

**Notice to Bidders**  
**Ithaca Tompkins Regional Airport**  
**Runway Broom and Rotary Snow Blower**

**SEALED BIDS** for a new All-Wheel Drive, Heavy Duty Dual Engine, Cab Forward Chassis with Front-Mounted Twenty Foot Runway Broom and Rotary Snow Blower will be accepted at the Tompkins County Finance Department, Purchasing Division, 125 East Court Street, Old Jail Building, 2<sup>nd</sup> Floor, Ithaca, New York, 14850 up until 11:30 a.m. on July 1, 2014 at which time and place they will be opened and publicly read.

Specifications are available for download at: [www.tompkinscountyny.gov/purchase/current-bids](http://www.tompkinscountyny.gov/purchase/current-bids).

Questions regarding the procurement process may be directed to Lisa Hall, [lhall@tompkins-co.org](mailto:lhall@tompkins-co.org), or (607) 274-5500.

Tompkins County reserves the right to waive any informalities and to reject any or all bids.

Lisa M. Hall  
Buyer

## Tompkins County

### Request for Bid – Submission Instructions

Respondents shall submit their bid response per the instructions below. Respondents who do not follow these guidelines may have their bids rejected as incomplete or non-responsive.

- Respondents shall read all documents contained in this specification package. Failure to do so does not excuse respondent from abiding by all instructions, terms or conditions.
- Responses shall be submitted to the location and in the format indicated in the specifications no later than the date and time indicated.
- The County reserves the right to amend the specifications prior to the due date by written “Addenda”. It is the respondent’s responsibility to ascertain whether any addenda have been issued prior to submitting their bid.
- Respondents shall submit their bid in a sealed package or envelope with the name of their company and the title of the Request for Bid.
- Respondents must provide one original printed copy, with original signatures, of their bid response. Electronic files may be requested as well.
- Respondents shall submit **all** forms that require signatures with their bid response.
- All responses submitted become the property of the County and are subject to Public Information Policy.
- This invitation for bid does not commit the County to award a contract, nor shall the County be responsible for any cost or expense that may be incurred by the respondent in preparing and submitting their response or any cost incurred prior to the execution of a contract.
- The County reserves the right to cancel the contract without cause with a minimum of thirty (30) days written notice. Termination or cancellation of the contract will not relieve the respondent of any obligations or liabilities resulting from any acts committed by the respondent prior to the termination of the contract. The respondent may cancel the contract with one hundred-twenty (120) days written notice.

**Tompkins County**  
**Request for Bid – Terms & Conditions**

**Method of Award:**

The County reserves the right to award the contract to the respondent who submits the bid(s) that prove(s) to be in the best interest of the County. The County has the sole discretion and reserves the right to cancel this request, reject any/all responses, to waive any/all informalities and/or irregularities if it is deemed to be in the best interest of the County to do so.

**Contract Extension:**

The County agrees, under the General Municipal Laws of New York State to allow all authorized users who wish to utilize any contract awarded as a result of this solicitation to do so. However, it is understood that the extension of such contract is at the discretion of the respondent and the respondent is only bound to the contract between itself and the County.

**Term of Contract:**

Unless otherwise specified, any contract resulting from this solicitation shall be for one year with the option to renew for up to three (3) additional twelve (12) month periods by mutual agreement in accordance with the terms of the contract.

**Contract Award:**

The contract award, if any, will be made within forty-five (45) calendar days of due date. The contract shall be awarded to the respondent who submits the lowest responsible bid that proves to be in the best interest of the County.

**Non-Appropriation Clause:**

In accordance with New York State General Municipal Law, the County will not be liable for any purchases or contracts for goods or services for which funding is not available. As a result, the respondent agrees to hold the County harmless for any contracts let for which funding either does not currently exist, or for which funding has been removed prior to the authorization to proceed. Should it become necessary for the County to cancel a project after the order to proceed has been issued, the County will only be liable for, and the respondent agrees, to only assess those financial damages that it can prove to have incurred as a result of the contract cancellation.

**Guarantee:**

The respondent shall guarantee that the product(s) or equipment provided is standard new products or equipment (unless otherwise requested), latest model of regular stock product and in current production. Replacements parts shall be easily obtained and that no attachment or part (if applicable) has been substituted or applied contrary to the manufacturers' recommendations and standard practice. Every product delivered shall be guaranteed against faulty material and workmanship for the term(s) of the contract(s). If during this period such faults develop, the product(s) shall be replaced at no cost to the County.

**Late Delivery Penalties:**

Delivery terms shall be stated in the detailed specifications, or may be requested from the respondent to be specified on the bid form. By signing the bid forms the respondent agrees that they are able to meet the specified requirements. A penalty fee of \$10.00 per calendar day, for each day the item(s) ordered are not delivered to the proper County location may be assessed. In the event that the item is on backorder through no fault of the respondent, the respondent is required to inform the County immediately. Late penalty fees shall be deducted from the invoice once the item is received by the County.

**Invoices:**

Invoices shall be mailed directly to the ordering department. Invoices mailed to the incorrect location may not be forwarded thus causing delay in payment.

**Tax on Materials:**

In regard to any taxes applicable to this project respondents are to acquire a copy of form ST-120.1 from the New York State Department of Taxation and Finance and follow accordingly. Tompkins County is tax exempt. If required, a Tax Exemption Certificate will be forwarded upon request.

**Failure to Perform:**

In the event the equipment and/or products fail to perform to the County's expectations the vendor shall, at its own expense, repair or replace said item(s).

**Installation of Equipment:**

In the event that installation of equipment is needed, the respondent shall arrange with the County for the installation within forty-eight (48) hours after delivery of the product(s).

**Training:**

If required, training shall take place during regular business hours. Training shall be provided until all County personnel involved in the contract are adequately trained.

**Financing of Material or Equipment Purchases:**

When any bid includes the lease and/or purchase of material and/or equipment the respondent shall submit a price on the bid form provided by the County. The price offered shall include all delivery, installation (if applicable), finance, and any other charges that may be associated with said purchase or lease. The County shall only deal with the contractor/vendor actually submitting the bid AND arrangements made between the respondent and any other party as a part of this bid are strictly between those parties and the County shall not be included or required to participate in them in any way. Furthermore, the County shall only make payments directly to the vendor awarded a contract and issued a purchase order or authorization to proceed. The County shall not make partial or pre-payments of any kind unless stipulated in the specifications by the County.

**Pricing Adjustments:**

Pricing adjustments will only be considered at the time of bid renewal. If, in the opinion of the County, any price adjustment request is in excess of that acceptable to the County, the County reserves the right to reject the proposed increase and seek new bids.

**Workforce Diversity and Inclusion:**

Tompkins County government is committed to creating a diverse and fully inclusive workplace that strengthens our organization and enhances our ability to adapt to change by developing and maintaining:

- A. An organization-wide understanding and acceptance of the purpose and reasons for diversity;
- B. Recruitment and retention policies that assure a diverse workforce;
- C. A workplace environment that is welcoming and supportive of all;
- D. Awareness, understanding and education regarding diversity issues;
- E. Zero tolerance for expressions of discrimination, bias, harassment, or negative stereotyping toward any person or group;
- F. A workforce ethic that embraces diversity and makes in the norm for all interactions, including delivery of services to the public.

Respondents are encouraged to include an outline of their diversity policy in their proposal response.

**Contract Re-Assignment:**

The respondent shall not re-assign any portion of the any contract that results from this solicitation without the express written consent of the County.

**Deviations:**

Deviations to the specifications are to be so noted and fully explained. Tompkins County reserves the right to accept any or all deviations if it proves to be in the best interest of the County.

**Corporate Compliance:**

FEDERAL FUNDING COMPLIANCE: The Respondent agrees to comply with all Federal, State, and local laws and regulations governing the provision of goods and services under this Contract. To the extent that federal funds are provided to the Respondent under this contract, the Respondent agrees that it will comply with all applicable federal laws and regulations, including but not limited to those laws and regulations under which the Federal funds were authorized.

Further, Respondent agrees to comply with the County's Compliance Plan regarding Federal and State fraud and abuse laws; the Compliance Plan can be reviewed at [www.tompkins-co.org](http://www.tompkins-co.org) or a copy can be obtained from Tompkins County Administration, 125 East Court Street, Ithaca, NY 14850.

Respondents that are providers of healthcare services certify that the Respondent, and all employees, directors, officers, and subcontractors of the Respondent, are not "excluded individuals or entities" under Federal and/or New York State statutes, rules and regulations, to determine if any of them are on or have been added to the exclusion list.

The Respondent shall promptly notify the County if any employee, director, officer of subcontractor is on or has been added to the exclusion list. The County reserves the right to immediately cancel this contract, at no penalty to the County, if any employee, director, officer or subcontractor is on or has been added to the exclusion list.

By submitting a response to a Request for Proposals, you are attesting to the fact that you and/or the provider, which you represent, have not been sanctioned nor excluded by any of the aforementioned entities.

**Iranian Energy Sector Divestment:**

By submitting a response to this solicitation, the respondent hereby represents that said respondent is in compliance with New York State General Municipal Law Section 103-g entitled "Iranian Energy Sector Divestment", in that said respondent has not:

- a. Provided goods or services of \$20 Million or more in the energy sector of Iran including, but not limited to, the provision of oil or liquefied natural gas tankers or products used to construct or maintain pipelines used to transport oil or liquefied natural gas for the energy sector of Iran; or
- b. Acted as a financial institution and extended \$20 Million or more in credit to another person for forty-five days or more, if that person's intent was to use the credit to provide goods or services in the energy sector of Iran.

Any respondent who has undertaken any of the above and is identified on a list created pursuant to Section 165-a (3)(b) of the New York State Finance Law as a person engaging in investment activities in Iran, shall not be deemed a responsible bidder pursuant to Section 103 of the New York State General Municipal Law.

Except as otherwise specifically provided herein, every respondent submitting a response to this solicitation must certify and affirm the following under penalties of perjury:

- (1) “By submission of this response to solicitation, each respondent and each person signing on behalf of any respondent certifies, and in the case of a joint response, each party thereto certifies as to its own organization, under penalty of perjury, that to the best of its knowledge and belief, that each respondent is not on the list created pursuant to NYS Finance Law Section 165-a (3)(b).”

Except as otherwise specifically provided herein, any response to this solicitation that is submitted without having complied with subdivision (1) above, shall not be considered for award. In any case where the respondent cannot make the certifications as set forth in detail the reasons therefore. The County reserves the right, in accordance with General Municipal Law Section 103-g to award the contract to any respondent who cannot make the certification on a case-by-case basis under the following circumstances:

- (1) The investment activities in Iran were made before April 12, 2012, the investment activities in Iran have not been expanded or renewed after April 12, 2012, and the respondent has adopted, publicized and is implementing a formal plan to cease the investment activities in Iran and to refrain from engaging any new investments in Iran; or
- (2) The County of Tompkins has made a determination that the goods and services are necessary for the County to perform its functions and that, absent such an exemption, the County of Tompkins would be unable to obtain the goods or services for which the Bid is offered. Such determination shall be made by the County in writing and shall be a public document.

### **Living Wage**

Tompkins County must consider the wage levels and benefits, particularly health care, provided by contractors when awarding bids or negotiating contracts, and to encourage the payment of livable wages whenever practical and reasonable.

If contractor certifies on Attachment A that its employees directly providing services outlined in this contract are NOT paid a living wage, the department contract representative may have a conversation with contractor to understand the cost implications of achieving the living wage threshold, whether there are structural barriers impacting the ability to pay the living wage, plans to improve wages over time, generous fringe benefits, or other considerations that should be applied when addressing the question of whether it is practical or reasonable to meet the living wage threshold including the cost required to bring the contract to the living wage threshold.

## **Tompkins County Bid Specifications Runway Broom and Snow Blower**

### **Questions:**

Questions regarding these specifications must be submitted in writing to David Crawford, Ithaca Tompkins Regional Airport, [dcrawford@tompkins-co.org](mailto:dcrawford@tompkins-co.org), no later than **Tuesday, June 24, 2014**. Questions submitted after June 24, 2014 will not be entertained.

### **General:**

It is the intent of the Ithaca Tompkins Regional Airport to purchase one new, all-wheel drive, heavy duty dual engine, cab forward chassis with front mounted, twenty foot runway broom and a rotary snow blower.

The proposed vehicle must be all-wheel drive and designed for the specific purpose of snow removal, with a 50,000 lb. GVW rating, approximate wheel base of 164". The configuration shall be front-mounted attachments, forward mounted cab design with near center steering, auxiliary power unit between operator cab and rear-mounted carrier engine. The chassis shall feature a quick hitch to allow for interchangeability of front-mounted snow removal implements.

The proposed vehicle shall comply with all applicable FMCSR and FMVSS quality/safety standards and the requirements of the FAA Advisory Circular 150/5220-20.

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

### **Experience:**

Bidders shall provide a list of a minimum of ten (10) airports that have purchased substantially comparable equipment to that being proposed within the last five (5) years. The list shall include the airport name, address, telephone and fax numbers as well as a point of contact.

### **Type and Size:**

The proposed unit shall be designed for one-man operation and have a fully enclosed, thermally and acoustically insulated, aluminum and glass cab mounted center frame. The operator shall be positioned near center cab.

The front attachment to front axle dimension shall be as close as possible to allow the operator to be as far forward permitted.

### **Chassis:**

The chassis design shall allow for easy mounting and dismounting of the unit. Grab bars shall be installed following OSHA standards of 3-point contact. A 1" diameter vertical grab bar behind each door shall be included. The inside door shall include a minimum 1-foot grab handle, made of a minimum 1" diameter material, round only, positioned under the window. All sheet metal, cowling, steps and fenders shall have no sharp edges or protrusions and include ample supports and bracing. All steps or walkways shall be raised lug or expanded metal construction.

The carrier engine access cover shall be a fiberglass tilting type with an air-over hydraulic assist system installed on the vehicle and controlled from the rear bumper area. The hoist shall operate on system air pressure with push-to-operate controls. The hood shall include a minimum of two (2) hydraulic cylinders, one mounted on the left, and one mounted on the right under the hood. Lowering of the hood shall be accomplished through an orifice release. Guides shall be mounted, one on each side of the hood, below the leading edge to self-align the hood as it lowers. Rollers or other items on the hood shall lower to the outside of the guides.

**Frame:**

The frame shall be Grade 8 bolted construction with heat treated, 120,000 psi yield strength, single channel carbon manganese steel rails, connected by the proper number of cross members required to resist frame distortion and lateral stress. Minimum bar size shall be 12.375" x 3.875" x .375" with minimum 2,818,000" pound RBM per rail. The frame shall be the industry standard 34" width. There shall be two (2) tow hooks mounted on the rear of the vehicle.

A straight, full-width rear bumper is required. The bumper shall be approximately 12" in height. The unit shall have an angle of departure of no less than 15°.

A Lubrication Data Plate is required.

Mud flaps shall be provided behind both axles and in front of the rear axle.

**Chassis Drive Engine:**

The engine shall be a minimum 2010 EPA "On-Highway" compliant, four-stroke diesel type, six (6) cylinder, minimum 11.9 liter nominal displacement, developing a minimum 500 horsepower at 1800 RPM, with engine governed RPM of 2100, Cummins. The engine shall be equipped with the latest diesel electronic control and engine management system. The engine shall be provided with full-flow, replaceable oil filters, heated fuel water separator, engine manufacturer's standard fuel filtration system, and emergency (power de-rate) system with light and buzzer. Two switches shall be provided, one to manually active the emissions regeneration system and one to stop the regeneration process. An automatic measured shot of ether starting aid with thermostatic control shall be provided. Starter shall be Delco. Engine shall have a front engine PTO flange for mounting a front-mounted hydraulic pump to be driven directly off the crankshaft.

The chassis engine shall be equipped with cruise control and high idle feature. Switches shall be in the upper cab control panel to allow the operator to select high engine idle, when the vehicle is stationary, or cruise control when the vehicle is moving. Both functions shall automatically be disabled if the brake, throttle pedals, or parking brake control valve are used.

A coolant heater shall be a 1500-watt block type with receptacle. The electrical connection for the on-board coolant heaters (both the carrier and the blower engine) shall be mounted at the rear of the vehicle.

A dry type, two-stage air cleaner is required with provision for modification of air intake to allow both outside of the hood and under the hood air intake. Chassis engine air intake filter canister(s) shall be located under the chassis engine hood on stand-away brackets.

An exhaust guard shall cover the external exhaust components.

**Side Drain Kit/Snow Blower and Prime Mover:**

A side drain kit containing hosing and valves for draining fluids is required. Outlets and hoses shall be supplied and labeled to allow draining of the blower radiator and cooling system, chassis radiator and cooling system, snow blower (auxiliary) engine oil, blower drop box, and main blower hydraulics reservoir. Outlets shall be frame mounted in easy to access areas.

**Cooling System:**

The cooling system shall consist of a heavy duty radiator and engine air charge cooler assembly. The charge air cooler (CAC) shall be mounted above the coolant radiator core. The coolant and air flow shall be horizontal with the side tanks and side members bolted together to form a rigid frame. The tanks shall be steel, the core shall be constructed of copper and brass. Sturdy steel support rods (minimum ½" diameter) between the radiator and frame, complete with rubber vibration isolating pucks at frame end. A minimum of one support bracket on each side of the radiator. Aluminum radiators are not preferred.

A transmission cooler shall be protected within one of the coolant radiator side tanks. A thermostatically controlled, air operated disconnect type suction fan shall be provided. Radiator shroud is required. An engine mounted fan ring is required and shall attach to the cooling system radiator and charge air cooler through a flexible rubber material. The engine cooling system shall be filled with permanent type anti-freeze protecting the system to -40° F. A spin-on coolant filter, a silicone radiator and heater hoses shall be provided.

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

**Chassis Engine Cooling System Certification:**

Certification and proof of chassis engine cooling tests must be submitted with the bid package. Certification shall include a letter from the engine manufacturer indicating the approval of the installation as bid. Certification shall prove the cooling capacity in ambient temperatures up to 100° at maximum horsepower and that the proposed horsepower shall be equal to or greater than the horsepower required within this specification.

**Fuel System:**

Twin fuel tanks shall have a minimum total capacity of 250 gallons. The tanks shall be constructed of heavy gauge steel. A 4" diameter filler neck with chain connected cap and brass tank drain plugs shall be provided. Fuel tanks shall be interconnected, single-side fuel fill, 30 GPM fill rate with shut-off valves at each end. A Racor 3150R heated fuel/water separator shall be installed in the supply line to each engine fuel injectors.

**Transmission:**

The transmission shall be Allison RDS – electronically controlled, four-speed automatic with a low gear ratio of 3.51:1 and provided with the appropriate torque converter for this application. Shifting shall be via a shift control. A low transmission oil level sensor system shall be included in the electronic transmission. Touch pad control that enables operator to shift gears with left hand. A dedicated back-up connection shall be provided between touch pad shifter and vehicle electronic system external to the J1939 data bus connection to allow for shifting into gear during fault mode, or if main J1939 data bus fails.

**Transfer Case – Automatic Locking Type:**

In accordance with FAA Advisory Circular; AC150/5220-20, Appendix 1, Part A, Section 4 and Appendix 1, Part B, Section 13, and automatic lockout type transfer case is required. No driver intervention shall be required. Proof of ability to meet this requirement must be provided.

The transfer case shall be a two-speed type with automatic locking/unlocking differential to control the torque between the front and rear axles. The hi-low range selection shall be electric over air actuated, operated from the cab, and equipped with Smart Shift®. Switch shall be stage bump type, moving the shift from low to high or high to low. A flashing light indicator at the control switch shall notify the operator if the shift is not completed by the electric/air system within one minute and the system shall cease attempts at the range shift. The operating range of the transfer case shall be displayed on the main dash LCD screen. The transfer case shall have a torque transmission capacity that exceeds the maximum torque developed by the engine and transmission and shall be approved for the application.

A driveline with two-speed transfer case and four-speed transmission is required.

**Axles:**

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

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

The steering-drive wheel ends shall be bolted to, and removable from, the center section of the axle housing. The cardan drive type joints shall be totally enclosed within a sealed ball and socket. The trunnion pins shall be supported by pre-loaded tapered roller bearings.

**Four Wheel Steering System:**

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

Safety provisions for dampening of all wheel steer effects at higher speeds as well as allowing full operation while the vehicle is moving a lower speeds shall be included. An indicator shall be located in the cab to display mode selected and rear wheel position. A mechanical linkage maintained at all times between the steering wheel in the cab and the front axle shall be provided to assure vehicle control in the event of hydraulic or electrical system failure. Safety dampening of all wheel steer effects shall be related to vehicle speed and all wheel steer shall be available in both transfer case speed ranges.

The system must provide the operator with the ability to select the desired mode of operation "on the go", an electronically controlled rear axle steering system which operates in conjunction with the mechanically controlled front wheel steering system. The system must consist of the following components and operating features:

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

**Additional Required Features of Four Wheel Steering System:**

- All wheel steering system controls shall be located in the cab and easily accessible.

- The all wheel steering system must be pre-programmed with multiple steering modes.
- Operator must have the option to select one of the following modes of operation “on the go”:
  1. **Front Steer.** Axle remains in the locked position and the rear axle does not steer.
  2. **Coordinated Steer.** When front axle is steered, the rear axle turns in the opposite direction of the front. Includes a deadband feature that allows the front axle to be turned at a pre-determined number of degrees in either direction before the rear axle steers. The deadband varies according to vehicle speed. The rear axle lock remains engaged when the front axle is within the deadband range.
  3. **Crab Steer.** When the front axle is steered, the rear axle steers in the same direction as the front axle making the vehicle travel in a diagonal motion. This mode also has a speed-controlled variable deadband.
  4. **Joystick or Manual Rear Steer.** Rear axle is controlled only by the joystick or thumbswitch, independently of the front wheel position. Mode can only be used during low speed operation. Hydraulic locks remain operational however, the mechanical lock is disengaged at all times when in this mode.
  5. **Switching Between Modes.** Mode switch may be moved at any time however, the ECU will not switch modes unless the front axle crosses the center. If the front axle does not cross center the system remains in the previous mode until it does. The rear wheels must be in the straight-ahead position before the mode change occurs.
  6. **Rear Wheel Position Gauge.** The system must include a rear wheel position gauge which performs the following three functions:
    - *Calibration Indicator:* the LED bar graph on the display gauge is used for calibrating the wheel position sensors. The LED bar graph display shows the position of the angle sensors.
    - *Rear Wheel Position Indicator:* the LED bar graph display shows the position of the rear wheels.
    - *Error Code Display:* the error code display signals when an error is detected by the ECU and is also used during system start-up to display the current CPU software revision level.
  7. **Mode Lights.** The mode light feature consists of four lights:
    - FRONT MODE LIGHT: lit when the all-wheel steering ECU is operating in the front steer mode;
    - AXLE LOCKED: lit when the rear axle is mechanically locked in the straight-ahead position. Light also comes on when the all-wheel steering ECU detects a system problem and error code is displayed on the rear wheel position gauge;
    - COORD MODE: lit when the all-wheel steering mode switch is in the coordinated steer mode position;
    - CRAB/JOYSTICK MODE: lit when the three-position mode switch is in the rear steer position.
  8. **Manager’s Switch.** A switch that allows supervisory personnel to “lockout” or “enable” operation of the system.
  9. **Auto-Center Feature.** Assists in relocating the rear axle to the straight ahead position after use of the independent rear steer mode.

### **Springs:**

Unit shall have semi-elliptical alloy steel springs with a minimum 27,000 lb. front and minimum 23,000 lb. rear ratings. Front springs shall be designed to provide reserve carrying support when blower head is raised in the transport mode. The spring hangers, pins and supports shall be heavy duty. The pins shall be grease type with substantial bronze bushings.

### **Brakes and Air System:**

The service brakes shall be fully air actuated, drum and shoe type with a minimum of 18.7 CFM air compressor and documented to conform to FMVSS 121, S-cam type front and rear. The parking brakes shall be spring actuated, air released at the rear service brake air chambers with the control switch mounted within the cab. An electronic anti-lock brake system is required, 4S-4M. The air system for this unit shall be equipped with frame-mounted, heated Bendix AD-9. A quick disconnect coupler to allow shop air into the air system upstream of the air dryer. Remote cable drains shall be provided for each air tank.

### **Wheels & Tires:**

The wheels and tires provided must be appropriate for the GVW rating of the unit being bid. Single wheels shall be furnished for the front and rear axles. The wheels shall be steel disc type with an 11 1/4" bolt circle. The tires shall be Goodyear or equal. A spare tire must be provided. If the vehicle is equipped with more than one configuration of wheel and tire combination, a spare tire must be provided for each configuration.

### **Cab:**

Unit shall have a fully enclosed, thermally and acoustically insulated, aluminum and glass cab. Fiberglass components shall be used where shaping will assist in snow and air flow around the vehicle, this includes the roof and front cowling. A visor above the windshield on the outside of the cab is required. The unit operator shall be positioned slightly right of center. Minimum cab height shall be 132", measuring from the ground to the top of the cab.

The cab shall include the following:

1. Tilt/telescoping steering column.
2. Single piece, panoramic, electronically heated windshield with reverse slope. Side windows shall be manually operated and provided on each side of the unit. Rear window shall be stationary.
3. Rear corners of cab shall include sight windows.
4. Two (2) peep windows provided in cab front fascia below windshield.
5. All windows shall be DOT approved and stamped, tinted safety glass.
6. Minimum four (4) electric, variable speed, electronically heated wipers that provide a minimum of 80% swept surface of windshield. Wipers shall be mounted above the windshield. Electrically heated wipers are also required on right and left side windows.
7. System shall include an automated sequence which soaks the windshield and performs wiper sweep by pressing a single button.
8. High output, fresh air type heater/defroster with multispeed fan motor, mounted behind the operator. Cab heater with defroster shall be capable of maintaining a 50° F inside temperature when the outside temperature is -40° F outside. Air flow of 380 CFM minimum is required. A 23,000 BTU cab air conditioner is required.
9. Screened, louvered vent is required near the rear of the cab for fresh air intake. The heater/ventilation unit shall be digitally controlled with settings up to 95° F. Climate control shall include auto mode. Vent controls shall be provided from panel selection.

10. Cab doors shall be provided with full length, stainless steel piano type hinges which shall be bolted to the door and the cab frame. Interior lower panels of doors shall include a non-metallic liner. Side sight peep windows required in each door. Glass pane in each skin of door required.
11. Auxiliary power outlets (2) required near center of cab.
12. Dual, heated, motorized West Coast type mirrors operated from the operator position in the cab.
13. Self-canceling turn signals with hazard switch.
14. Key type starter switch for chassis engine. Integrated safety checks shall prevent starting when an unsafe condition is detected. Real-time feedback to the message center reporting what condition is preventing the system from attempting to start the engine.
15. Coat hooks.
16. Cup holders (two), located near the center of the cab.
17. The operator seat shall be fully adjustable in the horizontal and vertical positions with high back, air assist, arm rests, lumbar support, cloth covered, and load adjustable and furnished with 3-point type safety belts. Adjustable arm rest shall contain joystick for implement control. A detent shall lock arm rest in the stowed position, with release control provided for operator.
18. A passenger jump seat, equipped with a 3-point safety belt shall be positioned to the left of the driver. Arm rests are not required.
19. All digitally controlled electrical circuits shall be protected by solid state circuitry and logic. Power supplies to control modules shall be protected by manual reset circuit breakers. Master wiring circuitry boxes shall be mounted behind operator. Manual reset circuit breakers controlling all analog circuits shall be easily accessible.
20. The floor of the cab shall be insulated with thermal-acoustical sound barrier floor mat.
21. Master connection point for radios in control console above windshield near center of cab.
22. Electric horn.
23. Multiple access panels in upper console for easy access to switch and wiring connections.
24. A warning device to indicate door open, transmission in gear is required.
25. An AM/FM radio with CD and weatherband.
26. Two (2) caged defroster fans.
27. A windshield deluge system is required. As a minimum, the system shall consist of a 5 gpm pump, a 16 gallon reservoir, three (3) discharge nozzles above the front windshield, one discharge nozzle above each side window, one discharge nozzle above left and right rear view mirrors, and the associated plumbing to make a functional system. Fill point shall be located no higher than the bottom of cab door. Discharge shall be controlled by a dash-mounted switch in conjunction with wiper controls. System shall allow single shot discharge as well.
28. A 20 lb. fire extinguisher shall be included, to be installed at a location approved by the purchaser.
29. An ICOM IC-AC200 with vehicle mount kit shall be provided and installed in a location to be approved by the purchaser.

Instrumentation shall be centered on a color LCD mounted to the tilt/telescoping steering wheel. Information displayed shall be:

1. Speedometer/odometer
2. Tachometer and hour-meter that registers only when engine is running
3. Voltmeter
4. Dual system, physical air pressure gauge
5. Time
6. Fuel level with low level indicated by color

Warning Icons for:

7. Low air pressure
8. ABS fail
9. ABS communication lost
10. Engine stop
11. Engine fail warning
12. Low voltage
13. Engine overheat
14. Engine low oil pressure
15. Engine air intake restriction
16. Transmission overheat
17. Transmission fail
18. Engine communication lost
19. Control system node communication lost
20. Transmission communication lost
21. Parking brake applied
22. Transmission range
23. Traction lock engaged
24. Windshield washer fluid level indicator
25. Message center for fault messages
26. Diesel exhaust fluid level gauge
27. Diesel exhaust fluid level icon
28. Diesel particulate filter lamp
29. High exhaust temperature lamp
30. Hydraulic temperature warning
31. Hydraulic fluid level low
32. Left and right turn indicators
33. High beam indicator

**Electrical and Lighting:**

Electrical system shall be multiplex technology. All lighting shall conform to FMVSS. All lighting shall be 12 volts and shall include, but not be limited to the following:

1. Two (2) fender mounted headlights and turn signals
2. Tail, stop, clearance and backup lights. Backup alarm Preco 1040 with auto adjustment for noise level
3. Whelen 800 or equivalent, amber strobe beacon near or on cab roof with switch
4. Cab dome light
5. Variable intensity instrument lighting, push button control with ramp up
6. Weatherproof wiring shall be GLX nomenclature type, insulated and numbered, required circuit breakers for analog circuits shall be located in weatherproof electrical panels
7. Two (2) headlights with high/low beam and turn signals mounted on a light bar near front outside corners of cab near leading edge. Light bar shall be vertical and made of round material. Deutsch type sealed connector required at each light bar to allow for passing electrical connections through cab shell
8. One (1) 12-volt, 270-amp minimum alternator with built-in regulator
9. Four (4) 12-volt, maintenance free batteries with a total of 3800 cca. Batteries to be installed in a separate frame-mounted compartment with corrosion resistant interior
10. on board battery charger to shall be provided
11. Two (2) HID lights, mounted on the cab lighting crossbar, forward facing, operated by a single illuminated, labeled switch in the cab

12. Two (2) HID lights, mounted on rear engine enclosure, with a switch in cab and activated by the reverse lights
13. Two (2) GOLIGHT Model 2021, or equivalent, mounted on the cab in a location approved by the purchaser
14. An additional external set of battery jumper terminals shall be installed in a convenient location to allow attachment of jumper cables without removing the battery box cover. The jumper terminals shall be mounted near the master disconnect switch and protected by plastic color coded covers.

**Auxiliary Engine:**

A separate auxiliary engine shall be used to power the rotary blower attachment. Engine shall be of four-stroke diesel type, six (6) cylinder, minimum 1106 cubic inch displacement, minimum of 700 hp at 2100 rpm, Caterpillar C-18 or larger. A protective enclosure of fiberglass construction shall be provided for engine installation. Doors for maintenance access of auxiliary engine shall be removable and held in place by rubber retainers. When removed, full access to the sides of the engine shall be provided from catwalks on both sides of the engine. The auxiliary engine shall have an electronic control system and shall have the same protection (power derate) systems and instrumentation as required for the vehicle engine plus an intake air warning system for high intake vacuum. The engine installation shall include 12-volt start (Delco 50MT or equal), automatic shot, thermally locked ether starting aid, exhaust approved for the application by the engine manufacturer, and air restriction indicator, and an automatic inside/outside air intake system. A coolant heater shall be a 1500-watt block type with receptacle. The electrical connection for the on-board coolant heaters (both the carrier and blower engine) shall be mounted at the left rear of the vehicle.

Auxiliary engine cooling system shall include a heavy duty vertical flow radiator with the top and bottom tanks and side members bolted together to form a rigid frame. The tanks shall be steel and the core shall be constructed of copper and brass, 1300 sq. in. minimum. Thermostatically controlled fan clutch is required. A spin-on coolant filter and silicone radiator hoses are required.

RPM control shall be by means of electric switch to ramp up or ramp down engine RPM.

Certification and proof of blower engine cooling tests are required to be submitted at the time of delivery of the unit.

**Quick Hitch:**

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

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

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

### **Two-Stage Rotary Snow Blower:**

The rotary snow blower shall be a two-stage unit including an auger or ribbon and a separate impeller. The blower unit shall be designed to withstand hard usage and cold climates. The unit shall have a minimum of 5,000 tons per hour with a casting distance as measured from the blower to the point of maximum deposition under a no-wind condition of 75 feet minimum. A second gear ratio shall be provided for a longer cast distance. The performance specifications are based on a snow with a unit weight of 25 pounds per cubic foot.

The first stage ribbon shall cut and feed the snow to the second stage impeller which shall force the snow out of a snow casting chute.

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

A minimum 2" thick polyurethane cutting edge shall be fitted to the lower edge of the rotary head box. The blade shall run the entire box width and be removable. Blade shall be attached by countersunk mounting bolts equally spaced along the blade.

### **Helical Ribbon:**

The helical ribbon shall be a minimum diameter of 52" and have a minimum of two bearing supports at each end of the reel and be driven from both ends. Dual motor drive is required. If dual motor drive is provided at the center, driving outward, prop shaft and/or drive mechanism must be in an enclosed case. Motors shall be fixed displacement type with electronic control system. The ribbon flights on each reel shall be two removable halves and mounted on the reel shaft by the necessary number of mounts. The ribbons shall be made from ASTM A572 GR 50 steel with a minimum thickness of 1/2". The reel shall be constructed with a curb ring. A minimum of clearance shall exist between the rotary head and the reel. The cutting width shall not be less than 102". Reel speed shall be selectable by the seated operator for variable snow and operating conditions without varying the impeller speed and cast distance. Operator shall be able to select from two (2) speed settings depending on snow conditions.

The reel shall be driven hydrostatically and be reversible from the cab to aid in the disgorging excessive or clogged snow from the head by means of momentary electric push-type switch. Pump shall be electronically controlled. Hydrostatic relief shall be provided to protect the system should the ingestion of foreign objects occur. A low/high oil level temperature warning system shall be included. A manual shut-off valve shall be provided at the outlet of the hydraulic oil reservoir.

### **Impeller System:**

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

The blower drive shall include a dry type, full torque 3-plate PTO 14" clutch, controlled from the cab, for blower drive engagement. Clutch engagement shall be hydraulically actuated and provide protection against engaging clutch when blower engine is over 800 rpm. Clutch engage selection shall automatically engage ribbon drive in forward direction. The clutch/ribbon engage button shall be illuminated green when activated and the ribbon status icon on the LCD will clearly indicate ribbon status as a visual reminder to the operator of the status. Clutch shall automatically disengage if engine is shut off.

A two-speed reduction gear system shall be provided between the blower engine and the impeller to provide proper torque and speed at the impeller while allowing the engine to operate at the rpm providing maximum efficiency. An electronically controlled lock-out system shall automatically assure that gear change is made only with clutch disengaged and shaft movement at low enough speeds to avoid damage to gear system. Shift shall be electric over air control. Switch shall be stage bump type. The system shall notify the operator of shift failure at the control switch. The operating range of the drop box is to be displayed on the main dash LCD screen.

The gear box shall include helical gears with pressurized lubrication system. Driveline shall be Spicer 1710 Series or equal. Shear bolts shall be provided in the impeller drive train and shall be accessible and replaceable from behind the intake face of the blower.

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

The casting chute assembly shall rotate in a vertical plane to cast the snow to the left or right side of the vehicle through a minimum arc of 125°. It shall flat cast to the right.

The blower chassis shall be equipped with a weight transfer system that automatically maintains 60% of the blower head weight on the front axle of the chassis by hydraulically sensing the system pressure and continually adjusting the pressure via electronically controlled hydraulic metering valves.

A minimum of two (2) 18" rubber tired caster wheels shall be provided on the blower head, capable of swiveling 360° for backing. The tires shall have a minimum load capacity of 2300 lbs. Each at 130 psi inflation and be rated for 30 mph service at full load.

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

### **Hydraulic Systems:**

The hydraulic system shall consist of rams, pumps, piping, fittings, valves, controls, fluid reservoirs, fluid filters, and all other essential parts. The system shall be capable of positioning the hydraulic actuated equipment in any chosen position with the design limits of travel and will be of such capacity that all controls can be operated simultaneously without noticeable reduction in response. The system shall be designed to operate the snow blower head as well as alternate attachments such as a snow plow. All hydraulic controls for operating the blower head shall be located in the cab. Hydraulic system will be constructed to withstand all loads of snow removing operations without the use of mechanical locks. Filtration of the hydraulic system shall conform to SAE J931. Control system shall include a plow mode selectable on the LCD screen to automatically adapt the electronic control system to plow mode.

Hydraulic tubes, hoses and fittings conforming to commercial quality will be used. A minimum number of fittings, joints and connections will be used for preventing excessive back pressure, vibration and leakage. Hydraulic lines must be of sufficient size to permit free flow of hydraulic temperatures of -40° F. All connections to the hydraulic pumps, motors and valves will be made o-ring type fittings. All hydraulic connections to the attachment must have a pressure relief device to facilitate connecting and disconnecting the fittings.

The hydraulic pump shall be a minimum of 180 cc with electronic control.

**Hydraulic Pressure Relief Valve:**

The chassis and auxiliary hydraulic system shall be equipped with a pressure release valve. The valve shall be lever actuated, controlled pressure type, relieving line pressures and returning released hydraulic oil to the main reservoir.

**Quick Propshaft Disconnect:**

The propshaft that drives the impeller for the snow blower must be a minimum 1710 series shaft and must have a splined flange design with a maximum of two (2) swing bolts to allow quick changing of attachments.

**Broom Attachment:**

The broom head shall provide a swept path of 16.38 ft. It shall be 46" in diameter and capable of producing 4820 ft. lbs. of torque and 525 rpm with an air blower system capable of producing 22,800 cfm at 450 mph. The broom head and air blower shall be hydrostatic drive with infinitely variable speed hydraulic pumps and fixed displacement motors. The broom shall be capable of removing snow, ice, slush and other debris rated speeds up to 40 mph depending on conditions.

**Walkways:**

External walkways constructed of open grating with reinforced cross members shall extend the full length of the chassis on both sides, front to back. Access steps to the walkways shall be provided on both sides near the middle of the chassis. Tubular handrails meeting SAE standards 40" high shall extend the full length on both sides.

**Broom Angle:**

The broom head shall be capable of swing 35° maximum left or right, selectable from the operator's joystick. The swing shall be accomplished by means of dual swing arms with four (4) pivot points to ensure the weight of the broom head remains approximately on the chassis centerline regardless of the position of the broom head. The broom pattern shall not vary more than 0.5" end to end for the entire width of the broom.

The bearing mechanism shall allow frictionless motion through the swing and shall be done by using four (4) vertical parallel shafts at least 2.5" in diameter at each end of both swing arms. The swing arms shall be made from formed steel plate and machined steel tubing with low friction bushings that can be greased.

**Broom Oscillation:**

The broom oscillation shall provide true flotation left to right for the broom head so that it is independent of broom chassis. It shall have at least 8° (+4, -4) of free floating oscillation from left to right. Oscillation shall occur by means of a spherical bearing assembly and low friction nylon pads.

### **Broom Elevation and Brush Pattern Adjustment:**

The broom head lift shall occur by using two (2) 4" diameter hydraulic lift cylinders, one on each end of the broom frame, controlled by the operator's joystick. The lift cylinders shall be equipped with a counterbalance valve to prevent the broom head from creeping down. The pivoting action shall have adequate stroke to achieve ground clearance during transport.

An electrical position sensor shall be embedded in the broom head lift cylinder to provide feedback to the Command Zone system for closed loop assessment of the lift position. A toggle switch for remote broom left control and pattern confirmation shall be provided. A weatherproof control box housing the micro switch shall be located on the left side of the chassis allowing for repeatable pattern adjustment from a standing position. Brush pattern adjustment process shall be accomplished without using tools.

### **Broom Head:**

The brush shall be 46" in diameter and 20' long, comprised of two (2) 10' sections. The broom head frame shall be fabricated from 6.5" diameter steel tube in tub design with 0.38" walls and include provisions for grease between the mating surfaces. The hydrostatic broom drive shall be dual end drive. Power shall be supplied from two (2) variable displacement hydrostatic pumps mounted on the engine's gearbox. The gearbox shall be a parallel shaft pump drive with precision gears and a dipstick for oil level measurement.

Two (2) high-speed hydrostatic motors, each connected to a planetary reduction gearbox, shall be mounted within the inner diameter of the broom core's outer ends to minimize overall width. The motor gearbox connections shall use a static o-ring seal, wet spline type. The motors shall not support the broom core loads and the planetary gearbox shall be hydraulic oil bath lubricated (case flushing type). The entire broom head shall be vibration analyzed and a report to be submitted with bid.

Speed of broom shall be infinitely variable from 0 to 525 rpm. Available torque at the broom shaft shall be 4820 ft. lbs. at maximum hydraulic pressure of 5075 psi for maximum snow moving capabilities. Power shall be transmitted to the broom core from the gearboxes using keyed tapered hubs and high strength molded urethane drive cogs into replaceable, hardened steel core drive sprockets of the core. Hardened steel pilot plates shall support the radial loads.

A maximum 2" gap between the broom core sections shall be obtained by using a center dual idler with the same components as the drive ends. The idler bearings shall be encased in sealed housing and be provided with oil bath lubrication.

The broom end plates shall be steel fabricated, 0.38" thick welded steel plate construction with 14" diameter, 0.38" thick steel tube for mounting the broom drive gearboxes. The end plates shall be reinforced horizontally and vertically with 2" x 6" structural rectangular tubing on the inside and 3" x 6.5" formed channel on the outside. The broom end plates shall be secured to broom frame with four (4) 1" diameter grade 8 bolts.

The unbolted end plates shall slide outward. The slide mechanism shall be 4.5" round telescoping tube in tube design. A second 2" square tube shall slide on a plastic slide for additional support and allowing repeatable location of brush centerline alignment during broom core remove and replace operations.

### **Broom Cores:**

The two (2) core sections must be split core design. They shall be tubular steel construction with four (4) drive bats, equally spaced around a tube to center each brush wafer. The drive sprockets shall be replaceable. Each core shall be individually dynamically balanced. A second set of broom cores with 50/50 wafers and spacers shall be provided.

The brush on the cores shall be full-width and designed for runway operation and field replaceable. The wafers shall be a 50/50 combination of polypropylene and wire, conforming to Mil Spec F-83002. The bristles shall be fastened in a radial wafer fashion to a steel ring. Polypropylene bristles shall be fastened to the steel ring by fusing their base to form a solid loop about the circumference of the ring, then mechanically holding them in place by wrapping the top of the ring over the fused bristle ends to form a dovetail. Wire bristles shall be fastened to the steel ring with wire. The polypropylene bristles shall be 0.075" x 0.105" oval shaped with an 8 pound total wafer weight minimum. The wire bristles shall have a mean diameter of 0.018", galvanized, with a carbon content of 0.81 to 0.86% and a 10 pound total wafer weight minimum. All wafers shall be within 50 oz. in static balance and marked at the heavy location.

#### **Casters:**

There shall be two (2) single tire caster assemblies for the 20' broom. A weight transfer broom hitch shall be utilized therefore the chassis shall carry approximately 65% of the broom weight. The broom casters shall carry the remaining weight of the broom head. Each caster shall be free to rotate 360°. The radial pneumatic tires shall be 180/70R8, 16-ply. Spring loaded adjustable automotive type disc brake shall be supplied per caster. The caster assembly shall be non-suspension type. The broom head caster support shall be mounted to the broom frame by welded brackets constructed of 0.5" steel plate, minimum. The steel caster assembly shall be attached to the broom head cast support by four (4) bolts. The caster axle shall be supported by the caster mounting body constructed of 0.63" plate.

#### **Broom Hood:**

The broom hood shall shield the top half of the brush completely and fabricated from heavy duty 10-gauge sheet steel securely bolted to the broom frame. It shall be non-clog design and provide quick access to the brush for replacement of bristles and for inspection. There shall be an adjustable and replaceable stripper bar across the front of the broom. The stripper bar shall be near the broom outside diameter.

A smooth curved scoop hood shall be incorporated across the full length of the broom. The stripper bar shall be attached to this scoop hood, connected to move independent of the stationary hood. A snow deflector shall be mounted on the front of the scoop. Two hydraulic cylinders spaced appropriately along the length of the deflector shall adjust the angle of the deflector with respect to the scoop. The deflector angle shall be controlled and adjusted from the cab. The stripper bar, scoop hood and the deflector structure shall have no abruption to a smooth flow at any broom/bristle diameter or at any deflector angle.

The adjustment to bristle diameter wear shall be performed using two (2) mechanical acme thread jacks, one on each end of the scoop and broom frame. The adjustment shall position the stripper to the bristle diameter.

#### **Forced Air Blower:**

The forced air blower shall be dual centrifugal impeller type with dual inlets and dual outlets. The forced air blower shall be mounted between the chassis engine and the broom engine. It shall produce 22,800 cfm total at 450-mph velocity air out both sides at the same time. Both nozzles shall blow in the same direction at any given time. Deflectors at the nozzle ends shall direct the flow to one or the other side. The nozzle deflector's control shall be hydraulic and interlocked with the broom head angle to blow in the direction of broom casting controlled by the operators' joystick. The nozzle deflectors change direction as the broom swings. A separate control shall allow the nozzle deflector's direction opposite of the broom angle by choice. An additional control shall permit blowing without broom operation. The velocity and cfm at each nozzle shall be certified and supplied with the bid.

The air ducts shall rise within the width of the tires of the chassis for transport and storage. There shall be 12" of ground clearance, minimum when raised. The ductwork shall be routed underneath the platforms on each side of the vehicle.

The centrifugal impellers shall be independently driven via hydrostatic motors. The two (2) motors, one for each impeller, shall be mounted directly to the impeller shaft. Power to the motors shall be supplied for a variable displacement hydrostatic pump (Sauer-Danfoss 90 series type) mounted on the engine's gearbox allowing control of blower speed from 0 - 100%. Both impeller/shaft assemblies shall be dynamically balanced at the rated rpm. All controls for the air blower shall be remotely operated within the cab.

### **Hydraulic System:**

All hoses for all systems shall be properly sized and strength. All hydraulic positioning functions (broom head lift, broom head swing, deflector, and air nozzle lift) shall be equipped with a hydraulic position locking system. A counterbalance valve shall be used for the broom lift and reverse and a pilot operated check valve for the snow shed. All hydraulic functions of the broom shall be electric over hydraulic valving. Connectors to the solenoids shall be interlocking type. Piloted operated check valves shall be installed for the broom swing left and right, deflector up and down, air ducts up and down, and air nozzles left and right. Fluid and components shall be design for temperature to -20° F ambient cold start. The hydraulic fluid reservoir shall be cyclonic type with lowest volume possible for the design. Shut-off valves for all filters below tank fluid level shall be installed.

Proper filtering shall be done on both the high and low pressure circuits and shall conform to SAE J931. There shall be a 5-micron absolute rating on the hydrostatic pumps' filters and placed in the charge pressure lines. One spare spin-on canister provided for each of these charge pressure filters. There shall be a clogged filter indicator light on the cab control panel.

The hydraulic oil cooler is essential to the radiator and charge air cooler package. It shall be controlled by a thermostatic switch to avoid excessively cold operation and designed such that thermostatic failure results in the cooling fan engaging. A pressure relief shall allow cod hydraulic oil to bypass the cooler for shorter warm-up times. A warning light for low hydrostatic oil level shall be supplied/

### **Controls and Instrumentation:**

All controls shall be electric over hydraulic type. All instruments and controls shall be labeled and illuminated. All wiring shall be either harness, cable, split loomed, or shrink-wrapped. All wiring shall be color coded, wire numbered, matching the drawing schematics and terminal strip, and labeled. The gauge wire and processes shall be in accordance with common wiring practices, GXL insulation type.

The broom control system in the chassis cab shall have an Active Matrix Display (AMD) station. It shall use a 7" minimum color LCD screen and use CAN (Controller Area Network) serial bus system technology. The AMD must incorporate diagnostics. All systems for the broom and broom engine must be part of the diagnostics.

The broom swing, lift and blower nozzle shall be microprocessor controlled (no relays) and have automatic function for cycle complete control allowing the operator to have hands free operating during cycle movement. A switch shall allow the operator to use the automatic control or disengage the system.

The control in the chassis cab shall have all necessary functions to operate the broom and air blower and shall have the following:

1. System on/off (keyed)

2. Multifunction CAN controlled joystick for broom head lift/lower and left/right swing. It shall also incorporate the snow shed hood lift/stow, deflector angle and the broom and air blower rpm.
3. Command Zone Active Matrix Display;
  - a) Mechanical sealed pushbuttons
  - b) Broom engine main operating screen
    - Engine, broom and air blower speed control and display
    - Oil pressure with visual and audible warning alarms
    - Coolant temperature with visual and audible warning alarms
    - Hydraulic oil temperature with visual and audible warning alarms
    - Engine tachometer
    - Voltmeter and warning indicators
    - Air filter restriction warning and alarm
    - Alarms for engine diagnostics and visual warning indicators and displayed faults
    - Mode selector: auto/manual
    - Status display for:
      1. Broom/Air duct coordination
      2. Weight transfer system
  - c) Menu selection screen: specific AMD function screens are accessed through this screen
  - d) Video screen
    - Enables the video system to be manually turned on or off
    - To be used for future installation of video camera system
  - e) Lighting screen
    - Daytime/nighttime display screen brightness selection
  - f) Joystick/touch pad screen (mimics the features of the joystick and touch pad)
    - Joystick lift up/down
    - Joystick swing left/right
    - Deflector up/down
    - Mode auto/manual
    - Broom on/off
    - Blower on/off
    - Snowshed hood up/down
    - Vibrator on
  - g) Engine hydraulics screen (used for systems monitoring):
    - Engine, broom and air blower speed control and display
    - % engine power
    - Engine hour meter
    - Inlet air temperature
  - h) Settings screen
    - Joystick control: broom only, blower duct only, or both
    - Air blower nozzle direction: coordinate/opposite broom swing
    - Weight transfer with audible alarm when in the off position
    - Core life hours
    - Maintenance hours
    - Automatic broom pattern control
      1. Pattern increase/decrease
      2. Broom height position
  - i) Engine diagnostics screen
    - Display active faults

- Active fault codes
  - j) Output diagnostics (for display only and shows the controller output diagnostics):
    - Individual system output test function
    - Output diagnostics last 100 fault history
  - k) Setup screen: allows authorized personnel to change the vital settings without the use of a notebook computer and is password protected.
4. Separate back light touch pad for:
- Deflector up/down
  - Mode auto/manual
  - Broom on/off
  - Air blower on/off
  - Snowshed
    1. Hood lift
    2. Hood stow

Controls located in the broom engine enclosure shall be single circuit breaker with Master Battery disconnect.

**Additional Required Items:**

- Plug-in, weatherproof engine block heater, 1500 watt, 120 V
- Ether starting system – Engine ECM controlled
- Central remote drain lines with valves for the broom portion
- Broom speed tachometer with broom hydrostatic pressure gauge, in cab
- **Snow Shed Hood.** Snow shed hood is in addition to the standard hood. Hydraulic pivot tilt for removal of snow that has landed on top during sweeping operation. Skeletal steel framework construction with a black polyethylene cover bolted in place. Tilt operational while the broom is rotating. Tilt-rotate forward in excess of 100°. Positive stowed position against poly supports. Snow shed hood shall cover the entire length of the broom hood without interruptions. Hood shall lift and lower when in automatic control mode with one touch of the control switch.
- **Broom head vibrator.** Attached to the broom head shall be a dump truck body vibrator. 12-volt “Cougar” type or equivalent. 3200 pounds of thrust impact for minimum. Vibrator shall be cab controlled with on/off rocker style switch.
- **Automatic broom pattern control.** In addition to the manual system brush pattern adjustment, there shall be an automatic broom pattern control with adjustment from cab. There shall be a three-position momentary toggle switch in the cab. Toggle forward to increase pattern in predetermined increments, toggle back to decrease the pattern in predetermined increments. There shall be an additional three-position pattern control switch at the exterior control box left side of the chassis for control outside.

When the switch is in the run position, a time based system shall be used to readjust the broom pattern by counting the time in the broom down position. When the preset time is reached, the broom head will index down a preset amount. At that time the timer is reset and restarts counting. Time running in the up mode is not counted. Manually adjusting the pattern from the cab or broom head will reset the timer.

**Brush speed controlled by ground speed:** Automatically adjusts the brush rotational speed depending on the vehicle speed. Manual override capabilities shall also be supplied. Option requires automatic pattern adjustment option.

### **Grease:**

A grease buddy type system shall be included. Any grease fittings that are not easily accessible shall have grease lines run to a location that is easily accessible and clearly marked with what part it goes to.

### **On-Board Diagnostics and Electronic Control System:**

Functional control of vehicle shall be centered on an electronic control system using a J1939 data bus. Electronic control systems shall include on board diagnostic assistance and other features to simplify the operation, troubleshooting, and repair of the unit.

### **ECU's, VIMS, Power Modules and Direct Current Controllers:**

Electronic control system shall comply with the following:

1. High amp manual resettable circuit breaker protection is required upstream from the electronic control modules;
2. Y's from the data bus to the modules shall be physically labeled in the vehicle;
3. Control boxes shall include a dual external LED tattletale, one LED display constant illumination indicating power supply, and one LED display a "heartbeat" indicating internal proper function;
4. A timer module to keep electronic modules live for 1 hour after last cycle of door switches indicating exit from vehicle. The unit shall maintain heartbeats and power indicators at modules and their function without the key switch on. After 1 hour without a change of status in door switches the unit shall automatically shut down completely;
5. Data bus terminal resistors shall be external;
6. Certifications of testing and durability of electronic modules;
  - EMI-RFI (meeting mil-spec of 150 volts/meter)
  - Salt spray survival for 1,000 hours minimum (ASTM B117)
  - Water immersion
  - High temperature tested at 125% overload for 100 hours minimum
  - Vibration tested to 50 g's
7. VIM shall be capable of 245 amp sustained output capacity;
8. VIM shall be overload and reverse polarity protected with self-diagnostic capabilities;
9. Field Effect Transistors (FET) shall provide power output to electrical functions, acting as a solid state relay and circuit breaker in one;
10. FET shall shut off automatically in the event of a short to ground, cycling on and off to test itself for proper function;
11. Individual FET ratings and over-current protection to be programmed to values of 1 to 15 amps depending on task assignment;

### **On Board Diagnostics Features and Performance:**

Electronic control system shall include and enable diagnosis of chassis systems and function by means of the LCD dash display. Engine and transmission diagnosis shall be accessible via connect ports on the vehicle. System shall include the following at a minimum:

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

**Quality/Safety Standards:**

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

FMVSS 571-103	Windshield defrosting and defogging systems, in accordance with J1944, J198
FMVSS 571-121	Air brake systems
FMVSS 571-207	Seating systems
FMVSS 571-210	Seat belt assembly
40 CFR CH.1	Pass by noise levels, in accordance with SAE J366
FMCSR 393.94	Vehicle interior noise levels
FMVSS 571-101	Controls and displays
FMVSS 571-108	Lamps, reflective devices and associated equipment
FMVSS 571-120	Tire selection and rims for motor vehicles other than passenger cars
FMVSS 571-206	Door locks and door retention components
FMVSS 271-209	Seat belt assemblies
FMCSR 393-65	Fuel systems and fuel tanks
FMCSR 205	Glazing for windows
FMCSR 302	Flammability of interior materials

**Dynamometer:**

The unit is to be delivered with a chassis dynamometer test report verifying proper operation and power output of chassis engine and drive train. Dynamometer test shall require engine and chassis to be run for at least 20 minutes and shall show run up to full power output with chassis mph to 45 mph minimum and to at least 90% of maximum horsepower output. Test report shall include truck serial number. A sample of chassis dynamometer testing is to be provided with the bid. The sample shall verify that the testing is standard practice for the manufacturer.

**Alignment:**

The vehicle is to be delivered with a wheel alignment report verifying proper alignment and set up of all steering axles, both left and right side. Report shall show camber, caster and toe-in before and after adjustment against acceptable product limits. A sample alignment report is to be included with the bid.

**Paint and Lettering:**

The complete vehicle shall be painted with one (1) coat of metal primer and two (2) coats of International School Bus Yellow acrylic urethane. Eight inch “ITHACA TOMPKINS REGIONAL AIRPORT” in black reflective adhesive (not painted) lettering on both sides of vehicle and the number “15” (16” on sides and 24” on top) done in locations approved by the purchaser.

**Factory Rust-proofing and Corrosion Protection:**

The vehicle (underside of fenders, underside of battery box, underside of fuel tanks, inside fender supports) shall be treated with low VOC rust-proofing protection. Rust-proofing material shall be tan color and applied to a thickness of 4 – 5 mils when dry.

**Training:**

A qualified factory trained representative must fully install, start-up, and test the unit as well as provide training to the operators and maintenance personnel (10). Training shall be performed by factor trained and authorized technician. Training shall be performed at the purchaser's site and shall be eight (8) hours for operators training and eight (8) hours for maintenance training (maintenance personnel shall attend the operator training first). The purpose of the training is to review safe and effective procedures for use and maintenance of the machine, review and test all systems, assure the full function of the machine. Training shall be in small groups. Both classroom and hands-on training is required. Printed and bound manuals shall be provided for each attendee with illustrations. A copy of the manual must be provided with the bid. Material within the manual shall include at a minimum:

1. Vehicle operation and maintenance safety precautions
2. Instrument and control operation
3. Active matrix display summary and operation
4. Seat and seatbelt operation
5. Brake system operation
6. Daily operators' checks and services
7. Drive engine starting and shutdown
8. Auxiliary engine starting and shutdown
9. Driving recommendations
10. Two-speed transfer case shifting
11. Special off-road procedures
12. All steer system operation
13. Electrical system operation
14. Maintenance and inspection intervals

**Manuals and Electronic Schematics:**

The successful bidder shall provide the following product documentation and support information, at no additional cost to the purchaser, at the time of vehicle delivery:

- One complete bound set of manuals, operators, parts, and service and one complete digital set of the same manuals as well as internet access to parts books.

**Note:** Vendor payment may be delayed until such time as the above required manuals, both bound and digital are received.

Successful bidder shall provide both paper and electronic copies of electrical schematic that include a computer search function. Successful bidder shall also provide, at no additional charge, the software required to view the schematics and operate the search function. The cost for the software and any license fees for use are to be included in the bid price.

In the event that the electronic schematic is multi-page, paper copies of schematics shall include reference indicators directing the reader to connection points on other pages by sheet number and grid location within each sheet.

**Filters:**

A master list of all filters used on the unit and listed by type and location along with two (2) complete sets of filters shall be provided with the unit.

**Warranty:**

The bidder shall warrant the equipment as to the specified capacities and performance, and to be free from all defects in design, material and workmanship. All labor, transportation cost and defective parts shall be replaced free of cost. This warranty shall be effective for a period of five (5) years after commencement of actual operation of the equipment.

**Manufacturer/Supplier Stability:**

Upon request bidders shall submit documentation verifying a ten-year consecutive history of financial stability and manufacture of similar equipment as that being bid. Documentation shall include contact lists, financial statements, and annual reports.

**Chassis Manufacturer Certification:**

The chassis manufacturer shall be ISO 9001 certified for the production of heavy trucks. Third party verification of such certification is required to be submitted with the bid.

**Local Support:**

Bidders must be authorized dealers of the proposed vehicle and shall have a service facility within one hundred (100) miles of the purchaser.

The service facility must employ factory-trained technicians that are completely trained in the delivery of in-service, service and maintenance of the unit offered. The technicians must hold current and valid certifications from the manufacturer. The service facility and technicians must be capable of servicing the entire unit including the chassis and any auxiliary equipment provided thereon.

The service facility must have fully equipped mobile service vehicles.

The service facility must be equipped to handle, without subletting, the following: body repairs, paintwork, welding, frame and spring repairs and power train repairs.

The service facility must provide a technical support telephone contact number. User inquiries shall receive a response to all technical support issues within four (4) hours of placing the call.

**BID FORM**  
**TOMPKINS COUNTY**  
**RUNWAY BROOM WITH SNOW BLOWER**

Proposed Manufacturer: \_\_\_\_\_ Model: \_\_\_\_\_ Year: \_\_\_\_\_

Bid Price: \$ \_\_\_\_\_ Delivery: \_\_\_\_\_ days a/r/o

Bid Price Written in Words: \_\_\_\_\_

**Deviations from Specifications** (attach additional pages if needed): \_\_\_\_\_

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**Bidder Information**

Company Name: \_\_\_\_\_

Sales Representative: \_\_\_\_\_ Cell Phone: \_\_\_\_\_

Email: \_\_\_\_\_ Telephone: \_\_\_\_\_

## ANTI-DISCRIMINATION CLAUSE

During the performance of this contract, (the contractor) hereby agrees as follows:

- (a) The contractor will not discriminate against any employee or applicant for employment because of race, creed, color or national origin, and will take affirmative action to insure that they are afforded equal employment opportunities without discrimination because of race, color, creed, ethnicity, Vietnam-era veteran status, disabled veteran, marital status, disability, national origin, or status as an ex-offender. Such action shall be taken with reference, but not be limited, to: recruitment, employment, job assignment, promotion, upgrading, demotion, transfer, layoff or termination, rates of pay or other forms of compensation, and selection for training or retraining, including apprenticeship and on-the-job training.
- (b) The contractor will send to each labor union or representative of workers with which he has or is bound by a collective bargaining or other agreement or understanding, a notice, to be provided by the State Commissioner for Human Rights, advising such labor union or representative of the contractor's agreement under clauses (a) through (f) hereinafter called "non-discrimination clauses". If the contractor was directed to do so by the contracting agency as part of the bid or negotiation of this contract, the contractor shall request such labor union or representative to furnish him with as written statement that such labor union or representative either will affirmatively cooperate, within the limits of its legal and contractual authority, in the implementation of the policy and provisions of these non-discrimination clauses or that it consents and agrees that recruitment, employment and the terms and conditions of employment under this contract shall be in accordance with the purposes and provisions of these non-discrimination clauses. If such labor union or representative fails or refuses to comply with such a request that it furnish such a statement, the contractor shall promptly notify the State Commission for Human Rights of such failure or refusal.
- (c) The contractor will post and keep posted in conspicuous places, available to employees and applicants for employment, notices to be provided by the State Commission for Human Rights setting forth the substance of the provisions of clauses (a) and (b) and such provisions of the State's and local Tompkins County Laws against discrimination as the State Commission for Human Rights shall determine.
- (d) The contractor will state, in all solicitations or advertisements for employees placed by or on behalf of the contractor, that all qualified applicants will be afforded equal employment opportunities without discrimination because of race, creed, color or national origin.
- (e) The contractor will comply with the provisions of Sections 291-299 of the Executive Law and the Civil Rights Law, will furnish all information and reports deemed necessary by the State Commission for Human Rights under these non-discrimination clauses and such sections of the Executive Law, and will permit access to his books, records and accounts by the State Commission for Human Rights, the Attorney General and the Industrial Commissioner for purposes of investigation to ascertain compliance with these non-discrimination clauses and such sections of the Executive Law and Civil Rights Law.
- (f) This contract may be forthwith cancelled, terminated or suspended, in whole or in part, by the contracting agency upon the basis of a finding made by the State Commission for Human Rights that the Contractor may be declared ineligible for future contracts made by or on behalf of the State or a public authority or agency of the State, until he satisfies the State Commission for Human Rights that he has established and is carrying out a program in conformity with the provisions of these non-discrimination clauses. Such finding shall be made by the State Commission for Human Rights after conciliation efforts by the Commission have failed to achieve compliance with these non-discrimination clauses and after a verified complaint has been filed with the Commission, notice thereof has been given to the Contractor and opportunity has been afforded him to be heard publicly before three members of the Commission. Such sanctions may be imposed and remedies invoked independently of or in addition to sanctions and remedies otherwise provided by law. The Contractor will include the provisions of clauses (a) through (f) in every subcontract or purchase order in such a manner that such provisions be performed within the State of New York. The Contractor will take such action in enforcing such provisions of such subcontract or purchase order as the contracting agency may direct, including sanctions or remedies for non-compliance. If the Contractor becomes involved in or is threatened with litigation with a subcontractor or vendor as a result of such direction by the contracting agency, the Contractor shall promptly so notify the Attorney General, requesting him to intervene and protect the interests of the State of New York.

GENERAL CONDITIONS ACCEPTED BY:

Firm: \_\_\_\_\_

By: \_\_\_\_\_

Date: \_\_\_\_\_

Title: \_\_\_\_\_

**COUNTY OF TOMPKINS  
GENERAL CONDITIONS**

**AFFIDAVIT OF NON-COLLUSION**

NAME OF RESPONDER: \_\_\_\_\_ PHONE NO.: \_\_\_\_\_ FAX NO.: \_\_\_\_\_

BUSINESS ADDRESS: \_\_\_\_\_ EMAIL: \_\_\_\_\_

I hereby attest that I am the person responsible within my firm for the final decision as to the price(s) and amount of the proposal, or If not, that I have written authorization, enclosed herewith, from that person to make the statements set out below on his/her behalf and on behalf of my company.

I further attest that:

1. The prices in this bid/proposal have been arrived at independently without collusion, consultation, communication, or agreement, for the purpose of restricting competition with any other contractor, responder or potential bidder; and
2. Neither the price(s), nor the amount of this bid/proposal, have been disclosed to any other firm or person who is a responder or potential responder on this project, and will not be so disclosed prior to bid/proposal opening; and
3. No attempt has been made or will be made to solicit, cause or induce any company or person to refrain from responding to this RFB/RFP, or to submit a bid/proposal higher than the proposal of this company, or any intentionally high or non-competitive bid/proposal or other complementary proposal; and
4. The bid/proposal of my company is made in good faith and not pursuant to any agreement or discussion with, or inducement from any firm or person to submit a complementary proposal; and
5. My company has not offered or entered into a subcontract or agreement regarding the purchase of materials or services from any other company or person, offerer, promised or paid cash of anything of any value to any company or person, whether in connection with this or any other project, in consideration for an agreement or promise by a company or person to refrain from responding to this RFB/RFP or to submit a complementary bid/proposal on this project; and
6. My company has not accepted or been promised any subcontract or agreement regarding the sale of materials or services to any company or person, and has not been promised or paid cash or anything of value by and company or person, whether in connection with this or any project, in consideration for my company's submitting a complementary bid/proposal or agreeing to do so on this project; and
7. I have made a diligent inquiry of all members, officers, employees, and agents of my company with responsibilities relating to the preparation, approval or submission of my company's proposal on this project and have been advised by each of them that he or she has not participated in any communication, consultation, discussion, agreement, collusion act or other conduct inconsistent with any statements and representations made in this affidavit.
8. **By submission of this proposal I certify that I have read, am familiar with, and will comply with any and all segments of these specifications.**

The person signing this proposal, under the penalties of perjury, affirms the truth thereof.

Signature & Company Position: \_\_\_\_\_

Print Name & Company Position: \_\_\_\_\_

Company Name: \_\_\_\_\_

Date Signed \_\_\_\_\_ Federal I.D. Number \_\_\_\_\_



**Tompkins County  
Vendor Responsibility Form**

The Office of the State Comptroller requires that governmental agencies award contracts only to vendors that have been certified as “responsible.” Vendor responsibility means that a vendor has the integrity to justify the award of public dollars and the capacity to fully perform the requirements of the contract. It is the contracting agency’s responsibility, under Section 163 (9) of the State Finance Law (SFL), to evaluate and make a determination of the responsibility of a prospective contractor. A responsibility determination, wherein the contracting agency determines that it has reasonable assurances that a vendor is responsible, is an important part of the procurement process, promoting fairness in contracting and protecting a contracting agency and the County against failed contracts.

The following factors are to be considered in making a responsibility determination:

1. Legal Authority to do business in New York State
2. Integrity
3. Capacity – both organizational and financial
4. Previous performance

Please complete the following questions. This form **must** be returned with your bid submission in order for your bid to be ruled responsive.

Within the past five (5) years has your firm, any affiliate, any predecessor or company or entity, owner, director, officer, partner or proprietor been the subject of:

**ANSWER ALL QUESTIONS**

- |  |           |          |
|--|-----------|----------|
| A. An indictment, judgment, conviction, or a grant of immunity, including pending actions, for any business related conduct constituting a crime under governmental law?   | YES _____ | NO _____ |
| B. A government suspension or debarment, rejection of any bid or disapproval of any proposed sub-contract, including pending actions, for lack of responsibility, denial or revocation of prequalification or a voluntary exclusion agreement? | YES _____ | NO _____ |
| C. Any governmental determination of a violation of any public works law or regulation, or labor law or regulation, or any OSHA violation deemed “serious or willful?”   | YES _____ | NO _____ |
| D. A consent order with NYS Department of Environmental Conservation, or a governmental enforcement determination involving a construction-related violation of federal, state, or local environmental laws?                                   | YES _____ | NO _____ |

E. A finding of non-responsibility by a governmental agency or Authority for any reason.

YES \_\_\_\_\_

NO \_\_\_\_\_

If yes to any of the above, please provide details regarding the finding.

ENTITY MAKING FINDING: \_\_\_\_\_

YEAR OF FINDING: \_\_\_\_\_

BASIS OF FINDING: \_\_\_\_\_

\_\_\_\_\_  
(Attach additional sheets if necessary)

Offerer Certification:

*I certify that all information provided to Tompkins County with respect to State Finance Law §139-k is complete, true and accurate.*

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Company Name: \_\_\_\_\_

Company Address: \_\_\_\_\_

Signature: \_\_\_\_\_

## Request for Taxpayer Identification Number and Certification

**Give form to the  
 requester. Do not  
 send to the IRS.**

<b>Print or type See Specific Instructions on page 2.</b>	Name (as shown on your income tax return)	
	Business name, if different from above	
	Check appropriate box: <input type="checkbox"/> Individual/Sole proprietor <input type="checkbox"/> Corporation <input type="checkbox"/> Partnership <input type="checkbox"/> Limited liability company. Enter the tax classification (D=disregarded entity, C=corporation, P=partnership) ▶ ..... <input type="checkbox"/> Exempt payee <input type="checkbox"/> Other (see instructions) ▶	
	Address (number, street, and apt. or suite no.)	Requester's name and address (optional)
	City, state, and ZIP code	
	List account number(s) here (optional)	

### Part I Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. The TIN provided must match the name given on Line 1 to avoid backup withholding. For individuals, this is your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the Part I instructions on page 3. For other entities, it is your employer identification number (EIN). If you do not have a number, see *How to get a TIN* on page 3.

Social security number
or
Employer identification number

**Note.** If the account is in more than one name, see the chart on page 4 for guidelines on whose number to enter.

### Part II Certification

Under penalties of perjury, I certify that:

1. The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me), and
2. I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding, and
3. I am a U.S. citizen or other U.S. person (defined below).

**Certification instructions.** You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and generally, payments other than interest and dividends, you are not required to sign the Certification, but you must provide your correct TIN. See the instructions on page 4.

<b>Sign Here</b>	Signature of U.S. person ▶	Date ▶
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## General Instructions

Section references are to the Internal Revenue Code unless otherwise noted.

### Purpose of Form

A person who is required to file an information return with the IRS must obtain your correct taxpayer identification number (TIN) to report, for example, income paid to you, real estate transactions, mortgage interest you paid, acquisition or abandonment of secured property, cancellation of debt, or contributions you made to an IRA.

Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN to the person requesting it (the requester) and, when applicable, to:

1. Certify that the TIN you are giving is correct (or you are waiting for a number to be issued),
2. Certify that you are not subject to backup withholding, or
3. Claim exemption from backup withholding if you are a U.S. exempt payee. If applicable, you are also certifying that as a U.S. person, your allocable share of any partnership income from a U.S. trade or business is not subject to the withholding tax on foreign partners' share of effectively connected income.

**Note.** If a requester gives you a form other than Form W-9 to request your TIN, you must use the requester's form if it is substantially similar to this Form W-9.

**Definition of a U.S. person.** For federal tax purposes, you are considered a U.S. person if you are:

- An individual who is a U.S. citizen or U.S. resident alien,
- A partnership, corporation, company, or association created or organized in the United States or under the laws of the United States,
- An estate (other than a foreign estate), or
- A domestic trust (as defined in Regulations section 301.7701-7).

**Special rules for partnerships.** Partnerships that conduct a trade or business in the United States are generally required to pay a withholding tax on any foreign partners' share of income from such business. Further, in certain cases where a Form W-9 has not been received, a partnership is required to presume that a partner is a foreign person, and pay the withholding tax. Therefore, if you are a U.S. person that is a partner in a partnership conducting a trade or business in the United States, provide Form W-9 to the partnership to establish your U.S. status and avoid withholding on your share of partnership income.

The person who gives Form W-9 to the partnership for purposes of establishing its U.S. status and avoiding withholding on its allocable share of net income from the partnership conducting a trade or business in the United States is in the following cases:

- The U.S. owner of a disregarded entity and not the entity,

- The U.S. grantor or other owner of a grantor trust and not the trust, and
- The U.S. trust (other than a grantor trust) and not the beneficiaries of the trust.

**Foreign person.** If you are a foreign person, do not use Form W-9. Instead, use the appropriate Form W-8 (see Publication 515, Withholding of Tax on Nonresident Aliens and Foreign Entities).

**Nonresident alien who becomes a resident alien.** Generally, only a nonresident alien individual may use the terms of a tax treaty to reduce or eliminate U.S. tax on certain types of income. However, most tax treaties contain a provision known as a “saving clause.” Exceptions specified in the saving clause may permit an exemption from tax to continue for certain types of income even after the payee has otherwise become a U.S. resident alien for tax purposes.

If you are a U.S. resident alien who is relying on an exception contained in the saving clause of a tax treaty to claim an exemption from U.S. tax on certain types of income, you must attach a statement to Form W-9 that specifies the following five items:

1. The treaty country. Generally, this must be the same treaty under which you claimed exemption from tax as a nonresident alien.
2. The treaty article addressing the income.
3. The article number (or location) in the tax treaty that contains the saving clause and its exceptions.
4. The type and amount of income that qualifies for the exemption from tax.
5. Sufficient facts to justify the exemption from tax under the terms of the treaty article.

**Example.** Article 20 of the U.S.-China income tax treaty allows an exemption from tax for scholarship income received by a Chinese student temporarily present in the United States. Under U.S. law, this student will become a resident alien for tax purposes if his or her stay in the United States exceeds 5 calendar years. However, paragraph 2 of the first Protocol to the U.S.-China treaty (dated April 30, 1984) allows the provisions of Article 20 to continue to apply even after the Chinese student becomes a resident alien of the United States. A Chinese student who qualifies for this exception (under paragraph 2 of the first protocol) and is relying on this exception to claim an exemption from tax on his or her scholarship or fellowship income would attach to Form W-9 a statement that includes the information described above to support that exemption.

If you are a nonresident alien or a foreign entity not subject to backup withholding, give the requester the appropriate completed Form W-8.

**What is backup withholding?** Persons making certain payments to you must under certain conditions withhold and pay to the IRS 28% of such payments. This is called “backup withholding.” Payments that may be subject to backup withholding include interest, tax-exempt interest, dividends, broker and barter exchange transactions, rents, royalties, nonemployee pay, and certain payments from fishing boat operators. Real estate transactions are not subject to backup withholding.

You will not be subject to backup withholding on payments you receive if you give the requester your correct TIN, make the proper certifications, and report all your taxable interest and dividends on your tax return.

**Payments you receive will be subject to backup withholding if:**

1. You do not furnish your TIN to the requester,
2. You do not certify your TIN when required (see the Part II instructions on page 3 for details),
3. The IRS tells the requester that you furnished an incorrect TIN,

4. The IRS tells you that you are subject to backup withholding because you did not report all your interest and dividends on your tax return (for reportable interest and dividends only), or

5. You do not certify to the requester that you are not subject to backup withholding under 4 above (for reportable interest and dividend accounts opened after 1983 only).

Certain payees and payments are exempt from backup withholding. See the instructions below and the separate Instructions for the Requester of Form W-9.

Also see *Special rules for partnerships* on page 1.

## Penalties

**Failure to furnish TIN.** If you fail to furnish your correct TIN to a requester, you are subject to a penalty of \$50 for each such failure unless your failure is due to reasonable cause and not to willful neglect.

**Civil penalty for false information with respect to withholding.** If you make a false statement with no reasonable basis that results in no backup withholding, you are subject to a \$500 penalty.

**Criminal penalty for falsifying information.** Willfully falsifying certifications or affirmations may subject you to criminal penalties including fines and/or imprisonment.

**Misuse of TINs.** If the requester discloses or uses TINs in violation of federal law, the requester may be subject to civil and criminal penalties.

## Specific Instructions

### Name

If you are an individual, you must generally enter the name shown on your income tax return. However, if you have changed your last name, for instance, due to marriage without informing the Social Security Administration of the name change, enter your first name, the last name shown on your social security card, and your new last name.

If the account is in joint names, list first, and then circle, the name of the person or entity whose number you entered in Part I of the form.

**Sole proprietor.** Enter your individual name as shown on your income tax return on the “Name” line. You may enter your business, trade, or “doing business as (DBA)” name on the “Business name” line.

**Limited liability company (LLC).** Check the “Limited liability company” box only and enter the appropriate code for the tax classification (“D” for disregarded entity, “C” for corporation, “P” for partnership) in the space provided.

For a single-member LLC (including a foreign LLC with a domestic owner) that is disregarded as an entity separate from its owner under Regulations section 301.7701-3, enter the owner’s name on the “Name” line. Enter the LLC’s name on the “Business name” line.

For an LLC classified as a partnership or a corporation, enter the LLC’s name on the “Name” line and any business, trade, or DBA name on the “Business name” line.

**Other entities.** Enter your business name as shown on required federal tax documents on the “Name” line. This name should match the name shown on the charter or other legal document creating the entity. You may enter any business, trade, or DBA name on the “Business name” line.

**Note.** You are requested to check the appropriate box for your status (individual/sole proprietor, corporation, etc.).

### Exempt Payee

If you are exempt from backup withholding, enter your name as described above and check the appropriate box for your status, then check the “Exempt payee” box in the line following the business name, sign and date the form.

Generally, individuals (including sole proprietors) are not exempt from backup withholding. Corporations are exempt from backup withholding for certain payments, such as interest and dividends.

**Note.** If you are exempt from backup withholding, you should still complete this form to avoid possible erroneous backup withholding.

The following payees are exempt from backup withholding:

1. An organization exempt from tax under section 501(a), any IRA, or a custodial account under section 403(b)(7) if the account satisfies the requirements of section 401(f)(2),
2. The United States or any of its agencies or instrumentalities,
3. A state, the District of Columbia, a possession of the United States, or any of their political subdivisions or instrumentalities,
4. A foreign government or any of its political subdivisions, agencies, or instrumentalities, or
5. An international organization or any of its agencies or instrumentalities.

Other payees that may be exempt from backup withholding include:

6. A corporation,
7. A foreign central bank of issue,
8. A dealer in securities or commodities required to register in the United States, the District of Columbia, or a possession of the United States,
9. A futures commission merchant registered with the Commodity Futures Trading Commission,
10. A real estate investment trust,
11. An entity registered at all times during the tax year under the Investment Company Act of 1940,
12. A common trust fund operated by a bank under section 584(a),
13. A financial institution,
14. A middleman known in the investment community as a nominee or custodian, or
15. A trust exempt from tax under section 664 or described in section 4947.

The chart below shows types of payments that may be exempt from backup withholding. The chart applies to the exempt payees listed above, 1 through 15.

IF the payment is for . . .	THEN the payment is exempt for . . .
Interest and dividend payments	All exempt payees except for 9
Broker transactions	Exempt payees 1 through 13. Also, a person registered under the Investment Advisers Act of 1940 who regularly acts as a broker
Barter exchange transactions and patronage dividends	Exempt payees 1 through 5
Payments over \$600 required to be reported and direct sales over \$5,000 <sup>1</sup>	Generally, exempt payees 1 through 7

<sup>1</sup> See Form 1099-MISC, Miscellaneous Income, and its instructions.

<sup>2</sup> However, the following payments made to a corporation (including gross proceeds paid to an attorney under section 6045(f), even if the attorney is a corporation) and reportable on Form 1099-MISC are not exempt from backup withholding: medical and health care payments, attorneys' fees, and payments for services paid by a federal executive agency.

## Part I. Taxpayer Identification Number (TIN)

**Enter your TIN in the appropriate box.** If you are a resident alien and you do not have and are not eligible to get an SSN, your TIN is your IRS individual taxpayer identification number (ITIN). Enter it in the social security number box. If you do not have an ITIN, see *How to get a TIN* below.

If you are a sole proprietor and you have an EIN, you may enter either your SSN or EIN. However, the IRS prefers that you use your SSN.

If you are a single-member LLC that is disregarded as an entity separate from its owner (see *Limited liability company (LLC)* on page 2), enter the owner's SSN (or EIN, if the owner has one). Do not enter the disregarded entity's EIN. If the LLC is classified as a corporation or partnership, enter the entity's EIN.

**Note.** See the chart on page 4 for further clarification of name and TIN combinations.

**How to get a TIN.** If you do not have a TIN, apply for one immediately. To apply for an SSN, get Form SS-5, Application for a Social Security Card, from your local Social Security Administration office or get this form online at [www.ssa.gov](http://www.ssa.gov). You may also get this form by calling 1-800-772-1213. Use Form W-7, Application for IRS Individual Taxpayer Identification Number, to apply for an ITIN, or Form SS-4, Application for Employer Identification Number, to apply for an EIN. You can apply for an EIN online by accessing the IRS website at [www.irs.gov/businesses](http://www.irs.gov/businesses) and clicking on Employer Identification Number (EIN) under Starting a Business. You can get Forms W-7 and SS-4 from the IRS by visiting [www.irs.gov](http://www.irs.gov) or by calling 1-800-TAX-FORM (1-800-829-3676).

If you are asked to complete Form W-9 but do not have a TIN, write "Applied For" in the space for the TIN, sign and date the form, and give it to the requester. For interest and dividend payments, and certain payments made with respect to readily tradable instruments, generally you will have 60 days to get a TIN and give it to the requester before you are subject to backup withholding on payments. The 60-day rule does not apply to other types of payments. You will be subject to backup withholding on all such payments until you provide your TIN to the requester.

**Note.** Entering "Applied For" means that you have already applied for a TIN or that you intend to apply for one soon.

**Caution:** A disregarded domestic entity that has a foreign owner must use the appropriate Form W-8.

## Part II. Certification

To establish to the withholding agent that you are a U.S. person, or resident alien, sign Form W-9. You may be requested to sign by the withholding agent even if items 1, 4, and 5 below indicate otherwise.

For a joint account, only the person whose TIN is shown in Part I should sign (when required). Exempt payees, see *Exempt Payee* on page 2.

**Signature requirements.** Complete the certification as indicated in 1 through 5 below.

**1. Interest, dividend, and barter exchange accounts opened before 1984 and broker accounts considered active during 1983.** You must give your correct TIN, but you do not have to sign the certification.

**2. Interest, dividend, broker, and barter exchange accounts opened after 1983 and broker accounts considered inactive during 1983.** You must sign the certification or backup withholding will apply. If you are subject to backup withholding and you are merely providing your correct TIN to the requester, you must cross out item 2 in the certification before signing the form.

**3. Real estate transactions.** You must sign the certification. You may cross out item 2 of the certification.

**4. Other payments.** You must give your correct TIN, but you do not have to sign the certification unless you have been notified that you have previously given an incorrect TIN. "Other payments" include payments made in the course of the requester's trade or business for rents, royalties, goods (other than bills for merchandise), medical and health care services (including payments to corporations), payments to a nonemployee for services, payments to certain fishing boat crew members and fishermen, and gross proceeds paid to attorneys (including payments to corporations).

**5. Mortgage interest paid by you, acquisition or abandonment of secured property, cancellation of debt, qualified tuition program payments (under section 529), IRA, Coverdell ESA, Archer MSA or HSA contributions or distributions, and pension distributions.** You must give your correct TIN, but you do not have to sign the certification.

## Secure Your Tax Records from Identity Theft

Identity theft occurs when someone uses your personal information such as your name, social security number (SSN), or other identifying information, without your permission, to commit fraud or other crimes. An identity thief may use your SSN to get a job or may file a tax return using your SSN to receive a refund.

To reduce your risk:

- Protect your SSN,
- Ensure your employer is protecting your SSN, and
- Be careful when choosing a tax preparer.

Call the IRS at 1-800-829-1040 if you think your identity has been used inappropriately for tax purposes.

Victims of identity theft who are experiencing economic harm or a system problem, or are seeking help in resolving tax problems that have not been resolved through normal channels, may be eligible for Taxpayer Advocate Service (TAS) assistance. You can reach TAS by calling the TAS toll-free case intake line at 1-877-777-4778 or TTY/TDD 1-800-829-4059.

### Protect yourself from suspicious emails or phishing schemes.

Phishing is the creation and use of email and websites designed to mimic legitimate business emails and websites. The most common act is sending an email to a user falsely claiming to be an established legitimate enterprise in an attempt to scam the user into surrendering private information that will be used for identity theft.

The IRS does not initiate contacts with taxpayers via emails. Also, the IRS does not request personal detailed information through email or ask taxpayers for the PIN numbers, passwords, or similar secret access information for their credit card, bank, or other financial accounts.

If you receive an unsolicited email claiming to be from the IRS, forward this message to [phishing@irs.gov](mailto:phishing@irs.gov). You may also report misuse of the IRS name, logo, or other IRS personal property to the Treasury Inspector General for Tax Administration at 1-800-366-4484. You can forward suspicious emails to the Federal Trade Commission at: [spam@uce.gov](mailto:spam@uce.gov) or contact them at [www.consumer.gov/idtheft](http://www.consumer.gov/idtheft) or 1-877-IDTHEFT(438-4338).

Visit the IRS website at [www.irs.gov](http://www.irs.gov) to learn more about identity theft and how to reduce your risk.

## What Name and Number To Give the Requester

For this type of account:	Give name and SSN of:
1. Individual	The individual
2. Two or more individuals (joint account)	The actual owner of the account or, if combined funds, the first individual on the account <sup>1</sup>
3. Custodian account of a minor (Uniform Gift to Minors Act)	The minor <sup>2</sup>
4. a. The usual revocable savings trust (grantor is also trustee)	The grantor-trustee <sup>1</sup>
b. So-called trust account that is not a legal or valid trust under state law	The actual owner <sup>1</sup>
5. Sole proprietorship or disregarded entity owned by an individual	The owner <sup>3</sup>
For this type of account:	Give name and EIN of:
6. Disregarded entity not owned by an individual	The owner
7. A valid trust, estate, or pension trust	Legal entity <sup>4</sup>
8. Corporate or LLC electing corporate status on Form 8832	The corporation
9. Association, club, religious, charitable, educational, or other tax-exempt organization	The organization
10. Partnership or multi-member LLC	The partnership
11. A broker or registered nominee	The broker or nominee
12. Account with the Department of Agriculture in the name of a public entity (such as a state or local government, school district, or prison) that receives agricultural program payments	The public entity

<sup>1</sup> List first and circle the name of the person whose number you furnish. If only one person on a joint account has an SSN, that person's number must be furnished.

<sup>2</sup> Circle the minor's name and furnish the minor's SSN.

<sup>3</sup> You must show your individual name and you may also enter your business or "DBA" name on the second name line. You may use either your SSN or EIN (if you have one), but the IRS encourages you to use your SSN.

<sup>4</sup> List first and circle the name of the trust, estate, or pension trust. (Do not furnish the TIN of the personal representative or trustee unless the legal entity itself is not designated in the account title.) Also see *Special rules for partnerships* on page 1.

**Note.** If no name is circled when more than one name is listed, the number will be considered to be that of the first name listed.

## Privacy Act Notice

Section 6109 of the Internal Revenue Code requires you to provide your correct TIN to persons who must file information returns with the IRS to report interest, dividends, and certain other income paid to you, mortgage interest you paid, the acquisition or abandonment of secured property, cancellation of debt, or contributions you made to an IRA, or Archer MSA or HSA. The IRS uses the numbers for identification purposes and to help verify the accuracy of your tax return. The IRS may also provide this information to the Department of Justice for civil and criminal litigation, and to cities, states, the District of Columbia, and U.S. possessions to carry out their tax laws. We may also disclose this information to other countries under a tax treaty, to federal and state agencies to enforce federal nontax criminal laws, or to federal law enforcement and intelligence agencies to combat terrorism.

You must provide your TIN whether or not you are required to file a tax return. Payers must generally withhold 28% of taxable interest, dividend, and certain other payments to a payee who does not give a TIN to a payer. Certain penalties may also apply.

**BID/PROPOSAL SIGN-OFF SHEET**

**BID/PROPOSAL TITLE:**

Please check off and sign for items below and submit this required sheet with your bid/proposal response; the bid/proposal may be rejected if the required documents are not included with the response.

	DONE	INITIALS
1. Bid/Proposal completed		
2. Non-Collusive certificate completed		
3. Anti-Discrimination clause completed		
4. Proof of insurance coverage in amounts required by specification signed by insurance agent enclosed		
5. Addenda (if issued) received		
List Addendum # and dates		
6. Vendor Responsibility Form completed		
7. Agree to all Terms & Conditions as provided within the specifications		
8. W-9 Taxpayer Identification and Certification		
9. Bid Sign-Off Form completed		

By signing below the respondent is certifying that:

1. All information provided herein is true and correct to the best of their knowledge.
2. The respondent has read and understands the specifications in their entirety and that the response is made in accordance therewith, and;
3. The respondent possesses the capabilities, resources, and personnel necessary to provide efficient and successful service to the County, and;
4. The respondent will be held responsible for any and all discrepancies, errors, etc. in the discounts or rebates which are discovered during the contract term or up to and including three (3) fiscal years following the County's annual audit.

\_\_\_\_\_  
Name/Title of Authorized Person Submitting Bid

\_\_\_\_\_  
Firm or Corporation Making Bid

\_\_\_\_\_  
Address

\_\_\_\_\_  
Telephone

\_\_\_\_\_  
Fax

\_\_\_\_\_  
(Remit to address (if different than above))

\_\_\_\_\_  
Signature of Authorized Person Submitting Bid