

SPECIFICATIONS

045950

TRUCK, 26,000 LB SHOP TRUCK, WITH CRANE

INDEX

I. GENERAL TRUCK SPECIFICATIONS:

- A. Intent Statement
- B. Weight Distribution
- C. Power Train Overview
- D. Vehicle Components
 - 1. Alarm Backup
 - 2. Axle, Front
 - 3. Axle, Rear
 - 4. Brakes
 - 5. Cab
 - 6. Chassis
 - 7. Drive Line
 - 8. Electrical
 - 9. Engine
 - 10. Engine Accessories
 - 11. Exhaust
 - 12. Instrumentation
 - 13. Paint
 - 14. Steering
 - 15. Tank / Fuel
 - 16. Tires / Wheels
 - 17. Transmission
 - 18. Safety
 - 19. Body
 - 20. Lighting / Warning
 - 21. Crane
 - 22. Body Accessories

II. DRAWINGS

III. MANUALS

IV. TRAINING

V. WARRANTY

February 1, 2017 GAW

SPECIFICATIONS

I. GENERAL TRUCK SPECIFICATIONS:

A. INTENT STATEMENT:

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 **240** days after receipt of the purchase order by the successful bidder.

The purpose of these specifications is to describe a vehicle with a shop truck body, rear mounted crane and air compressor.

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. 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.

B. WEIGHT DISTRIBUTION:

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 larger 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 following information must be supplied with the pilot model:

ACTUAL TRUCK WEIGHT: (LB)

Chassis only	_____ Front Axle
	_____ Rear Axle
	_____ Total

"Chassis with body" if applicable, shall be split weighed and total weighed, and signed by a certified weight master.

_____ Front Axle
_____ Rear Axle
_____ Total

The above may be performed by the body company.

SPECIFICATIONS

I. GENERAL TRUCK SPECIFICATIONS: (Continued)

B. WEIGHT DISTRIBUTION: (Continued)

Truck GAWR's as Built (LB)

	<u>Front GAWR</u>	<u>Rear GAWR</u>
Axle	_____	_____
Tires	_____	_____
Springs	_____	_____
Rims	_____	_____

C. POWER TRAIN OVERVIEW:

The following power train combination is acceptable, no substitute.

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

TRANSMISSION – Allison automatic 3000 RDS, 6 Speed. Automatic transmission cooler lines shall be stainless steel or a **preapproved** no-rusting material.

NOTE: LUBRICANTS FOR FRONT AXLE HUBS, 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.)

D. VEHICLE COMPONENTS:

1. ALARM - BACKUP:

Shall be an ECCO Back-up Alarm Model 450 with shock mounting.

2. AXLE, FRONT:

10,000 lb. Minimum, "ROCKWELL or SPICER Model" or equal.

Shock absorbers, heaviest duty available from OEM.

If a handling package is available from OEM as standard or option, it shall be included.

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.

SPECIFICATIONS

I. GENERAL TRUCK SPECIFICATIONS: (Continued)

D. VEHICLE COMPONENTS: (Continued)

3. AXLE, REAR:

19,000 lb. minimum. Locking differential. Magnetic drain plug.

Shock absorbers, heaviest duty available from OEM.

Rear axle ratio shall be chosen at the pre-build meeting.

ALUMINUM OR LIGHTWEIGHT HOUSING IS NOT ACCEPTABLE.

4. BRAKES:

16.50 inch x 7 inch "S" cam rear brakes with quick change type single or double pin. (No substitute - standardization).

16.50 inch x 5 inch "S" cam steer axle brakes with quick change type single or double anchor pin. (No substitute - standardization).

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.

Buzzer-type, low air pressure indicator.

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: Heated 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. Placement to be approved prior to build.

Air dryer shall be placed outboard of frame rail to accommodate the changing of filter cartridges without disconnecting any hoses or removing dryer base from its mounting location. Placement to be approved prior to build.

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**).

SPECIFICATIONS

I. GENERAL TRUCK SPECIFICATIONS: (Continued)

D. VEHICLE COMPONENTS: (Continued)

5. CAB:

Steel or aluminum cab with air ride, shall be a conventional cab manufactured by an OEM.

All controls and knobs shall be properly identified.

Deluxe fresh air high output heater with air conditioning. Manufacturer's highest output.

Dual windshield wipers with the heaviest arms, linkages and motor available. Wipers shall be minimum 2-speed electric with intermittent feature. Wiper length shall provide maximum windshield cleaning area.

Intermittent, variable speed electric windshield wipers with washers and anti-freeze solvent. Minimum capacity of two (2) quarts of washer fluid and shall be filled with an anti-freeze type solvent.

AM/FM radio, weather band and hands free function for mobile device. Ref. Bluetooth.

Dual windshield defrosters.

Dual sun visors.

Inside dome light, door operated.

Steering Column: Steering wheel and column shall be tilt and telescopic, infinitely adjustable to multiple positions.

Fenders: Front fenders shall have a rubber extension. Not to exceed 96 inch truck width.

Hood: Fiberglass, tilting. Fenders shall be part of tilting hood. Grille shall be fixed. Hood shall be one piece design, high visibility, and without any access panels.

Radiator screen shall protect full width and length.

Air horn(s): Minimum 1 horn with snow-shield, not required if under hood mount and away from road splashing.

Brake pedal and throttle shall be suspended if available from the factory.

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

Cup holder in the cab within easy reach of the operator.

Windshield: One (1) or two (2) piece construction is acceptable, must be tinted. Safety glass throughout.

Exterior. 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.

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 No. NST4 full size, Ohio Grating No. JA21195G4 serrated, IKG. Industries Type B54 or Mack Part # 85QM423OM4.

Top of the first step shall be approximately 21 inch above the ground.

Mirrors: Drivers and passengers side power mirrors, west coast style minimum 6 inch X 15.75 inch manufacturers standard heavy-duty breakaway 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 5.5 inch X 8.8 inch or 8" diameter, minimum. A blind-spot elimination heated mirror shall be mounted on the right front fender and it shall be 8-inch minimum 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. Ref: Grote (800-628-0809)

SPECIFICATIONS

I. GENERAL TRUCK SPECIFICATION: (Continued)

D. VEHICLE COMPONENTS: (Continued)

5. CAB: (Continued)

Emergency triangle warning kit as per EQN-66A. Placement to be approved prior to build.

Seats: Driver's seat shall be high back adjustable Bostrom air 910 or 915 Series with lumbar support or National 2000 Series with lumbar or DuraForm Air Command Series (fabri form cushions with lumbar support), with body cloth insert and three-point retractable seat belt (Seatbelt shall be High Visibility Orange). Seat belts shall be equipped with a comfort lock. A bellow-type or protective skirt shall cover the seat suspension mechanism. There shall be an inside armrest on the driver's seat. **(No substitute, standardization)**. Color coordinated to cab interior. Passenger seat shall be the manufacturer's standard non-suspension (static) high back type and shall have a three-point retractable seat belt (Seatbelt shall be High Visibility Orange). Color coordinated.

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). Placement to be approved prior to build

There shall be a permanent decal, 2 inch high red letters on white back ground 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.

6. CHASSIS:

26,000 LB maximum GVWR, manufacturer's rating certified on door.

Two (2) front tow hooks, or one center mounted tow pin.

Front bumper, black, argent, or match truck in color.

Front and rear license plate mounting.

Tinted windshield.

All chassis dimensions shall be determined by the truck manufacturer and Body Company.

7. DRIVE LINE:

Heavy duty drive line shall be engineered and be compatible to engine and transmission torque capacity.

8. ELECTRICAL:

Heavy duty 12 volt batteries, maintenance free. Total of 1800 CCA @ 0* F (min)

Alternator and starter mounting bolts: Grade 8 minimum.

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.

Note: Starter shall have (OCP) either built in or controlled by the Vehicle's control system, (if required).

Circuit-breaker-equipped electrical system shall be in an easily accessible location. Fused circuit(s) in battery box, acceptable if so identified by manufacturer as safety factor and must be permanently labeled.

SPECIFICATIONS

I. GENERAL TRUCK SPECIFICATION: (Continued)

D. VEHICLE COMPONENTS: (Continued)

8. ELECTRICAL: (continued)

GPS Combo Radio Antenna: There shall be a pedestal mount base with built-in GPS, PCTEL model GPPB-204-54-12-S1-M1 and a low profile black antenna, PCTEL model BMLPU700. Assembly shall be mounted on pedestal with mini light bar and the antenna cable routed 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 department radio. Antenna shall be prewired with a MINI - UHF MALE connection. (No substitute, standardization). Under no circumstance shall anything be mounted in the chassis cab roof.

Power Distribution Center: There shall be a 4-way power/ground distribution center located on the underside of the dash for connection of department state radio. The lugs shall be 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.

Electrical wiring: Chassis wiring harness protected at areas prone to cause chafing by installing convoluted plastic conduit and clamped using steel band clamps with rubber inserts.

There shall be no splices, other than OEM, outside of a sealed box or fixture.

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.

9. ENGINE:

Cummins Diesel minimum 320 HP/1,000 lb-ft torque.

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 with full width and length screen protection.

The oil dipstick must have tubing and dipstick of sufficient length to provide reasonable access for checking the oil level.

10. ENGINE ACCESSORIES:

Automatic throttle control system for compressor operation, if applicable.

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).

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**).

SPECIFICATIONS

I. GENERAL TRUCK SPECIFICATION: (Continued)

D. VEHICLE COMPONENTS: (Continued)

10. ENGINE ACCESSORIES: (Continued):

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)**. Placement to be approved prior to build.

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)**. Placement to be approved prior to build.

Air restriction gauge: Flush, dash-mounted with indicator slide for engine air cleaner, Re: 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. Automatic idle shutdown shall be programmed to be overridden when the PTO Mode is engaged.

ECM shall be set to a maximum of sixty five (65) miles per hour.

Governor: Set at manufacturer's recommended maximum engine speed (rpm).

Hoses: The air induction system and large radiator cooling system hoses shall be clamped with 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.

All engine power systems (truck, air compressor, generator, etc.) shall be equipped with a 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. Placement to be approved prior to build. Ref: EQN-351A. (Only truck engine FLOCS hose must be routed to front of truck. Accessory equipment (air compressor, generator, etc. shall have FLOCS hose routed to an easily accessible location).

Chassis engine shall be equipped with an hour meter that records only when the engine is running. In-dash, integral with instrument panel (e.g., speedometer) is acceptable. Ref: DATCON or equal. Hour meter shall be illuminated and shall be readable from the operator's seat. All accessories engines shall be equipped with remote mounted hour meters (if applicable). All hour meters shall be identified.

11. EXHAUST:

Exhaust system shall be vertical and shall be installed to provide adequate clearance to all crane and body components. All exhaust pipe(s), DPF that personnel can come in contact with shall be shielded.

SPECIFICATIONS

I. GENERAL TRUCK SPECIFICATION: (Continued)

D. VEHICLE COMPONENTS: (Continued)

12. INSTRUMENTATION:

All standard instruments shall be supplied, properly identified and dash-mounted, including but not limited to the following:

1. Oil pressure gauge.
2. Water temperature gauge.
3. Fuel gauge.
4. Speedometer with odometer.
5. Voltmeter/ammeter.
6. Parking brake light.
7. Hour meters that work only when engine is running.
8. Dash mounted air gauge (illuminated) and low air pressure buzzer.
9. Cruise control.

13. PAINT:

Cab and body shall be painted PennDOT yellow Ref: DuPont F9885, PPG 85246, Sherwin Williams 73266, Sikkens 4017 and NAPA 73266 for shade only. Entire unit except for glass, rubber and those metallic accessories or fixtures constructed of rust-resistant or plated material not normally painted.

Chassis frame shall be painted black. Front bumper shall be black, argent or match truck in color. Rear bumper shall be PennDOT yellow.

Aluminum or stainless steel fixtures: handles, hinges etc. shall not be painted.

Prior to painting all metal shall be cleaned and ground / sanded to eliminate splatter and scale and shot blasted.

All metal surfaces shall be cleaned prior to primer and final painting.

All metal surfaces shall have rust preventive treatment and etching urethane primer (aluminum or stainless steel need not be painted).

All steel attachments must be cleaned, primed and painted with a minimum of one coat of primer and two coats of urethane color paint (with hardener) low VOC with the manufacturer's lead-free coating.

The sides and rear shall have conspicuity tape striping Ref. EQN-127A.

Conspicuity Reflective Sheeting required on the rear of body and bumper, flat vertical surfaces only Ref. EQN-122A. Rear Chevron Ref. Orafol America Inc. Red SRHI4R PN# 18716 and Yellow SRHI4Y PN# 18836 VC 312

Manufacture standard color shall be utilized for all crane components, air compressor components. Filters shall not be painted over and shall display the OEM part number(s) and all component tags must be readable.

Hoses shall not be painted.

Cab and body, left and right side, shall have conspicuity per EQN-127A.

14. STEERING:

Single integral type hydraulic power steering.

Manufactures standard 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.

SPECIFICATIONS

I. GENERAL TRUCK SPECIFICATION: (Continued)

D. VEHICLE COMPONENTS: (Continued)

15. TANK - FUEL:

Safety-type fuel tank meeting all FMVSS standards.

65 GAL minimum useable capacity.

Tank filler shall be positioned in such a way to ensure that filler nozzle can be set on automatic and nozzle will support itself, with unrestricted flow. Accessible fill pipe (located at either end of tank to avoid interference with steps).

Tank shall be aluminum or stainless steel, unpainted, with minimum 2 in wide heavy duty aluminum or stainless steel mounting straps with rubber shims/liners.

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. Top of first step from ground shall be approximately 21 inch.

16. 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 7,500 LBS at a maximum inflation pressure of 120 PSIG. Accuride part number 29039.
(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.
(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: All tires shall be radials.

Front Tires: 315/80R22.5 (Load Range L).

Rear Tires: 12R22.5 (Load Range H).

MANUFACTURER

Goodyear

Michelin

FRONT TIRE

G-289/G-291/G-670

XZY3

REAR TIRE

G-182 RSD/G-282 MSD/G-622 RSD

XDN-2

SPECIFICATIONS

I. GENERAL TRUCK SPECIFICATIONS: (Continued)

D. VEHICLE COMPONENTS: (Continued)

17. TRANSMISSION:

Allison 3000 RDS 6 Speed series automatic transmission with oil cooling as recommended by the manufacturer, and synthetic transmission fluid. An Allison approved water-to-oil type cooling system shall be provided to keep the transmission fluid at an acceptable operating temperature regardless of whether engine retarder is incorporated in the system or not. Automatic transmission cooler lines shall be stainless steel or a **preapproved** no-rusting material.

NOTE: All vehicles shall have a transmission-operated safety starting switch.

18. SAFETY:

The vehicle shall meet all the requirements set for the in EQN-118.

Grab handles shall be supplied on all cab and body 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.

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).

There shall be conspicuity tape applied per EQN-127A.

Wheel chocks and holder per EQN-82C.

Triangle kit stowed in the cab per EQN-66A

There shall be a permanent decal, 2 inch high red letters on white back ground 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.

NOTE: The boom shall be securely fastened to the vehicle with a restraining device to prevent its movement or shifting during transit.

The rear of the body shall be equipped with an inverted "V" pattern as per EQN-120K.

19. BODY:

There shall be an 11 foot Stellar TMAX2-11 crane reinforced mechanics body. The body shall be constructed using 12 gauge galvaneal steel; compartment tops shall be formed into an integral drip rail. Each compartment shall be illuminated with LED lighting; all lighting shall be sealed and routed securely to prevent damage. There shall be (6) recessed tie down D-rings in floor, each shall be rated for 6,000 lbs. The bed (floor and interior walls) of the body shall be coated with a non slip abrasive coating. All hinges shall be of continuous design and stainless steel, with stainless steel T-handle latches. The body shall be equipped with a 12-inch high galvaneal steel tailgate.

SPECIFICATIONS

I. GENERAL TRUCK SPECIFICATION: (Continued)

D. VEHICLE COMPONENTS: (Continued)

19. BODY: (Continued)

All compartments shall be lockable and keyed alike, with one master locking system per side of body.

There shall be (2) stainless steel grab handles at the rear of the body to aide in entry (Ref. I.D. section 18). There shall be a 24-inch work bench/bumper with full width storage compartment with vise plate. Directly under bumper shall be a tow hitch receiver and D-rings. Hitch shall be rated to tow the vehicles max GCWR as per EQN-202B. There shall be two (2) D-ring safety chain hooks, mounted one to each side of the pintle hitch. Each D-ring shall have a breaking strength equal or above the rated trailer hitch capacity. Provision shall be provided for a trailer break away cable clip for a surge brake equipped trailer in close proximity to the pintle hitch. Pintle hitch shall be installed approximately 28 inch from ground level to center of pintle eye. One 7-way female (pin type) electrical trailer plug connection, installed Ref. EQN-80A.

The truck shall be equipped with hydraulic outriggers, with controls mounted on the driver's side.

Outriggers shall raise and lower in a vertical manner and not interfere with body compartments.

Shelving specification/configuration:

Left front vertical – Drawer 500lb. Heavy-duty roll-out tool drawers, min six (6) drawers with fixed top shelf.

Left second vertical – (3) adjustable shelves.

Left horizontal – (1) adjustable shelves.

Left rear vertical – (3) adjustable shelves.

Right front vertical – (2) bottle hold-down kit; divider with (2) adjustable shelves.

Right second vertical – (3) adjustable shelves.

Right third vertical – (3) adjustable shelves.

Right horizontal – (1) adjustable shelves.

Right rear vertical – Crane controls; air hose reel, filter, lubricator and regulator.

20. LIGHTING:

Lights: **Whelen Light Kit Part # PADOTSY5, Kit contains the following lighting.**

1 - R10PADOT Light Bar to be mounted to the driver's side of the bulkhead. In no case shall the light bar be mounted on the roof of the vehicle.

2- LINZ6A lights to be flush grille mounted, side and front (grille) lights to be wired in conjunction with light bar. Per EQN - 115

2 - M6AD Amber warning lights

2 - M6BTDD Stop, Tail, Turn lights

2 - M6BUD Back-up lights

2 - 11-486152-000 Vertical black flange housing assembly. Above warning, STT, and back up lights shall be mounted within housing per EQN - 120M.

2 - LINZ6AD Amber warning lights, grommet mounted, mounted 1 to each side of bed per EQN - 120M. Side and front (grille) warning lights are to be wired in conjunction with above light bar.

4 - LINZ6 Grommet Kits

8 - 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.

SPECIFICATIONS

I. GENERAL TRUCK SPECIFICATIONS: (Continued)

D. VEHICLE COMPONENTS: (Continued)

20. LIGHTING: (Continued)

1 - PFP1PA Tripod pedestal work light with coiled cord and plug, remote mount to be supplied in the cab.

A work Light receptacle shall be wired and mounted in the rear of the truck and one receptacle on the left front side of the body. Work light receptacles shall have a constant

12 volt power supply, circuit to be properly protected and have a chassis ground.

Tripod work light remote mounting plate placement to be approved prior to build.

Each compartment shall have the Vista Compartment lighting System (Tel: 219-264-0711) or preapproved manufactures standard. The 3/8" LED rope lighting sections shall be mounted on the inside of each compartment door and shall occupy space on the left, top, and right of each compartment. Rope sections shall extend full length of compartment on left and right sides. All compartments lighting shall be controlled by a single illuminated rocker switch mounted within easy reach of the driver.

Body builder to supply remaining marker and ICC lighting, they shall be protected against damage and shall also be shock mounted. Connections shall be water tight. All Body lighting shall be LED. Body wiring shall be Grote, Trucklite, or Prior Approved Equal.

The Warning lights / Light bar shall have a lighted, permanently labeled toggle switch located in the dash.

License plate lighting shall specifically be a Truck light 36 series PN# 36140C LED lamp with light bracket PN#36710

There shall be no splices outside of a sealed box or fixture.

There shall be a seven-way trailer (Pin Type) receptacle mounted on rear. Per EQN - 80A

A color-coded electrical wiring chart and schematic shall accompany each body.

No wiring shall be left exposed or hung where it could be damaged by the elements or debris.

21. CRANE:

There shall be a Stellar 12621 12,000 lb. hydraulic crane mounted to the right rear (passenger's side) portion of the body. The unit shall consist of a 400 degree rotation (worm gear) with a 12,000 pound lifting capacity and a planetary winch with 60ft minimum cable. The crane shall be capable of 21 foot of reach, with a (2) section telescoping boom. The hydraulic controls shall be proportional with a backup radio remote control circuit. The unit shall be equipped with a hydraulic overload shutdown feature.

22. BODY ACCESSORIES:

The unit shall be equipped with a Stellar SR65 rotary screw air compressor. It shall be rated for a minimum 65 cfm; 150 psi. There shall be a 22.5 gallon ASME DOT approved air receiver tank mounted underbody. The tank shall be mounted in a manner that will be protected from road debris/splashing and it shall be mounted high enough to allow the truck to traverse off-road terrain without being impacted. It shall be equipped with a system relief valve, load free starter, filter, lubricator, regulator assembly. There shall be a Reelcraft air reel with 50 foot of 1/2 inch air hose mounted within the cabinet as referenced in the shelving section. The unit shall be equipped with a storage cover to protect the unit from inclement weather. It shall be able to withstand highway driving speeds and be lockable to the unit.

SPECIFICATIONS

II. DRAWINGS:

EQN-66A	dated	Rev.	07-20-09	1 sheet	TRIANGLE STORAGE BOX/BRACKET
EQN-80A	dated	Rev.	08-02-16	1 sheet	WIRING DIAGRAM/ 7 WAY CONNECTOR
EQN-82C	dated	Rev.	07-22-15	1 sheet	CHOCK & HOLDER
EQN-115	dated	Rev.	07-03-12	1 sheet	CREW CAB GRILLE LIGHT FIXTURES
EQN-118	dated	Rev.	06-26-09	1 sheet	UNDER RIDE PROTECTION
EQN-120K	dated	Rev.	06-10-14	1 sheet	TYPICAL REFLECTIVE SHEETING
EQN-120M	dated	Rev.	09-28-11	1 sheet	CREW CAB BODY LIGHTING
EQN-127A	dated	Rev.	01-02-09	1 sheet	CONSPICUITY TAPE STRIPING REQUIREMENTS
EQN-202B	dated	Rev.	07-27-16	1sheet	HITCH, WEIGHT DISTRIBUTING TYPE
EQN-351A	dated	Rev.	06-19-13	2 sheets	FAST LUBE OIL CHANGE SYSTEM
EQN-552	dated	Rev.	05-29-13	1 sheet	MAX. TRAVEL HEIGHT
EQN-552-1	dated	Rev.	12-20-16	1 sheet	THREE POINTS OF CONTACT

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.

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.

Delivery of these manuals shall be completed within a maximum of 90 days after the pilot model is accepted.

Manuals may be supplied on CD Disc in lieu of paper manuals.

SPECIFICATIONS

IV. TRAINING:

Mechanic:

The successful vendor shall provide services of qualified factory trained technicians for not more than 1 training sessions of not more than 7.5 hours at 1 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 Equipment 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 Equipment 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.

SPECIFICATIONS

V. WARRANTY:

Per PCID No. 1075. And the additional specific warranty items stated below.

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.

NOTE: 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.

BUMPER-TO-BUMPER WARRANTY:

1 year starting from the Departments acceptance date.

BRAKE WARRANTY:

Manufacturer's service and warranty policy for automatic slack adjusters shall be for two (2) years 100% parts only.

RADIATOR WARRANTY:

Manufacturer's service and warranty policy for radiator shall be for two (2) years, 100% parts and labor plus an additional three (3) years, 100% parts only.

ENGINE WARRANTY:

The successful vendor and or supplying OEM shall provide the Department with a 100% parts and labor engine warranty FOR 60 months / 150,000 miles / 5,400 hours minimum. In addition to the engine warranty, the engine block shall be warranted against external perforation from corrosion for 10 years, 100% parts and labor.

NOTE: 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 / 150,000 miles / 5,400 hours minimum. Shall be warranted against corrosion, rust, rust thru etc. regardless of atmospheric conditions.

TRANSMISSION WARRANTY:

Manufacturer's service and warranty policy for automatic and manual transmissions shall be five (5) years 100% parts and labor. This warranty shall include all internal and external components related to the automatic or manual transmission. This warranty shall also include, but not limited to, the transmission cooler, cooler hoses or lines, and all electronic transmission controls (harnesses, connections and modules) regardless of atmospheric conditions.

SPECIFICATIONS

V. WARRANTY: (continued)

DIFFERENTIAL/AXLE WARRANTY:

Manufacturer's service and warranty policy for differential and axles shall be for three (3) years 100% parts and labor.

BODY WARRANTY:

Constructability and durability of body shall be guaranteed for five (5) years, parts and labor. A decal shall be affixed to the driver's door, on the inside, stating the company's name, address and phone number.

Crane assembly 3 years, 100% parts and labor.

HYDRAULIC SYSTEM:

Complete Central Hydraulic system and components 1-year 100% parts and labor

HYDRAULIC PUMP

Manufacturer's service and warranty policy for hydraulic pump shall be three (3) year 100% parts and labor.

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.