16 inlet, #20 outlet, #16 hoist section, #4 load sense port, and #10 or #12 for all other sections. The hoist section shall be stacked to one side of the mid-inlet and all other sections will be stacked on the other side. All ports shall be level with each other so as to lay flat on its base. There will be a main relief in the mid-inlet section that will be set at 3500 PSI to protect the system from being over pressurized. _____
2. Valve section to be arranged as follows:
3. Hoist, 4-way for a double acting cylinder with mid-inlet transition section. _____
4. Pressure reducing section., if needed. _____
5. Plow Lift, 4-way for a double acting cylinder with flow control. _____
6. Plow Angle, 4-way for a double acting cylinder with flow control. _____
7. Spin-A-Veyer section, consisting of two pressure compensated cartridges that are a single piece design with hardened cartridge bores and spools. These shall be operated independently via a 12 VDC pulse width modulated signal. Each valve shall have heavy duty 7/16-20 UNF screw style manual overrides that are adjustable from no flow to full flow. These valves shall be mounted in a housing that is made of aluminum with gray anodizing for corrosion resistance and durability. The auger/conveyor shall be a 15 GPM spool and the spinner shall be a 7 GPM spool. No

exceptions. _____

8. Liquid Pre-Wet/Anti-Ice Valve 4-way. _____
9. Valve shall be prior approved equal. _____
13. A plow float/balance valve must be provided and controlled with a dash mounted rocker switch for on/off. The plow float/balance can be turned off as needed. When in use, the valve will allow the valve to use a pressure reducing/relieving system to control the float/balance lifting pressure on the plow's lift arm assembly. Two solenoid valves wired together turn the valve off and on. One solenoid valve opens the inlet of the pressure reducing valve to the pump. The other solenoid valve opens the outlet of the pressure reducing/relieving valve to the lift port. Oil flowing in and out of the lift port is restricted with an orifice. _____

D. OPERATOR CONTROLS FOR DUMP BOY HOIST and SNOW PLOW:

1. The valve controls shall be a feathering remote electric control with each joystick. Dump to have one (1) Joystick and Plow to have another Joystick. Force America Joysticks or prior approved equal. Layout to be determined at the time of build. _____

E. RESERVOIR/VALVE COMPARTMENT:

19. One (1) 30 gallon all-welded 304 stainless steel hydraulic oil reservoir mounted on the hoist's cradle on passenger side. Must have site gauge with rubber gasket seal. No exceptions. _____
20. The hydraulic reservoir will be constructed of 10-gauge stainless steel and be internally baffled. _____
21. One (1) 304 stainless steel valve enclosure mounted on the hoist's cradle on the driver's side. Must have a Stainless steel cover with one bolt-on securing mechanism. No exceptions. _____
22. Shall be mounted in a manner as to not transmit any truck torsional loads thru the tank. _____
23. The enclosure will use a gasket-less passive technology. (No rubber seals, gaskets, or weather stripping.) _____
24. The reservoir supplier will provide all valve fittings (JIC connections) and plumb the return line from the valve to the filter. _____
7. The cover will protect from both road and pressure washer spray. _____
8. A 2" full flow brass ball valve shall be plumbed at the suction port of the tank. _____
9. A low oil/high temp sending unit shall be mounted in the reservoir. _____
10. Hydraulic oil filter shall be mounted in the reservoir. Hydraulic filter shall be a 10-micron absolute and rated for no less than 60 GPM. _____

F. Hydraulic Lines and Fittings:

1. Stainless steel tubing to be used under body and cab in lieu of hosing. Only hosing to be used is ends of stainless steel tubing to reach each function's quick couplers or connection. Tubing shall be seamless #304 stainless steel construction with a minimum wall thickness of 0.065". The ends must be flared to accommodate a 37 degree JIC fitting. The use of compression fittings is not Acceptable. Spacing of each tube to allow for material to fall between each tube. _____
47. All stainless tubing must be mounted in polyurethane poly

green tube clamps. _____

48. All hoses to be wire braid reinforced with swaged on high pressure JIC 37 degree tapered seat end fittings. _____
49. All fittings & adapters to be forged steel (No tapered pipe fittings except on suction hose). _____
50. Hoses to front with 1/2" 100% stainless steel (no exceptions) quick couplers for power reversing plow. _____
51. Hoses to rear with 1/2" 100% stainless steel quick couplers for spreader (no exceptions). _____
52. Spreader stainless steel hose couplers to be mounted on either frame rail or pintle plate under dump body at rear. _____
53. Polymer dust plugs or caps on all couplers with retainer straps. _____
54. All pressure hoses except for plow & spinner to be 3/4" I.D. SAE 100R2. _____
55. Plow, spreader spinner, and prewet system pressure hoses to be 1/2" I.D.SAE 100R2. _____
56. Main pressure hose from pump to control valve shall be 1" Didiameter, 4-wire braid. No exception. _____
57. All return hoses to be SAE 100R2. _____
58. Suction hose to be minimum 2" I.D. SAE 100R4 spiral wire reinforced with long radius ells. _____
59. All hoses to be routed away from chassis exhaust whenever possible to protect against heat deterioration. _____
60. All hydraulic quick disconnect couplings must be stainless steel Aero-Quip FD45 series or prior approval; bulkhead mounted, and include attached male and female dust covers. Couplings to be configured so as to eliminate confusion when coupling. No exceptions. _____
61. All stainless steel quick disconnects for spreaders must be mounted under body at passenger rear most corner and mounted to stainless steel encloused housing that is welded to bottom rub rail wrap around portion. No exceptions. _____

G. Spreader Controller:

4. Force America 5100ex open loop controller. No exceptions. _____

SNOW PLOW LIGHTS:

A. Truck-Lite brand LED model 80880 plow lights. _____

13. Mounted with custom fabricated 100% stainless steel brackets on truck fenders. Brackets must be painted black. _____
14. Plow lights to be wired into the truck's existing headlight circuit using the factory installed switch. _____
15. Plow lights must function in high and low beam modes using existing truck's dimmer switch. _____
16. Plow lights and truck chassis headlights must never operate at the same time. _____

LIGHTING & ELECTRICAL

ALL lighting and layout must meet all Fedaral, State, and DOT regulations. No exceptions.

A. LED lighting system. _____

1. All marker, work, S/T/T, backup and strobe lighting to be LED. _____

47. Whelen brand DOT3 System to be Super-LED DOT Light system model 00007DS0 or equal and a current production model of Whelen and made in the USA. _____

48. The two (2) Whelen 704-D three lamp light boxes to be continuously welded to outside of each rear corner post. Rear Super LED Head Assemblies to be 700 Linear-Super-LED two (2) amber heads, two (LED) brake/tail/turn light modules, and two (2)LED back-ups, one set each side. Each head shall be capable of emitting a full 180 degree of light in the vertical plane. The light heads shall be recessed into a heavy duty 7GA stainless steel housing. _____

49. The two rear 700 series heads shall utilize a DOT LED flasher which is mounted and encapusulated in a junction box inside of cab. The DOT LED flasher shall allow the two rear 700's to be controlled independently from the front head assembly. One (1) stainless steel rod mounted vertically in front of each head to protrude out far enough to protect lense. _____

50. The 700 assembly, brake light and back up, including the steel housing, shall be approximately 23-1/2 inches high , 4-7/8 inches deep and 3-1/2 inches wide. _____

51. The modules, as well as the lens, shall be easily replacable. A water proof connector for each module shall be used to connect to the cable harness and shall be located inside the steel housing for weather resistence as well as ease of replacement. _____

52. The 700 lenses shall be made of polycarbonate, amber in color, and have a smooth outer surface for self cleaning. _____

53. There shall be two LED brake/tail/turn modules, one located in the middle positions of each steel housing. Each module must contain a minimum of 72 red LEDs. The module must be in "signal alert" flash pattern, which flickers three times withing 150 milliseconds before becoming steady "on". These modules must meet or exceed SAE requirements. _____

54. There shall be two LED back ups, one located in the bottom position of each steel housing. Each module must contain a minimum of 48 white LEDs for maximum light output. These modules shall be supplied with a clear polycarbonate lens. _____

55. The rear mounted head assemblies shall use stainless steel screws that screw directly into a nylon mounting bracket to eliminate dissimiliar metal corrosion. Units that screw into steel bracket are unacceptable. _____

56. Cable harnesses being supplied from the rear housings must be heavy-duty TPR type cable. Flexible to minus 40 degrees Fahrenheit; abrasion, corrosion and oil/grease resistance. Each conductor shall be a minimum of 14GA, pure copper stranded, and fully tin coated. No less than 30feet of cable shall be provided for each head assembly. All necessary connections shall be provided, including a strain-relief system. _____

57. Cabshield lighting shall be five (5) surface mounted Whelen brand

700 series strobes. Must be synchronized with two (2) rear Whelen brand 700 series on outside of rear corner posts. _____

58. Cabshield Whelen 700 series strobes to be on one (1) chassis dash rocker switch for on/off and labeled. _____

59. Both rear facing and rear side corner mounted Whelen 700 series strobes to be on one (1) chassis dash rocker switch for on/off and labeled. _____

60. Two (2) OEM S/T/T w/ Backup light mounted behind rear apron of dump body. Hole to be cut into apron to allow visibility. Hole to be covered with black trim lock. _____

61. Two (2) OEM S/T/T w/ Backup light mounted on each side of pintle plate. Location and mounting to be determined at the time of installation. _____

B. Electronic Back-Up Alarm provided by chassis dealer and relocated if needed. _____

C. Body Up Indicator Light. _____

1. Sealed weatherproof proximity switch on hoist-frame. _____
2. Whelen model ION-R body up light mounted in cab. _____

D. All non- strobe wiring to be 7 wire trailer cable. Separate cable routed from in-cab to all non-strobe lights with sealed junction box at rear so all wiring connections are made either inside cab and in a sealed junction box. _____

E. One (1) solid stainless steel rod must be mounted under body and all electrical body lighting must be neatly run. Rod will be one piece and full length. No exceptions. _____

F. All wire connections shall be made in the chassis cab or by means of a waterproof junction box. In cab connections shall be made using vinyl coated crimp connectors covered in weather resistant heat shrink tuning. There shall be no wire splices outside the cab. All wiring to junction box shall be resistant to abrasion, ozone, sunlight, chemicals and oil. The outer jacket shall be chlorinated polyethylene and be approved for submersion in water. The outer jacket shall be label with the cable identification wire gauge and number of conductors. Must be MSHA approved. All body lighting shall be supplied by a single sealed harness from the junction box and making the connection at the light by means of weather tight sealed connector. All strobe lights shall be included in the same harness and be connected by means of a Deutsch connector, no exceptions. _____

MISCELLANEOUS

A. 90 degree elbow extension on top of chassis vertical exhaust stack to clear cab protector and still route exhaust upward to be provided by chassis supplier and installed by body company. _____

H. Rear tire poly Fleet Maintenance fenders with stainless steel mounting tubes. _____

C. Upon installation of all components, truck must be delivered to the truck dealer for final inspection and prep. _____

D. Rear pintle plate shall have a Holland model T90 pintle properly Installed and secured. _____

1. Mounted on reinforced 3/4" thick mounting plate at rear of chassis frame at designated clearance height to ground to be 29". Sides and bottom must be reinforced with ¾" x 2" flat stock

mounted behind the pintle plate. _____

11. Must include Safety two (2) 5/8" D-Rings, one (1) 7-wire flat plug and one (1) 6-wire plug. _____

12. License plate light and bracket mounted to top corner on passenger side. _____

E. DOT approved 2" conspicuity tape on body bottom rub rails, rear corner posts, tailgate perimeter. All DOT necessary reflective decals installed as well. _____

F. Pull Tarp brand asphalt tarping system to be mounted in cabshield rear. Must recess ahead of front head sheet and cut into side plates of cab-shield for lowest possible mounting. _____

J. Two (2) Toolboxes; Heavy duty aluminum 48x18'x18', mounted on frame rails. One (1) per side. _____

INSTALLATION AND WARRANTY

P. Minimum twenty-four (24) months, 100% parts and labor on components and installation. No deductible. _____

Q. For warranty considerations and future availability of parts and service, the body company must be an authorized primary distributor for all major components they propose to furnish. Must furnish written proof from such said vendor upon request. _____

R. All equipment must be installed by a single body company, by their employees and at their regular location. _____

S. Installation of components is not to be subcontracted by body company to another installer. _____

T. No welding whatsoever is to be done on chassis frame between front of most forward spring hanger and rear of rearmost spring hanger. _____

F. No drilling whatsoever is to be done in frame rail flanges. _____

M. Body company to furnish operator's parts and service manuals for all components manufacturer's i.e., dump body, hoist, snow plow, salt spreader, central hydraulic system and strobe lights. _____

N. Completed vehicle must be certified by the body company as meeting all federal motor vehicle safety standard in effect at time of chassis production. _____

4. Approved NHTSA/FMVSS certification label must be furnished and located inside cab on driver's side. _____

I. Completed unit to comply with current OSHA regulations. _____

J. Body company must be registered with National Highway Traffic Safety Administration as a final stage manufacturer of motor vehicles as required by Federal Law. _____

K. Body company to conduct operator training session on body and equipment at the The Town garage after delivery of completed truck. _____

L. Delivered of completed vehicle must be within 60 to 75 days after delivery of cab chassis to up-fitter. $75 a day penalty might incur with later delivery. _____

M. Body company must have ASE certified installer/s and show documentation at time of bid. No exceptions. _____

N. Body company to be registered and in good standing with National Truck Equipment Association (NTEA), be a MVP member, and be the authorized distributor for all equipment bid. _____

O. Body company must participate and provide documentation at time of bid

for E-Verify®. This employment verification verification is a United States of America federally accredited verification system to insure all employees are legal residents. List Company ID#_____. No exceptions. _____

P. Dump Body, Snow Plow, and Snow Plow Hitch must be engineered and manufactured in the United States of America and all from the same manufacturer. No exceptions. _____

Q. Hydraulic schematic must be provided and laminated and placed inside the combination valve enclosure/combo tank lid. _____

R. A required pre-build meeting will occur after award of bid and prior to the start of installation. No exceptions. _____

S. The Town will inspect all equipment (plow, hitch, dump body and tailgate spreader) prior to the start of installation. No exceptions. _____

Package "C" for Chassis, Combination Body, Plow, Hydraulics, Spreader Control and Misc Items for V-Box Setup

"BIDDING REQUIREMENTS SECTION"

SECTION	SPECIFICATION DETAIL	COMPLY	
		Comply	Exception
PACKAGE C: 6 WHEEL TRUCK, DUMP BODY, PLOW, HITCH, CENTRAL HYDARAULICS FOR HI-WAY SPREADER			
-			
Description: Chassis Specifications For A New 2016 GU712 Chassis With SCR Technology To Meet 2014 Emissions Of 0.2 Grams Of Nox Or Equal			
Chassis/ Frame & Wheelbase:	Chassis: 2016 Mack GU712 Chassis Or Equal		
	Frame Rails, 11.811" x 3.54" x 0.44" High Strength 120,000 PSI Steel - 20" Integral Front Frame Extension For Snow Plow Mount		
	Single Chassis Rail		
	Section Modulus 23.5 cu In/Rbm 2,820,000 In Lbs. Per Rail		
	Wheelbase - 180"WB, Center of Axle - 92"CA,		
	Platform - 154"LP, After Frame - 62"AF		
MAXIMUM GVW & AXLE RATINGS:	Gross Vehicle Weight Rating Of 48,000lbs.		
	Front Axle Capacity - 18,000 Lbs.		
	Rear Single Drive Axle Capacity - 30,000lbs		
	Front Steer Axle-Gross Axle Weight Rating - 18,000lbs		
	Rear Drive Axle –Gross Axle Weight Rating - 30,000lbs		
ENGINE:	MP7-405M 405 Hp @ 1500-1900 Rpm. Operating range 1100-2100 1480 Lb. Ft. Max. Torque @ 1050-1350 Rpm High Torque Rise 60%		

	11.9 Liter, 659 Cu. In Piston Displacement.		
	EPA Carb Emission Certified For 2014 Utilizing Selective Catalyst Reduction(Scr).Engines Utilizing Government Credits Or Penalties Are Not Acceptable		
ENGINE EQUIPMENT:	Air Compressor, Meritor/Wabco 318 18.7 Cfm		
	Engine Mounted Oil Check And Fill		
	Mack Powerleash Engine Brake		
	Alternator, Delco 12V 130A (24SI) Brush-Type		
	(3) 12volt Mack Grp31 Batteries With 3000 CCA Threaded Post		
	Air Cleaner, 11" x 30" Under Hood Single Element Dry Type		
	12 Volt Heavy Duty Starter-Delco 39mt-Mxt		
	Electronic Starter Interlock System		
	Coolant Protection To Below –34 Degrees Fahrenheit With Coolant Conditioner Filter		
ENGINE EQUIPMENT:	Engine Block Heater, Gomack (Phillips) – 1500 Watt 120 Volt With Intake Grid Heater mounted under driver side door.		
	Starting Aid Engine Electric Preheater		
	Engine Hoses And Tubing, Silicone		
	Diesel Particulate Filter /Scr System Horizontal-Under Right Side Of Cab-Clear Back Of Cab Option		
	Exhaust After –Treatment System Diesel Particulate Filter Ceramic Catalyzed, And Scr Technology To Meet 0.2 Grams Of Nox		
	Exhaust, Side Of Cab Single (R/S) Vertical Straight Exhaust Stack		
	Poly-V Fan Belt With Automatic Tensioner		
	Fan Drive, Behr Fan And Electronic Modulating Fan Drive		
	Flywheel ,Light Weight Aluminum		
	Fuel-Water Separator: Davco 382, (Fluid Heater) Fuel Heater/Water Separator w/vendor Prim & Mack Sec fuel Filter		
	Tether device Furnish Cap Retainer for Oil Fill & Radiator		
	Hand Primer Pump		
	Hoses, Radiator/Heater Mack Brand EPDM Radiator & Heater Hoses		
	Injection Pump- Electronic Engine Control		
	Radiator, Aluminum Core		
TRANSMISSION:	Allison 4500-RDS -6 (4.70/0.67) Rugged Duty Series Gen 5 Includes transmission Cooler, External Oil Cooler, Internal Filter, and Oil Level Sensor		
	Driveline-Main, Meritor 18 MXL "Xtended Lube"		
	Transmission Bell Housing, Aluminum		
	Synthetic Transmission Fluid		
CAB EQUIPMENT:	Air Conditioner/Heater, (Bergstrom) Integral w/heater combination		
	Air Restriction Monitor, Air Cleaner Intake Mtd		
	Instrument Cluster Display, Co-Pilot Driver Display(4.5"Diagonal Graphic Lcd Display W/4-Button Stalk Control)(Includes Guardog Routine Maintenance Monitoring)		

	Conventional Cab (Welded Steel Galvanized Shell) with Air Ride Suspension(Aluminum Cabs Not Acceptable)		
	Fiberglass Tilt Hood With Safety Lock And Hood Hatch For Maintenance Checks		
	Cigar Lighter On Instrument Panel		
	Overhead Console with 2 Storage Compartments and Power Leads		
	Dome Light, (4) W/Self-Contained Switch		
	Diagonal Handle On Driver Side Door Panel		
	AM/FM Premium Stero, CD-Player, MP3, Weatherband, Handsfree Interface, Bluetooth		
	Driver and Passenger side Power door locks and Windows		
	Gauge, Air Pressure		
	Gauge, Voltmeter		
	Gauge Cluster, Exhaust Pyrometer, Engine Oil, And Transmission Oil Temperature Gauges		
CAB EQUIPMENT:	Gauge, Engine Coolant Temperature		
	Gauge, Engine Oil Pressure		
	Gauge, Fuel Level		
	Gauges, English Display		
	Gauge, Speedometer w/Trip Odometer (Electronic 1% Accuracy)		
	Engine Tachometer Electronic With Hourmeter		
	Glass-Cab Window, Safety Tinted Windshield, Side And Rear Windows		
	Grab Handles, Aluminum, Rh & Lh Behind Door		
	Grille, Bright Finish With Bug Screen		
	Headlamp Bezel- Molded Plastic		
	High Beam Indicator Light		
	Body Builder Access Connector Inside Of Cab For Body Controls		
	Horn-Air, (2) Mounted On Cab Roof		
	Horn- Electric, Single Tone		
	Identification/Clearance Lights, (5) TruckLite LED Chrome Bullet Type Lamp		
	Instrument Panel, Gray With Black Gage Bezel		
	Interior Trim Level, (Grey) Features: Padded Vinyl Headliner		
	Rear Panel With Storage Pouch, Polyurethane Rubber Padded floor Mat		
	2 Cup Holders Mounted At Bottom Of Dash (Center)		
	Chassis Keyed Alike- 4 Keys		
	Heated Mirrors-Exterior, West Coast, Rh & Lh Bright Finish		
	Mirrors – Convex Type, Bright Finish, Lh & Rh 8.0” Dia; Mounted Below Lower Arm Of West Coast Mirror		
	Proximity Mirror Rect Convex Above Rh Door Window		
	Right Side Door Peep Window		
	Exterior Sun Visor Fiberglass (Cab Color)		
	Rear Window (Fixed Type)		
	Seat - Driver, Bostrom Talladega 915 (Mid-Back) Air Suspension		

	Seat – Rider Bostrom Mid Back Stationary with Integral Storage Compartment		
	Seat Covering, All Vinyl		
	Seat Belts, Lap And Shoulder w/Cab Mounted Shoulder Belt		
	Sun visor –Interior, Both Sides (Padded Vinyl)		
	Starter Switch, Key Type		
	Steering Wheel, 18" Two Spoke Urethane Grip		
	Windshield Washers, Electric, Wiper Mounted W/Reservoir Back Of Cab		
CAB EQUIPMENT:	Windshield Wipers, Sprague 2 Speed Electric Motor w/Intermittent feature		
	Dash Control/Power Supply/Local Installation Plow Lamps W/Lead Furnish At Grille With 2w/3w Weather Pack		
FRAME EQUIPMENT/ FUEL TANKS:	Bumper – Front, Extended Swept Back -Steel Channel		
	Crossmembers, Steel Huck Bolted HD Back-To-Back Channel		
	Flaps – Wheel (Front) Black Poly Armor		
	Frame rail End Squared		
	Towing Device – Front, (2) Hooks		
	Fuel Tank – Lh, 72 Gallon Aluminum with 8.7 Gallon Def Fluid Tank-(Clear Back Of Cab Package)		
FRONT AXLE/ EQUIPMENT/ TIRES:	Front Axle, FXL18 - 18,000 Lbs. Capacity-Sealed Kingpins - Maintenance Free		
	Tire Brand/Type – Front, Bridgestone – Tubeless Radial, 315/80R22.5 20 Ply. M860A (All Position)		
	Wheel – Front, Steel Disc 10 Hole Hub Piloted 22.5" x 9.0"		
	Brakes – Front, Meritor "S" Cam Type 16.5" X 6" Q+		
	Brake Drums – Front, Cast Outboard Mounted		
	Dust Shields – Front Brake, Furnish		
	Oil Seals – Front Wheels, Chicago Rawhide (Scotseal)		
	Front Axle Shock Absorbers		
	Slack Adjusters – Front, Haldex – Automatic		
	Springs – Front, Mack Multileaf 18,000 Lb.		
	Spring Build-Up, RH side for Wing Plow Applications		
	Steering Box, Sheppard SD110 with Tilt and Telescopic Steering Column		
REAR AXLE/ EQUIPMENT/ TIRES / RATIOS:	Rear Axle, Meritor RS-30-185 - 30,000 Lbs. Capacity		
	Suspension - Rear, 30,000 Lbs. Multileaf w/Helpers		
	Single Reduction Rear End Gears		
	Locking Main Differential, Driver Controlled		
	Tire Brand/Type – Rear, Bridgestone – Tubeless Radial (4) 315/80R22.5 20 Ply (M860A Tread)		
	Spring Brake Chambers – Vender, Mgm Tr-T Tamper Resistant		
	Spring Brake Chambers, Type 36/36 Rear		
	Carrier/Ratio- Rear Axle, Malleable Housing, 5.63 Ratio		
	Wheels – Rear, Steel Disc 10 Hole Hub Piloted 22.5" x 8.25"		
	Brakes – Rear, Meritor-Cam - 16.5" x 7" P Brakes		
	Brake Drums – Rear, Cast Outboard Mounted		

	Dust Shields – Rear Brake, Furnish		
	Oil Seals, Premium Hub		
	Slack Adjusters – Rear, Haldex – Automatic		
	Spring Brake Chambers-Quantity (2) Chambers Double Diaphragm Type		
AIR/BRAKE:	Air Reservoirs, Steel - One Supply (Wet) Tank		
	Brake Control System-Two Valve Dual Brake System-Trailer Supply With Hand Control For Trailer-Trailer Air Connections To Rear Pintle Plate, Trailer Electrical Harness To Rear For trailer Lights		
	Air Dryer-Meritor/Wabco 1200 Heated With Coalescing Oil Filter		
	Anti-Lock Brake System, Bendix Without Traction Control		
	Automatic Drain Valve, Bendix (Heated) (1) On Supply (Wet) Tank		
ELECTRICAL EQUIPMENT:	Electrical Master Disconnect Switch Mounted in cab.		
	Back-Up Alarm, With Intermittent Feature (Ambient Noise Sensitive)		
	Steel Battery Box with molded plastic cover		
	Courtesy Light Switch (Headlamp And Clearance)		
	Daytime Running Lights,		
	Electric Circuit Protection Package, All Circuits Fuse/Breaker Protected		
	Headlights, Single Mounted Rectangular Halogen Lamps Flush Mtd.		
	Rear Lighting, (2) Combination Stop, Tail Directional and Back-Up Lights-Led Module		
	Signal Flasher Type, Transistorized Turn Signal, Federal Mogul #250		
PTO:	Engine Crankshaft Adapter,1350 Series Flange		
PAINT:	Cab Exterior, Customer Color-Base Coat/Clearcoat		
	Frame Color, Black		
ADDITIONAL EQUIPMENT:	Icc Safety Kit (Fire Extinguisher And Road Reflectors)		
	Manuals, Two Complete Set Of Parts And Service Manuals		
	Front Axle Spare Tire And Rim Mounted		
	Front bumper guides poles with bulldogs.		
WARRANTY:	Basic Vehicle – 12 Months On All Components		
	5 Year /150,000 Miles, Engine Warranty Is To Cover Exhaust After-Treatment System And To Include Turbo Charger, Injectors, And Water Pump.		
	Allison Transmission – 5 Years / Unlimited Miles		

COMBINATION BODY

D. This specification shall describe a 201 stainless steel rear rischarge, combination dump/spreader body or equal. Bidders must submit with their bid complete specifications on the unit they propose to furnish. _____

7. Inside length to be 10'. _____
8. Inside width to be 95.625” minimum. Outside width to be no more than 96”. _____
3. Sides (from body floor to top of top rail) to be 42" high. _____
4. Tailgate to be 54" high. _____
5. Head sheet to be 54" high. _____

6. Water level capacity to be 7.9 cubic yards sides and 10.6 cubic Yard ends. _____
7. Sides, head sheet and tailgate to be 7 gauge Type 201 stainless steel. _____
8. Floor to be 1/4" AR400 rated at approximately 190,000 PSI tensile strength steel. _____
9. 12"x 4-3/4" 7 ga. 201 Stainless steel rear corner posts are tied into a 12" rear apron formed from 7 ga. 201 Stainless Steel. Further reinforcement is provided by a 1/4" 201 Stainless Steel plate that helps prevent flexing in this critical area and strengthens the tailgate latch assembly. Shall have holes cut in the rear of posts to accept (2) oval shaped lights for LED strobe and LED S/T/T. _____
10. 10 ga. 201 stainless steel boxed top rail seamless and sloped inward to shed debris. This design is critical to providing the specified 96" body width. _____
35. 201 Stainless Steel Integral fenders shall be continuously welded and positioned over wheels of truck chassis and built to accept either Poly pre-wet tanks and tool box. _____
36. Full width, cabshield 53" cabshield. Cabshield to house tarp and four oval cut-outs for LED lights. Two per front corner and two per side corners. Back side of lights shall be boxed in with stainless steel.

_____

37. 10" truck frame to body floor height between chain for lower center of gravity and lower mounting height. _____
38. One piece sides and floor which incorporates a 6" floor to side radius. The floor slopes 22 degrees to the conveyor. A body with any portion of the floor, outside of the main conveyor that is less than 22 degrees, is NOT acceptable due to poor cleanout. _____
39. 7 gauge 201SS formed inner/ 10 gauge 201SS formed outer longsills. _____
40. 2" diameter drive and idler shafts with 8 tooth cast iron sprockets. Drive sprockets are double keyed to shaft. Shall have bearing at each sprocket. _____
41. 25:1 planetary gearcase at the rear of conveyor with a hydraulic piston motor approximately 8 cubic inch displacement. _____
42. Maximum 28" wide conveyor made with D667K pintle chain every link (24,500 lb. tensile/strand). _____
19. Body to have 201 Stainless Steel 15" spreader apron but with bolt on apron in two pieces for access to bearings and drive motor. _____
20. Conveyor extends 12" beyond tailgate to prevent free flow of granular material. _____
21. Tailgate sheet to 7GA 201 stainless steel.:
    a. To be and double-acting heavy duty. _____
    b. Bracing to be full perimeter box type, 6" top and bottom and 4" sides. _____
    ppp. There is to be two intermediate 6" horizontal brace. No 6-panel tailgate. _____
    qqq. Bottom and intermediate horizontal braces to be sloped (dirt/salt shedding). _____

rrr. Upper hardware to be heavy-duty flush type with minimum 5/8" diameter vertical drop pins on retainer chains. _____

sss. Flush mount, 1/2" flame cut tailgate pivots. _____

ttt. Minimum 3/8" stainless steel chains to be long enough to hold tailgate in horizontal position if necessary. _____

uuu. Heavy duty offset hinge plates, 1" flame cut. _____

vvv. Heavy nylon mesh sleeves to be installed over spreader chains to protect body finish. _____

www. Lower latch hooks to be flame cut from 3/4" 201SS plate with 3/8" latch plates. _____

xxx. 7 gauge 201 Stainless Steel 12" x 26" rear feedgate operates perpendicular to floor.Sloped-in feed gates NOT acceptable. _____

l. Screwjack type feedgate with handle to passenger side. _____

m. All 201 stainless steel hardware. _____

n. Dual brake chamber air tailgate latches (one on each side) with over-center linkage. Pivot shafts include stainless steel bushings to eliminate seizing. Tailgate latch rods that extend the length of the body or have a cross shaft are not acceptable. _____

o. Stainless lift hook welded to top of tailgate. _____

22. Continuous welded body shell, cab protector & tailgate. _____

23. Fold-up grip strut two-step ladder on left front corner of body with grab/step above. Stainless Steel step inside of body. _____

24. Two (2) shovel holders, one on each side of body, specify exact location at time of installation. _____

25. 2 ½" x 12" hardwood (not pine) sideboards. _____

26. Full length top screens and full length 201 stainless steel under body pan installed under chain. _____

27. 3/16" Hardox 450 cover plate for conveyor chain to be included and mounted at rear. _____

28. 6"x 8 x1/2" formed angle with 2" 303 stainless steel pins with greaseless composite bushings. _____

SPINNER AND SPINNER ASSEMBLY

7. 20" diameter poly spinner disk will be provided. _____

8. Directly driven by high torque, low speed (550 RPM max.) 2.8 C.I.R. Char-lynn hydraulic motor (Char-lynn part # 101-1313). _____

3. Spinner assembly must be adjustable left to right, front to back, and up and down to assure accurate placement of material on spinner disc to facilitate control of spread pattern. _____

4. Spinner assemble shall be self leveling and kept parallel to road surface at all dump angles using a stabilizer bar attached to the truck frame. _____

11. 201 stainless steel stationary shield mounted in from of spinner to protect the truck under carriage from thrown materials. _____

12. Stainless steel spinner assembly to have four (4) adjustable deflectors. _____

HOIST

D. Heavy duty front telescopic type hoist suitable for use with a combination body on a road and highway maintenance truck

used for snow and ice control. _____

1. NTEA rated Class 50. _____
2. 17.8 Tons of Lift-Off Capacity at 2000 PSI. _____
3. Double-acting (power up and power down full length of stroke). _____
4. Largest diameter stage must be at bottom-inverted cylinder not acceptable. _____
5. 4.5" inside diameter cylinder base tube (minimum). _____
6. 90" stroke (minimum). _____
7. All cylinder stages to be nitrated for corrosion resistance and wear resistance. _____
8. Internal bore seal design so no packing adjustment or bleeding is required. _____
9. Hoist cylinder to be mounted inside pivoting, trunnion mounted cylinder cover tube. _____
10. No sub-frame for hoist. Rear hinge assembly to be cut into truck frame rail behind rear spring hanger of rear axle. _____
17. Lowest possible mounting height -- not to exceed 10" (top-of chassis frame to body floor). _____
18. 5 degree oscillating cylinder collar with grease zerk. _____

SNOW PLOW HITCH

G. Heavy front frame side plate low profile snow plow hitch. _____

7. To be engineered, designed and built by a recognized snow plow manufacturer. Hitch to be a low profile configuration. The design will limit the amount of front overhang to a minimum. _____
8. A truck frame extension is not required for the mounting of hitch but recommended. _____
3. Heavy front frame hitch of modular design shall allow the cab hood to tilt completely forward for engine access. _____
61. Side plates will transmit plowing forces directly to the truck frame side rails and will custom fit the specified year, make and model of the truck. _____
62. The side plates are custom fitted 5/8" steel plate of proper length and construction for heavy duty service and shall provide adequate clearance for steering mechanisms and spring suspensions. _____
63. Side plate mounting angles or plates shall mount flush to the truck frame for maximum strength. Pipe spacers are not acceptable. _____
64. The front section of the hitch assembly: lift frame, center section and the lower push plate shall all be welded to the two (2) vertical tubular supports. The two (2) vertical supports are to be constructed of 6" x 3" x 1/4" thick wall. The length of each support shall be 38-1/4". No exceptions. _____
65. The front two (2) vertical supports are to be spaced evenly 26-3/4" apart. No exceptions. Overall mounting width is 32-3/4". _____
66. The front two (2) vertical supports are to be mounted to vertical structural angles of 5" x 4" x ½", full height of tubes. _____
67. Each vertical tube must have three (3) 3" wide gussets tying in the vertical tube to the structural angle. Each gusset is 3" x 4" x 5" x 7ga. _____
68. The vertical tubes and structural angles are mounted to a

horizontal 6” x 4” x ½” x 39” wide structural angle mounted at the top of the two (2) vertical structural angles. _____

69. The center cylinder tube to be built with a 6" x 3" x 1/4" tubes x 26-5/8” long and mounted centered to the vertical tubes. Two (2) 1/2" x 3" x 4" lift cylinder ears to be welded to this tube along with a 1/2" x 3" flat reinforcement bar. _____

70. The telescopic lift arm shall be manufactured of 4” x 4” x 3/8” square outer tubing and 3” x 3” x 3/8” square inner tubing. _____

71. The lift arm and lift frame shall be designed to accept 2.5”, 3” or 4”x10” lift cylinder . Cylinder pins are to be 1” cold rolled steel. Inner lift arm must accept clevis and pin. _____

72. Truck and plow portion hitch must be Torloc/Arrowhead style and work interchangeably with The Town of North Hempstead’s fleet. _____

73. Mounted under the telescopic outer tubing is to be a white poly block 1-1/2” x 3” and arced to hold a 4” x 10” lift cylinder. _____

74. The quick hitch shall provide self-alignment with the mating plow section while being engaged. _____

75. Re-mount OEM bumper. Bumper shall be split to accommodate plow hitch and must be bolted on and utilize stabilizer arm per section. _____

76. The plow hoist cylinder shall be of premium grade and shall be a double acting 4" bore x 10" stroke. _____

77. The piston rod is to be of steel construction treated with a nitro steel process. _____

78. The ram sleeve or outer barrel will be such that the rod packing may be maintained or replaced as required. A positive stop must be incorporated that will help prevent mechanical pressure being applied to the packing when the rod is fully extended. _____

79. The cylinder shall be capable of 14,137 pounds of thrust @ 2,000 PSI and 16,000 pounds of bursting pressure @ 2,000 PSI. Minimum weight of the cylinder shall be 28 pounds. Ports to be 3/8" _____

SNOW PLOW

A. MOLDBOARD:

1. The moldboard shall be heavy duty torsion trip edge design type Snowplow with level lift without additional mechanical mechanism._____

2. Moldboard will be an integral shield with trip edge. _____

   m. Length to be 10’. _____

   n. Height to be 42” (not including rubber deflector). No exceptions. _____

   o. 36” side plastic markers mounted to plow. _____

   p. Two (2) lift hooks to be mounted on moldboard top. _____

9. The moldboard shall be reinforced at the top with a 3-1/2" x 2-1/2" x 3/8" with holes to allow moisture to escape with poly 36” markers. _____

10. 3/8” Poly moldboard with eight (8) ½” x 3-1/2” ribs for extra strength and rigidity. _____

5. All welds must be continuous (skip welds not acceptable). _____

6. Bottom angle must be 4”x 4” x ¾” with an additional 4” x 3” x ½” trip edge angle. _____

16. Top moldboard angle must be constructed of 3-1/2” x 2-1/2” x 3/8” with holes to allow moisture to escape. _____

17. Two horizontal structural angle braces ¼’ x 3” x 3” added for

rigidity. _____

18. Attack angle of moldboard shall have adjustments of 5, 10, and 20 degree. _____

B. CUTTING EDGE:

1. The cutting edge must be Carbide cutting edge with cover plate. Must be AASHO standard punched, flush with moldboard and be easily replaceable. _____

5. Cutting edge face must have wrap around curb guards mounted on both ends with same bolts/nuts as cutting edge. No Exceptions. _____

C. TRIPPING MECHANISM:

1. Adjustable torsional one piece cutting edge trip. From bottom of new 8" cutting edge to top trip edge is no less than 14.75". _____

8. Springs must have a zero insertion force for increased safety while servicing. No Exceptions. _____

9. Bottom moldboard angle must be 4" x 3" x ½". Fully welded to bottom edge of moldboard. _____

4. 4" x 4" x ¾" backer angle with (6) ¾" trip ears welded to angle. _____

5. Full length trip edge pivot tube, must be constructed of schedule 80, 1.50" OD black pipe. End of each plow cutting edge is to include a 4.5"OD x 1.5" thick curb guard. _____

6. Cutting edge tripping must be controlled by (5) torsion springs. Springs constructed of a minimum of .75 square bar with 14 active coils. Minimum spring dimensions shall be 3.75OD x 2.25ID x 11.75. Springs must be produced to meet Rockwell C hardness. Hardness shall be produced from oil quenching with a minimum temperature of 1550°F. Spring preload shall be a minimum of 35°. Springs shall have a trip load capability of 8228 INCH-LBS. Typical spring material composition shall be Carbon=0.40, Manganese=.70, Phosphorous=.020, sulfur=.020, silicon=.25, chromium=.80, Nickel=1.75, Molybdenum=.25. _____

7. Three (3) position adjustment on each individual torsion spring on the trip assembly to allow adjustment in various settings for road conditions. No exceptions. _____

8. Face of cutting edge trip section must be 201 Stainless Steel. No exceptions. _____

D. PUSH TUBE ASSEMBLY:

1. Push tube to be constructed of 4" x 4" x .38 square tube, 95.5" in length. Each end of the push tube shall be capped with a 10ga 3.25" x 3.25" plate. _____

2. Welded to the moldboard pushtube shall be (8) 5/8" x 3.5" x 7" pivot ears. Each ear shall be further reinforced with a 2" x 2" x .38 gusset. Pivot ears shall pin to moldboard assembly with 1-1/4" thick pins. _____

33. (2) Moldboard stabilizer strut mounting ears each constructed of (2) 5/8" plate approximately 10" x 13". _____

34. Center pushframe pivot constructed of (2) .38 x 36.5" x 8.5" plates. There shall be a 3.5" hole in each plate for a 5-1/2" x 3-1/2" OD x 2.52" ID bushing. Bushing shall be drilled and tapped for a 1/8" grease zerk. _____

35. Center pushframe pivot assembly shall also have (2) 3.75" stops for the a-frame assembly. _____
36. Push tube cylinder lugs, located on left and righ hand sides shall each be constructed of (2) 5/8" x 8-1/4" x 3-5/8" plates complete with a 1-1/4" pin hole. _____
37. Cylinder lugs shall be further reinforced with 3/8" x 2-3/4" x 3-1/4" gusset. _____
38. There shall be (2) chain lift lugs welded to the top of the push tube constructed of ½" x 3" x 4" plates. _____
39. Moldboard reversing shall be accomplished by (2) 3" rod x 3.5" bore x 16" stroke single acting cylinders. _____
40. Cylinder rods shall be nitride for increased corrosion resistance. Chromed rods shall be unacceptable. _____
41. Cylinder working pressure shall be 3000 PSI. _____
42. Cylinder shall be plumbed to an 1800 PSI cushioning valve to prevent damage when hitting obstructions. _____

E. A-FRAME:

1. Pivot capture plates shall consist of (2) plates constructed of 1" x 11" x 12-7/8" plates. These plates will be flame cute and have a 2.53" hole to pin the a-frame assembly the push-tube assembly. The top pivot capture plate shall be drilled and threaded for a ¾" capture bolt to prevent pin rotation. _____
5. Top main A-frame plate shall be constructed of 3/8" x 28" x 25-5/8" flame cut plate. The narrowest portion of the top plate shall remain a minimum of 12". Top plate shall also be flame cut to accept the reversing cylinder pins. Pin hole shall be 1.281" in diameter. Each pin holes shall be further reinforced with a 1" thick plate which is flame cut to accept reversing cylinder pin. _____
18. Bottom main a-frame plate shall be constructed of 3/8" x 28" x 25-5/8" flame cut plate. The narrowest portion of the top plate shall remain a minimum of 12". Bottom plate shall also be flame cut to accept the reversing cylinder pins. Pin hole shall be 1.281" in diameter. There shall be a 6" access hole for attaching the hitch swivel bolt. _____
19. The A-frame vertical side plates which tie the top and bottom plates into a boxed formation shall be constructed of ½" x 4" x 32" plate and formed to follow the contour the top and bottom plates. _____
20. The rear A-frame push plate shall be constructed of 1" x 6-3/4" x 33-5/8" plate. This plate shall be flame cut with a 1-9/16" hole to accept the plow hitch attachment bolt. _____
21. On the top side of the A-frame plate shall be a mounting plate to which attached is the reversing cylinder cushion valve. _____
22. Plow portion hitch must be Torlo/Arrowhead and fit existing Town of North Hempstead truck portion hitches. _____

F. PAINT:

10. All metal surfaces are to be phosphate washed to remove slag, splatter, oxide and oil residue. _____
11. Moldboard frame work must be powder-coated Highway Orange. _____
12. Push frame, "A" frame and other miscellaneous components are powder-coated black for increase paint durability. _____

CENTRAL HYDRAULIC SYSTEM

A. TYPE:

1. System to be of load sensing pressure-compensated type, pumping oil only when needed and in exact volume and pressure required --- no more, no less. _____
2. Pump to automatically revert to standby mode when no oil flow is required (No on/off switch). _____
6. Must be able to operate all equipment on truck simultaneously if necessary. No one function to interfere with any other. _____
4. System controls are to be electronic and air. _____
5. Operating speed of all functions must-be variable and adjustable. _____
6. One complete system to operate all functions. _____

B. HYDRAULIC PUMP AND POWER TAKE-OFF:

1. The hydraulic pump shall be an axial piston pressure and flow compensated load-sensing type. The pump shall have a displacement of 5.61cubic inches per revolution at maximum stroke which will deliver 23.7 GPM @ 1000 engine RPM. The pump shall have a minimum 2" inch suction line and ½" control drain line plumbed directly back to the reservoir. The pumps compensator shall have rear facing adjustments. The pump shall be rated for 5800 PSI maximum and 4800 PSI continuous. The pump shall have a Din type-mounting flange and a Din 5462 8-tooth shaft. Shall be a TXV pump or approved equal. A Chelsea 277 series hot shift PTO or approved equal that is mounted to the transmission shall drive the pump to operate whole system. _____
2. The system shall be designed so that when the float contacts close, the PTO will disengage and stop pump flow. An enunciator in the cab that is on a control panel will alert the driver that the PTO has been disengaged. The control panel will also incorporate an override switch wired to de-energize the shut down system to facilitate diagnostics and equipment storage. _____

C. HYDRAULIC VALVE:

1. Control valve shall be U.S. manufactured. Valve shall be a load sensing type with o-ring ports. Mid-inlet section porting will be #16 inlet, #20 outlet, #16 hoist section, #4 load sense port, and #10 or #12 for all other sections. The hoist section shall be stacked to one side of the mid-inlet and all other sections will be stacked on the other side. All ports shall be level with each other so as to lay flat on its base. There will be a main relief in the mid-inlet section that will be set at 3500 PSI to protect the system

from being over pressurized. _____

2. Valve section to be arranged as follows:
3. Hoist, 4-way for a double acting cylinder with mid-inlet transition section. _____
4. Pressure reducing section., if needed. _____
5. Plow Lift, 4-way for a double acting cylinder with flow control. _____
6. Plow Angle, 4-way for a double acting cylinder with flow control. _____
7. Spin-A-Veyer section, consisting of two pressure compensated cartridges that are a single piece design with hardened cartridge bores and spools. These shall be operated independently via a 12 VDC pulse width modulated signal. Each valve shall have heavy duty 7/16-20 UNF screw style manual overrides that are adjustable from no flow to full flow. These valves shall be mounted in a housing that is made of aluminum with gray anodizing for corrosion resistance and durability. The auger/conveyor shall be a 15 GPM spool and the spinner shall be a 7 GPM spool. No exceptions. _____

11. A plow float/balance valve must be provided and controlled with a dash mounted rocker switch for on/off. The plow float/balance can be turned off as needed. When in use, the valve will allow the valve to use a pressure reducing/relieving system to control the float/balance lifting pressure on the plow's lift arm assembly. Two solenoid valves wired together turn the valve off and on. One solenoid valve opens the inlet of the pressure reducing valve to the pump. The other solenoid valve opens the outlet of the pressure reducing/relieving valve to the lift port. Oil flowing in and out of the lift port is restricted with an orifice. _____

D. OPERATOR CONTROLS FOR DUMP BOY HOIST and SNOW PLOW:

1. The valve controls shall be a feathering remote air control with air shift actuators for valve. The dump lift and plow lift controls shall be single axis controls with lock in the center position to prevent accidental actuation. It shall be mounted in an adjustable tower next to the driver. There shall be a pressure protection valve to protect against loss of pressure in the primary system caused by a broken line or an air leak somewhere in the auxiliary system. There shall also be a FLR (filter, lubricator, and regulator) plumbed into the auxiliary air system to protect the air controls from contamination and being over pressurized. All the air tubing will be color coded to identify each individual hydraulic function from control to valve section. _____
5. The air control joystick must each have an illuminated head. No exceptions. _____

E. RESERVOIR/VALVE COMPARTMENT:

28. To be 35 gallon all-welded 304 stainless steel combination hydraulic oil reservoir and control valve mounting compartment. _____
29. The hydraulic reservoir will be constructed of 10-gauge stainless steel and be internally baffled. _____
30. Mounting bracket is to be designed and supplied by the reservoir supplier. _____
31. Mounting system should allow for a 1" frame clearance for frame

obstructions. _____

32. Shall be mounted in a manner as to not transmit any truck torsional loads thru the tank. _____
33. The enclosure will use a gasket-less passive technology. (No rubber seals, gaskets, or weather stripping.) _____
34. The enclosure lid will be removable within seconds by one person without the use of tools. _____
35. All valve fittings, hose ends, filter, filler breather, sending units and any electrical connections are to be protected by enclosure cover. _____
36. The reservoir supplier will provide all valve fittings (JIC connections) and plumb the return line from the valve to the filter. _____
10. The cover will protect from both road and pressure washer spray. _____
11. The directional control valve must be easily accessible from all (6) sides without the use of tools. _____
12. Hose exit and entrance must allow for components to be mounted adjacent to the enclosure. _____
13. A 2" full flow brass ball valve shall be plumbed at the suction port of the tank. _____
14. A low oil/high temp sending unit shall be mounted in the reservoir. _____
15. Hydraulic oil filter shall be mounted in the reservoir. Hydraulic filter shall be a 16-micron absolute and rated for no less than 60 GPM. Filter shall be model TEF31016VG16SP-UG60E115 or prior approved equal and include visual and electrical bypass indicators. A warning light shall be mounted in the cab and wired to the electrical indicator. _____
16. The valve/tank assembly shall be prior approved equal. _____

F. Hydraulic Lines and Fittings:

1. Stainless steel tubing to be used under body and cab in lieu of hosing. Only hosing to be used is ends of stainless steel tubing to reach each function's quick couplers or connection. Tubing shall be seamless #304 stainless steel construction with a minimum wall thickness of 0.065". The ends must be flared to accommodate a 37 degree JIC fitting. The use of compression fittings is not Acceptable. Spacing of each tube to allow for material to fall between each tube. _____
44. All stainless tubing must be mounted in polyurethane poly green tube clamps. _____
45. All hoses to be wire braid reinforced with swaged on high pressure JIC 37 degree tapered seat end fittings. _____
46. All fittings & adapters to be forged steel (No tapered pipe fittings except on suction hose). _____
47. Hoses to front with 1/2" 100% stainless steel (no exceptions) quick couplers for power reversing plow. _____
48. Hoses to rear with 1/2" 100% stainless steel quick couplers for spreader (no exceptions). _____
49. Spreader stainless steel hose couplers to be mounted on either frame rail or pintle plate under dump body at rear. _____
50. Polymer dust plugs or caps on all couplers with retainer straps. _____
51. All pressure hoses except for plow & spinner to be 3/4" I.D. SAE 100R2. _____
52. Plow, spreader spinner, and prewet system pressure hoses to

be 1/2" I.D.SAE 100R2. _____

53. Main pressure hose from pump to control valve shall be 1" Didiameter, 4-wire braid. No exception. _____
54. All return hoses to be SAE 100R2. _____
55. Suction hose to be minimum 2" I.D. SAE 100R4 spiral wire reinforced with long radius ells. _____
56. All hoses to be routed away from chassis exhaust whenever possible to protect against heat deterioration. _____
57. All hydraulic quick disconnect couplings must be stainless steel Aero-Quip FD45 series or prior approval; bulkhead mounted, and include attached male and female dust covers. Couplings to be configured so as to eliminate confusion when coupling. No exceptions. _____

G. Spreader Controller:

4. Force America 5100ex open loop controller. No exceptions. _____

SNOW PLOW LIGHTS:

A. Truck-Lite brand LED model 80880 plow lights. _____

13. Mounted with custom fabricated 100% stainless steel brackets on truck fenders. Brackets must be painted black. _____
14. Plow lights to be wired into the truck's existing headlight circuit using the factory installed switch. _____
15. Plow lights must function in high and low beam modes using existing truck's dimmer switch. _____
16. Plow lights and truck chassis headlights must never operate at the same time. _____

LIGHTING & ELECTRICAL

All lighting and layout must meet all Federal, State, and DOT regulations. No exceptions _____

A. LED lighting system. _____

1. All marker, work, S/T/T and strobe lighting to be LED. _____
14. The four (4) spreader lights mounted under rear apron of combination body and must be on an independent rocker switch. _____
15. The two (2) chassis step mounted lights and must be on an independent rocker switch.. _____
16. Whelen brand model 50A03ZAR TIR6 and 5TSMAC surface mount kit, two (2) grill Mounted. Must be on an independent rocker switch with cabshield and rear bolster mounted amber lighting. No exceptions. _____
17. Whelen brand model 50A03ZAR TIR6, six (6) head. Four (4) rubber grommet mounted in cabshield and one (1) each rear bolster. Must be on the same rocker switch with grill mounted amber lighting. No exceptions. _____

B. Electronic Back-Up Alarm to be Preco series 300. _____

1. To automatically change volume to suit background noise. _____
2. Mounted to back side of pintle plate on a stainless bracket. _____

C. Body Up Indicator. _____

1. Sealed weatherproof proximity switch on hoist-frame. _____

2. Body up light shall illuminate using chassis dash mount switch. _____

D. All non- strobe wiring to be 7 wire trailer cable. Separate cable routed from in-cab to all non-strobe lights with sealed junction box at rear so all wiring connections are made either inside cab and in a sealed junction box. _____

E. One (1) solid stainless steel rod must be mounted under body and all electrical body lighting must be neatly run. Rod will be one piece and full length. No exceptions. _____

F. All wire connections shall be made in the chassis cab or by means of a waterproof junction box. In cab connections shall be made using vinyl coated crimp connectors covered in weather resistant heat shrink tuning. There shall be no wire splices outside the cab. All wiring to junction box shall be resistant to abrasion, ozone, sunlight, chemicals and oil. The outer jacket shall be chlorinated polyethylene and be approved for submersion in water. The outer jacket shall be label with the cable identification wire gauge and number of conductors. Must be MSHA approved. All body lighting shall be supplied by a single sealed harness from the junction box and making the connection at the light by means of weather tight sealed connector. All strobe lights shall be included in the same harness and be connected by means of a Deutsch connector, no exceptions. _____

MISCELLANEOUS

A. 90 degree elbow extension on top of chassis vertical exhaust stack to clear cab protector and still route exhaust upward to be provided by chassis supplier and installed by body company. _____

H. Rear tire poly Fleet Maintenance fenders with stainless steel mounting tubes. _____

C. Upon installation of all components, truck must be delivered to the truck dealer for final inspection and prep. _____

D. Rear pintle plate shall have a 25ton pintle properly installed and secured. _____

1. Mounted on reinforced 3/4" thick mounting plate at rear of chassis frame at designated clearance height to ground to be 29". Sides and bottom must be reinforced with ¾" x 2" flat stock mounted behind the pintle plate. _____

8. Must include Safety two (2) 5/8" D-Rings, one (1) 7-wire flat plug and one (1) 6-wire plug. _____

9. License plate light and bracket mounted to top corner on passenger side. _____

E. DOT approved 2" conspicuity tape on body bottom rub rails, rear corner posts, tailgate perimeter. All DOT necessary reflective decals installed as well. _____

F. Pull Tarp brand asphalt tarping system to be mounted in cabshield rear. Must recess ahead of front head sheet and cut into side plates of cabshield for lowest possible mounting. _____

J. Zeibart under coating to be sprayed up chassis frame rails, pintle plate and under chassis. _____

INSTALLATION AND WARRANTY

P. Minimum twenty-four (24) months, 100% parts and labor on components and installation. No deductible. _____

Q. For warranty considerations and future availability of parts and service, the body company must be an authorized primary distributor for all major components they propose to furnish. Must furnish written proof from such said vendor upon request. _____

R. All equipment must be installed by a single body company, by their employees and at their regular location. _____

S. Installation of components is not to be subcontracted by body company to another installer. _____

T. No welding whatsoever is to be done on chassis frame between front of most forward spring hanger and rear of rearmost spring hanger. _____

F. No drilling whatsoever is to be done in frame rail flanges. _____

M. Body company to furnish operator's parts and service manuals for all components manufacturer's i.e., combination body, hoist, snow plow, salt spreader, central hydraulic system and strobe lights. _____

N. Completed vehicle must be certified by the body company as meeting all federal motor vehicle safety standard in effect at time of chassis production. _____

4. Approved NHTSA/FMVSS certification label must be furnished and located inside cab on driver's side. _____

I. Completed unit to comply with current OSHA regulations. _____

J. Body company must be registered with National Highway Traffic Safety Administration as a final stage manufacturer of motor vehicles as required by Federal Law. _____

K. Body company to conduct operator training session on body and equipment at the The Town garage after delivery of completed truck. _____

L. Delivered of completed vehicle must be within 75 days after delivery of cab chassis to up-fitter. _____

M. Body company must have ASE certified installer/s and show documentation at time of bid. No exceptions. _____

N. Body company to be registered and in good standing with National Truck Equipment Association (NTEA), be a MVP member, and be the authorized distributor for all equipment bid. _____

O. Body company must participate and provide documentation at time of bid for E-Verify®. This employment verification verification is a United States of America federally accredited verification system to insure all employees are legal residents. List Company ID#_____. No exceptions. _____

P. Combination Body, Snow Plow, and Snow Plow Hitch must be engineered and manufactured in the United States of America and all from the same manufacturer. No exceptions. _____

Q. Hydraulic schematic must be provided and laminated and placed inside the combination valve enclosure/combo tank lid. _____

R. A required pre-build meeting will occur after award of bid and prior to the start of installation. No exceptions. _____

S. The Town will inspect all equipment (plow, hitch, body etc prior to the start of installation. No exceptions. _____

OPTION # 1: V-Box Spreader

V-BOX SPREADER

Heavy Duty 304 Stainless Steel V-Box Salt Spreader 3-in-1 V-Box for granular, prewetting and slurry system. No exceptions. _____

13. Capacity to be 6.9 yd^3 struck water level minimum. No exceptions. _____
14. Inside length to be 10 feet and side height of 56". _____
15. Inside top width to be 83-3/4". _____
16. Side slope to be 45^0 minimum. _____
5. Front & rear panels slope; rear 9^0, front 18^0. _____
16. Hopper seams to be continuous welded on inside. _____
17. Sides, ends, & side supports to be 10 gauge 304 SS. _____
38. Top edge of hopper is formed "J" channel 2" x 7/8". _____
39. Dual auger trough is to be 7 gauge 304 SS. _____
40. Long sills to be 7 gauge 304 SS; continuous welded to side sheet. _____
41. Cross sills to be formed 7 gauge 304 SS welded to side supports. _____
42. 7GA 304 SS inverted vee mounted over the dual augers with appropriate frame work for stability. _____
43. Lift hooks on each corner are 1/4" x 2" formed 304 SS plate. _____
44. All hardware shall be 304 stainless steel. _____
45. Hydraulic inter-lock auger shut-off system to shut augers down when cover grates are opened—interlock plumbed at factory. _____
46. 3/8" rod on 3/8" rod top grate screens with anti-freeze hinges are required equipment with auger conveyor v-box units. _____
47. A full width rear 304 stainless steel light bar shall be mounted with nine (9) LED lights. Shall include S/T/T and Amber LED Strobes. Shall have junction box and plug. No exceptions. _____
18. Spinner light mounted on driver's side rear on the stainless steel bumper. _____
19. Heavy duty lighted rocker switch on control console for spinner light. _____
20. One (1) stainless steel ladder with 8 rear steps mounted at the rear of spreader on right side allowing access from ground to top of spreader. _____

B. Minimum Auger Requirements

1. Dual 7" diameter variable pitch auger conveying system. The augers must be counter rotating to help prevent bridging of material. Dual augers extend 2 feet past end of hopper to allow discharge into spinner chute. No exceptions. _____
2. Each auger is driven at the rear by a 24.7 CIR hydraulic motor which is directly coupled to a 3.6:1 planetary gearcase with 2.5 in. dia. shaft coupled to the end of the auger shaft with a 7/8" cross bolt. _____
3. Gearcase is directly coupled to end of auger shaft. _____
4. Auger shaft connect at front with a 2" 2 bolt flange bearing. _____
5. Auger shafts utilize a polyurethane bushing at both ends of each auger to eliminate seizing and ensure ease of maintenance. _____
7. Must be an one inch OD stainless steel pipe mounted between/above augers and under the inverted vee to allow for future use of liquid. Pipe must have holes evenly spaced on both sides to allow for spraying of liquid. All hardware must be stainless steel. At the rear of the spreader wall, behind the pipe, there must be a Banjo valve manually operated to close and open the liquid system. No exceptions. _____

C. Spinner Assembly

1. 10 gauge 304SS enclosed design. _____
2. (4) position telescopic adjustment; 32-3/4"-41" below mounting surface. _____
3. Two (2) baffles shall be positioned at the bottom of the spinner chute to direct flow of materials onto spinner disc for directional spread pattern adjustment. _____

31. The two (2) spread pattern adjustment baffles shall each have 5 (five) positions of adjustment without the use of tools. The baffle(s) shall utilize a 304SS notched bar that pins into position for a positive lock. _____
32. Four (4) bottom spinner deflectors shall be over-lapping to prevent loss of granular material when the deflectors are raised. Front deflector is fixed. _____
33. The bottom over-lapping spinner deflectors shall have four (4) positions of rod and pin adjustment without tools. Chain adjustable deflectors are not acceptable. _____
34. The bottom over-lapping spinner deflectors shall have the capability to be easily removed and/or replaced without tools. _____
35. 20" diameter poly spinner disc to have replaceable machined hub. _____
36. Six (6) vanes built into poly spinner disc. _____
37. Spinner hydraulic motor shall mount directly on top of spinner disc. Bottom mount motor or drive shaft with bearings not acceptable. _____
38. The top mounted spinner motor shall be enclosed in the spinner chute to maximize granular material flow to the spinner disc. For serviceability, the spinner chute shall have open access to the spinner motor. _____
39. A spinner bypass chute shall be provided that allows for the stationary unloading of granular material. When in the pivoted "down" position, the chute shall provide complete bypass of the spinner and bottom deflectors. When in the "up" position, the chute shall become part of the enclosed spinner chute providing granular material flow to the spinner. The bypass chute shall have a quick latch system pinning into position without the use of tools. _____

<u>PRE-WETTING and SLURRY SYSTEM</u>

A. Hydraulically driven system of designated valve section. _____

16. All components are mounted in a sealed, corrosion resistant, molded fiberglass housing with hinged cover. _____
17. Hydraulic drive motor is 1.21 CIR geroler type with appropriate sized Flow Meter. _____
18. Liquid pump is a 8.2 GPM @ 1725 RPM Roller Pump of corrosion resistant materials. _____
19. All tubing is stainless steel with corrosion resistant JIC fittings. _____
20. Liquid output is controlled by an adjustable flow control valve with dial on control modular in cab that also houses granular outputs. _____

B. Reservoir

1. (2) 200-gallon rotation molded medium density .375" polyethylene

tank with 5" diameter cap. Includes sump for complete drainage. _____

2. Replaceable screen line strainer. _____
3. Corrosion resistant shut off valves. _____
4. Reservoir tank is angle formed to allow for mounting on the side of a slip-in v-box. _____
5. Supplied with bulk tank fill quick couplings. Internal baffle. _____

D. Metering Orifice and Slurry Tube

1. All bolt-on (no welding required) brackets, hardware, and fittings supplied. _____
2. Variable displacement orifice provides an extended range of material outputs located in spinner chute. _____
3. 2 variable displacement orifice 22" wide, vented internal at top of spinner chute. _____
4. Spreader shall have a provision for a stainless steel liquid injection tube 1-1/2" OD which is to be located on the underside of the inverted vee. The injection tube will provide liquid which will be agitated by the spreader augers to create a salt slurry mixture. The liquid for the slurry generation process shall come from the liquid prewet system. _____

E. Spreader Stand

1. A self-contained storage stand shall be permanently fastened to the spreader by bolting on. The stand shall be fabricated of stainless steel and designed to support the full weight of the spreader when removed from the truck with only small amounts of material remaining in the hopper or tanks. No exceptions. _____
8. The front of the stand shall be equipped with steel caster wheels with appropriate bushings and grease fittings to allow the spreader to roll into the dump body of the truck. _____
15. Front legs shall be a minimum 4" x 3" x ¼" stainlesssteel tubing designed to fold up along side of the spreader when it is installed in the truck. There shall be a means to lock the legs in a vertical position when the stand is in use. _____
16. Rear legs shall be stainless steel tubing designed to telescope or pivot up and out of the way once the spreader in the dump body. Legs shall be minimum 4" x 4" x ¼". _____
17. The base of the legs shall provide a big enough footprint to properly support the spreader when in storage. _____
18. The rear shall have a complete stainless steel construction bumper mounted to the spreader stand to protect the spinner assembly. The structure shall form a triangle by mounting on two points to the spreader stand with a stainless steel round tube at the rear. Rear of bumper shall be wider than spinner assembly and have conspicuity tape full width. No exceptions. _____

<u>OPTION # 2: For Package "C" Combination Body</u>

<u>Combination Body</u>

Dual 7" augers in lieu of chain drive system. _____

<u>EXCEPTION (LIST ALL BY SECTION AND ITEM #):</u>

_____

_____

_____

_____

_____

_____

The Town of North Hempsteadreserves the right to award the base bid and none or some of the options.

Item 16

	Description	YES	NO	EXCEPTIONS
CHASSIS AND FRAME				
	Base Chassis, Model TERRASTAR SFA 4x4 with 158.00 Wheelbase, 83.60 CA, and 49.00 Axle to Frame.	___	___	_____
	TOW HOOK, FRONT (2) Frame Mounted	___	___	_____
	SKID PLATE Steel, Frame Mounted, Protects the Transfer Case from the Ground	___	___	_____
	FRAME RAILS High Strength Low Alloy Steel **minimum 80,000 PSI Yield**; 7.375" x 3.079" x .312" (187.45mm x 78.2mm x 8.0mm) With Transition to 9.125" x 3.079" x .312" (231.8mm x 78.2mm x 8.0mm); Includes 1.2" (30mm) Drop Under Cab; 335.2" (8512.2mm) Maximum OAL	___	___	_____
	BUMPER, FRONT Full Width, Aerodynamic, Steel; 0.118" Material Thickness, Dark Gray	___	___	_____
	: BUMPER, FRONT Powder Coated Gray (Argent) Color	___	___	_____
	CROSSMEMBER, REAR, AF (01)	___	___	_____
	WHEELBASE RANGE 128" (325cm) Through and Including 183" (465cm)	___	___	_____
FRONT AXLE AND SUSPENSION				
	AXLE, FRONT DRIVING {Dana Spicer 70-273} Single Reduction, 8,000-lb Capacity	___	___	_____
	SUSPENSION, FRONT, SPRING Taper Leaf, Shackle Type; 8,000-lb Capacity; With 7,000-lb Capacity Steel Spring & (1) Rubber Auxiliary Spring (1000-lb Capacity), With Shock Absorbers	___	___	_____
BRAKE SYSTEM				
	BRAKE SYSTEM, HYDRAULIC {TRW 355} Split System, With Three Channel ABS	___	___	_____
	: BRAKE LININGS, FRONT HX-73, Non-Asbestos	___	___	_____
	: BRAKE LININGS, REAR HX-73, Non-Asbestos	___	___	_____
	BRAKE, PARKING {TRW} Drum-in-Hat Type; for Hydraulic Brake chassis; Activated by Lever in Cab; Mounted in Rear Wheels	___	___	_____
	: PARKING BRAKE CONTROL Lever, Floor Mounted, Located Right of Driver	___	___	_____
	BRAKES, FRONT, HYDRAULIC DISC {TRW} 15.35" x 1.54" Rotors; Dual 2.36" (60mm) Diam. Pistons	___	___	_____
	BRAKES, REAR, HYDRAULIC DISC {TRW} 15.35" x 1.54" Rotors; Dual 2.36" (60mm) Diam. Pistons	___	___	_____
STEERING				
	STEERING COLUMN Tilting	___	___	_____
	STEERING WHEEL 2-Spoke, 18" Diam., Black	___	___	_____
	STEERING GEAR {Sheppard MD83} Power	___	___	_____
EXHAUST SYSTEM				
	EXHAUST SYSTEM Single, Horizontal, Aftertreatment Device Frame Mounted Left Side Back of Cab; Includes Horizontal Tail Pipe	___	___	_____
	ENGINE EXHAUST BRAKE for MaxxForce 7 V8 Engines, Electronically Activated	___	___	_____
ELECTRICAL SYSTEM				
	ELECTRICAL SYSTEM 12-Volt, Standard Equipment	___	___	_____
	: BATTERY BOX Steel	___	___	_____
	: DATA LINK CONNECTOR For Vehicle Programming and Diagnostics In Cab	___	___	_____

: FUSES, ELECTRICAL SAE Blade-Type	___	___	_____
: HAZARD SWITCH Push On/Push Off, Located on Top of Steering Column Cover	___	___	_____
: HEADLIGHT DIMMER SWITCH Integral with Turn Signal Lever	___	___	_____
: HEADLIGHTS (2) Sealed Beam Halogen, 5" x 7" Rectangular, with Molded-In Argent Colored Bezels	___	___	_____
: JUMP START STUD Located on Positive Terminal of Outermost Battery	___	___	_____
: PARKING LIGHT Integral with Front Turn Signal and Rear Tail Light	___	___	_____
: RUNNING LIGHT (2) Daytime, Included With Headlights	___	___	_____
: STARTER SWITCH Electric, Key Operated	___	___	_____
: STOP, TURN, TAIL & B/U LIGHTS Dual, Rear, Combination with Reflector	___	___	_____
: TURN SIGNAL SWITCH Self-Cancelling for Trucks, Manual Cancelling for Tractors, with Lane Change Feature	___	___	_____
: TURN SIGNALS, FRONT Includes Reflectors and Solid State Flashers; Flush Mounted	___	___	_____
: WINDSHIELD WIPER SWITCH 2-Speed with Wash and Intermittent Feature (5 Pre-Set Delays), Integral with Turn Signal Lever	___	___	_____
: WINDSHIELD WIPERS Single Motor, Electric, Cowl Mounted	___	___	_____
: WIRING, CHASSIS Color Coded and Continuously Numbered	___	___	_____
CIGAR LIGHTER Includes Ash Cup	___	___	_____
ALTERNATOR {Delco Remy 28SI} Brush Type, 12 Volt 200 Amp. Capacity, Pad Mount, with Remote Voltage Sensor	___	___	_____
BODY BUILDER WIRING Back of Standard Cab at Left Frame or Under Extended or Crew Cab at Left Frame; Includes Sealed Connectors for Tail/Amber Turn/Marker/ Backup/Accessory Power/Ground and Sealed Connector for Stop/Turn	___	___	_____
ELECTRIC TRAILER BRAKE/LIGHTS Accommodation Package to Rear of Frame; for Separate Trailer Stop, Tail, Turn, Marker Light Circuits; Includes Electric Trailer Brake accommodation package With Cab Connections for Mounting Customer Installed Electric Brake Unit, Less Trailer Socket	___	___	_____
BATTERY SYSTEM {International} Maintenance-Free (3) 12-Volt 2250CCA Total	___	___	_____
RADIO {Panasonic CQ120} AM/FM, Includes Multiple Speakers, Includes Auxiliary Input	___	___	_____
: SPEAKERS IN CAB (2) Dual-Cone with Deluxe Interior	___	___	_____
BACK-UP ALARM Electric, 102 dBA	___	___	_____
AUXILIARY HARNESS 3.0' for Auxiliary Front Head Lights and Turn Signals for Front Plow Applications	___	___	_____
HORN, ELECTRIC Disc Style	___	___	_____
JUMP START STUD Remote Mounted	___	___	_____
BATTERY DISCONNECT SWITCH {Joseph Pollak 51-315} Positive Type, Lever Operated, Cab Mounted	___	___	_____
: BATTERY DISCONNECT SWITCH Mounted to Outside of Battery Box	___	___	_____
CLEARANCE/MARKER LIGHTS (5) {Truck Lite} Amber LED Lights, Flush Mounted on Cab or Sunshade	___	___	_____
INDICATOR, LOW COOLANT LEVEL With Audible Alarm	___	___	_____
STARTING MOTOR {Delco Remy 29MT} 12 Volt; Less Thermal Over-Crank Protection, With Integrated Magnetic Switch	___	___	_____
CIRCUIT BREAKERS Manual-Reset (Main Panel)	___	___	_____

	SAE Type III With Trip Indicators, Replaces All Fuses Except For 5-Amp Fuses			
FRONT END				
	GRILLE Molded, Dark Gray Color	___	___	_____
	FRONT END Tilting, Fiberglass, With Three Piece Construction	___	___	_____
	: HOOD TILT ASSIST Includes Torsion Bar Spring System	___	___	_____
PAINT				
	PAINT SCHEMATIC, PT-1 Single Color, Design 100	___	___	_____
	PAINT TYPE Base Coat/Clear Coat, 1-2 Tone	___	___	_____
CLUTCH				
	CLUTCH Omit Item (Clutch & Control)	___	___	_____
ENGINE				
	BLOCK HEATER, ENGINE {Phillips} 120 Volt/1000 Watt	___	___	_____
	: BLOCK HEATER SOCKET Receptacle Type; Mounted below Drivers Door	___	___	_____
	ENGINE, DIESEL {MaxxForce 7} EPA 10, 300 HP @ 2600 RPM, 660 lb-ft Torque @ 1600 RPM, 2800 RPM Governed Speed, 300 Peak HP (Max)	___	___	_____
	: AIR COMPRESSOR AIR SUPPLY LINE Naturally-Aspirated (Air Brake Chassis Only)	___	___	_____
	: ANTI-FREEZE Red Shell Rotella Extended Life Coolant; -40 Degrees F/ -40 Degrees C; for MaxxForce and Navistar Engines	___	___	_____
	: CRUISE CONTROL Electronic; Controls Integral to Steering Wheel	___	___	_____
	: ENGINE OIL DRAIN PLUG Magnetic	___	___	_____
	: ENGINE SHUTDOWN Electric, Key Operated	___	___	_____
	: FUEL FILTER Engine Mounted	___	___	_____
	: FUEL HEATER Included with Fuel/Water Separator	___	___	_____
	: FUEL/WATER SEPARATOR Engine Mounted	___	___	_____
	: GLOW PLUG Automatic with Indicator Light	___	___	_____
	: GOVERNOR Electronic	___	___	_____
	: OIL FILTER, ENGINE Drop-In Cartridge Type	___	___	_____
	FAN DRIVE {Borg-Warner Series 790} Viscous Type, Screw On	___	___	_____
	: FAN Nylon	___	___	_____
	RADIATOR Aluminum; 2-Row, Cross Flow, Side-by-Side System, 697 SqIn Louvered, With 225 SqIn CAC, With In-Tank Oil Cooler	___	___	_____
	: DEAERATION SYSTEM with Surge Tank	___	___	_____
	: HOSE CLAMPS, RADIATOR HOSES Gates Shrink Band Type; Thermoplastic Coolant Hose Clamps	___	___	_____
	: RADIATOR HOSES Premium, Rubber	___	___	_____
	FEDERAL EMISSIONS EPA, OBD and GHG Certified for Calendar Year 2014; MaxxForce 7 Engines	___	___	_____
	AIR CLEANER With Service Protection Element	___	___	_____
	: GAUGE, AIR CLEANER RESTRICTION Air Cleaner Mounted	___	___	_____
	THROTTLE, HAND CONTROL Engine Speed Control; Electronic, Stationary, Variable Speed; Mounted on Steering Wheel	___	___	_____
	ENGINE CONTROL, REMOTE MOUNTED Provision for; Includes Wiring for Body Builder Installation of PTO Controls; With Ignition Switch Control for MaxxForce and Navistar post 2007 Emissions Electronic Engines	___	___	_____
	FAN DRIVE SPECIAL EFFECTS Fan Cooling Ring with Fan Shroud Effects, Engine Mounted	___	___	_____
	EMISSION COMPLIANCE Low NOx Idle Engine, Complies with California Clean Air Regulations;	___	___	_____

	Includes "Certified Clean Idle" Decal located on Driver Door			
TRANSMISSION				
	TRANSMISSION, AUTOMATIC {Allison 1000_RDS} 5th Generation Controls; Close Ratio, 6-Speed, With Overdrive; Includes Park Pawl, With PTO Provision, Less Retarder, With 19,500-lb GVW & 26,000-lb GCW Max., on/off hwy	___	___	_____
	TRANSFER CASE {Fabco TC-28} Two-Speed, Gear Drive, 3,600 lb-ft Capacity with Electric Shifting Controls, without PTO Provision	___	___	_____
	TRANSMISSION OIL Synthetic; 20 thru 28 Pints	___	___	_____
	SHIFT CONTROL PARAMETERS Allison 1000 or 2000 Series Transmissions, 5th Generation Controls, with EcoCal and Dynamic Shift Sensing (FuelSense Basic)	___	___	_____
REAR AXLE AND SUSPENSION				
	AXLE, REAR, SINGLE {Dana Spicer S110} Single Reduction, With Offset Housing; 13,500-lb Capacity, 160 Wheel Ends . Gear Ratio: 4.30	___	___	_____
	: REAR AXLE DRAIN PLUG (1) Magnetic, For Single Rear Axle	___	___	_____
	SUSPENSION, RR, SPRING, SINGLE Vari-Rate; 13,500-lb Capacity	___	___	_____
FUEL TANK				
	FUEL TANK Top Draw; Rectangular Non-Polished Aluminum, 40 U.S. Gal., 13.0” Tank Depth, Mounted Right Side Under Cab	___	___	_____
CAB				
	CAB Conventional	___	___	_____
	: ARM REST (2) Molded Plastic; One Each Door	___	___	_____
	: CLEARANCE/MARKER LIGHTS (5) Flush Mounted	___	___	_____
	: COAT HOOK, CAB Located on Rear Wall, Centered Above Rear Window	___	___	_____
	: CUP HOLDERS Two Cup Holders, Located in Lower Center of Instrument Panel	___	___	_____
	: DOME LIGHT, CAB Rectangular, Door Activated and Push On-Off at Light Lens, Timed Theater Dimming, Integral to Console, Center Mounted	___	___	_____
	: GLASS, ALL WINDOWS Tinted	___	___	_____
	: GRAB HANDLE, CAB INTERIOR (1) "A" Pillar Mounted, Passenger Side	___	___	_____
	: GRAB HANDLE, CAB INTERIOR (2) Front of "B" Pillar Mounted, One Each Side	___	___	_____
	: INTERIOR SHEET METAL Upper Door (Above Window Ledge) Painted Exterior Color	___	___	_____
	: STEP (4) Two Steps Per Door Frame Mounted	___	___	_____
	GAUGE CLUSTER English With English Electronic Speedometer	___	___	_____
	: GAUGE CLUSTER (5) Engine Oil Pressure (Electronic), Water Temperature (Electronic), Fuel (Electronic), Tachometer (Electronic), Voltmeter	___	___	_____
	: ODOMETER DISPLAY, Miles, Trip Miles, Engine Hours, Trip Hours, Fault Code Readout	___	___	_____
	: WARNING SYSTEM Low Fuel, Low Oil Pressure, High Engine Coolant Temp, and Low Battery Voltage (Visual and Audible)	___	___	_____
	IP CLUSTER DISPLAY On Board Diagnostics Display of Fault Codes in Gauge Cluster	___	___	_____
	SEAT, DRIVER {National 2000} Self Contained with Compressor, High Back with Integral Head Rest, Vinyl, Isolator, Mechanical Lumbar, 2 Position Front Cushion Adjust, -3 to +14 Degree Back Angle Adjust	___	___	_____
	: SEAT BELT 3-Point, Lap and Shoulder Belt Type	___	___	_____

	EXTERIOR GRAB HANDLE (2) Chrome Towel Bar Type With Anti-Slip Rubber Inserts; for Cab Entry, Mounted Left and Right, Each Side at "B" Pillar	___	___	_____
	MIRRORS (2) {Lang Mekra} Rectangular, 7.44" x 14.84" & 7.44" sq. Convex Both Sides, 102" Inside Spacing, Breakaway Type, Thermostatically Controlled Heated Heads, Black Heads, Brackets and Arms	___	___	_____
	SEAT, PASSENGER {National} Non Suspension, High Back, Fixed Back, Integral Headrest, Vinyl	___	___	_____
	AIR CONDITIONER {Blend-Air} With Integral Heater & Defroster	___	___	_____
	: HEATER HOSES Premium	___	___	_____
	: HOSE CLAMPS, HEATER HOSE Mubea Constant Tension Clamps	___	___	_____
	: REFRIGERANT Hydrofluorocarbon HFC-134A	___	___	_____
	INSTRUMENT PANEL Center Section, Flat Panel	___	___	_____
	CAB INTERIOR TRIM Deluxe	___	___	_____
	: "A" PILLAR COVER Molded Plastic	___	___	_____
	: CAB INTERIOR TRIM PANELS Cloth Covered Molded Plastic, Full Height; All Exposed Interior Sheet Metal is Covered Except for the Following: with a Two-Man Passenger Seat or with a Full Bench Seat the Back Panel is Completely Void of Covering	___	___	_____
	: CONSOLE, OVERHEAD Molded Plastic; With Dual Storage Pockets with Retainer Nets and CB Radio Pocket	___	___	_____
	: DOOR TRIM PANELS Molded Plastic; Driver and Passenger Doors	___	___	_____
	: FLOOR COVERING Rubber, Black	___	___	_____
	: HEADLINER Soft Padded Cloth	___	___	_____
	: INSTRUMENT PANEL TRIM Molded Plastic with Black Center Section	___	___	_____
	: STORAGE POCKET, DOOR (1) Molded Plastic, Full-Length; Driver Door	___	___	_____
	: SUN VISOR (2) Padded Vinyl with Driver Side Toll Ticket Strap, Integral to Console	___	___	_____
	MODESTY PANEL Molded, Dark Gray Color	___	___	_____
WHEELS AND TIRES				
	WHEELS, FRONT DISC; 19.5" Painted Steel, 10-Stud (225mm BC) Hub-Piloted, Flanged Nut, Metric Mount, 6.00 DC Rims; With Steel Hubs	___	___	_____
	WHEELS, REAR DISC; 19.5" Painted Steel, 10-Stud (225mm BC) Hub-Piloted, Flanged Nut, Metric Mount, 6.00 DC Rims; With Steel Hubs	___	___	_____
	(2) TIRE, FRONT 225/70R19.5 G647 RSS (GOODYEAR) 640 rev/mile, load range G, 14 ply	___	___	_____
	(4) TIRE, REAR 225/70R19.5 G622 RSD (GOODYEAR) 641 rev/mile, load range G, 14 ply	___	___	_____
WARRANTY				
	BASE VEHICLE WARRANTY 36 Months/36,000 miles	___	___	_____
	SERVICE CONTRACT, AFTERTREATMENT {Navistar} To 72-Month/200,000 Miles (320,000 km), 7,200 Hours; Aftertreatment Coverage	___	___	_____
	SERVICE CONTRACT, ENGINE {Navistar} To 84-Month/200,000 Miles (320,000 km), 7,200 Hours; Includes Engine, Engine Electronics, and Injectors	___	___	_____
	EXTENDED TRANSMISSION COVERAGE {Allison} to 60-month/unlimited miles	___	___	_____
ACCESSORIES				
	(1) SPARE WHEEL AND TIRE MATCHING FRONT TREAD	___	___	_____
	(1) SPARE WHEEL AND TIRE MATCHING REAR TREAD	___	___	_____

(4) KEYS PER VEHICLE	___	___	_____
Complete set of Parts and Service Manuals	___	___	_____
Whitaker jump start system; plug mounted under drivers door	___	___	_____

	Body General	YES	NO
1.0	The inside length of the dump body shall be 11' and inside width shall be 84"		
1.1	It shall have a capacity of 3.5-4.7 cubic yards without sideboards		
1.2	The 7 gauge steel sides shall be 18" high with 6" wood sideboard pockets capable of increasing the capacity to 4.7 cubic yards.		
1.3	The straight vertical sides shall be made of 10 gauge grade 50 steel with a boxed top rail 3" wide.		
1.4	The dirt shedding top rail is to fold back 45 degrees at the top.		
1.5	No seams is to be visible to the outside or bottom of the top rail.		
1.6	Including the front corner post there is to be three (3) vertical side braces constructed of 10 gauge grade 50 steel. Fully welded		
1.7	The vertical side braces are to be 2" wide and 3" deep. Fully welded		
1.8	The bottom of the sides shall have a 5" 45 degree slopped rub rail that is 4 ½" wide. Fully welded		
1.9	The full depth rear corner posts shall be a minimum of 11" wide. Fully welded		
1.10			
	Tailgate	**YES**	**NO**
2.0	The fully welded 3 panel tailgate shall be one piece 10 gauge grade 50 steel with a 38" height.		
2.1	Horizontal bracing shall be dirt shedding including the top rail with Qty. (2), 3" vertical gussets		
2.2	The 1" flame cut upper tailgate hinge shall have a minimum 1 ½" upper pin and 1 ¼" lower tailgate pin.		
2.3	The ½" lower latch assembly shall have a lower ½" flame cut lower pin cradle		
2.4	Safety "F" latch on bottom tailgate pin.		
2.5	3/8" diameter cold rolled chain shall be provided to hook into the banjo eye brackets that are to be welded onto the rear corner posts for tailgate spreading.		
	Bulkhead	**YES**	**NO**
3.0	The bulk head shall be 24" from the bottoms of the floor to the top of the front corner posts and constructed of grade 50 steel.		
	Floor & Understructure	**YES**	**NO**
4.0	The floor shall be constructed of a one piece 10 gauge steel with a and will have a 5" side knee brace, fully welded		
4.1	The floor shall have 3" 4.1# structural steel crossmembers. And 6" 8.2# structural long members for an Understructure"		
4.2	Full length 6" "I" channel longsills		
	Hoist & Trunnion	**YES**	**NO**
5.0	Single cylinders scissor type sub frame mounted)		
5.1	(6) inch cylinder, (15)" stroke and a capacity of 9.0 tons		

5.3	Sub frame incorporates body props, body guides, bushings		

SECTION	SPECIFICATION DETAIL	COMPLY	
	Cabshield	**YES**	**NO**
6.0	½ Cabshield shall be made of 10 gauge grade 50 steel that extends 24” from the front of the dump body.		
6.1	Cabshield shall be mounted as low to the top of the cab as possible and shall be continuously welded to the bump body bulk head.		
	Tailgate Release	**YES**	**NO**
7.0	The tailgate shall be Manual release.		
7.1	The tail gate shall be 24” high, 3 panel		
7.2	A quick release top hardware shall be incorporated		
7.3	.an “F” latch with pin on the lower bracket shall encapsulate the lower pin and be pinned to not allow tailgate to come open from the bottom in case of lock mechanism failure.		
		YES	**NO**
	Added Accessories	**YES**	**NO**
8.0	Ladders and grab handle on both sides under dump body at front		
9.0	Splash shields forward or the rear wheels to be fabricated of 10 gauge steel.		
10.0	All lights are to be recessed.		
10.1	lights are to be flush mounted, rubber grommet type		
11.0	Lower side rub rails, and tailgate perimeter are to be outlined as per NHSTA guidelines with approved red / white conspicuity tape.		
12.0	18” x 18” x 48” powder coated steel toolbox mounted on the chassis frame rails on		
	.		
13.0	The body shall be equipped with a roll over manual tarp system.		
	Lighting & Electrical	**YES**	**NO**
14.0	All body lights must meet all Federal Safety Standard #108 and shall be installed using rubber shock mounted recessed lights with body wiring “Home Run Wired” (no splicing, but connectors or soldering outside of cab) and insulated in heavy loom.		
14.1	There shall be three 2” red lights installed in the rear corner posts.		
14.2	All marker lights are to be LED		
14.3	There shall be a 2” LED light installed in the dash to notify the driver that the dump body is in the “up” position.		
14.4	All lighting shall be Whelen LED lights and products. And must be manufactured in the United States.		
14.5	The products being bid must be standard lighting components for parts availability		
14.6	Mounted into the rear corner posts of the dump body must be one oval rubber grommet mounted Whelen 5G amber LED warning light, Whelen 500 series LED Red Stop tail and turn lights		
14.7	96db backup alarm is to be mounted at the rear of the chassis		
14.8	A Whelen l31 HAF amber led flashing light shall be Cabshield mounted.		
14.9	Whelen hidden Amberstrobe lights shall be installed in front corner lights of vehicle.		
14.10	A center console shall be installed between the 2 front seats of the host vehicle to house all the electrical switches for the emergency lighting, plow lights and		

	controls.		
	Pintle Plate & Towing	**YES**	**NO**
15.0	Rear of the chassis shall have two tow hooks.		
15.1	1/2" Pintle plate to be solid welded between the rear frame rails.		
15.2	Holland model T60 pintle hook mounted to the pintle plate		
15.3	The pintle hook height shall be aproximatly 21"p to the center of the hook		
15.4	Two (2) 1" D rings shall be permanently one on each side of the pintle hook.		
15.5	Weather proof RV style trailer connector shall be installed in the pintle plate. With the female installed and the male supplied.		
	Hydraulics	**YES**	**NO**
16.0	A hot shift P.T.O shall be transmission mounted to operate the hydraulic system for the dump body.		
16.1	The hydraulic pump shall be the recommended type that the dump body manufacturer recommends for this application		
17.0	Bidder must be a primary dealer for all items they are furnishing. For parts availability.		

The Superintendent of Highways, or his representative must approve the location of all mounted equipment other than standard production items, i.e. lights , radios etc..

NOTE: THE USE OF "3M" SCOTCHLOCK CONNECTORS IS NOT ACCEPTABLE FOR USE IN ANY CIRCUIT ON THE VEHICLE. ALL SPLICES MUST BE SOLDERED AND PROTECTED WITH HEAT SHRINK TUBING. ALL POWER CONNECTIONS FOR ANY INSTALLED ACCESSORIES MUST BE MADE TO AN EXISTING POWER SOURCE, i.e. terminal block. THE FUSE PANEL IS NOT TO BE USED TO SUPPLY POWER FOR ANY ADD ON ACCESSORIES, (i.e. radio, strobe

light, central hydraulic system etc.). ACCESSORIES ARE TO BE PROTECTED BY A SEPARATE CIRCUIT BREAKER OF PROPER RATING, ONE FOR EACH INSTALLED ITEM.

Each vehicle delivered shall comply with all applicable rules and regulations of the New York State Department of Motor Vehicles and National Traffic Safety Administration. Each vehicle shall be delivered with all standard equipment offered by the manufacturer whose product is offered in this bid as standard in 2007 vehicles. The Superintendent of Highways or his representative must approve locations of all non-manufacturer installed items such as plow lights, switches, pintle hook, etc

PERIOD OF CONTRACT: To be one year from date of award. At the termination date of contract period, the contract may be extended for one year, BY MUTUAL CONSENT OF BOTH OF THE CONTRACTING PARTIES.

PARTICIPATION BY POLITICAL SUBDIVISIONS: The successful vendor agrees that all political subdivisions of New York State and all other entities authorized by law to make such purchases may participate in any award under this bid. These entities shall accept full responsibility for any payments due the successful bidder for their purchases hereunder.

BIDDER QUALIFICATIONS:
ANY ADDITIONS, DEVIATIONS OR DELETIONS FROM THESE SPECIFICATIONS MUST BE STATED IN A LETTER WITH YOUR BID AND PLAINLY MARKED TO THE CORRECT AREA. OTHERWISE THE PURCHASING AUTHORITY WILL DEEM THE UNIT TO BE AS SPECIFIED AND UPON RECEIPT AND INSPECTION OF THE UNIT, HAVE THE AUTHORITY TO RETURN SAID UNIT FOR NON-COMPLIANCE WITH THE SPECIFICATIONS.

1)Bidder shall state the model, year and the name of the manufacturer.

2)Bids will be accepted only from chassis Manufacturers or their authorized dealers, who have constructed units similar in size and design to unit specified in this bid within the past five years. Bids on equipment must be on standard new equipment, latest model and in current production.
3)In the event that an alternate is bid, the Superintendent of Highways or his designee reserves the right to request a demonstration of the specific model bid within ten days after notification. Failure to furnish the demonstration would render the bid for that item non-responsive. The demonstration, if held, will be within the customer's location at no cost to the customer.

4)Mandatory submittal of detailed specifications are required. Failure to do so will result in rejection of the bid.

ITEM 17

	Description	YES	NO	EXCEPTIONS
CHASSIS AND FRAME				
	Base Chassis, Model TERRASTAR SFA 4x4 with 203.00 Wheelbase, 84.70 CA, and 49.00 Axle to Frame.	___	___	_____
	TOW HOOK, FRONT (2) Frame Mounted	___	___	_____
	SKID PLATE Steel, Frame Mounted, Protects the Transfer Case from the Ground	___	___	_____
	FRAME RAILS High Strength Low Alloy Steel **minimum 80,000 PSI Yield**; 7.375" x 3.079" x .312" (187.45mm x 78.2mm x 8.0mm) With Transition to 9.125" x 3.079" x .312" (231.8mm x 78.2mm x 8.0mm); Includes 1.2" (30mm) Drop Under Cab; 335.2" (8512.2mm) Maximum OAL	___	___	_____
	BUMPER, FRONT Full Width, Aerodynamic, Steel; 0.118" Material Thickness, Dark Gray	___	___	_____
	: BUMPER, FRONT Powder Coated Gray (Argent) Color	___	___	_____
	CROSSMEMBER, REAR, AF (01)	___	___	_____
	WHEELBASE RANGE 128" (325cm) Through and Including 183" (465cm)	___	___	_____
FRONT AXLE AND SUSPENSION				
	AXLE, FRONT DRIVING {Dana Spicer 70-273} Single Reduction, 8,000-lb Capacity	___	___	_____
	SUSPENSION, FRONT, SPRING Taper Leaf, Shackle Type; 8,000-lb Capacity; With 7,000-lb Capacity Steel Spring & (1) Rubber Auxiliary Spring (1000-lb Capacity), With Shock Absorbers	___	___	_____
BRAKE SYSTEM				
	BRAKE SYSTEM, HYDRAULIC {TRW 355} Split System, With Three Channel ABS	___	___	_____
	: BRAKE LININGS, FRONT HX-73, Non-Asbestos	___	___	_____
	: BRAKE LININGS, REAR HX-73, Non-Asbestos	___	___	_____
	BRAKE, PARKING {TRW} Drum-in-Hat Type; for Hydraulic Brake chassis; Activated by Lever in Cab; Mounted in Rear Wheels	___	___	_____
	: PARKING BRAKE CONTROL Lever, Floor Mounted, Located Right of Driver	___	___	_____
	BRAKES, FRONT, HYDRAULIC DISC {TRW} 15.35" x 1.54" Rotors; Dual 2.36" (60mm) Diam. Pistons	___	___	_____
	BRAKES, REAR, HYDRAULIC DISC {TRW} 15.35" x 1.54" Rotors; Dual 2.36" (60mm) Diam. Pistons	___	___	_____
STEERING				
	STEERING COLUMN Tilting	___	___	_____
	STEERING WHEEL 2-Spoke, 18" Diam., Black	___	___	_____
	STEERING GEAR {Sheppard MD83} Power	___	___	_____
EXHAUST SYSTEM				
	EXHAUST SYSTEM Single, Horizontal, Aftertreatment Device Frame Mounted Left Side Back of Cab; Includes Horizontal Tail Pipe	___	___	_____
	ENGINE EXHAUST BRAKE for MaxxForce 7 V8 Engines, Electronically Activated	___	___	_____
ELECTRICAL SYSTEM				
	ELECTRICAL SYSTEM 12-Volt, Standard Equipment	___	___	_____
	: BATTERY BOX Steel	___	___	_____
	: DATA LINK CONNECTOR For Vehicle	___	___	_____

Programming and Diagnostics In Cab

: FUSES, ELECTRICAL SAE Blade-Type	___	___	_____
: HAZARD SWITCH Push On/Push Off, Located on Top of Steering Column Cover	___	___	_____
: HEADLIGHT DIMMER SWITCH Integral with Turn Signal Lever	___	___	_____
: HEADLIGHTS (2) Sealed Beam Halogen, 5" x 7" Rectangular, with Molded-In Argent Colored Bezels	___	___	_____
: JUMP START STUD Located on Positive Terminal of Outermost Battery	___	___	_____
: PARKING LIGHT Integral with Front Turn Signal and Rear Tail Light	___	___	_____
: RUNNING LIGHT (2) Daytime, Included With Headlights	___	___	_____
: STARTER SWITCH Electric, Key Operated	___	___	_____
: STOP, TURN, TAIL & B/U LIGHTS Dual, Rear, Combination with Reflector	___	___	_____
: TURN SIGNAL SWITCH Self-Cancelling for Trucks, Manual Cancelling for Tractors, with Lane Change Feature	___	___	_____
: TURN SIGNALS, FRONT Includes Reflectors and Solid State Flashers; Flush Mounted	___	___	_____
: WINDSHIELD WIPER SWITCH 2-Speed with Wash and Intermittent Feature (5 Pre-Set Delays), Integral with Turn Signal Lever	___	___	_____
: WINDSHIELD WIPERS Single Motor, Electric, Cowl Mounted	___	___	_____
: WIRING, CHASSIS Color Coded and Continuously Numbered	___	___	_____
CIGAR LIGHTER Includes Ash Cup	___	___	_____
ALTERNATOR {Delco Remy 28SI} Brush Type, 12 Volt 200 Amp. Capacity, Pad Mount, with Remote Voltage Sensor	___	___	_____
BODY BUILDER WIRING Back of Standard Cab at Left Frame or Under Extended or Crew Cab at Left Frame; Includes Sealed Connectors for Tail/Amber Turn/Marker/ Backup/Accessory Power/Ground and Sealed Connector for Stop/Turn	___	___	_____
ELECTRIC TRAILER BRAKE/LIGHTS Accommodation Package to Rear of Frame; for Separate Trailer Stop, Tail, Turn, Marker Light Circuits; Includes Electric Trailer Brake accommodation package With Cab Connections for Mounting Customer Installed Electric Brake Unit, Less Trailer Socket	___	___	_____
BATTERY SYSTEM {International} Maintenance-Free (3) 12-Volt 2250CCA Total	___	___	_____
RADIO {Panasonic CQ120} AM/FM, Includes Multiple Speakers, Includes Auxiliary Input	___	___	_____
: SPEAKERS IN CAB (2) Dual-Cone with Deluxe Interior	___	___	_____
BACK-UP ALARM Electric, 102 dBA	___	___	_____
AUXILIARY HARNESS 3.0' for Auxiliary Front Head Lights and Turn Signals for Front Plow Applications	___	___	_____
HORN, ELECTRIC Disc Style	___	___	_____
JUMP START STUD Remote Mounted	___	___	_____
BATTERY DISCONNECT SWITCH {Joseph Pollak 51-315} Positive Type, Lever Operated, Cab Mounted	___	___	_____
: BATTERY DISCONNECT SWITCH Mounted to Outside of Battery Box	___	___	_____
CLEARANCE/MARKER LIGHTS (5) {Truck Lite} Amber LED Lights, Flush Mounted on Cab or Sunshade	___	___	_____
INDICATOR, LOW COOLANT LEVEL With Audible Alarm	___	___	_____
STARTING MOTOR {Delco Remy 29MT} 12 Volt; Less Thermal Over-Crank Protection, With Integrated Magnetic Switch	___	___	_____

	CIRCUIT BREAKERS Manual-Reset (Main Panel) SAE Type III With Trip Indicators, Replaces All Fuses Except For 5-Amp Fuses	___	___	_____
FRONT END				
	GRILLE Molded, Dark Gray Color	___	___	_____
	FRONT END Tilting, Fiberglass, With Three Piece Construction	___	___	_____
	: HOOD TILT ASSIST Includes Torsion Bar Spring System	___	___	_____
PAINT				
	PAINT SCHEMATIC, PT-1 Single Color, Design 100	___	___	_____
	PAINT TYPE Base Coat/Clear Coat, 1-2 Tone	___	___	_____
CLUTCH				
	CLUTCH Omit Item (Clutch & Control)	___	___	_____
ENGINE				
	BLOCK HEATER, ENGINE {Phillips} 120 Volt/1000 Watt	___	___	_____
	: BLOCK HEATER SOCKET Receptacle Type; Mounted below Drivers Door	___	___	_____
	ENGINE, DIESEL {MaxxForce 7} EPA 10, 300 HP @ 2600 RPM, 660 lb-ft Torque @ 1600 RPM, 2800 RPM Governed Speed, 300 Peak HP (Max)	___	___	_____
	: AIR COMPRESSOR AIR SUPPLY LINE Naturally-Aspirated (Air Brake Chassis Only)	___	___	_____
	: ANTI-FREEZE Red Shell Rotella Extended Life Coolant; -40 Degrees F/ -40 Degrees C; for MaxxForce and Navistar Engines	___	___	_____
	: CRUISE CONTROL Electronic; Controls Integral to Steering Wheel	___	___	_____
	: ENGINE OIL DRAIN PLUG Magnetic	___	___	_____
	: ENGINE SHUTDOWN Electric, Key Operated	___	___	_____
	: FUEL FILTER Engine Mounted	___	___	_____
	: FUEL HEATER Included with Fuel/Water Separator	___	___	_____
	: FUEL/WATER SEPARATOR Engine Mounted	___	___	_____
	: GLOW PLUG Automatic with Indicator Light	___	___	_____
	: GOVERNOR Electronic	___	___	_____
	: OIL FILTER, ENGINE Drop-In Cartridge Type	___	___	_____
	FAN DRIVE {Borg-Warner Series 790} Viscous Type, Screw On	___	___	_____
	: FAN Nylon	___	___	_____
	RADIATOR Aluminum; 2-Row, Cross Flow, Side-by-Side System, 697 SqIn Louvered, With 225 SqIn CAC, With In-Tank Oil Cooler	___	___	_____
	: DEAERATION SYSTEM with Surge Tank	___	___	_____
	: HOSE CLAMPS, RADIATOR HOSES Gates Shrink Band Type; Thermoplastic Coolant Hose Clamps	___	___	_____
	: RADIATOR HOSES Premium, Rubber	___	___	_____
	FEDERAL EMISSIONS EPA, OBD and GHG Certified for Calendar Year 2014; MaxxForce 7 Engines	___	___	_____
	AIR CLEANER With Service Protection Element	___	___	_____
	: GAUGE, AIR CLEANER RESTRICTION Air Cleaner Mounted	___	___	_____
	THROTTLE, HAND CONTROL Engine Speed Control; Electronic, Stationary, Variable Speed; Mounted on Steering Wheel	___	___	_____
	ENGINE CONTROL, REMOTE MOUNTED Provision for; Includes Wiring for Body Builder Installation of PTO Controls; With Ignition Switch Control for MaxxForce and Navistar post 2007 Emissions Electronic Engines	___	___	_____
	FAN DRIVE SPECIAL EFFECTS Fan Cooling Ring with Fan Shroud Effects, Engine Mounted	___	___	_____
	EMISSION COMPLIANCE Low NOx Idle Engine,	___	___	_____

	Complies with California Clean Air Regulations; Includes "Certified Clean Idle" Decal located on Driver Door			
TRANSMISSION				
	TRANSMISSION, AUTOMATIC {Allison 1000_RDS} 5th Generation Controls; Close Ratio, 6-Speed, With Overdrive; Includes Park Pawl, With PTO Provision, Less Retarder, With 19,500-lb GVW & 26,000-lb GCW Max., on/off hwy	___	___	_____
	TRANSFER CASE {Fabco TC-28} Two-Speed, Gear Drive, 3,600 lb-ft Capacity with Electric Shifting Controls, without PTO Provision	___	___	_____
	TRANSMISSION OIL Synthetic; 20 thru 28 Pints	___	___	_____
	SHIFT CONTROL PARAMETERS Allison 1000 or 2000 Series Transmissions, 5th Generation Controls, with EcoCal and Dynamic Shift Sensing (FuelSense Basic)	___	___	_____
REAR AXLE AND SUSPENSION				
	AXLE, REAR, SINGLE {Dana Spicer S110} Single Reduction, With Offset Housing; 13,500-lb Capacity, 160 Wheel Ends . Gear Ratio: 4.30	___	___	_____
	: REAR AXLE DRAIN PLUG (1) Magnetic, For Single Rear Axle	___	___	_____
	SUSPENSION, RR, SPRING, SINGLE Vari-Rate; 13,500-lb Capacity	___	___	_____
FUEL TANK				
	FUEL TANK Top Draw; Rectangular Non-Polished Aluminum, 40 U.S. Gal., 13.0” Tank Depth, Mounted Right Side Under Cab	___	___	_____
CAB				
	CAB Conventional 4 door crew cab	___	___	_____
	: ARM REST (2) Molded Plastic; One Each Door	___	___	_____
	: CLEARANCE/MARKER LIGHTS (5) Flush Mounted	___	___	_____
	: COAT HOOK, CAB Located on Rear Wall, Centered Above Rear Window	___	___	_____
	: CUP HOLDERS Two Cup Holders, Located in Lower Center of Instrument Panel	___	___	_____
	: DOME LIGHT, CAB Rectangular, Door Activated and Push On-Off at Light Lens, Timed Theater Dimming, Integral to Console, Center Mounted	___	___	_____
	: GLASS, ALL WINDOWS Tinted	___	___	_____
	: GRAB HANDLE, CAB INTERIOR (1) "A" Pillar Mounted, Passenger Side	___	___	_____
	: GRAB HANDLE, CAB INTERIOR (2) Front of "B" Pillar Mounted, One Each Side	___	___	_____
	:GRAB HANDLE, CAB INTERIOR (4) Two Each Side, Rear Door Mounted at Hinge Side and “C” Pillar Mounted	___	___	_____
	: INTERIOR SHEET METAL Upper Door (Above Window Ledge) Painted Exterior Color	___	___	_____
	: STEP (8) Two Steps Per Door Frame Mounted	___	___	_____
	GAUGE CLUSTER English With English Electronic Speedometer	___	___	_____
	: GAUGE CLUSTER (5) Engine Oil Pressure (Electronic), Water Temperature (Electronic), Fuel (Electronic), Tachometer (Electronic), Voltmeter	___	___	_____
	: ODOMETER DISPLAY, Miles, Trip Miles, Engine Hours, Trip Hours, Fault Code Readout	___	___	_____
	: WARNING SYSTEM Low Fuel, Low Oil Pressure, High Engine Coolant Temp, and Low Battery Voltage (Visual and Audible)	___	___	_____
	IP CLUSTER DISPLAY On Board Diagnostics Display of Fault Codes in Gauge Cluster	___	___	_____
	SEAT, DRIVER {National 2000} Self Contained with Compressor, High Back with Integral Head Rest,	___	___	_____

	Vinyl, Isolator, Mechanical Lumbar, 2 Position Front Cushion Adjust, -3 to +14 Degree Back Angle Adjust			
	: SEAT BELT 3-Point, Lap and Shoulder Belt Type	___	___	_____
	EXTERIOR GRAB HANDLE (4) Chrome Towel Bar Type With Anti-Slip Rubber Inserts; for Cab Entry, Mounted Left and Right, Each Side at "B" Pillar	___	___	_____
	MIRRORS (2) {Lang Mekra} Rectangular, 7.44" x 14.84" & 7.44" sq. Convex Both Sides, 102" Inside Spacing, Breakaway Type, Thermostatically Controlled Heated Heads, Black Heads, Brackets and Arms	___	___	_____
	SEAT, PASSENGER {National} Non Suspension, High Back, Fixed Back, Integral Headrest, Vinyl	___	___	_____
	SEAT, REAR {National} Vinyl, With Fixed Back and Two Integral Outboard Headrests	___	___	_____
	AIR CONDITIONER {Blend-Air} With Integral Heater & Defroster	___	___	_____
	: HEATER HOSES Premium	___	___	_____
	: HOSE CLAMPS, HEATER HOSE Mubea Constant Tension Clamps	___	___	_____
	: REFRIGERANT Hydrofluorocarbon HFC-134A	___	___	_____
	INSTRUMENT PANEL Center Section, Flat Panel	___	___	_____
	CAB INTERIOR TRIM Deluxe	___	___	_____
	: "A" PILLAR COVER Molded Plastic	___	___	_____
	: CAB INTERIOR TRIM PANELS Cloth Covered Molded Plastic, Full Height; All Exposed Interior Sheet Metal is Covered Except for the Following: with a Two-Man Passenger Seat or with a Full Bench Seat the Back Panel is Completely Void of Covering	___	___	_____
	: CONSOLE, OVERHEAD Molded Plastic; With Dual Storage Pockets with Retainer Nets and CB Radio Pocket	___	___	_____
	: DOOR TRIM PANELS Molded Plastic; Driver and Passenger Doors	___	___	_____
	: FLOOR COVERING Rubber, Black	___	___	_____
	: HEADLINER Soft Padded Cloth	___	___	_____
	: INSTRUMENT PANEL TRIM Molded Plastic with Black Center Section	___	___	_____
	: STORAGE POCKET, DOOR (1) Molded Plastic, Full-Length; Driver Door	___	___	_____
	: SUN VISOR (2) Padded Vinyl with Driver Side Toll Ticket Strap, Integral to Console	___	___	_____
	MODESTY PANEL Molded, Dark Gray Color	___	___	_____
WHEELS AND TIRES				
	WHEELS, FRONT DISC; 19.5" Painted Steel, 10-Stud (225mm BC) Hub-Piloted, Flanged Nut, Metric Mount, 6.00 DC Rims; With Steel Hubs	___	___	_____
	WHEELS, REAR DISC; 19.5" Painted Steel, 10-Stud (225mm BC) Hub-Piloted, Flanged Nut, Metric Mount, 6.00 DC Rims; With Steel Hubs	___	___	_____
	(2) TIRE, FRONT 225/70R19.5 G647 RSS (GOODYEAR) 640 rev/mile, load range G, 14 ply	___	___	_____
	(4) TIRE, REAR 225/70R19.5 G622 RSD (GOODYEAR) 641 rev/mile, load range G, 14 ply	___	___	_____
WARRANTY				
	BASE VEHICLE WARRANTY 36 Months/36,000 miles	___	___	_____
	SERVICE CONTRACT, AFTERTREATMENT {Navistar} To 72-Month/200,000 Miles (320,000 km), 7,200 Hours; Aftertreatment Coverage	___	___	_____
	SERVICE CONTRACT, ENGINE {Navistar} To 84-Month/200,000 Miles (320,000 km), 7,200 Hours; Includes Engine, Engine Electronics, and Injectors	___	___	_____
	EXTENDED TRANSMISSION COVERAGE {Allison} to 60-month/unlimited miles	___	___	_____

ACCESSORIES

(1) SPARE WHEEL AND TIRE MATCHING FRONT TREAD	___	___	_____
(1) SPARE WHEEL AND TIRE MATCHING REAR TREAD	___	___	_____
(4) KEYS PER VEHICLE	___	___	_____
Complete set of Parts and Service Manuals	___	___	_____

	Body General	YES	NO
1.0	The inside length of the dump body shall be 11’ and inside width shall be 84”		

Whitaker jump start system; plug mounted under drivers door	___	___	_____

1.1	It shall have a capacity of 3.5-4.7 cubic yards without sideboards		
1.2	The 7 gauge steel sides shall be 18” high with 6” wood sideboard pockets capable of increasing the capacity to 4.7 cubic yards.		
1.3	The straight vertical sides shall be made of 10 gauge grade 50 steel with a boxed top rail 3” wide.		
1.4	The dirt shedding top rail is to fold back 45 degrees at the top.		
1.5	No seams is to be visible to the outside or bottom of the top rail.		
1.6	Including the front corner post there is to be three (3) vertical side braces constructed of 10 gauge grade 50 steel. Fully welded		
1.7	The vertical side braces are to be 2” wide and 3” deep. Fully welded		
1.8	The bottom of the sides shall have a 5” 45 degree slopped rub rail that is 4 ½” wide. Fully welded		
1.9	The full depth rear corner posts shall be a minimum of 11” wide. Fully welded		
1.10			
	Tailgate	**YES**	**NO**
2.0	The fully welded 3 panel tailgate shall be one piece 10 gauge grade 50 steel with a 38” height.		
2.1	Horizontal bracing shall be dirt shedding including the top rail with Qty. (2), 3” vertical gussets		
2.2	The 1” flame cut upper tailgate hinge shall have a minimum 1 ½” upper pin and 1 ¼” lower tailgate pin.		
2.3	The ½” lower latch assembly shall have a lower ½” flame cut lower pin cradle		
2.4	Safety “F” latch on bottom tailgate pin.		
2.5	3/8” diameter cold rolled chain shall be provided to hook into the banjo eye brackets that are to be welded onto the rear corner posts for tailgate spreading.		
	Bulkhead	**YES**	**NO**
3.0	The bulk head shall be 24” from the bottoms of the floor to the top of the front corner posts and constructed of grade 50 steel.		
	Floor & Understructure	**YES**	**NO**
4.0	The floor shall be constructed of a one piece 10 gauge steel with a and will have a 5” side knee brace, fully welded		
4.1	The floor shall have 3” 4.1# structural steel crossmembers. And 6” 8.2# structural long members for an Understructure”		
4.2	Full length 6” “I” channel longsills		
	Hoist & Trunnion	**YES**	**NO**
5.0	Single cylinders scissor type sub frame mounted)		
5.1	(6) inch cylinder, (15)” stroke and a capacity of 9.0 tons		
5.3	Sub frame incorporates body props, body guides, bushings		

SECTION	SPECIFICATION DETAIL	COMPLY	
	Cabshield	**YES**	**NO**
6.0	½ Cabshield shall be made of 10 gauge grade 50 steel that extends 24” from the front of the dump body.		
6.1	Cabshield shall be mounted as low to the top of the cab as possible and shall be continuously welded to the bump body bulk head.		
	Tailgate Release	**YES**	**NO**
7.0	The tailgate shall be Manual release.		
7.1	The tail gate shall be 24” high, 3 panel		
7.2	A quick release top hardware shall be incorporated		
7.3	.an “F” latch with pin on the lower bracket shall encapsulate the lower pin and be pinned to not allow tailgate to come open from the bottom in case of lock mechanism failure.		
		YES	**NO**
	Added Accessories	**YES**	**NO**

8.0	Ladders and grab handle on both sides under dump body at front		
9.0	Splash shields forward or the rear wheels to be fabricated of 10 gauge steel.		
10.0	All lights are to be recessed.		
10.1	lights are to be flush mounted, rubber grommet type		
11.0	Lower side rub rails, and tailgate perimeter are to be outlined as per NHSTA guidelines with approved red / white conspicuity tape.		
12.0	18” x 18” x 48” powder coated steel toolbox mounted on the chassis frame rails on		
	.		
13.0	The body shall be equipped with a roll over manual tarp system.		
	Lighting & Electrical	**YES**	**NO**
14.0	All body lights must meet all Federal Safety Standard #108 and shall be installed using rubber shock mounted recessed lights with body wiring “Home Run Wired” (no splicing, but connectors or soldering outside of cab) and insulated in heavy loom.		
14.1	There shall be three 2” red lights installed in the rear corner posts.		
14.2	All marker lights are to be LED		
14.3	There shall be a 2” LED light installed in the dash to notify the driver that the dump body is in the “up” position.		
14.4	All lighting shall be Whelen LED lights and products. And must be manufactured in the United States.		
14.5	The products being bid must be standard lighting components for parts availability		
14.6	Mounted into the rear corner posts of the dump body must be one oval rubber grommet mounted Whelen 5G amber LED warning light, Whelen 500 series LED Red Stop tail and turn lights		
14.7	96db backup alarm is to be mounted at the rear of the chassis		
14.8	A Whelen l31 HAF amber led flashing light shall be Cabshield mounted.		
14.9	Whelen hidden Amberstrobe lights shall be installed in front corner lights of vehicle.		
14.10	A center console shall be installed between the 2 front seats of the host vehicle to house all the electrical switches for the emergency lighting, plow lights and controls.		
	Pintle Plate & Towing	**YES**	**NO**
15.0	Rear of the chassis shall have two tow hooks.		
15.1	1/2” Pintle plate to be solid welded between the rear frame rails.		
15.2	Holland model T60 pintle hook mounted to the pintle plate		
15.3	The pintle hook height shall be aproximatly 21”p to the center of the hook		
15.4	Two (2) 1” D rings shall be permanently one on each side of the pintle hook.		
15.5	Weather proof RV style trailer connector shall be installed in the pintle plate. With the female installed and the male supplied.		
	Hydraulics	**YES**	**NO**
16.0	A hot shift P.T.O shall be transmission mounted to operate the hydraulic system for the dump body.		
16.1	The hydraulic pump shall be the recommended type that the dump body manufacturer recommends for this application		
17.0	Bidder must be a primary dealer for all items they are furnishing. For parts availability.		

The Superintendent of Highways, or his representative must approve the location of all mounted equipment other than standard production items, i.e. lights , radios etc..

NOTE: THE USE OF "3M" SCOTCHLOCK CONNECTORS IS NOT ACCEPTABLE FOR USE IN ANY CIRCUIT ON THE VEHICLE. ALL SPLICES MUST BE SOLDERED AND PROTECTED WITH HEAT SHRINK TUBING. ALL POWER CONNECTIONS FOR ANY INSTALLED ACCESSORIES MUST BE MADE TO AN EXISTING POWER SOURCE, i.e. terminal block. THE FUSE PANEL IS NOT TO BE USED TO SUPPLY POWER FOR ANY ADD ON ACCESSORIES, (i.e. radio, strobe light, central hydraulic system etc.). ACCESSORIES ARE TO BE PROTECTED BY A SEPARATE CIRCUIT BREAKER OF PROPER RATING, ONE FOR EACH INSTALLED ITEM.

Each vehicle delivered shall comply with all applicable rules and regulations of the New York State Department of Motor Vehicles and National Traffic Safety Administration. Each vehicle shall be delivered with all standard equipment offered by the manufacturer whose product is offered in this bid as standard in 2007 vehicles. The Superintendent of Highways or his representative must approve locations of all non-manufacturer installed items such as plow lights, switches, pintle hook, etc

PERIOD OF CONTRACT: To be one year from date of award. At the termination date of contract period, the contract may be extended for one year, BY MUTUAL CONSENT OF BOTH OF THE CONTRACTING PARTIES.

PARTICIPATION BY POLITICAL SUBDIVISIONS: The successful vendor agrees that all political subdivisions of New York State and all other entities authorized by law to make such purchases may participate in any award under this bid. These entities shall accept full responsibility for any payments due the successful bidder for their purchases hereunder.

BIDDER QUALIFICATIONS:
ANY ADDITIONS, DEVIATIONS OR DELETIONS FROM THESE SPECIFICATIONS MUST BE STATED IN A LETTER WITH YOUR BID AND PLAINLY MARKED TO THE CORRECT AREA. OTHERWISE THE PURCHASING AUTHORITY WILL DEEM THE UNIT TO BE AS SPECIFIED AND UPON RECEIPT AND INSPECTION OF THE UNIT, HAVE THE AUTHORITY TO RETURN SAID UNIT FOR NON-COMPLIANCE WITH THE SPECIFICATIONS.

1)Bidder shall state the model, year and the name of the manufacturer.

2)Bids will be accepted only from chassis Manufacturers or their authorized dealers, who have constructed units similar in size and design to unit specified in this bid within the past five years. Bids on equipment must be on standard new equipment, latest model and in current production.
3)In the event that an alternate is bid, the Superintendent of Highways or his designee reserves the right to request a demonstration of the specific model bid within ten days after notification. Failure to furnish the demonstration would render the bid for that item non-responsive. The demonstration, if held, will be within the customer's location at no cost to the customer.

4)Mandatory submittal of detailed specifications are required. Failure to do so will result in rejection of the bid.

ITEM 18

2016 FORD F250 4X4 REGULAR CAB PICKUP

F2B F250 4X4 SD R/C
137" WHEELBASE - 8 FOOT BED
W6 GREEN GEM METALLIC PAINT
AS STEEL GRAY VINYL 40/20/40 SEAT
600A PREF EQUIP PKG
.XL TRIM
.TRAILER TOW PKG
572 .AIR CONDITIONER
996 .6.2L EFI V8 ENGINE
TBM LT245 BSW ALL TERRAIN 17" TIRES
17X FX4 OFF-ROAD PKG
90L POWER EQUIP GROUP
10000# GVWR PKG
41H ENGINE BLK HEATER
473 SNOW PLOW PREP PKG
TELE TRAILER TOW MIRRORS- PWR
66S UPFITTER SWTCHES
85S TOUGH BED SPRAYED IN BEDLINER
.AM/FM STER/CLK
44P 6-SPD AUTOMATIC
X3E 3.73 ELOCKING
.SKID PLATES
18B MOLDED BLK STE
213 ELECTRONIC SOF
425 50 STATE EMISS
512 SPARE TIRE/WHL2 JACK
76C REVERSE ALARM

Powertrain/Functional

- Brakes – Four-Wheel Disc with Anti-lock Brake System (ABS)
- Stationary Elevated Idle Control
- Tire Pressure Monitoring System (TPMS)
- Trailer Tow Package – 7-wire harness w/relays & 7/4 pin connector
- Transmission – TorqShift® six-speed automatic w/SelectShift® Automatic

Exterior

- Bumpers – front & rear, black painted
- Center High-mounted Stop Lamp
- Headlamps – dual beam jewel effect halogen
- Jack — 2-Ton
- Spare tire, wheel, lock & carrier
- Tailgate – Removable w/key lock & Tailgate Assist
- "Three-Blink" lane change signal
- Tow hooks – front, two (2)
- Underhood service light

Interior

- Air conditioning – manual
- Audio – AM/FM stereo with digital clock and two (2) speakers
- Door trim – armrest/grab handle & reflector
- Floor covering – Black, full length vinyl
- Instrumentation Center – Multi-function switch message center display with Ice Blue® Lighting
- Mirror – rearview 11.5" day/night
- Outside Temperature Display
- Powerpoint – auxiliary two (2) in instrument panel
- Seats – Front, HD vinyl, 40/20/40 split bench w/center armrest, cupholder and front center-seat
- Windshield wipers – intermittent Safety/Security

Safety/Security

- AdvanceTrac® with RSC® (Roll Stability Control™)
- Safety belts – w/height adjustment D-ring
- Safety Canopy® System

ITEM 19

2016 FORD F250 4X4 SUPER CAB (MODEL X2B) PICKUP

X2B F250 4X4 SUPER CAB
142" WHEELBASE - 6 ½ FOOT BED
W6 GREEN GEM METALLIC PAINT
AS STEEL GRAY VINYL 40/20/40 SEAT
600A PREF EQUIP PKG
.XL TRIM
.TRAILER TOW PKG

572 .AIR CONDITIONER	AM/FM STER/CLOCK
996 .6.2L EFI V8 ENGINE	44P 6-SPD AUTOMATIC
TBM LT245 BSW ALL TERRAIN 17" TIRES	X3E 3.73 ELOCKING
17X FX4 OFF-ROAD PKG	SKID PLATES
90L POWER EQUIP GROUP	18B MOLDED BLK STE
10000# GVWR PKG	213 ELECTRONIC SOF
41H ENGINE BLK HEATER	425 50 STATE EMISS
473 SNOW PLOW PREP PKG	512 SPARE TIRE/WHL2
TELE TRAILER TOW MIRRORS- POWER	JACK
66S UPFITTER SWTCHES	76C REVERSE ALARM

85S TOUGH BED SPRAYED IN BEDLINER

Powertrain/Functional

- Brakes – Four-Wheel Disc with Anti-lock Brake System (ABS)
- Stationary Elevated Idle Control
- Tire Pressure Monitoring System (TPMS)
- Trailer Tow Package – 7-wire harness w/relays & 7/4 pin connector
- Transmission – TorqShift® six-speed automatic w/SelectShift® Automatic

Exterior

- Bumpers – front & rear, black painted
- Center High-mounted Stop Lamp
- Headlamps – dual beam jewel effect halogen
- Jack — 2-Ton
- Spare tire, wheel, lock & carrier
- Tailgate – Removable w/key lock & Tailgate Assist
- "Three-Blink" lane change signal
- Tow hooks – front, two (2)
- Underhood service light

Interior

- Air conditioning – manual
- Audio – AM/FM stereo with digital clock and two (2) speakers
- Door trim – armrest/grab handle & reflector
- Floor covering – Black, full length vinyl
- Instrumentation Center – Multi-function switch message center display with Ice Blue® Lighting
- Mirror – rearview 11.5" day/night
- Outside Temperature Display
- Powerpoint – auxiliary, two (2) in instrument panel
- Seats – Front, HD vinyl, 40/20/40 split bench w/center armrest, cupholder and front center-seat
- Windshield wipers – intermittent Safety/Security

Safety/Security

- AdvanceTrac® with RSC® (Roll Stability Control™)
- Safety belts – w/height adjustment D-ring
- Safety Canopy® System

ITEM 20

2016 FORD F250 4X4 CREW CAB (4 DOOR) PICKUP

W2B F250 4X4 CREW/CAB
172" WHEELBASE - 8 FOOT BED
W6 GREEN GEM METALLIC PAINT
AS STEEL GRAY VINYL 40/20/40 SEAT
600A PREF EQUIP PKG
.XL TRIM
.TRAILER TOW PKG
572 .AIR CONDITIONER
996 .6.2L EFI V8 ENGINE
TBM LT245 BSW ALL TERRAIN 17" TIRES
17X FX4 OFF-ROAD PKG
90L POWER EQUIP GROUP
10000# GVWR PKG
41H ENGINE BLK HEATER
473 SNOW PLOW PREP PKG
TELE TRAILER TOW MIRRORS- PWR
66S UPFITTER SWTCHES
85S TOUGH BED SPRAYED IN BEDLINER
.AM/FM STER/CLK
44P 6-SPD AUTOMATIC
X3E 3.73 ELOCKING
.SKID PLATES
18B MOLDED BLK STE
213 ELECTRONIC SOF
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- Safety belts – w/height adjustment D-ring
- Safety Canopy® System

ITEM 21

2015 FORD EXPEDITION XLT – REGULAR LENGTH

NOTE – FINAL 2015 EXPEDITION ORDERS DUE NO LATER THAN 4/30/15

U1J 4X4 EXPEDITION XLT
.119" WHEELBASE
Z1 OXFORD WHITE
CH EBONY CLOTH BUCKET SEATS
200A EQUIP GRP
58B .AM/FM SINGLE CD
21F .2ND ROW CLOTH
99T .3.5L ECO V6 ENGINE
446 .6-SPD AUTO O/D TRANSMISSION
422 CALIF EMISSIONS
51R ALL WEATHER FLOOR MATS
536 TRAILER TOW PKG

EXTERIOR

. GRILLE - 3-BAR, CHROME
. RUNNING BOARDS
. LUGGAGE RACK AND CROSSBARS
. LED FOG LAMPS
. AUTOLAMP-AUTO ON/OFF HDLMP

INTERIOR

. ELECTROCHROMIC MIRROR
. CENTER CONSOLE W/STORAGE
. 2ND ROW BENCH SEAT
. 3RD ROW 60/40 SPLIT BENCH
. POWER ADJUSTABLE PEDALS
. TILT STEERING WHL/ CRUISE & AUDIO CONTROLS
. SIRIUS SAT RADIO N/A AK/HI

FUNCTIONAL

. ENGINE 3.5L V6 ECOBOOST
. SYNC
. FRONT/REAR IND SUSPENSION
. PWR HTD MIRRORS W/SEC LAMP
. UNIVER GARAGE DOOR OPENER
. CLASS IV TRAILER TOW PKG
. TRAILER SWAY CONTROL
. REAR INT WIPER/WASH/DEFRST

SAFETY/SECURITY

. ADVANCETRAC WITH RSC
. AIRBAGS - SIDE IMPACT / SAFETY CANOPY
. 4-WHEEL DISC BRAKES W/ABS
. LATCH CHILD SAFETY SYSTEM
. SOS POST CRASH ALERT SYS
. SECURILOCK PASS ANTI THEFT
. SECURICODE KEYLESS KEYPAD
. REVERSE SENSING SYSTEM
. TIRE PRESSURE MONITOR SYS

WARRANTY

. 3YR/36,000 BUMPER / BUMPER
. 5YR/60,000 POWERTRAIN 5 yr/60,000 roadside

ITEM 22

MODEL OPTION	CODE	DESCRIPTION	COMPLY YES
		2015 GMC SIERRA 2500 HD 4X4 DOUBLE CAB PICK UP	
		FLEET/RETAIL TK25753	
	AVF	2015 INTERIM PROCESSING CODE	
SUSPENSION PKG	Z85	SUSPENSION PACKAGE	
EMISSIONS	NE1	NEW YORK STATE	
ENGINE	L96	VORTEC 6.0 L	
TRANSMISSION	MYD	6 SPEED AUTOMATIC TRANSMISSION	
GVWR	GEH	9500 LBS.	
AXLE	GT5	REAR AXLE 4.10 RATIO	
EQUIPMENT GROUP	1SA	WORK TRUCK PREFERRED EQUIPMENT GROUP	
WHEELS	PYN	17" WHEELS STEEL RIMS	
	STD	FULL SIZE SPARE	
TIRES	QXT	TIRES LT265/70R17E ALL TERRAIN BLACK WALLS	
PAINT SCHEME	ZY1	PAINT SOLID	
PAINT	G7J	EMERALD GREEN METALLIC	
SEAT TYPE	AE7	SEATS, FT. 40/20/40	
SEAT TRIM	H2Q	DARK ASH W/ JET BLACK INTERIOR ACCENTS, VINYL SEAT TRIM	
RADIO	IO3	AUDIO SYSTEM	
ADDITIONAL EQUIPMENT			
	PCR	SIERRA FLEET CONVENIENCE PACKAGE	
	VYU	SNOW PLOW PREP PACKAGE	
	KW5	ALTERNATOR	
	JL1	TRAILER BRAKE CONTROLLER INTEGRATED	
	Z82	TRAILER EQUIPMENT	
	NZZ	UNDERBODY SHIELDS	
	RVQ	LPO BLACK TUBULAR ASSIT STEPS	
	SB1	LPO FLAT SPLASH GUARDS	
	UF2	LED LIGHTING, CARGO BOX WITH SWITCH ON CENTER	
	U01	LAMPS, SMOKED AMBER ROOF LIGHTS	
	TRW	PROVISION FOR CAB ROOF MOUNTED LAMP/BEACON	
	DL8	MIRRORS OUTSIDE HEATED POWER ADJUST	
	VK3	LICENSE PLATE KIT FRONT	
	AQQ	REMOTE KEYLESS ENTRY	
	C49	REAR WINDOW ELECTRIC DEFOGGER	

ADDITIONAL EQUIPMENT	4 KEYS MUST BY SUPPLIED
WARRANTY	3 YEARS, 36000 MILES BUMPER TO BUMPER, 5 YEARS 100,000 POWER TRAIN

ITEM 23
2015 Jeep
Compass

See specs in
separate document