SPECIFICATIONS
A-48-DO-A-AL

062300 - 062700

TRUCK - SPECIAL PURPOSE PONY
38,000 LB GVWR

TRUCK, PONY, 20' BODY (062300)

TRUCK, PONY, 24' BODY (062700)

INDEX

October 5, 2021 GAW

I. GENERAL TRUCK SPECIFICATIONS: (Continued)

E. Van Body

1. Body Dimensions
2. Body Material
3. Rear Door
4. Side Door - Curb Side and Street Side
5. Electrical
6. Floor
7. Accessories
8. Lift Gate
8a. Optional Trailer Tow Package (installed)
9. Roof
10. Safety

II. DRAWINGS:

III. MANUALS:

IV. TRAINING:

V. WARRANTY:

GENERAL TRUCK SPECIFICATION:

A. INTENT STATEMENT:

The purpose of this specification is to describe a conventional dual rear wheel, single rear axle truck with a van body of various lengths.

NOTE: Pennsylvania Department of General Services, PCID No. 1075, "*General Requirements for Bidding PENNDOT Vehicles/Equipment*", most current version effective at the time and date of bid opening is included as a part of this specification. PCID No. 1075 may be reviewed and downloaded from the Department of General Services website, http://www.dgs.state.pa.us.

Delivery as required per Department of General Service PCID NO. 1075 Section "G". All units must be delivered within **270** days after receipt of the purchase order by the successful bidder.

Awarded OEM vendor shall be responsible for contacting the Specification Section of the Fleet Management Division at (717) 787-1567 to set up a pre-build meeting for all chassis and body mounting component locations prior to chassis build. Any deviations to the specification must be granted in writing by the Chief of the Specification Section, previous acceptance will not be considered pre-approved. It shall be understood that any discrepancies/deviations between the specification and the completed unit(s), chassis or body up-fitter related, must be addressed and corrected prior to the delivery deadline and the Departments acceptances.

Unit shall be delivered clean, washed, with current PA state Inspection and a full tank of fuel.

All component manuals and weight distribution sheets shall be completed and supplied with the delivery of each unit.

Department representatives will review the final design of the unit before work begins on the pilot model. The successful bidder will provide detailed drawings of the various systems, i.e., heating, electrical, hydraulic, etc.

The Department reserves the right to have its representative(s) periodically inspect each unit during assembly at the successful bidder's assembly point.

B. WEIGHT DISTRIBUTION:

Weight slip shall be submitted with the Pilot Model.

Engineering Certified Weight Distributions (empty and loaded) shall be provided with the pilot model. These shall be reviewed to determine the weight distribution with "maximum legal" payload for the unit which is proposed.

It is understood that the components specified are minimum and if the truck manufacturer's Engineering Department recommends or deems necessary, due to their particular weight distribution, a larger component or a large GAWR totally, the burden of responsibility is hereby placed upon the Manufacturer's Engineering Department to supply a unit that is totally engineered.

1. Frame
2. Axle
3. Tires
4. Steering components
5. Rims
6. Suspension
7. Brakes
8. Any other items as required

The dynamic and static loads created by the unit, plus operational stresses, must be reviewed to ensure the Commonwealth of a properly designed/engineered unit.

The vehicle shall be certified for 38,000 LB Gross Vehicle Weight Rating (GVWR). The GVWR shall be identified in the cab or on the door as the final complete certification label (minimum rating)

I. GENERAL TRUCK SPECIFICATION: (Continued)

C. POWER TRAIN OVERVIEW:

The following power train components are acceptable, minimum, in any noted combination: (Any deviations require, prior to bid, authorization by Chief of Equipment Division).

ENGINE DIESEL – **ENGINE**- CUMMINS ISL9 MIN. 320 HP AT GOVERNED RPM, MIN, 1,000 LB/FT TORQUE. SHALL MEET LATEST EPA EMMISSIONS.

TRANSMISSION – AUTOMATIC ALLISION 3000 RDS, 6 speed.

REAR AXLE – 23,000 LB. Min.
DANA S23-170
MERITOR RS23160
MACK - RA23

LUBRICANTS FOR FRONT AXLE HUBS AND DIFFERENTIALS, AUTOMATIC TRANSMISSIONS, TRANSFER CASES AND ALL REAR DIFFERENTIALS SHALL MEET OR EXCEED ALL APPROPRIATE MIL AND SAE SPECIFICATIONS FOR SYNTHETIC LUBRICANTS AND SHALL HAVE ALL PLUGS IDENTIFIED AS SYNTHETIC OR PAINTED RED.
(The OEM shall provide written exemption if synthetic oil is not installed).

I. GENERAL TRUCK SPECIFICATIONS: (Continued)

D. VEHICLE COMPONENTS:

1. AXLE FRONT:

16,000 LB capacity, minimum, "ROCKWELL or SPICER Model" or equal.
Two (2) shock absorbers.
The front axle drag links and tie rods shall have grease zerks installed.
Sufficient tire clearance at maximum turning angles.
Complete "STEMCO" or INTERNATIONAL oil seal assembly, including hub, window plug type and "GUARDIAN" or INTERNATIONAL seal, or equal.
Each unit shall have the front end aligned prior to delivery.
The front axle king pin bushings shall be the bronze type.

2. REAR AXLE:

23,000 LB capacity at ground each rear spring.
Suspension shall be tailored to axle loads and shall be adequate to sustain maximum GVW without overload or permanent set.
11,500 LB capacity at ground each rear spring, minimum.
2,250 LB capacity, separate auxiliary spring, minimum.
Suspension tailored to axle loads and adequate to sustain maximum GVW without overload or permanent set.
Aluminum or lightweight housing is unacceptable. Only heaviest duty housing will be accepted.
All rear axles must provide axle shafts with a minimum diameter of 2.19 inch at the spline. All rear axle(s) shall have an extended breather tube to prevent debris buildup from entering axle housing. There shall be a torque-proportioning traction-assist device, which is full locking within the differential housing. The device shall provide maximum traction to the rear wheels when actuated and shall be a self-relieving designed to prevent gear damage and/or axle shaft breakage under extreme service conditions. The traction-assist device shall be driver actuated by a dash mounted traction control switch.
Lubricants for all rear axles shall meet or exceed all appropriate MIL and SAE specifications for synthetic lubricants and shall have all fill plugs identified as synthetic oil, or painted red.
Stemco guardian or SKF Scotseal, Chicago Rawhide rear wheel seals, or approved equal. All axles shall have magnetic drain plugs.
This information shall be presented at the pre-build meeting.
Rear axle selection shall be made after the award and may be a mix of ratios as required. The successful vendor/manufacturer shall present three (3) computer runs showing the three most likely ratios for consideration for a top speed range of 65 MPH max. Gear selections shall include probable gear selection to maintain a 5-8 mph speed during the seal coating operation.

3. BRAKES:

16.500-inch x 7 inch "S" cam rear brakes with quick change type single or double pin. (No substitute - standardization).
16.500-inch x 6 inch "S" cam steer axle brake or a power front disc brake system providing equal performance. Quick change type single or double anchor pin if drum type brakes are furnished.
Full air antilock in compliance with the most current FMVSS requirements.
The ABS shall incorporate a diagnostic fault switch that is capable of illuminating a fault light for diagnostic purposes. The switch shall be easily accessible and can be either dash or under-dash mounted. A dash-mounted display that will show all SAE message descriptions for the ABS is an acceptable means of diagnostics in lieu of the fault switch.
If air compressor intake is connected to engine air intake an inlet check valve must be used.

I. GENERAL TRUCK SPECIFICATIONS: (Continued)

D. VEHICLE COMPONENTS: (Continued)

3. BRAKES: (Continued)

Low air pressure indicator: Buzzer-type and dash light. Must meet current Federal DOT guideline requirements. Air gauge shall display in 5lb. increments. Digital numerical readout is acceptable. Air gauge and low air warning buzzer shall operate with key switch **on** and engine **off**. Function shall not have capabilities of being deactivated by the operator.

Parking brake: Rear wheels, spring-type, MGM 30/30 or ANCHORLOCK 30/30 gold seal chambers (no substitute). Parking brake shall provide modulated emergency braking via the foot valve in the event of a rear service system failure.

Rear service parking brake chambers shall be front or top mounted.

Air tank: Automatic drain valve, on wet (first) tank. Each of the remaining air tanks shall have a manual drain valve.

Air dryer: With heater, mounted away from road splashing and a minimum of 20 inches above road surface. Dryer shall be compatible with the body company clearance requirements for sub-frame, valve body, etc. Per: Haldex DRYest or Bendix AD-IP installation made in concurrence with the air compressor manufacturer's recommendations.

Air dryer shall be placed to accommodate the changing of filter cartridges without disconnecting any hoses or removing dryer base from its mounting location. Final mounting location shall be determined at Pre-Build meeting.

All electrical connectors for drain valve and air dryer shall be covered with heat shrink material or have sealed connections.

Brake valve shall be mounted away from road splashing.

All drum brakes shall have automatic slack adjusters, and they shall be clearance sensing type only **(no substitute).**

4. CAB:

Air conditioning: manufacture's highest output.

Air horn(s) minimum 1 with snow cover (unless mounted under hood).

All controls shall be properly identified.

AM - FM radio with weather band.

Air deflector: Clear colorless or smoke color, hood mounted. Deflector manufacturer's standard full width for the truck model. Access to front end hood tilt handle shall not be blocked. Extra handle acceptable. Ref: Deflect-Shield Corp., Tel. 1-800-247-2440.

Cab Steel or Aluminum, 105 inch minimum to 116-inch maximum BBC (Bumper-to-Back-of Cab dimension).

Cab shall have air suspension system

Cab floor covering shall be heavy-duty rubber with closed cell rubber or heavy felt backing.

Covering shall seal against all mating and adjoining surfaces sealing dirt and liquid on the surface keeping it from penetrating or accessing the metal cab flooring causing corrosion from inside the cab.

Cruise control.

Deluxe fresh air hot water heater and defroster, MANUFACTURER'S highest output heater.

Dual interior sun visors.

Dual windshield wipers: Arctic wipers and heaviest, motor, arms and linkages available. Wiper blades, maximum length, shall follow windshield contours. They shall be minimum two (2) speed intermittent. Washer system shall be electric. Washer tank shall be a minimum capacity of two (2) quarts of washer fluid. It shall be filled with an anti-freeze type solvent. Washer fill point shall be located to be accessed from ground level, without overhead reaching. With unobstructed and unrestricted flow from a one-gallon jug.

Fenders: Front fenders shall have extensions to cover the width of the front tires.

I. GENERAL TRUCK SPECIFICATIONS: (Continued)

D. VEHICLE COMPONENTS: (Continued)

4. CAB: (Continued)

Hood: Fiberglass, tilting.
Halogen headlights, all other cab lighting shall be L.E.D.
Mirrors: Driver's and passenger side power mirrors, west coast style minimum 7-inch X 14 inch with manufacturer's standard heavy duty break away arms. Mirrors shall be heated with a lighted toggle switch mounted within accessible reach of the operator, automatic on/off is acceptable. The wires shall be fitted in such a way that the mirror glass/element can be changed by unplugging the two-wire lead. There shall be a heated convex mirror both sides, minimum 6-inch X 7 inch or 8-inch diameter. There shall be a heated blind-spot elimination mirror (conventional cab only) mounted on the right front fender and it shall be minimum 7-inch X 7 inch or 8-inch diameter stainless steel or aluminum head with mirror. Mirror shall be a conventional convex mirror and shall not be of the half-round cross view type. All arm/s and hardware shall also be stainless steel. Fender type washers stainless or aluminum, with rubber pads to be placed on both sides of the fender shall be included. Pedestal system shall be single, double or triple mounting assemblies (stainless steel or aluminum). Mirror shall be mounted in rubber or vinyl.
Inside dome light shall be provided.
The engine components facing wheel areas, on both sides, shall be shielded.
There shall be box mounted wind deflector of adequate size to offer minimum wind resistance and maximum fuel mileage. Deflector shall be bolted in place. Temporary attachment is unacceptable Ref. Nose-Cone Part# NC38-RM2.Steering wheel diameter shall be 18-inch (approx.). Manufacturer's Standard.
Power windows: Right and Left sides.
Seats: Driver's seat shall be high-back, adjustable Bostrom Air 915 Series with lumbar support or National 2000 Series with lumbar support, with body cloth insert and three-point retractable seat belt **(Seatbelt shall be High Visibility Orange).** A protective skirt shall cover the seat suspension mechanism. No substitute on seat reference. Color to match cab interior. Seat shall have a fold-up armrest on the right side of the driver's seat.
Passenger seat: With three-point retractable seat belt **(Seatbelt shall be High Visibility Orange).** Manufacturers, high-back, non-suspension type. Color coordinated.
If due to cab configuration a Bostrom 915 seat cannot be used, a Bostrom 910 may be substituted. All other requirements must be met.
Sun Visor: External, cab mounted. Reference section I. D. 16 Paint.
Steering wheel diameter shall be 18-inch (approx.), Manufacturer's standard.
Steering Column: Steering wheel and column shall be tilt and telescopic, infinitely adjustable to multiple positions.
Steps: Drivers and passenger entrance steps: Shall be aluminum, serrated. **The outer step edge must be serrated in lieu of plain. (Overlay is not acceptable).** Step design material must be the same, both left and right side. Ref: Bustin.
Top of the first step shall be approximately 21 inch above the ground.
Grab handles shall be supplied on all cab entry locations. Three points of contact shall be achievable at all cab entry locations. Handrails shall be coated with non-skid paint (non-skid tape is unacceptable) or have OEM anti-slip rubber inserts, both non-skid paint or rubber inserts must extend the full length of the grab handle.
Exterior grab handles shall be supplied if available from OEM.
Wiring Pass Through: All wiring entering the cab shall be made through a rubber boot assembly and be weather tight. There shall be no connectors in the wiring at the pass-through point. Wiring shall be protected against sharp edges and from rubbing / chaffing. Boot design shall be pre-approved.
Windshield: 1- or 2-piece construction. Tinted safety glass throughout.

I. GENERAL TRUCK SPECIFICATIONS: (Continued)

D. VEHICLE COMPONENTS: (Continued)

4. CAB: (Continued)

There shall be a permanent decal, 2-inch-high red letters on white background affixed by the driver side door handle stating the overall maximum travel height of the completed and unloaded unit. (Example) HT-__' __" Ref. EQN-552

There shall be a permanent decal, "Three Point Contact" located at each entry point of the truck cab and at the body ladders area per EQN – 552-1. Exact location to be determined at prebuild meeting.

5. CHASSIS:

38,000 LB GVWR, manufacturer's rating.

Cab-axle (CA) dimension: (Wheelbase and CA dimension may be adjusted to provide the optimum legal weight distributions with maximum payload.)

The frame AF shall be reinforced by cross member(s) at the rear of the frame as required. (Local installation is acceptable.)

Heavy duty front bumper.

Front mounted tow hooks or eyes: (2) two front.

License plate bracket: Securely mounted. (Front & Rear)

6. DRIVE LINE:

Main driveline: Spicer Life XL or Meritor MXL Series. **"Factory balanced"** greasable, (one zerk minimum). Heavy-duty driveline shall be engineered and be compatible to engine, drive train and transmission torque. Heavy-duty center bearing, if required, with due consideration to drive shaft angles, length, location, proper bolting based upon engine and transmission selection. Inter-axle driveline: Spicer Life XL or Meritor MXL Series.

7. ELECTRICAL:

Batteries: Two (2) or Three (3), heavy-duty, 12-volt, field maintenance-free, BCI Group Size 31, with stud-type posts and anti-corrosion treatment on each terminal (min 1850 CCA).

Battery Mounting: It shall include the following:

a.) 0.25-inch-thick rubber shock pad under the battery.

b.) Box with cover. Cover shall be constructed of fiberglass, poly, or aluminum (if aluminum, there shall be an insulating liner).

c.) Mounting bolts grade 8 with self-locking nuts.

Mounting of accessories within the battery box is prohibited.

All OEM connections within the battery box shall have attached non-metallic embossed labels/tags. Labels/tags applied with self-adhesives or stickers will not be accepted.

Mounting of accessories within the battery box is prohibited. Any connections that are essential in the battery box must be pre-approved by the Chief of the Specification unit at the Fleet Management Division in writing (717) 787-1567. Any circuit deemed necessary for connection in the battery box by the body up fitter or component manufacturer shall have attached non-metallic embossed labels/tags. Labels/tags applied with self-adhesives or stickers will not be accepted.

All circuits shall be individually permanently labeled.

Cables shall conform to RCC Practice 105 with "sealed" terminal ends for stud-type battery posts.

Electrical system: Circuit-breaker-equipped, in easily accessible location, weatherproof. Fuses acceptable in circuit so identified by manufacturer as safety factor.

Any fuse or circuit-breaker liable to be damaged during truck operation shall have an easily removable protective cover. All wire splices must be heat shrink material. Ref: Thomas & Betts Tel: (201) 707-2145.

I. GENERAL TRUCK SPECIFICATIONS: (Continued)

D. VEHICLE COMPONENTS: (Continued)

7. ELECTRICAL: (Continued)

Alternator: Delco 36SI (No substitute, Standardization) 160 A minimum, high performance, solid state (brushless).
Starter motor: Delco 39 MT (No Substitute, Standardization) with thermal over-crank protection and high torque capacity. Suitable for the diesel engines offered as per starter manufacturer's recommendation.
Battery cable from battery negative terminal to starter motor or frame.
Starter shall have (OCP) either built in or controlled by the Vehicle's control system, (if required).
Alternator and starter mounting bolts: Grade 8.
Power supply for two-way radio: Dash or overhead console mounted. Both male/female ends shall be supplied, per EQN-78.
Electrical chassis-wiring harness:
Lights: All lights shall meet all Federal and State regulations. The head Lights shall be Halogen with (DRL's) daytime running lights manufacture's STD or aftermarket. Body lights shall have their own dedicated complete circuit. All lights shall be LED.
Whelen Light Kit Part # PADOTSY9 Kit contains the following lighting Ref. EQN-120T.
2) 01-0683558BR1D (50R00XRD, 500 LED BTT) LED Brake, tail and turn lights
2) 01-06835577C1B (50C00WCD, 500 LED) LED Back-up
4) 01-0463592-00B Brush guards
4) 01-0463297-00B Flange brackets
4- W441D Harness side mating Deutch connectors.
The above lights are supplied with male and female Deutsch connectors that shall be utilized to connect the vendor supplied harness to each light source.
There shall be a Truck-Lite Model# 36140C LED license plate light with light bracket PN# 36710. (Installed)
Body builder to supply remaining marker and ICC lighting, they shall be protected against damage and shall also be shock mounted. Connections shall be watertight.
Body wiring shall be Grote, Trucklite, or Prior Approved Equal.
There shall be no splices outside of a sealed box or fixture. All pass-through points shall be properly sealed and protected.
A color-coded electrical wiring chart and schematic shall accompany each body.
Flasher: (All) heavy-duty electrical, Ref: Tridon Model EL 12 or equal.
If an audible alarm is supplied for 4 ways and turn signals, it shall have an on/off capability.
Radio Antenna: There shall be an antenna base, PCTEL Maxrad NMO-52-360-XX-N and a VHF StiCO Roof-FT-NITI-M whip shall be cut to 18.0 inches per manufactures cut sheet. Assembly shall be mounted to the stationary beacon light bracket, (to the street side, of the light bar) with the antenna cable routed (within protective conduit) to the floor area between the seats. There shall be a minimum of 4 feet of antenna cable coiled at the base of the floor to allow for connection of radio on spreader control pedestal. Antenna shall be prewired with a UHF MALE connection. **(No substitute, standardization).** Antenna shall be mounted to not interfere with cab shield.
Power Distribution Center: There shall be a 4-way power/ground distribution center located near the console for connection of 800 MHz state radio. The lugs shall be labeled and configured in the following manner: (1) lug shall be a 30-ampere constant hot circuit, (1) lug shall be a 10-ampere ignition-controlled circuit. (2) lugs shall be chassis ground. All connections shall be enclosed in a weatherproof enclosure: EQN-120Q
Each circuit shall be supplied individually, labeled, properly sized, protected from weather and sealed to be watertight.

I. GENERAL TRUCK SPECIFICATIONS: (Continued)

D. VEHICLE COMPONENTS: (Continued)

8. ENGINE:

Replaceable heavy-duty, full-flow type fuel filter(s) and oil filter(s) as recommended by the engine manufacturer, bearing a legible OEM part number.
Cooling system: The largest factory available capacity compatible with engines and transmission referenced. With overflow recovery system and visual level indicator.
Radiator core and shell: Heavy-duty design.
The oil dipstick must have tubing and dipstick of sufficient length to provide reasonable access for checking the oil level.
Engine Heater: Immersion in-block type for cooling system with waterproof plug flush-mounted in an accessible location at the front/roadside of the vehicle outside the cab/hood, 115 volt, 3-prong plug. The electrical cable from the heater to plug shall be one piece and waterproof.
Coolant filter: Coolant filter: A non-charged spin-on coolant filter shall be installed if required by engine manufacturer.
Air cleaner: Air cleaner shall be manufacturer's heaviest duty air cleaner that meets all the requirements of the extended engine warranty.
Fan: Thermostatically controlled, viscous type, or manufacturer's recommended automatic fan.
Screening system: Mounted in front of radiator grille that protects entire radiator from stones and bugs. Screening system to be approved by engine and truck manufacturer(s).
Engine vibration dampener.
Diesel Fuel Filter: There shall be a DAVCO 382, or a 482-filtration unit installed and mounted higher than fuel tank per manufactures recommendations in a location to accommodate filter replacements, yet be protected from road debris **(No substitute, standardization)**.
Mounting location to be determined at pre-build meeting.
Davco 382 Unit shall be equipped with engine coolant heat and 120-volt heater circuit. The 120-volt circuit and engine block heater shall be powered via the same electrical connection. **(No substitute, standardization)**
Davco 482 shall be equipped with a 12 volt and 120-volt heater circuit. 12-volt heater circuit will activate with the ignition key switch, the 120-volt heater circuit and engine block heater shall be powered via the same electrical connection. **(No substitute, standardization)**.
Air restriction gauge: Flush, dash-mounted with indicator slide for engine air cleaner, Ref: FILTER MINDER, manufactured by Engineered Products Company, Tel: (319) 234-0231, or OEM installed electronic monitor.
Automatic idle shutdown shall be set to five (5) minutes. An audible warning alarm shall be provided to alert operator prior to engine shutting down.
ECM shall be set to a maximum of sixty-five (65) miles per hour.
Governor: Set at manufacturer's recommended maximum engine speed (rpm).
Engine Brake: Engine shall be equipped with a minimum 2 stage, full engine compression brake.
Brake lights shall activate when engine brake is activated.
Hoses: The air induction system and large radiator cooling system hoses shall be clamped with 0.500 inch wide, 150-inch LB stainless steel, constant torque, spring-loaded worm clamps. Ref: Wittek Manufacturing (Tel: (312) 492-9400) or Breeze Clamp Co, Constant Torque clamps with liner for silicone hoses. Cooling system hoses under 1 inch OD may use factory standard hose clamps, as a minimum acceptable standard.
Lubricating oil lines: If hoses are used, they shall be wire braid type, "AEROQUIP" or approved equal system, minimum standard.

I. GENERAL TRUCK SPECIFICATIONS: (Continued)

D. VEHICLE COMPONENTS: (Continued)

9. EXHAUST:

DPF (diesel particulate filter) and exhaust system shall meet the latest EPA emission requirements.
Vertical tailpipe with elbow and muffler system or approved horizontal muffler and vertical tail pipe with elbow.
The muffler, DPF and tail pipe shall be shielded or insulated to protect personnel from burns when entering or exiting the cab. The shield shall be 180 degrees to 360 degrees and shall be of non-rustable material such as stainless steel or aluminum. Any fluid tank or hoses shall not be routed close to any part of the exhaust system.
All exhaust/DEF components shall be properly shielded to protect personnel from contact, at ground level to the side and rear of cab and normal entrance and exit into cab. Exhaust components below and to the inside of the frame rails do not need shielding. Awarded OEM Model will be discussed at pre-build.

10. FAST LUBE OIL CHANGE SYSTEM (FLOCS):

This FLOCS system shall be installed with all fittings, brackets, clamps and hoses. Hose from oil pan to FLOCS fitting shall be hydraulic hose with a 100R2 rating and properly secured. The system shall be compatible with all fittings presently used by the Department. The final placement of the male half of the snap coupler, on the equipment, shall be determined at the pre-build meeting. Ref: EQN-351A.

11. FRAME:

The Resisting Bending Moment (RBM) shall be a minimum of 1,000,000-inch LB per rail, for the entire length of the frame, including any frame liners, except where engine and radiator adjustments are required. Frame material shall be of at least 110,000 PSI yield strength. (Drop frames are not acceptable).
Main frame and any required liners shall be either straight channel or offset channel, full length.
Minimum frame RBM shall be approved by manufacturer's Engineering Department.

12. INSTRUMENTATION:

All instruments and gauges shall be illuminated and dash-mounted, except where specified otherwise. All standard instruments shall be supplied, including, but not limited to the following:
Oil pressure gauge with warning light or audible alarm.
Air pressure gauge(s) for dual circuit, dual indicator with low-pressure audible alarm and warning light.
Coolant temperature with warning light or audible alarm.
Transmission oil temperature gauge with warning light or audible alarm.
Fuel gauge.
Hour meter that records only when the engine is running. In – dash, integral with instrument panel and readable from the operator’s seat.
DEF level gauge.
Speedometer with odometer and a dual speedometer lead to interface with the ground speed spreader control system.
Low air pressure indicator: Buzzer-type and dash light. Must meet current Federal DOT guideline requirements. Air gauge shall display in 5lb. increments. Digital numerical readout is acceptable. Air gauge and low air warning buzzer shall operate with key switch **on** and engine **off**. Function shall not have capabilities of being deactivated by the operator.
Tachometer.
Voltmeter.

I. GENERAL TRUCK SPECIFICATIONS: (Continued)

D. VEHICLE COMPONENTS: (Continued)

12. INSTRUMENTATION: (Continued)

Parking brake indicator light.
Hydraulic fluid level gauge shall be installed within the dash face, exterior installation will not be accepted.
Air Restriction Gauge: Vehicle OEM equipped electronic dash that incorporates an air restriction gauge or indicator light, shall be required.

13. PAINT:

Cab shall be painted with OEM manufactures standard painting process PENNDOT yellow Ref: DuPont F9885, PPG 85246, Sherwin Williams 73266, Sikkens 4017 and NAPA 73266 for shade only. Entire cab except for glass, rubber and those metallic accessories or fixtures constructed of rust-resistant (Aluminum and Stainless Steel) or plated material not normally painted. Base coat and clear coat. Ref: Axalita Imron for durability
OEM frame manufactures standard procedures shall be acceptable, all underside and attached components shall be ground to eliminate weld splatter, scale, sharp edges, rust and oils prior to a rust preventive primer and topcoat of black paint. Powder coating is acceptable. Rims shall be painted as specified in the tire and wheel section of this specification.
Body up fitter prior to painting **all** body and upfit attachments shall be ground to eliminate splatter, scale, and sharp edges. All metal surfaces shall be cleaned to eliminate rust and oils prior to primer and final painting. All surfaces to be primed and painted, except for glass, rubber and those metallic accessories or fixtures constructed of rust-resistant (Aluminum and Stainless Steel) or plated material not normally painted shall be coated with one (1) coat of a rust preventive etching primer, (1) coat of epoxy primer and two (2) coats of the body up fitters lead free Acrylic urethane black paint to match frame. Aerosol can touch up paint and primer will not be accepted and will be rejected at the time of delivery inspection.
Cab and van body sides except front panel shall be painted PENNDOT yellow.
Bumper shall be painted black or argent.

14. SAFETY:

ECCO 450 back up alarm installed with rubber grommet **(No substitute, standardization)**
Grab handles shall be supplied on all cab entry locations. Anti-slip paint is required on all handholds, for the entire length, (tape is unacceptable). All handrails, ladders, and step configurations shall be built for three points of contact.
Steps: Shall be serrated. The outer step edge must be serrated in lieu of plain. (Overlay is not acceptable). Step design material must be the same, both left and right side. Ref: Bustin.
First aid kit mounted in the cab (Ref: AW Direct Part No. FA-10, Tel. 1-800-243-3194), or equal.
Fire extinguisher: Rechargeable with vehicle mount. Mounted in the cab for easy and quick access. Ref. 3A:40BC (5 LB).
Placards: There shall be changeable placards affixed to both sides of the vehicle and front and rear.
There shall be conspicuity tape applied per EQN-127A.
Wheel chocks and holder per EQN-82.
Triangle kit stowed in the cab per EQN-66A
There shall be a permanent decal, 2-inch-high red letters on white background affixed by the driver side door handle stating the overall maximum travel height of the completed and unloaded unit. (Example) HT-__' __" Ref. EQN-552.
There shall be a permanent decal, "Three Point Contact" located at each entry point of the truck cab and at each bed ladder area per EQN – 552-1. Exact location to be determined at prebuild meeting.

I. GENERAL TRUCK SPECIFICATIONS: (Continued)

D. VEHICLE COMPONENTS: (Continued)

15. STEERING:

Single integral type hydraulic power steering.
Glidecoat steering shaft, Bendix wedge lock lube-for-life shaft or ZF type steering shaft.
Steering system (e.g., Flow, pressure, relief valve etc.) Shall be selected considering the full front-GAWR axle loading. Ref: ROSS, SHEPPARD or TRW gear assembly. (No substitute, standardization).
Hydraulic supply pump, vane type or roller type supply pump with sufficient oil flow to permit one (1) steering wheel revolution per second with front axle loaded to rated capacity, in a "park" condition.
Power Steering Reservoir, "remote mounted", incorporating a filter which is easy to remove and replace.
The remote filter referenced above shall be factory mounted, certified and engineering approved in conjunction with the appropriate pump. The pump shall not be the integral filter type unit.

16. TANK - FUEL:

Safety - Type fuel tank as per the requirements of FMVSS.
Minimum fuel capacity 80 gallons dual tanks are unacceptable. Tank must be aluminum or stainless steel, unpainted.
Heavy duty mounting straps with rubber shims/liners.
Heavy duty aluminum or stainless steel with minimum 2 in wide straps and gaskets.
Accessible fill pipe (located at either end of tank to avoid interference with steps).
Minimum of two (2) steps shall be mounted to the tank bands (stainless or aluminum with rubber liners) permitting easy access to cab, with optimum safety. The outer step edge must be banded and serrated in lieu of plain smooth metal edge, Ref I.D.5.

17. TIRES/WHEELS:

The truck shall be equipped with hub piloted steel disc wheels for tubeless tires. The wheel end shall be equipped with outboard cast brake drums, and 15-degree tubeless steel wheels, hub piloted, 10 hole - 285.75mm bolt circle with 22mm two-piece flange nuts.
Front: Wheels: 22.5 x 9.00, 10 hole - 285.75mm bolt circle with 220mm bore, tubeless steel disc wheel rated at 10,000 LBS at a maximum inflation pressure of 120 PSIG. Accuride part number 29039 or 50344PG. **(No substitute, standardization).**
Rear: Wheels: 22.5 x 8.25, 10 hole - 285.75mm bolt circle with 220mm bore, tubeless steel disc wheel rated at 7,500 LBS at a maximum inflation pressure of 120 PSIG. Accuride part number 28828 or 29169. **(No substitute, standardization).**
The dual rear wheel/tire assembly shall have clearance between the tires, which permits the use of dual tire chains.
Wheel-Guard Separators: The wheel ends shall be equipped with the Accuride part number 5903 Wheel Guard Separator as follows:
Front axle - between the wheel and the brake drum.
Rear axle - between the inner dual and the brake drum and between the inner and outer duals.
Paint: The wheels shall be topcoat painted with TGIC Polyester Powder Paint MLD-82008 High Gloss Gray or equal applied over Cathodic Electro-Disposition Gray Primer.
Tires: Drive tires shall be mud/snow tread. All tires shall be radials and have minimum 25/32 thread depth.
Front Tires: 315/80R22.5 (Load Range L).
Rear Tires: 12R22.5 (Load Range H).
MANUFACTURER: Goodyear, Michelin, or Bridgestone

I. GENERAL TRUCK SPECIFICATIONS: (Continued)

D. VEHICLE COMPONENTS: (Continued)

18. ON BOARD GREASE SYSTEM

There shall be a centralized-on board chassis lubrication system installed, manufactured by SKF Lincoln Industrial Model# 94012 **(No Substitute, standardization)** Ref: EQN-501.

19. TRANSMISSION:

AUTOMATIC: Allison 3000 RDS 6 speed

Oil cooler for transmission required. (Water-to-oil type cooler.) An Allison approved cooling system shall be installed.
All vehicles shall have a transmission (auto) operated safety starting switch that will avoid engine starting with drivetrain in gear.
Unit shall be programed to require a service brake application for transmission to shift into any gear from neutral.
Dash mounted console with push button shift selector or steering column mounted stalk style selector.
Automatic transmission cooler lines shall be stainless steel, Braded hoses will not be accepted, and all hoses shall be routed to prevent rub-through with hanging brackets and P-style clamps.
All transmission modules shall be routed and installed in the cab

I. GENERAL TRUCK SPECIFICATIONS: (Continued)

E. VAN BODY:

The following van body shall be furnished and installed on the specified chassis.

1. BODY DIMENSIONS:

TRUCK, PONY, 20 FEET BODY, “Inside” length actual cargo area 062300.

TRUCK, PONY, 24 FEET BODY, “Inside” length actual cargo area 062700.

96-inch maximum outside width.
90 inch inside width.
12 feet 6-inch maximum body height, mounted.
Inside body height, from bottom of rolled up door to floor, must accommodate a forklift (89-inch height min.).

2. BODY MATERIAL:

All body skins, except front panel, shall be painted to match the cab.
There shall be box mounted wind deflector of adequate size to offer minimum wind resistance and maximum fuel mileage. Deflector shall be bolted in place. Temporary attachment is unacceptable Ref. Nose-Cone Part# NC38-RM2.
2 long sills: 4 inch structural "I" beams 3.19 LB per foot, minimum, or 70,000 PSI minimum.
Cross members: 3 inch minimum, structural "I" beams 2.869 LB per foot, minimum, or 70,000 PSI minimum.
Cross members shall be located on 12-inch centers maximum.
Aluminum body skin shall be 0.040 inch minimum, riveted on 3-inch centers max.
Galvanized or Aluminum "Z" section with posts 1.250 inch deep at 0.048 LB per foot, minimum, shall be stationed on 16-inch centers or hat post 1.250 inch - 24-inch centers.
Four (4) - 0.6250-inch dia. minimum "U" bolts per long rail with self locking nuts, and they shall be backed by an additional nut (double nutted).
The "U" bolt mounting brackets and cross brackets shall be min. 0.3750-inch-thick x 2-inch x 2-inch (angle) material.
There shall be one (1) hardwood strip placed between the "I" beam and the frame rail. There shall be no more than two (2) pieces on each rail. The "I" beam shall have steel filler plates or wooden filler blocks wherever "U" bolts are placed. All gussets, brackets, filler plates, in addition to all necessary welding shall be full welded. Tack or step welds are unacceptable. All cuttings shall be ground smooth.
The entire front of the van body shall be polished or milled aluminum or stainless steel, unpainted.
The front top and front corner posts shall incorporate a radius to serve as a wind deflector.
The top corners shall incorporate a heavy casting or heavy fabricated extrusions the casting shall be designed to indent and protect the front top clearance lights. Wires shall be in conduit and sealed into the lights.
Sides and bulkhead shall be lined using 0.3750 in ACX type or C backer (with full finish face) plywood, good 1 side attached with rivets or screws on 8-inch centers.
The sides and front bulkhead shall be lined with 0.0781-inch-thick min. (14 gauge) 16-inch-high kick plate.

I. GENERAL TRUCK SPECIFICATIONS: (Continued)

E. VAN BODY: (Continued)

2. BODY MATERIAL: (Continued)

Side walls shall be furnished with two (2) per side full length flush mounted cargo restraining tracks located at 18 inch and 44-inch centered heights from the floor, ref. KINEDYNE Series E track, NOTE: Supplied on Pony truck only.
Two (2) 20 feet long x 2-inch-wide load binding straps and ratchet(s) compatible with the restraining tracks shall be furnished.
There shall be a minimum of six recessed tie downs located in the floor. These tie-downs shall be connected to framing or cross members. Connection to floor only is unacceptable.

3. REAR DOOR:
Fully sealed door (top, bottom and sides).
Full width overhead roll up type with lockable cast hardware package.
0.7500-inch-thick solid door covered with aluminum and painted to match side panels.
Heaviest available track and hinges.
Ref. WHITING, with quick change rollers - or equal
Remote Control: There shall be a remote control (portable) for the rear door. There shall also be a cab mounted switch for deactivating the remote control.

4. SIDE DOOR - CURB SIDE AND STREET SIDE:

Two (2) doors, one to each side, shall be single panel side door using a door frame shall be provided approximately 48 inch back from front bulkhead on curb side and on street side. 40-inch-wide x 76.500 inch high.
Door shall have heavy duty hardware and lockable latch.
A hold open device shall be provided, both doors.
Watertight seals required.
Grab handles shall be supplied on all cab entry locations. Three points of contact shall be achievable at all cab entry locations and they shall be coated with non-skid paint. See "Safety" page 12 **(tape is unacceptable).**
Side entry steps (both sides). Ref. EQN-229, attached, or other approved system, with platform.
Curb side, street side doors and platform shall be installed to provide access and egress to the rear of the body.
Design drawing of steps and platform shall be submitted and approved prior to production of body.

5. ELECTRICAL:

Two (2) 8 in inside dome lights mounted at 1/3 and 2/3 of body length (relocation acceptable if they interfere with rear door) with a dash mounted switch with indicator light in cab. Reference 80355 TRUCK-LITE or equal.
Clearance lights shall be provided to meet all PA State Inspection Laws.

6. FLOOR

1.3750-inch-thick minimum laminated hardwood.
Each board shall be bolted or screwed to the cross members, 2 screws per board per cross member. The boards shall be full length of bed, 1 piece, no splices.

I. GENERAL TRUCK SPECIFICATIONS: (Continued)

E. VAN BODY: (Continued)

7. ACCESSORIES:

Front mounted steel mud flaps.
Rear mounted rubber mud flaps, per EQN-66.
There shall be an underbody toolbox, lockable, Ref: Weather Guard Part No. 536 (or larger), Tel. 1-800-456-7865.

8. LIFT GATE:

A hydraulic/electric tailgate assembly with side bumpers. Galvanized finish on lift frame and level lift platform Ref. WALTCO or ANTHONY Flip-away or equal model meeting specifications.
84-inch x 48 inch
Metal or vinyl splash guard to protect switches, motors and pump.
Heavy duty switch.
Platform and hydraulic component located under body.
3,000 LB capacity minimum.
There shall be a fixed step recessed shock mounted lights, and heavy-duty dual dock bumpers on both sides per EQN-270.

8a. **OPTION**: **Heavy Duty Trailer Tow Package shall be integrated with the lift gate.**
Heavy Duty Trailer Tow Package: minimum 16,000 pounds capacity.
A pintle hitch shall be installed on a minimum 2-inch X 6-inch heavy walled steel box properly supported to frame and cross member, with minimum 3/8" steel gussets added between frame rails and box. Pintle hitch shall be installed approximately 28-inch from ground level to center of pintle eye. There shall be two (2) D-ring safety chain hooks, mounted one to each side of the pintle hitch.
Provision shall be provided for a trailer break away cable clip for a surge brake equipped trailer in close proximately to the pintle hitch.
(1) One 7-way female (pin type) electrical trailer plug connection installed Ref. EQN-80A.

9. ROOF:

Roof shall be translucent glass-board (fiberglass reinforced polyester, minimum 0.060-inch thickness). Panels shall be manufactured by a continuous laminating process with a pebble-like embossed finish on the exterior side (light transmission 45% minimum). The glass-board shall have extra fiberglass built-in to the edges, for additional strength. The glass-board roof shall be supported completely around the perimeter and every 24-inch. The perimeter edges shall have an over-lay channel and shall be sealed with weatherproofing tape. Ref. KEMLITE Glass-board.

10. SAFETY:

Alarm Backup: Ecco Model 450, shock grommet mounted **(No substitute - standardization)**.
Body shall have reflective enhancement per EQN-127A.
Anti-slip paint is required on all handholds, for the entire length, (tape is unacceptable). All handrails, ladders, and step configurations shall be built for three points of contact.
There shall be a permanent decal, 2-inch-high red letters on white background affixed by the driver side door handle stating the overall maximum travel height of the completed and unloaded unit. (Example) HT-__' __" Ref. EQN-552.
There shall be a permanent decal, "Three Point Contact" located at each entry point of the truck cab and at the bed ladder area per EQN – 552-1. Exact location to be determined at prebuild meeting.
Steps: Shall be serrated. **The outer step edge must be serrated in lieu of plain. (Overlay is not acceptable).** Step design material must be the same, throughout. Ref: Bustin.

II. DRAWINGS:

EQN-66	Dated	Rev.	07-20-09	2 sheets	SPLASH GUARDS
EQN-66A	Dated	Rev.	07-20-09	1 sheet	TRIANGLE STORAGE BOX
EQN-78	Dated	Rev.	10-27-06	1 sheet	CB RADIO CONNECTIONS
EQN-80A	Dated	Rev.	08-02-18	1 sheet	7 WAY TRAILER CONNECTOR
EQN-82D	Dated	Rev.	07-22-15	1 sheet	CHOCK & HOLDER
EQN-120T	Dated	Rev.	07-31-12	1 sheet	PONY TRUCK LIGHTING
EQN-127A	Dated	Rev.	01-02-09	1 sheet	CONSPICUITY
EQN-229	Dated	Rev.	06-11-14	2 sheets	SIDE ENTRY STEP
EQN-270	Dated	Rev.	06-16-14	1 sheet	TRUCK FIXED STEP
EQN-351A	Dated	Rev.	06-19-13	2 sheets	FAST LUBE OIL CHANGE SYSTEM
EQN-501	Dated	Rev.	06-08-09	2 sheets	CENTRALIZED LUBE SYSTEM
EQN-552	Dated	Rev.	07-25-18	1 sheet	MAX. TRAVEL HEIGHT
EQN-552-1	Dated	Rev.	07-24-18	1 sheet	THREE POINTS OF CONTACT
EQN-562	dated	Rev. 01-08-14		1 sheet	POWER DISTRIBUTION STATE RADIO

The above referenced drawings shall become part of these specifications.
These drawings reflect the intent of the Department and any discrepancies shall be resolved at the line setting ticket meeting between the vendor and the Equipment Chief, or the pre-production inspection of the truck.

DRAWINGS APPEAR AT THE END OF THE SPECIFICATIONS.

III. MANUALS:

The successful vendor shall furnish all applicable manuals per unit:

1 Operator's

1 Parts

1 Service

1 Engine

1 Transmission (Automatic or Manual)

1 Body and Sub-frame (Parts and Service)

1 Complete set of manuals for any additional items/equipment added to a piece of equipment.

The manuals listed shall be official O.E.M. publications supplemented with technical manuals for all components as published by sub-vendors/manufacturers.

Parts Manual presented must be a relative to "all" items utilized to build these units, with appropriate part numbers.

All manuals shall be supplied on thumb drive in PDF format that can be loaded to a dedicated website. Paper manuals may be supplied if available from manufacture. Paper manuals do not relieve the requirement for the thumb drives.

Delivery of manuals shall be completed with the delivery of each unit.

IV. TRAINING:

Mechanic:

The successful vendor shall provide services of qualified factory trained technicians for not more than __0__ training sessions of not more than __0__ hours at __0__ PennDOT locations to train personnel for in-depth preventive maintenance, overhaul and review of the proper usage of parts and service manuals, as well as component/system adjustments that need to be monitored at specified service intervals.

Operator:

The successful vendor shall provide services of qualified factory trained technicians for not more than __0__ training sessions of not more than __0__ hours at __0__ PennDOT locations to train personnel in the proper operation, safety, and servicing of the equipment.

The successful vendor shall submit a training plan to the Fleet Management Division for approval within 45 days after receipt of the Purchase Order. The training plan shall consist of course outline and class schedule.

All training must be completed within 60 days after the dates established in the approved training plan unless an extension is mutually agreed to in writing by the Chief of the Fleet Management Division.

All training shall be coordinated with the District Equipment Managers, with the exception of Asphalt related training, which must be coordinated with the Statewide Training Coordinator (717) 787-4836, Fax (717) 783-4438.

V. WARRANTY: Per PCID No. 1075.

Per PCID 1075: E.1. Construction Equipment - 2 years or 4000 hours whichever first occurs.
1 year starting from the Department's in-service date.
The warranty start-up date shall be defined as the date of transfer from the PennDOT Fleet Management Division to the designated county location. This will be considered the date of delivery to the county and NOT the date of delivery by the successful bidder to the Department. The PennDOT Fleet Management will supply the actual start-up date, equipment number, and serial number of the machine, via email, to the successful bidder. It is the responsibility of the successful bidder to ensure that the equipment manufacturer recognizes and applies the Department's actual warranty start-up date in their database.

This warranty is in effect as follows, starting from date of acceptance by the Department. Warranty shall not be voided due to Department operation as explained in the Intent Statement. It is understood that the components specified are minimum and if the manufacturer's Engineering Department recommends or deems necessary a more robust component, other than specified, be installed to meet the vehicles intent statement and to not void the warranty, it shall be the bidders/vendors responsibility.

ENGINE WARRANTY:
The successful vendor and or supplying OEM shall provide the Department with a 100% parts and labor engine warranty, shall include all engine components internal and external FOR 60 months / 150,000 miles minimum.
The oil pan shall be warranted against corrosion, rust, rust thru etc. regardless of atmospheric conditions for 5 years, 100% parts and labor.

EMISSION WARRANTY: The successful vendor and or supplying OEM shall provide the Department with a 100% parts and labor warranty for all emission related components to include the diesel particulate filter (DPF) FOR 60 months / 100,000 miles, unlimited engine hours. Shall be warranted against corrosion, rust, rust thru etc. regardless of atmospheric conditions.

RADIATOR WARRANTY:
Manufacturer's standard service and warranty policy for radiator minimum shall be for one (1) year, 100% parts and labor.

TRANSMISSION WARRANTY:
Manufacturer's service and warranty policy for automatic shall be three (3) years 100% parts and labor. This warranty shall include all internal and external components related to the automatic transmission.

BODY ELECTRICAL/LIGHTING:
Wiring harness shall be 5 years 100% parts. First year shall include 100% labor.
All LED lights shall be 5 years 100% parts.

WARRANTY REPAIRS SHALL BE COMPLETED AT THE MANUFACTURER'S LOCATION OR IN-HOUSE FIELD REPAIR COMPLETED BY PENNDOT. IT SHALL BE THE DEPARTMENTS DISCRETION TO REPAIR INTERNALLY OR TRANSPORT THE UNIT TO THE DEALERSHIP. THE MANUFACTURER SHALL REIMBURSE THE DEPARTMENT AT THE MANUFACTURERS STANDARD PUBLISHED IN-HOUSE LABOR RATE. THE LABOR RATE SHALL BE MUTUALLY AGREED UPON BETWEEN THE DEPARTMENT AND VENDOR/BIDDER. ALL IN-HOUSE WARRANTY DOCUMENTATION SHALL BE DELIVERED WITH THE PILOT MODEL. ALL WARRANTY DOCUMENTATION SHALL BE DELIVERED WITH THE PILOT MODEL.