

TITLE

**REAR WHEEL LIFT TRANSIT BUS WRECKER
(60,000 POUND GVWR)**

NEW VEHICLE AUTOMOTIVE ENGINEERING

**SOUTHEASTERN PENNSYLVANIA
TRANSPORTATION AUTHORITY**

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ADDENDA and REVISIONS
SEPTA
TECHNICAL SPECIFICATION

<u>CHANGE NO.</u>	<u>RELEASE DATE</u>	<u>REASON FOR ISSUE</u>	<u>RELEASE APPROVAL</u>
4	04/24/2015	Upgrade Wheel Lift Mechanism	

1.0 SCOPE:

This specification, is intended to provide a general description of an emergency response heavy duty service wrecker with a minimum GVWR of 66,000 pound, lifting capacity fully retracted at 67" 35,000 pounds and fully extended lifting capacity of 18,000 pounds with telescopic rear wheel three stages under lift and boom (**Reference: Vulcan V100 3-Stage Euro**) or approved equal and body for this specific application for the primary purpose of both flat and lift towing various configured transit buses (40Foot and 60Foot Articulated Bus's) within the Authority Revenue Fleet. In addition it must tow from Class II light duty truck through Class 8 Heavy Duty Trucks that have maximum axle ratings of 18,000 pounds GFAWR and rear axle rating of 46,000 pounds from the Non-Revenue Fleet within five county area and tri-state area that we service. The wrecker must comply with Pennsylvania, New Jersey, Delaware Motor Vehicle codes and Federal Highway laws. This specification will have detailed information and requirements of certain special equipment to be installed on the vehicle. The vehicle supplied under this specification will comply fully with all applicable FMVSS, State, and Local regulations in effect at the time of manufacture. Also ANSI A92.2, S.A.E. Standards and required recommended practices will be followed whenever applicable. Unless stated otherwise, the specific details of this performance specification are minimum requirements of acceptable vehicles and/or equipment.

2.0 DESCRIPTION:

The vehicle described in this performance specification is intended to be used as stated in **section 1.0**. The wrecker will be comprised of a two (2) person chassis cab, diesel engine, automatic transmission, tandem rear axle, air ride suspension, frame rails of adequate capacity to withstand high impact, air brakes, general lighting, manufacture standard wrecker **Reference: Vulcan V100 3-Stage Euro** telescopic hydraulically operated recovery boom angle at thirty-five degrees (35^0) fully retracted will have 100,000 pounds lifting capacity retracted, fully extended 18,000 pounds with a maximum hook height of three hundred four (304") inches with all lifting apparatus, cables, slings, under lift tools and body, air circuits with other detail features within this specification. Also underlift fully retracted at zero (0^0) degrees will lift the front axle of the chassis at 55,000 pounds at sixty-seven (67") inches including a negative six (-6") inches to a positive height of twelve (12") inches, fully extended underlift at One Hundred and forty-four (144") inches with a tilt arc of a minimum of eighteen degrees (18^0) with a tow rating of eight thousand pounds (80,000 lbs.).

A hot shift with over-speed power take off (PTO), will operate all wrecker function's and auxiliary air compressor from both a remote and stationary positions and disengages when driving. **Clutch pump or auxiliary engines driven pump and electric/hydraulic system is not acceptable.** The only exception to the electric/hydraulic system is the twelve (12) volt emergency hydraulic system. Mounted in conjunction with this wrecker is a heavy duty body fabricated by the wrecker manufacture for this piece of equipment. **The maximum dimension for a SEPTA forty (40') transit bus, set-back front axle is one hundred and nineteen (119'') inches with a front axle weight rating (FAWR) of 16,000 pounds with a nine (9⁰) degrees approach and departure angle. The maximum dimension for a SEPTA sixty (60') transit bus, set-back front axle is one hundred and nineteen (119'') inches with a front axle rating (FAWR) of 16,000 pounds with a nine (9⁰) degrees approach and departure angle.** The completed vehicle will have a minimum GVWR of 66,000 pounds. Bid Awardee to submit interior, exterior and body layout drawings of the vehicle and equipment within sixty (60), days after purchase order are issued.

2.1 ENGINE:

The engine will be an electronic control Cummins, direct injection diesel rated at a minimum of **475** gross Horsepower (GHP) at either eighteen hundred to twenty-one hundred (1800 - 2100 RPM). The engine will be capable of operating on either #1 low sulfur or #2 diesel fuel and will be equipped with the following:

- 2.1.1** Spin on full flow and bypass type oil filters.
- 2.1.2** Spin on full flow primary and secondary fuel filters.
- 2.1.3** A twelve (12 V.) volt Fuel/Water separators with a heater, dash mounted water/fuel indicator light (**Reference Racor 1000FG**), or approved equally.
- 2.1.4** An engine idle limiter with a thirty (30) minutes time range.
- 2.1.5** Single password for engine reprogramming will be installed. The SEPTA Project Manager will advise vendors' of the password at the time of award.
- 2.1.6** Engine controls and shutdown system which are to include: low oil pressure, high coolant temperature, low coolant level, engine power derates and a shutdown with manual override.
- 2.1.7** Properly calibrated fan clutch for this application.
- 2.1.8** Engine manufactures pre-charged coolant filters will be installed.
- 2.1.9** All water and heater hoses will be silicone type with constant torque clamps where possible.

- 2.1.10** Antifreeze protection will be to minus (-30⁰) degrees with Extended Cool with additive. Permanent labels will be installed in the engine compartment or original equipment manufacturer recommendation.
- 2.1.10.1** Radiator fill neck will be both a pressured system and a manual fill system.
- 2.1.10.2** Radiator system shall be a closed loop system with overflow recovery canister.
- 2.1.11** Radiator will be manufacturer standard with both a manual radiator drain-cock and a pressurized drain cock.
- 2.1.12** Electric engine coolant pre heaters rated One Thousand watts (1000 W), with a polarized twenty (20-amp.) Plug or receptacle mounted on the left side.
- 2.1.13** Exhaust system will be dual vertical type chrome pipes with a ninety (90⁰) bend, stainless steel muffler and heat shield and tail pipe will exit beyond the body of the truck. Flex exhaust pipes are not acceptable.
- 2.1.14** Air intakes will be a minimum two stage heavy duty element Donaldson ECG air cleaners or authority approved equal. A dash mounted air filter restriction gauge with manual reset will be supplied.
- 2.1.15** Engine electric remote throttle control will be installed for the wrecker end. Its function will allow the operator to increase or decrease the engine truck speed. Provisions will be provided for a quick adjustments and emergency shutdown. Only OEM wire harnesses are acceptable, splicing the ECM harness of either engine, transmission or PTO is not acceptable. **Vehicles will be not be acceptable.**
- 2.1.16** Minimum DEF tank capacity will be 10 gallons, if available a 25 gallon tank would be preferred.

2.2 **TRANSMISSION**

The vehicle application will operate in severe service conditions. A six (6), speed fully automatic transmission, Allison HD-4560RDS, with touch shift pad and electronic over-speed control power take off. The transmission will be equipped with the following:

- 2.2.1** Internal auxiliary oil to water oil cooler.
- 2.2.2** Dash mounted high oil temperature indicators with built-in shut down system.
- 2.2.3** Internal, spin-on replaceable filters.
- 2.2.4** A heavy duty drive shaft safety retaining strap.

2.2.5 Hot Shift Power Take Off (PTO) with electronic over speed control EOS-110 and light indicator will be mounted on the dash or through the chassis multiplex system and PTO activated through the dash backlight rocker switch panel and clearly indicating the PTO.

2.2.6 Vehicle manufacturers will receive ECU input and output requirements at the time of the pre award meeting from both the wrecker manufacturer and the authority.

2.3 **CHASSIS**

2.3.1 The frame will be 120,000 PSI, heat treated steel with **full length depth inverted "C" insert** reinforcement to rear of the overall length of the vehicle. Frame section modulus of **25.42** with a minimum RBM will be **3,500,000 foot pounds. Full Front twenty-four (24")inches frame extension is to be included if required for counter weight. Bolt on a type front frame extension is not acceptable.**

2.3.2 The CA will be minimum 156 inches, with after frame (AF) to be determined by the wrecker installer.

2.3.3 The wheelbase will be minimum 256 inches.

2.3.4 The maximum BBC will be approximately 113 inches.

2.3.5 A front axle will have a five (5") inch or greater set-back, 18,000 pounds GAWR, multi-leaf spring suspension.

2.3.6 Front hubs will be Stemco oil lubricated wheel bearings if available.

2.3.7 A rear axle will be Rockwell RT-46-160P, 46,000 pounds GAWR, single reduction tandem with a ratio 4.11 with synthetic oil. Maximum road speed will be 65 MPH. With driver control front and rear differential lock-out and wheel locks with dash mounted back light rocker switch indicator.

2.3.7.1 Rear hubs will be a Stemco oil lubricated wheel bearings.

2.3.8 Rear suspension will be air ride 46,000 pounds with leveling gauge/valve Hendrickson HAS-460-55, 55" Axle spacing 46,000 pound capacity with 9.5" ride height with shock absorbers mounted inboard with dual leveling valves.

2.3.8.1 Cab operated rear axle dump switch dash mounted through the chassis multiplex system.

2.3.9 All drive line components will be Dana-Spicier extra heavy duty 1810 Series or Rockwell 181 series with a full polymer coated ("Glidecote") splines.

- 2.3.10** Brake system will be air type either “S” or “Q” cam 16.5"x7" with anti lock brake (ABS) system.
- 2.3.10.1** Inboard or Outboard Front & Rear brake rotors if available.
 - 2.3.10.2** Front and Rear Drums are acceptable.
 - 2.3.10.3** Front and Rear Rockwell automatic slack adjusters.
 - 2.3.10.4** Rear brake dust shields.
 - 2.3.10.5** The rear axle only will be equipped with a spring type parking/emergency brakes.
 - 2.3.10.6** Brake lining will be non-asbestos type.
 - 2.3.10.7** Brake rotors or drums front and rear will be cast iron hubs piloted mounted type.
 - 2.3.10.8** Rockwell/WABCO or Bendix Anti-Lock Brake system with a blink code diagnostic reader will be supplied.
- 2.3.11** Engine gear driven, air compressor TU-FLO 750, minimum of 16.5 CFM, two cylinders, Bendix/Westinghouse or approved equals.
- 2.3.12** Bendix/Westinghouse AD-IP or AD-9 air-dryer.
- 2.3.13** Automatic and heated moisture ejector system DV-2 will be supplied.
- 2.3.14** Full trailer air brake controls will be supplied.
- 2.3.14.1** Glad hands are to be supplied and mounted on the rear of the body painted red and green (pressure and return).
- 2.3.15** Tire size will be rated to meet the required front steering axle rating and in combination with the rear axle. Tires will be tubeless with a minimum size/rating of **315/80R22.5 load range L, 20 ply rating** and rear drive axle tires will be a minimum of **11R22.5 load range G, 14 ply rating**.
- 2.3.15.1** Tires will be tubeless radial type.
 - 2.3.15.2** The tread design of the front tires will be a Goodyear (G286) highway type bi-directionally self-cleaning.
 - 2.3.15.3** The rear tires will be Goodyear (G164 RTD) bidirectional self-cleaning cleat type.
 - 2.3.15.4** The rim will be either chrome or polished aluminum single piece disc, ten (10) hole hub pilot type.
 - 2.3.15.5** Front and Rear spare tire and rim will be supplied for each vehicle.

- 2.3.16** Fuel tank will be manufacturers' standard, equipped with two external grip strut steps mounted on the street side and curb side and exterior grab handles mounted on the chassis "B" post of the truck in addition to the normal interior grab handles. The minimum capacity will be seventy (70) gallons. The saddle tank is to be mounted on the driver side under the cab chassis. The fuel tank will be labeled "**DIESEL FUEL ONLY.**" Tank will not interfere with the hydraulic reservoir, air tanks, DEF tank or exhaust system.
- 2.3.17** Front push bumper **per section 3.3** will include license plate mounting, cutouts for towing eyes, swept back ends and a set orange plastic guide rods are to be mounted on the corners. Bumper to be painted per **section 4.3** manufacturer standard color.
- 2.3.18** Front and Rear mud flaps in addition there will be anti-spray type over the wheel wells will be either symplastics anti spray guard suppression or wheel well fenders over the wheel well mounted onto the body wheel well area.
- 2.3.19** Entire body will be rustproofed by the "Ziebart" process in addition to manufacturer undercoating process. This is not required if cab is covered under a 5-year manufacturer standard rust proof warranty.
- 2.3.20** Electric "Stick" Arc welding anywhere on the heat-treated frame is not acceptable nor will the vehicle be accepted. The only acceptable fasteners, are huckbolts, high torque bolts, plasma arcs, Mig, tig with CO₂ or argon gas.
- 2.3.21** Oxygen/acetylene torch cutting on the frame or blowing holes through the frame is not acceptable and therefore is not acceptable mounting practice on the vehicle. The only approved method is to drill, saw cut or plasma arcs the heat treated frame.
- 2.3.22** Manufacturer standard dual integral power steering will be installed with external oil cooler.
- 2.3.23** Two (2) front and two (2) rear tow hooks will be provided. The tow hooks will be bolted to the frame.
- 2.3.24** If a counterweight is used to meet certified capacity lifting and transporting capacity, the Authority would require that we maintain maximum allowable lifting and towing capacity and stay within the State and Federal Highway Bridge Formula law.

2.4 CAB

The cab will be two (2) door, two (2) passenger air ride cab with tinted glass, power door locks, power windows and power heated mirrors windows with under cab door lighting mounted on the rocker panel. The cab will be equipped with the following:

2.4.1 A high capacity, heavy duty heater, air conditioner (R-134A), recirculating switch and defroster with a three (3) speed fan.

2.4.1.1 Silicone heater hoses with shut-off valves.

2.4.2 One or Two dash, mounted cup holders will be installed.

2.4.3 Manufacturers' standard windshield wipers with intermittent speed and windshield washing spray.

2.4.4 The vehicle will be equipped with a dual trumpet roof mounted or under engine hood Grover dual air horn. If roof mounted air horns are being supplied then chrome plated with a roof mounted manual shut-off valve.

2.4.5 Dual "West Coast" remote control, heated type mirrors, with combination sixteen by seven (7" x 16") inches, on right and left-hand side of the cab and convex mirrors. Also mounted on the left and right-hand fenders eight (8") inch bright finish convex mirrors, will be mounted on each side of the cab and fenders on the vehicle.

2.4.6 Manufacturer standard cab am/fm/cb radio mounted inside.

2.4.7 The door locks and ignition will be keyed alike and ten (10) sets of keys or key FOBS will be provided for each wrecker chassis. If available, a keyless ignition with a touch pad will be supplied in lieu of keys. Body compartment keys are to be keyed identical for the wrecker body compartments.

2.4.8 Each cab will have interior door trim and head liner panels and will be a manufacturer premium with combined armrest and grab handles on the interior and a grab handle on the exterior at each door entrance.

2.4.8.1 Interior dual padded sun visors will be provided.

2.4.8.2 An interior cab insulation package to include dash and engine covers.

2.4.8.3 Interior lighting controlled from both the door switch and manually controlled from the driver dash.

2.4.8.4 Exterior lighting under the driver and passenger doors.

2.4.9 One (1) additional step will be provided under each door in addition to the manufacturer standard steps. The step size will be approximately 24" X 5". Steps can be an integral part of the fuel tank and air tanks.

- 2.4.10** Steering Column will be adjustable tilt from the manufacturer.
- 2.4.11** Manufacturer standard (adjustable) 17" tilt steering wheel.
- 2.4.12** Windshield, and all windows are to be tinted glass.
- 2.4.13** The driver and passenger seats will be high back adjustable lumbar support Bostrom "Easy Air 914" or other manufacturers comparable seat. The seat covering material will be manufacturers' standard darkest vinyl material.
- 2.4.14** All seats will be equipped with a lap and shoulder belts.
- 2.4.15** A manufacturer's standard instruments with the addition of an engine and wrecker hour meter, air restriction dial gauge indicator, dual air pressure/brake applicator gauge, fuel gauge, DEF gauge, transmission warning indicator, voltmeter, manifold pressure gauge, an engine shut down warning indicator and transmission overheat shut down indicators, water temperature, fuel/water warning light indicators will be provided.
- 2.4.16** Interior floor will have a non-slip rubber flooring and insulated. Roof liner will be installed with an acoustically sound proof linear material.
 - 2.4.16.1** A minimum floor to ceiling height will be fifty-seven and quarter (57.25") inches head room with shoulder room of seventy (70") inches.
- 2.4.17** Fiberglass engine hood single piece that tilts forwards as one integral unit.
 - 2.4.17.1** A stationary grille mounted to the radiator support frame or frame rails will be supplied.
- 2.4.18** Manufacturer standard exterior grab handles will be installed on each side of the cab doors.
- 2.4.19** Plastic etched vehicle information plate will be permanently affixed on the dash. Plate will be included but not limited to overall height, width length, height and wrecker operation procedures.

2.5 **ELECTRICAL**

- 2.5.1** A starter will be a twelve (12) volt, Delco-Remy model 42MT (OCP) with over crank protection.
- 2.5.2** An alternator with an integral solid state voltage regulator 200 amp. will be supplied by the chassis manufacturer.
- 2.5.3** The battery(s) will be 12V, top post, deep cycle type, with a minimum of Two thousand one hundred (2100) CCA. The battery box will have a step plate cover on either the curb or street side of the cab. A positive battery post with dust cap for jump starting will be installed.

- 2.5.4** The vehicle will be equipped with independent four way hazard warning flashers. Warning and turn signal flashers will be solid state type.
- 2.5.5** Map/Dome light's ceiling mounted swivel or manufacturer standard will be controlled by switches at all doors and by a switch on the vehicle dashboard.
- 2.5.5.1** The manufacturer standard interior dome lights will be operated either by the dashboard switch or independently or may be combined with other switches to meet the manufacturer's standard configuration.
- 2.5.6** Dual electric horns with dual note will be supplied.
- 2.5.7** Manufacturer standard daytime running headlight system.
- 2.5.8** The "ignition/starter " switch and doors will be key operated and be identical to the keyed ignition. Or keyless ignition system if available this is preferred. The wrecker compartment doors can be keyed differently from the door and ignition key, but all body compartment doors will be identical. The same quantity of keys will be supplied as for the ignition/doors key.
- 2.5.9** The electrical system will be protected by either standard thermal fuses or E-T-A manual reset type circuit breakers with trip indicators. The only exception to manual-reset breakers is the instrument panel cluster feed circuit. The maximum number of protected circuits available from the manufacturer will be provided. All circuit breakers will be mounted in blocks in one easily accessible location.
- 2.5.9.1** All electrical control functions and accessories that are switches through relays will be installed in a weather/water tight junction box within this box will be a waterproof compartment on the driver's side of the wrecker. Each body circuit will have a permanent metal wiring diagram and circuit number and fuses or breakers per manufacture design. All low voltage, a control circuit will be routed to the cab mounted through the electrical switch panel eliminating arcing.
- 2.5.9.2** All harness connections will interconnect using Amp, Packard or equal type terminals where appropriate.
- 2.5.9.3** All wiring will be color and numbered coded, with weather tight connections.
- 2.5.9.4** **All body wiring will run through the chassis multiplex system no exceptions.**

- 2.5.10** All wiring will run in encased plastic looms and secured by rubber tie downs. Rubber grommets will be used wherever wires pass through the body or chassis. Wrecker and Utility body will have rigid pipe or PVC conduits where applicable per the manufacturer design for all wiring supplied. All harness connections will be waterproof with glyptol compound or authority approved equal.
- 2.5.10.1** **The chassis builder will supply the necessary auxiliary wiring harness and multiplex modules for the body builder.** This will assure the proper electrical connections between the chassis and body lighting. This excludes the directional arrow and LED lights.
- 2.5.10.2** All junction boxes will be water resistant and mounted within the tool compartment.
- 2.5.10.3** A complete wiring diagram encapsulated with clear plastic will be mounted in the first compartment on the driver side interior door or in a location that is clearly visible for the mechanic to have full access to diagnostic any wiring issues.
- 2.5.11** Electric "Reverse" alarm, ECCO model EA 630, wired to the reverse switch or approved equal.
- 2.5.12** Each wrecker will have a Whelan Liberty LED Series Yellow with front, corner and side alley, front take-down lights, build-in directional traffic arrow model TA-870 board mounted on top of the light pylon body structure.
- 2.5.12.1** Primary body bar light functions and public address system will operate by a control panel switch/pa system, model #3696PL.
- 2.5.12.2** Wig-Wag LED Yellow flashing lights will be mounted in the front grill area and rear tail light lenses and controlled from the cab and labeled on the master console switches.
- 2.5.12.3** A separate Lite It wireless 48" long wireless LED tow Bar part # LIW-48RFS-7R is to be supplied with a seven (7) pin charging connector mounted inside the cross body for charging the tow light bar and in-cab cigarette lighter adapter.
- 2.5.13** One LED spotlights on each side for a total of two spotlights on the light pylon between the light bar. Each light fixture will be restive to salt, various road hazard and vibration. **Vendors to supply examples of proposed light fixtures during the design review stage for installation approval to the Project Manager.**

- 2.5.14** Vehicles will be equipped, with both a seven (7) way ABS tow plug and a Non ABS tow plug. The plug will be female a type connector mounted on the rear of the wrecker on a street side with other electrical and air connection station.
- 2.5.15** All general body lighting will be Truck Lite LED style and comply with FMVSS regulations in effect at the time of assembly.
- 2.5.16** Manufacture emergency light LED clear packages deluxe upper work lights, upper and a lower hook up lights and wing lights mounted with wigwags as stated in **Reference section 2.5.12.2.**
- 2.5.17** Single channel color back-up camera rear camera activated when the vehicle is in reverse with a 7" monitor screen mounted inside the cab at a place to be determined during the design phase. The system must have the capability of storing and recording data for one week in a downloadable DVD format and recovered thru a USB drive. Manufactured by UTC Fire & Security Mobile View products.
- 2.5.18** Two (2) single monitors mounted inside the street and curb side compartment where the lift mechanism controls are stored. They will have dual function as part of **Section 2.5.17.** and give a clear line of sight of the wheel lift mechanisms during the lifting operation.
- 2.5.19** Cab mounted driver Navigation system from the chassis supplier.
- 2.5.20** Side work light LED package.
- 2.5.21** Underlift LED light package.

2.6 WRECKER BODY

The body for this wrecker will be supplied by the wrecker manufacture (reference Jerr-Dan model HDL 600/350 or Vulcan V-100 Euro Option). The body will be light weight, weatherproof and corrosion resistant to salt, oils and chemicals. All panels are to be fabricated to allow for individually replacement in the field. The panels will be fitted into an all-poly-built **(fiberglass or Aluminum body is not acceptable)** body is to be rubber shock mounted to reduce stress. It will be designed with a tunnel tool box integrated into the body to conform to the lifting assembly and all sub components that are required for this application. In addition the design, fabrication, assembly of a poly body must comply with ISO 9001 quality control guidelines. After market body manufacturers and installers will not be accepted due to the complex nature of the lifting components and weight restrictions of this vehicle.

- 2.6.1** The body will be constructed in either two halves or per manufacturer design.
- 2.6.2** Each half will have a substructure fabricated from high strength poly sheets, formed and bonded together with high strength adhesives.
- 2.6.3** Rivets will be not be used on components where high strength and fatigue loads are not present.
 - 2.6.3.1** Two (2) exterior dock rubber bumpers attached to the rear corners.
 - 2.6.3.2** Cargo and sling ties down placement will be finalized in the final submission of the detail drawings.
- 2.6.4** High strength, structural poly components, excluding compartment roll-up doors will be included as an integral part of the structure and add to the inner surface to form a high strength, light weight corrosive resistant body.
- 2.6.5** Tool boxes will be included as an integral part of the body.
 - 2.6.5.1** First compartment for both driver and passenger side will be a cross through body tool box with electrically operated roll-up access doors on both side will be installed.
- 2.6.6** The minimum body dimensions will be as follows:
 - 2.6.6.1** Body Length: 242 inches
 - 2.6.6.2** Body Width: 96 inches
 - 2.6.6.3** Body Height: 40 inches
 - 2.6.6.4** Deck Width: 56 inches
- 2.6.7** Driver Side (Left Side), second compartment, will have a vertical compartment recessed flush into the side of the body. It will be capable of handling various lengths of nylon and steel slings. A total of ten (10), sling hooks will be installed equally spaced within the cabinet.
 - 2.6.7.1** All interior walls will have chain guard protection on all three walls and floor.
 - 2.6.7.2** Chain hook end caps are to be installed in each compartment.
- 2.6.8** Driver Side (Left Side), third compartment, will house the start-all unit and accessories (**Reference section 3.2**).
- 2.6.9** Passenger Side (Right Side), second compartment, will have the identical box to store binder chains, cum-a-longs, slings, rope and cable. For a total of ten (10) swivel “J” hooks.
 - 2.6.9.1** All interior walls will have chain guard protection on all three walls and floor.
 - 2.6.9.2** Chain hook end caps are to be installed in each compartment.

- 2.6.10** Passenger Side (Right Side), third compartment, will store items as directed during the design and review built stage prior to fabrication.
- 2.6.11** Passenger Side (Right Side), fourth compartment, door will have a built-in underlift tool area storage with dedicated socket holders and forks and identify each application use.
- 2.6.12** **Both the Right side (passenger side and Left side (driver side) will have horizontal control station on each side for the operator** to have a clear line of sight when lifting and securing the towed vehicle or Transit Bus.
- 2.6.13** All compartments exterior back walls, side walls, interior door walls and floor are to be covered with a bare white sheets of poly material plate.
- 2.6.14** All doors will be roll up type and be Rom corporation model Quest 2000 power doors and lock with an additional solid state Magnetic door ajar system. This system is to operate through the chassis multiplex and be controlled from inside the cab with a backlight switch supplied from the auxiliary switch panel supplied from the chassis supplier and labeled. Body installer must advise the chassis supplier to have their multiplex controller activated and advise the Body installer as to what pin is to be used.
- 2.6.15** All compartment's doors will have a nylon all weather seal on the slider and be self-lubricated.
- 2.6.16** All compartments will have LED tool compartment's and control station's operated from a master switch through the chassis multiplex system and from.
- 2.6.17** Aluminum Tread plate walkway, mounted on top of passenger and driver side on top of the saddle box's entire length.
- 2.6.18** Rear Bumper and Step Edges will have alternating "RED/WHITE" two (2") inch wide reflective tape **Ref. 3M model: 980-32**, will be placed in these areas. The authority will only accept the product as stated no exceptions.
- 2.6.19** Rear of the body will have reflective safety tape identifying the exterior outline of the rear body. Two (2") inch wide alternating "RED/WHITE" **Ref. 3M model: 980-32** reflective tape will be placed on the rear shaped in a "V" configuration that is visible when traveling. The authority will only accept the product as stated no exceptions.
- 2.6.20** Exterior frame and body line will have reflective safety tape identifying the exterior body outline of the vehicle. Two (2") inch wide "WHITE" manufacturer 3M reflective tape **Ref. 3M model: 980-10**, will be placed on the entire perimeter of the chassis and body. The authority will only accept the product as stated no exceptions.

2.6.21 Rubber rock guards at the front and rear of the wheel wells.

2.7 **WRECKER ASSEMBLY**

The recovery device will be integral design and constructed to provide high strength steel at critical stress areas. The subframe will consist of a tubular frame that mounts directly to the truck chassis and extends from the tail-section forward to the front body connecting brackets. In addition it will support a boom pivot pylon on one end and a three-stage underlift assembly on the other end. Provision will also be provided to attach the boom lift cylinders.

2.7.1 The wrecker boom will be fully hydraulic recovery type without repositioning the integral underlift. The boom will extend, retract, raise and lower under a full design load.

2.7.2 The boom assembly will be fabricated from a number of components to form five major parts. They will consist of an outer boom, inner boom, two boom end swivels (horsehead), winch mounting basket and cable tie backs on each side.

2.7.2.1 Attachment plates will be provided for mounting the subframe to the truck chassis.

2.7.2.2 Mounting bolts will fasten through the sides of the chassis frame in accordance with the truck manufacturers recommendations.

2.7.3 All assemblies will be fabricated from high strength structural steel.

2.7.4 The outer boom will be constructed to allow the attachment of hydraulic cylinders used to raise and lower, extend and retract the boom assembly.

2.7.5 The inner boom will slide within the outer boom and connect to the outer boom by means of a hydraulic cylinder and pins.

2.7.6 The use of low friction, high strength urethane wear pads with wear indicators will be used within the design to reduce friction between sliding members.

2.7.7 Winch boom lifting capacity fully retracted booms will be fifty thousand (50,000 lbs.) pounds.

2.7.7.1 Winch boom lifting capacity fully extended booms will be thirty thousand (30,000 lbs.) pounds.

2.7.8 The winch boom stowed travel height will be a maximum of twelve (12') feet.

2.7.9 The winch boom lifting height will be thirty-five (35⁰) degrees plus or minus five (+/- 5⁰) degrees in the first stage and two hundred forty-eight (248") inches plus or minus (+/-5") inches.

- 2.7.10** A minimum winch boom reaches past tail section will be one hundred and twenty-nine (129") inches.
- 2.7.11** Minimum hook height will be three hundred four (304") inches.
- 2.7.12** Minimum, hook height, with the hydraulic boom extension two hundred sixteen (216") inches.
- 2.7.13** A winch boom maximum working angle will be forty (40^0) degrees.
- 2.7.14** A winch boom minimum working angle will be three-five (35^0) degrees.
- 2.7.15** Winches' boom will have two independent wire cables, cable boom protectors at the horse head, cable termination loops on each side of the boom head.
 - 2.7.15.1** Boom end swivels will incorporate long life structural steel sheaves.
 - 2.7.15.2** The cable guides will allow three hundred and sixty (360^0) degrees sheave rotation, permitting pulls from all directions.
- 2.7.16** Winch motors will be mounted in a winch basket and conform to SAE J706.
- 2.7.17** Winch motors will be hydraulic closed loop tandem pumps and receive full fluid power from the PTO to both winches' when operated together.
- 2.7.18** Winches' booms will be independent winches for a total of two (2) dual winch motors. It will have the capability to wind and unwind the cable (in and out) under full loads.
 - 2.7.18.1** Each winch drum will be a dual 2-speed planetary winch with an individual drum pulling force of fifty thousand (50,000 lbs.) each.
 - 2.7.18.2** Each winch drum will have independent cable tensioners.
 - 2.7.18.3** Each winch motor will be equipped with independent, air shifts, for free wheeling the cable drum under no-load conditions. The location of this mechanism will be the manufacturer standard placement.
 - 2.7.18.4** Each winch drum will have installed two hundred and fifty (250') feet of useable 6x37 steel IWRC extra improved plow steel 5/8" diameter wire rope cable with snatch blocks and hooks and safety latches per manufacturer standard or individual loops.
 - 2.7.18.5** Winch operating dual controls will have curb and street side operating controls', will be within the body compartments per manufacturer recommendation.
 - 2.7.18.6** Approximate line speed at low range (first layer) 12 to 15 feet per minute.
 - 2.7.18.7** Approximate line speed at high range (first layer) 75 to 95 feet per minute.

- 2.7.19** Three stage underlift assemblies will be fully hydraulic flat (ground) recovery type without repositioning the winch booms.
- 2.7.20** Three stage underlift lifting capacities fully retracted will be fifty-five thousand (55,000 lbs.) pounds at sixty-seven (67") inches.
- 2.7.20.1** Three stage underlift lifting capacities fully extended will be eighteen thousand (18,000 lbs.) pounds at one hundred forty-four (144") inches.
- 2.7.21** Three stage underlift, will have hydraulic power raise, lowering, extended, retracts, tilt and fold under hydraulic power and be operated from either curbside, roadside compartments or at the rear of the wrecker.
- 2.7.21.1** The minimum underlift will have power tilt positively up to twelve (12⁰) degrees.
- 2.7.21.2** The underlift will have power tilt negative, down to six (6⁰) degrees.
- 2.7.21.3** The hydraulic extension will be sixty-seven (67") inches.
- 2.7.21.4** The first stage will be a fixed arm.
- 2.7.21.5** The second stage will be a hydraulic extendible arm.
- 2.7.21.6** The third stage will be a hydraulic extendible arm and a cross bar.
- 2.7.21.7** A five (5") inch diameter pin and matching high carbon steel journals will be provided.
- 2.7.22** Underlift extension dimension and lifting capacity are minimum requirements as follows:
- 2.7.22.1** A centerline of a rear axle to tailboard will be sixty (60") inches.
- 2.7.22.2** Tailboard to the centerline of fork fifty-nine (59") inches with a lift capacity of thirty-five thousand (35,000 lbs.) pounds.
- 2.7.22.3** Tailboard to the centerline of fork seventy-one (71") inches with a lift capacity of thirty-five thousand (35,000 lbs.) pounds.
- 2.7.22.4** Tailboard to the centerline of forks eight-nine (89") inches with a lift capacity of twenty-five thousand (25,000 lbs.) pounds.
- 2.7.22.5** Tailboard to the centerline of forks one hundred twenty-eight (128") inches with a lift capacity of twenty thousand (20,000 lbs.) pounds.
- 2.7.23** Heavy duty tire lift, with twenty thousand (20,000 lbs.) pound lift capacity. The tire lift will consist of three sections per side with no, one section weighing more than sixty-four (64) pounds. Tire lift will have one complete basket type straps and four ratchets.
- 2.7.23.1** Tire lift storage bracket is to be supplied and installed in a compartment that will be assigned during the interior layout drawings.

- 2.7.24** Nine (9) sets of underlift cast steel forks and tools for transit buses and passenger cars, sports utility, light and medium duty and heavy duty trucks.
- 2.7.24.1** Short Axle forks, three (3") inch short, three (3") inch medium, three (3") inch tall, four and half 4.5" medium, 4.5" Tall, six (6") inch short Offset, round axle forks.
- 2.7.24.2** Set of low profile fork holders.
- 2.7.24.3** Four (4) fabricated forks for lifting the Nova Bus fleet with floor mounted spring loaded lock mechanism.
- 2.7.24.4** Mounted in the second compartment on the Driver side will be a device fabricated to hold and spring lock the four (4) custom NOVA BUS fabricated forks and mounted on the inside floor.
- 2.7.25** Two (2) sets of underlift pivoting spring lifts adaptors for both transit buses and passenger cars, sports utility, light and medium duty trucks.
- 2.7.26** Two (2) sets of tie down chains for underlift for both transit buses and passenger cars, sports utility, light and medium duty trucks.
- 2.7.26.1** Two (2) sets of tie down ratchet nylon straps for underlift for both transit buses and passenger cars, sports utility, light and medium duty trucks.
- 2.7.27** Four position tool holder and tie-down chain's three-eighths by forty-eight (3/8" x 48") grade 80, alloy will be supplied.
- 2.7.27.1** Tool holder width will be adjusted manually along the cross tube to allow hookups in a variety of positions and widths. T-handles provide a means to lock the tool holders in place when in use, no special tools needed. Manual installed pins, at the end of the cross bar to prevent the tool holders from becoming detached.
- 2.7.28** Five (5) sets of tools will be provided in several configurations as standard as follows:
- 2.7.28.1** Low/narrow, High/narrow, High/wide, chain forks, spring forks.
- 2.7.29** Two (2) sets of three-eighth (3/8") inch by fourteen (14') feet (3/8" x 14'), grade 80, alloy steel safety chains will be supplied as standard equipment. Provisions to attach and store the chains when not in use will be provided at the tail-section of the recovery unit.
- 2.7.30** A fifth wheel adapter with combination pintle hook attachment with trailer ball adapter two (2") inch balls, with a rated capacity of ten (10,000 lbs.) pounds.

- 2.7.31 Two (2) sets of half (1/2") inch by eighteen (18') feet (1/2" x 18'), grade 80, alloy steel safety chains will be supplied as standard equipment. Provisions to attach and store the chains when not in use will be provided at the tail-section of the recovery unit.
- 2.7.32 Four snatch blocks are to be supplied per truck Gunnebo Johnson two (2) 8-ton with eight (8") inch sheave, two (2) 8-ton with six (6") inch sheave.
- 2.7.33 Two snatch blocks with shackles 8-ton with six (6") inch sheave.
- 2.7.34 Ratcheting heavy duties under lift tie down straps for wheel grid tie down kit.
- 2.7.35 Independently, controlled dual combination rear hydraulic jack stabilizers and integral folding recovery spades will be provided. The stabilizers will be welded to the sub frame and bolted directly to the truck chassis.
 - 2.7.35.1 Recovery anchors eight (8) each side, including a special ground anchor will be provided as part of the stabilizer system.
- 2.7.36 Trailer hookup package, will be included. Two (2) glad hands, air chuck and seven (7) contact (**Reference 2.5.14**) female plug and emergency tow directional arrow board. This will be recessed into the tail-section of the body and provide easy access to hookup trailer air, lights and wireless emergency directional arrow towing board.
- 2.7.37 Brake buddy model BB-100 for Buses and Trucks.
- 2.7.38 Post Steering wheel lock model: BA8AW and a B/A product steering wheel lock strap model: SWL8 double claw-hooks.
- 2.7.39 Wireless remote throttle pendent control that will allow the operator to increase or decrease truck engine speed will be installed at the rear of the unit. It will operate either electrical or air shift (**Reference section 2.1.15**).
- 2.7.40 Complete set of tire chains "V" bar style and pair of snow chain ramps model SCR-4.

2.8 **WRECKER OPERATION CONTROLS**

The operation control system is to be full pressure, full metering, and proportional remote controls system. **Electrically activated solenoid control valves are not acceptable.**

- 2.8.1 Manual controls on both sides will be grouped for convenience providing proportional control for each wrecker or underlift function on the passenger or driver side of the wrecker.
- 2.8.2 Hydraulic system pressure gauges are provided at both control stations for monitoring the system performance of each pump.

- 2.8.3** Both control stations will be recessed inside the rearmost, curbside and street side tool compartment.
- 2.8.4** All control handles will automatically return to their neutral off -position when released.
- 2.8.5** When any of the controls are released in their neutral off-position all hydraulic functions will lock and hold their load even when the power takeoff is disengage or in the event of a hydraulic malfunction.
- 2.8.6** In addition to the conventional manual controls provided a hand held 12FXN wireless remote control with charging and docking stations with an emergency stop button, which operates all wreckers and wheel lift function will be provided.
- 2.8.7** In addition to the wireless controls an additional tethered controls with identical functions as the wireless controls is also to be supplied.
- 2.8.8** The wrecker portion of the control will provide proportional controls to all wrecker functions.
- 2.8.9** Rear stabilizers controls will operate from the control stations.
- 2.8.10** Air operated winches, free spool controls are grouped for convenience in the rearmost curb and street side compartment.

2.9 HYDRAULIC SYSTEM

The hydraulic system is to be either a full pressure closed or open center or proportional type system to provide hydraulic pressure and flow as required for the operation of the wrecker, underlift, stabilizer jack and winches.

- 2.9.1** The hydraulic system will have a minimum operating pressure of three (3,000 PSI), with a flow rate range from zero (0) to twenty (20) G.P.M. at 1,000 rpm. , for the wrecker, underlift, stabilizer jacks and winches.
 - 2.9.1.1** The pumps will be a tandem section gear type.
 - 2.9.1.2** System will have an overload protection relief valve.
 - 2.9.1.3** Safety provision for holding the load will include but limited are counterbalance valves, load checks and relief valves as required.
 - 2.9.1.4** A third pump will be installed and primarily used for auxiliary hydraulic equipment.
- 2.9.2** The complete system will conform to J.I.C. and SAE J525, 100R2A, 100R4, 100R1 standard with a four to one burst ratio with an outer jacket the being impervious to salt, oils and road hazard. All control valves will have NEMA type enclosure.

- 2.9.3** The hydraulic PTO pump will be continuous heavy-duty type that operates off the electronic world transmission and not the crankshaft. Power Take Off pumps, will be “Hot Shift PTO” with an over speed control circuit and light indicators. The PTO will be compatible with the Allison World Transmission and electronic control engines and be installed at the chassis plant not after market installation by the body installer.
- 2.9.4** Hot Shift control with a light indicator unit will be mounted inside the cab on the top of the dash. That will allow full view of both the control console and the driver view of the road.
- 2.9.5** The hydraulic tank will have a spin-on external dual return line filter with a contamination indicator that will filter the fluid to ten (10) micron with 25 psi. bypass.
- 2.9.5.1** A external fluid level indicator, temperature gauge **with guard protector** and pressure filler breather, suction strainer with bypass circuit and pressure gauge.
- 2.9.5.2** In the hydraulic tank, suction side there will be two (2) 100 mesh stainless steel wire mesh strainers with 5 psi by-pass.
- 2.9.6** All hydraulic lines shall be rigged type piping where applicable and flexible hose inside the boom sections shall be insulated. All hose’s and tubing shall have a part number tagged or stamped for ease of identification.
- 2.9.7** All hydraulic lines connecting the auxiliary tool circuit shall be equipped with self-sealing, quick disconnect and the male and female ends are to have dust covers permanently mounted on the units.
- 2.9.8** The fluid control head shall be of a type that will meter the flow rate of the hydraulic system for the individual functions.
- 2.9.9** The hydraulic reservoir tank shall have the capacity to operate the wrecker truck with multiple operation functions and auxiliary tool circuit with a reserve capacity of fifty (50%) percent. The tank shall have internal baffles and a access cover with a replaceable gasket.
- 2.9.10** Hydraulic test port sensors for high pressure readings shall be installed and labeled.
- 2.9.11** Hydraulic test point monitors for low pressure shall be installed and labeled.
- 2.9.12** A hydraulic diverter valve shall be installed to divert the flow of hydraulic fluid to accessories. This valve will also allow hydraulic flow to auxiliary tool circuits.
- 2.9.13** The emergency 12VDC system shall also supply hydraulic fluid to the wrecker. There shall only be one pump to operate both units (**Reference Section 2.7.17**).

3.0 ADDITIONAL EQUIPMENT

- 3.1** A registration card holder **Ref. Betts Model PS-1** shall be supplied and installed on the left front lower door panel or left inner door column support.
- 3.2** Hydraulic driven Goodall Start-all model 11-810 with four additional capacitors, anti-vibration kit will be mounted inside a body compartment that adequately can accommodate the unit and jumper cables and front and rear mounting on front grill and rear body compartment clamp-ended booster cables with plugs and weather caps and single cable storage rack (one-24vdc) set of fifty (50Ft.) jumper cables with alligator type clamps.
- 3.3** A heavy duty steel fabricated heavy duty half inch (1/2") rubber faced, push bumper with grille guard, **Ref. Diversified Products Mfg.** . Bumper to be a turbo wraparound push bumper with full frill guard and pintle hook access. A minimum of 1/2" thick hard rubber glued and mounted onto the face and designed to deflect impact, while pushing a 40ft. transit bus with a gross weight of 32,000 lbs. This bumper will not affect the air bag mechanism that the original equipment manufacturer has supplied (if equipped). It will also act as a storing area for counter weight if required.
- 3.4** Hydraulically driven 120 cfm Vanair air compressor at 150 Psi. , thirty-five and fifteen gallon tank reservoir. Hose reel manual pull-out/ recoil retraction, ball stop, four-way guide wheels and 100ft. high pressure therm-plastic air hose will be installed. Portable air connection half inch quick disconnect mounted through the front grill and rear body station area.

4.0 PAINING

The exterior of the truck chassis, body, booms, underlift (inner/outer sections) winches and pedestal, the body the poly body is to have impregnated thorough out the color as stated. Fiberglass Gelcoat process is not to be used or will be acceptable. The color will be painted to conform to the requirements of the SEPTA non-revenue fleet. The exterior shall be **NO LEAD**. The unit shall be painted to conform to the requirements of the SEPTA utility fleet. The exterior color shall be orange, "DUPONT IMRON 5000", color number.

- 4.1** The base unit shall be delivered from the manufacturer painted as required above. Manufacturer's standard finishing system will be acceptable if the color matches "DUPONT IMRON 5000", orange.
- 4.2** If the base unit manufacturer cannot provided exterior finish as required above. The parts of the exterior which are delivered pre-painted shall be refinished according to the following schedule:
 - 4.2.1** Clean, sand and prepare the surface according to the paint manufacturer's recommendations for overall refinishing.
 - 4.2.2** Apply a total of two (2) coats of, orange "DUPONT IMRON 5000", to a minimum dry film thickness (DFT) of 2.0 mil.
 - 4.2.3** Apply a total of two (2) coats of, clear coat "DUPONT IMRON 5000", to a minimum dry film thickness (DFT) of 2.0 mil.
- 4.3** The remainder of the exterior of the unit shall be finished according to the following schedule:
 - 4.3.1** Surface preparation shall begin with bare metal free of rust bloom, scale, dirt or other contamination.
 - 4.3.2** The bare metal shall be treated in accordance with the paint manufacturer's recommendation.
 - 4.3.3** The surface shall be primed with Dupont "Variprime" 615S/616S. Primer shall be applied to a minimum DFT of 1.5 mil. . Interior surfaces of the compartments shall receive a total of two coats of zinc chromate primer to a minimum DFT of 1.5 mil.. Special care shall be taken where dissimilar metals are joined to prevent electrolytic corrosion.
 - 4.3.4** The final finish,"DUPONT IMRON 5000", orange , shall be applied for a total of three (3) coats, each with a minimum DFT of 1.0 mil.
 - 4.3.5** The final finish shall have a total DFT of not less than 4.5 mil at any point.
 - 4.3.6** The final finish shall have a total DFT of not less than 4.5 mil at any point including clear coat.
- 4.4** Exposed bumpers, frame rails, steps, and similar structure shall be painted with polyurethane enamel equal to or superior to "DUPONT IMRON 5000", pitch black #099. Alternately, bumpers may be painted silver-gray, chrome plated, or polished and passivated aluminum or stainless steel.

5.0 NAMEPLATE

Three (3) plastic engraved nameplate and wrecker operating instructions shall be permanently affixed to the equipment in a safe and highly visible location. One (1) shall be mounted inside the cab and the second and third shall be mounted on the interior operator station in the body. The nameplate and wrecker operating instructions shall be permanently marked with the following information as applicable:

- 5.1** Vendor name and address.
- 5.2** Gross vehicle weight rating (GVWR).
- 5.3** Gross Combination Weight Rating (GCWR).
- 5.4** Paint manufacturer, type and code numbers.
- 5.5** Delivery date.
- 5.7** Front and Rear Axle rating.
- 5.8** Manufacturer, Make, Model, Year, Body Style, Wrecker Type.
- 5.9** Final Inspection Date:
 - 5.9.1** Inspector's name.
 - 5.9.2** Date of inspection.
 - 5.9.3** Inspected at (location).
- 5.10** SEPTA purchase order number and date.
- 5.11** Overall stowed travel height for bridge clearance.
- 5.12** Detail recovery (wrecker) operating instructions.

6.0 DOCUMENTATION

- 6.1** At the time of delivery, the vendor shall furnish the following documentation:
 - 6.1.1** Owner's/Operators Manual - Twenty (20) copies per unit.
 - 6.1.2** Factory Service Manual - Two (2) copies.
 - 6.1.3** Factory Overhaul Manual - Two (2) copies.
 - 6.1.4** Factory Parts Manual and/or Catalog - Two (2) copies.
 - 6.1.5** Miscellaneous Documentation including wiring diagrams, pictorial hydraulic flow charts, S.A.E., J.I.C. hydraulic schematics, installation manuals, or other items appropriate to the vehicle - Two (2) copies.

- 6.1.6** If any item in the above reference sub-section has available in a CD-Rom will be supplied. Also provide four (4) CD-Rom copies for stand-a-lone personnel computers. If any special software is required to operate the manufacturer's system, that also is to be supplied. All items are to be delivered to the Project Manager.
- 6.1.7** To ensure that these items are not available a letter from the Original Equipment for the body, wrecker manufacturer, hydraulic supplier and Chassis Supplier must be submitted at the pre-bid meeting.
- 6.2** Original invoice with two duplicate.
- 6.3** The vendor shall furnish pre-production drawings of the vehicle within sixty days of issues of the purchase order by SEPTA. Body, wrecker weight, center of gravity calculations and weight distribution shall be submitted. Two (2) sets of prints and one (1) AutoCAD Ver. 14 copy of each drawing shall be furnished.
- 6.3.1** All drawing submission shall be directed to:
- SEPTA – OPS Utility Fleet
1234 Market Street 14th Floor
Philadelphia, PA 19107
Attn. Joseph M. Chimenti
- 6.3.2** Drawings will be reviewed and returned marked either "APPROVED", "APPROVED AS NOTED", "DISAPPROVED" or "REVISE AND RESUBMIT". Only drawings marked "APPROVED" maybe used for construction.
- 6.4** Prior to delivery, the completed vehicle shall be inspected for compliance with the requirements in this specification. SEPTA shall have thirty (30) days advance notice of the inspection of this vehicle and may elect to send a representative to review the completed vehicle prior to delivery.
- 6.5** The documents required in **Section 6.1** shall be delivered to the SEPTA Automotive Engineering Equipment Maintenance Department, to the attention of Mr. Joseph M. Chimenti.
- 6.6** The MV-1, MV14G and MV-673 and Certificate of Origin must be completed and executed by the dealership with the required signature from SEPTA to place these vehicles under PENNDOT Fleet Registration system. Municipal plates will be affixed to the vehicle at the time of delivery. Duplicate copies of these documents must be submitted at the identical time that the bid awardee is requesting payment.

7.0 DELIVERY

- 7.1** The vehicle shall be delivered completely lubricated, a filled fuel tank, and ready for service. The vehicle shall have a current Pennsylvania State Inspection sticker and a metal Pennsylvania Municipal License Plate.
- 7.2** The vehicle shall be delivered to:
- SEPTA – Courtland Utility Shop
c/o Director of Maintenance
3rd & Courtland Street
Philadelphia, Pa. 19140
- 7.3** Delivery may be made between the hours of 8:00 am and 3:00 pm Monday through Friday. No deliveries may be made outside of the hours listed above or on Saturdays, Sundays or Holidays.
- 7.4** Vendor has Ten (10) days after delivery of the vehicles to SEPTA, in which they will supply the manuals to the above address in either electronic, PDF or paper format. **Payment will not be disbursed to the Primary contractor until all conditions of this contract are fully met. The items are final weight distribution Chassis order cards, body service, parts and operational manuals. Also included will be copies of all applications for the Municipal Plates and CAD drawings are delivered to the Project Manager of the Non-Revenue Fleet.** Receipt of these items will be required and submitted to the Project Manager of Non-Revenue Fleet.
- 7.5** Vendor, will supply training for four (4) SEPTA instructors. The training/classroom will be a National Drivers Certification Program sponsored by T.R.A.A. (Towing Recovery Association of America). The certification will be a level 3. This certification can also be performed at SEPTA training facility or at local distributor facility within the authority territory. If off-site training is required the authority will supply airfare, hotel and meals for the duration of the training sessions if conducted at the manufacturer's facilities for the chassis and any sub components. Class must be conducted within a fifty (50) mile radius if at all possible.
- 7.5.1** Mechanic training is separate and will be conducted at SEPTA Utility Shop Facilities or our corporate headquarters providing the center is within fifty (50) miles.
- 7.6** There will be a ten (10%) percent, total bid price retainage; if all items in Section 6.0 are not complied at the time of delivery.

8.0 WARRANTY

The minimum warranty term shall be not less than twelve (12) months for the vehicle and all equipment installed, field travel related cost on the vehicle. The Drive Train and auxiliary components will be five (5) years extended warranty. The minimum warranty shall cover the cost of both parts, labor and field travel time required to repair defects reported during the term of the warranty.

- 8.1** Where the manufacturer's standard warranty for the equipment or a certain item of equipment installed on the vehicle is in excess of twelve (12) months, that longer warranty shall be in-force throughout its term. Terms and conditions of such additional warranties (if any) shall be clearly stated in the vendor's proposal.
- 8.2** The term of the warranty shall begin upon acceptance of the vehicle by the Project Manager who is the authorized SEPTA representative.
- 8.3** The complete vehicle shall have an explicit warranty against corrosion damage on the entire body and/or frame. This warranty may be furnished either by the vehicle OEM or by Ziebart, which is an aftermarket rust-proofing company, the term of this warranty shall not be less than five (5) years.
- 8.4** The dealership shall represent SEPTA in acquiring the authorization to perform in-house warranty, parts supply room and technical, mechanical and Operational Training for the vehicles supplied.