

SPECIFICATIONS  
A-48-DB-C-AT

**057700, 057900**

**CONV. CAB TANDEM TRUCK CHASSIS WITH OIL DISTRIBUTOR BODY**

**TRUCK, OIL DIST., 3K, CONV. CAB, ARC, AUTOMATIC (057700)**

**TRUCK, OIL DIST., 3K, CONV. CAB, ARC, MANUAL (057900)**

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I. GENERAL TRUCK SPECIFICATIONS:

A. INTENT STATEMENT:

The purpose of these specifications is to describe a bituminous distributor for use by the Department to service road construction with bituminous materials. The vehicle shall consist of a cab, chassis, dual rear wheels and tandem rear-axle-drive, and be equipped with a tank and dispensing equipment as described.

Functions:

The distributor shall perform the following functions:

1. Fill tank by distributor pump from outside source.
2. Circulate material in tank.
3. Circulate material in spray bar.
4. Spray at a constant desired application rate, regardless of variance in truck speed and bar length.
5. Return material in spray bar to tank by pump suction.
6. Hand spray
7. Return material in hand spray to tank by pump suction.
8. Transfer from an outside source to another source without having material enter distributor tank.
9. Pump material back to supply source.
10. Heat material to proper temperature.

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.

B. WEIGHT DISTRIBUTION:

Engineering-certified weight distribution charts shall be provided with the pilot model for the equipment supplied.

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.

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I. GENERAL TRUCK SPECIFICATIONS: (Continued)

B. WEIGHT DISTRIBUTION: (Continued)

1. Frame
2. Axle
3. Tires
4. Steering unit of 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.

Engineering Concurrence:

This specification and all specified components must be reviewed and approved by the successful manufacturer. The installation of the specified components must be approved by the successful manufacturer's Engineering Department.

Transmission gear (Manual or Automatic), and drive axle gear ratio selection shall be made to ensure an obtainable ground speed in the lowest useable gear of 3-5 MPH at 1300 RPM's for spraying applications. If a suitable ratio cannot be obtained, than an Eaton 1202 auxiliary transmission shall be used.

The distribution shall be made relative to the following information:

1. Payload of approximately 3,000 GAL minimum, of emulsion as permitted to provide a unit with the largest tank capacity best utilizing available GAWR's without exceeding maximum Pennsylvania GVWR.
2. Chassis fuel tank(s) and all other fluid tanks full.
3. 200 LB operator.

The vehicle shall be certified for 62,000 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)

Actual Truck Weight

Slip requirements to be presented with the pilot model:

Chassis only	_____ <u>LB</u> Front Axle
	_____ <u>LB</u> Rear Axle
	_____ <u>LB</u> Total

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B. WEIGHT DISTRIBUTION: (Continued)

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

\_\_\_\_\_ LB Front Axle

\_\_\_\_\_ LB Rear Axle

\_\_\_\_\_ LB Total

Chassis with body and payload:

\_\_\_\_\_ LB Front Axle

\_\_\_\_\_ LB Rear Axle

\_\_\_\_\_ LB Total

Truck GAWR's as Built (LB)

Front GAWR

Rear GAWR

Axle \_\_\_\_\_

\_\_\_\_\_

Tires \_\_\_\_\_

\_\_\_\_\_

Truck GAWR's as Built (LB)

Springs \_\_\_\_\_

\_\_\_\_\_

Rims \_\_\_\_\_

\_\_\_\_\_

C. POWER TRAIN OVERVIEW:

NOTE: LUBRICANTS FOR FRONT AXLE HUBS AND DIFFERENTIALS, AUTOMATIC TRANSMISSION, 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).

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I. GENERAL TRUCK SPECIFICATIONS: (Continued)

C. POWER TRAIN OVERVIEW: (Continued)

**ENGINE DIESEL -MIN. 12.4 LITER (actual engine liters), MINIMUM 425 HP AT GOVERNED RPM, and MINIMUM 1540 LB FT TORQUE.**

Transmission gear (Manual or Automatic), and drive axle gear ratio selection shall be made to ensure an obtainable ground speed in the lowest useable gear of 3-5 MPH at 1300 RPM's for spraying applications. If a suitable ratio cannot be obtained, than an Eaton 1202 auxiliary transmission shall be used.

**CLUTCH & MANUAL TRANSMISSION:**

Manually adjustable, Solo Clutch will not be accepted.

Cast Pressure plate, Stamped pressure plate will not be accepted. Dampened driven disc.

Externally lubricated and torque limiting with a clutch brake.

Clutch shall be capable of 100 ft/lb. above peak engine torque.

Clutch adjustment shall be set to specifications prior to delivery to the Department.

There shall be a neutral safety device to ensure that the vehicle cannot be started in gear.

Note: The transmission-input shaft shall be 2 inch spline.

EATON RTO – 16908LL

EATON RTO – 14908LL

**AUTOMATIC TRANSMISSION:**

AUTOMATIC ALLISION 4500 RDS 6 SPEED

**REAR AXLE:**

DANA DS463P

Meritor RT46-164-P

MACK S462

NOTE: All rear axles must provide axle shafts with a minimum diameter of 2.19 inch at the spline.

D. VEHICLE COMPONENTS:

1. AXLE-FRONT:

20,000 LB capacity "I"-beam type, minimum.

10,000 LB capacity at ground, each front spring, minimum.

The front axle grease fitting locations must be provided with zerks.

STEMCO oil seal assembly, including hub, plug type window and GUARDIAN seal, or approved equal.

Each unit shall have the front end aligned.

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D. VEHICLE COMPONENTS: (Continued)

2. AXLE-REAR, TANDEM:

23,000 LB capacity at ground each rear spring.

Suspension tailored to axle loads and adequate to sustain maximum GVW without overload or permanent set.

Inter-axle differential (power divider), (in cab controls) with lockout and warning light with pump to lubricate inter-axle differential as furnished in EATON DS461-P, the pump system furnished in the ROCKWELL SSHD or the automatic inter-axle system furnished on the Mack S462.

STEMCO oil seal assembly, complete (GUARDIAN), or approved equal.

Magnetic drain plug.

The rear axle housings shall not be aluminum or lightweight component type.

Rear axle ratio selection will 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 three (3) most likely ratios for consideration for a speed range up to 65 MPH max. This information shall be presented at the pre-build meeting.

3. BRAKES:

Braking System: 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.

Rear brakes: 16.5 inch x 7 inch "S" cam with quick-change type single or double pin. (No substitute - standardization).

Drum brakes shall have automatic slack adjusters, clearance sensing with adjustment on application of the brake (no substitute).

Steer axle brake: 16.5 inch x 6 inch "S" cam or a power front disc brake system providing equal performance. Quick-change type single or double anchor pin if drum type brakes are furnished.

Backing plates on all drum brakes.

Air compressor: Per truck manufacturer's recommendation. Buzzer-type, low air pressure indicator. Compressor shall be fitted with a safety valve to prevent mechanical failure.

Parking brake: Rear wheels, spring-type, MGM E 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.

Air tank: Automatic drain valve, with heater 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.

System shall be equipped with anti-compounding to prevent mechanical failure of the foundation brakes, slack adjusters, etc.

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D. VEHICLE COMPONENTS: (Continued)

4. CAB:

Aluminum or galvanized steel cab.

Conventional cab.

Exterior windshield sun shade (visor), color coordinated to the cab.

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

Air Conditioning: Manufacturer's standard highest output.

Cruise Control

AM/FM radio

Seats: Driver's seat shall be BOSTROM Air 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 and retractable seat belt. **(Seatbelt shall be High Visibility Orange)**. A bellow-type or protective skirt shall cover the seat suspension mechanism. **(No substitute, standardization)**.

Color coordinated to cab interior

Passenger seat: With three-point retractable seat belt **(Seatbelt shall be High Visibility Orange)**, manufacturer's standard non-suspension (static) high-back type. Color coordinated.

**Note:** If due to cab configuration a Bostrom 915 seat cannot be used, a Bostrom 910 may be substituted. All other requirements must be met.

Deluxe fresh air hot water heater and defroster manufacturer's highest output.

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

Dual inside sun visors.

Dual windshield Wipers, shall be minimum 2-speed electric with intermittent feature.

Heaviest Wipers, arms, motor and linkages available. Washer system shall be electric. Minimum capacity of two (2) quarts of washer fluid and shall be filled with an anti-freeze type solvent.

Drivers and passenger side windows shall be power.

Mirrors: Drivers and passengers side power mirrors, west coast style minimum 7 inch X 14 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 6 inch X 7 inch or 8 inch diameter.

A heated blind-spot elimination mirror shall be 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. Ref: Grote (800-628-0809).

Drivers and passenger cab 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.

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



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I. GENERAL TRUCK SPECIFICATIONS: (Continued)

D. VEHICLE COMPONENTS: (Continued)

4. CAB: (Continued)

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.

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 bed ladder area per EQN – 552-1. Exact location to be determined at pre build meeting.

Driver armrest. Seat shall have a fold-up armrest on the right side of the driver's seat.

Air horn(s): With protective cover(s).

All controls and knobs shall be properly identified.

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

Cabs shall have air suspension.

Steering wheel diameter shall be 18 inch (approx.) Manufacturers standard.

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

5. CHASSIS:

62,000 LB GVWR minimum, manufacturer's rating.

Cab Axle (CA) dimension: Wheel Base (WB) and CA dimension to be determined and adjusted by the manufacturer to provide the optimum legal weight distributions with maximum payload.

Front Bumper: Heavy duty. To accommodate an 8 inch wide flat sign, mounted flush.

Front mounted tow hooks or eyes: Two (2) front or one (1) severe-duty centered.

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.

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I. GENERAL TRUCK SPECIFICATION: (Continued)

D. VEHICLE COMPONENTS: (Continued)

7. ELECTRICAL:

All copper system, negative ground.

Battery location to be determined at the pre-build meeting.

Batteries: Three (3), 12-volt, maintenance-free, BCI Group Size 31, with stud-type posts and anti-corrosion treatment on each terminal. 2500 total cold cranking amperes (CCA) min.

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). **Mounting of accessories within the battery box is unacceptable. All fuses and circuit breaker shall be labeled.**

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

Cables shall conform to RCC Practice 105 "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 connections shall be made using sealed connections and dielectric grease.

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.

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

Battery cable from battery negative terminal to the truck frame and from the battery or frame to the starter motor.

Alternator and starter mounting bolts: Grade 8.

Power supply for two-way radio: Quantity (1). Dash mounted. Both male/female ends shall be supplied, Ref: EQN-78.

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**) with 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). No mounting in roof. REF. EQN-120Q

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.

All pass-through points shall be properly sealed and protected.

Flasher: (All) heavy-duty electrical, Ref: Tridon Model EL 12 or equal.

Note: If an audible alarm is supplied for 4 ways and turn signals, it shall have an on/off capability.

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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. **And bearing a legible OEM part number.**

Cooling system: The largest factory available capacity compatible with engines and transmissions referenced and for continuous high engine output under extreme temperatures and/or operations conditions due to prolonged slow ground speeds while applying the asphalt material. With overflow recovery system and visual level indicator.

Radiator core and shell: Shall be manufacturer's heaviest construction grade radiator available, with overflow recovery system and visual level indicator.

9. ENGINE ACCESSORIES:

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.

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: A non-charged spin-on coolant filter shall be installed only if required by engine manufacturer.

Air Cleaner: Heavy Duty Capacity adequate for maximum performance of the engine.

Fan: Thermostatically controlled, viscous type.

Screening system: Mounted behind radiator grille that protects radiator from stones and bugs. 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)**.

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, RE: FILTER MINDER, manufactured by Engineered Products Company, or prior-approved equal.

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

Lubricating oil lines: High quality flexible wire braid type, "AEROQUIP" or approved equal system, minimum standard if hoses are used.

Engine Brake: Engine shall be equipped with a minimum 2 stage, full engine compression brake.

**Brake lights shall activate when engine brake is activated Ref: Jacobs.**

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I. GENEAL TRUCK SPECIFICATIONS: (Continued)

D. VEHICLE COMPONENTS: (Continued)

10. 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. Exhaust system shall not be close to any fluid tank or any hoses. The DPF, muffler 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. RE: RIKER or equal.

11. 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.

12. FRAME:

Resisting Bending Moment (RBM): Minimum of 2,800,000 inch LB per rail at high-stress areas and 2,086,000 inch LB at non-high-stress areas, for the entire length of the frame, and any frame reinforcements. Minimum frame RBM shall be approved by manufacturer's Engineering Department.

Frame material: Heat treated carbon steel, at least 110,000 psi yield strength.

Main frame and any required liners: Either straight channel or offset channel, full length. Drop frames are not acceptable. Minimum 96 inch deep section.

Frame AF extension: An integral and continuous extension of the main-frame side rail section modulus. Bolt on or welded extensions are acceptable. Length sufficient to properly mount body and equipment.

13. INSTRUMENTATION:

All instruments illuminated and dash-mounted except where specified otherwise. All standard instruments shall be supplied, including, but not limited to the following:

Gauges: Oil pressure gauge: with warning light or audible alarm.  
Air pressure: gauge(s) for dual circuit, dual indicator with low pressure audible alarm.  
Coolant temperature: with warning light or audible alarm.  
Transmission oil temperature: for automatic transmission only, with warning light or audible alarm.  
Fuel gauge  
Hourmeter that records only when the engine is running. Ref: DATCON or equal.  
Speedometer with odometer.  
Tachometer for engine and power-take-off.  
Voltmeter  
Parking brake indicator light.

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I. GENEAL TRUCK SPECIFICATIONS: (Continued)

D. VEHICLE COMPONENTS: (Continued)

14. LIGHT - WARNING:

All lights shall meet all Federal and State regulations. The head Lights shall be Halogen with (DRL's) daytime running lights. Factory or aftermarket installation. Body lights shall have their own dedicated complete circuit. All lights including the body shall be LED.

Whelen Light Kit Part # PADOTSY8, Kit contains the following lighting. EQN – 120Q

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

2 - M6AD Amber warning lights with brush guard mounted to the rear of body

2 - M6BTDD Stop, Tail, Turn lights with brush guard

2 - M6BUD Back-up lights with brush guards

4- LINZ6AD Amber warning lights, grommet mounted, flush mounted 1 to each side (middle/center) of bed and 2 flush mounted and equally spaced in the front grill per EQN – 120Q.

Warning lights are to be wired in conjunction with above light bar.

4 - LINZ6 Grommet Kits

10 - 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 water tight.

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

Body wiring shall be Grote, Trucklite, or Prior Approved Equal.

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

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

15. PAINT:

Cab shall be painted PennDOT yellow Ref: DuPont F9885, PPG 85246, Sherwin Williams 73266, Sikkens 4017 or NAPA 73266 for shade only. Frame and all underside components shall be painted black. Front bumper and frame shall be primed and painted black (with hardener) low VOC. All bare metal surfaces shall be coated using etching primer prior to paint. All surfaces shall be properly cleaned and prepared prior to paint, with all weld splatter and debris removed.

All tank components that are not polished aluminum or stainless shall be painted black.

16. SAFETY:

Cab 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 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 bed ladder area per EQN – 552-1. Exact location to be determined at pre build meeting.

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D. VEHICLE COMPONENTS: (Continued)

16. SAFETY: (Continued)

There shall be two wheel chocks per truck Ref: buyers WC1467 or equal with a rope. Mounting location will be determined at pre-build meeting.

All corners shall be angled or rounded for safety.

There shall be a triangle warning kit mounted in the cab.

Fire extinguishers 3A:40BC 5lb. rechargeable with vehicle mount. Mounted in the cab for easy and quick access.

Ref: EQN-66A, EQN-82.

17. STEERING:

Power steering: Dual-integral or single-integral type hydraulic

Steering system (e.g. flow, pressure, relief valve etc.) shall be selected considering the full front axle loading. Ref. ROSS, SHEPPARD or TRW gear assembly.

Hydraulic supply pump: Vane type or roller type, with sufficient oil flow to permit one (1) steering wheel revolution per second with front axle loaded to capacity, in a "park" condition. Ref.: VICKERS V-20, EATON or BORG WARNER. The pump shall not be the integral filter type unit.

Power Steering Reservoir: "Remote-mounted", and factory-mounted, minimum two (2) quart capacity, incorporating a filter, which is easy to remove and replace.

Steering wheel diameter shall be 18 inch (approx). Manufactures' Standard.

Glidecoat steering shaft, Bendix wedge lock lube-for-life shaft or ZF type steering shaft.

18. TANK - FUEL:

Safety - type fuel tank as per the requirements of FMVSS. **Dual tanks are unacceptable.**

One (1) 100 GAL minimum total capacity, frame mounted. (Mounted drivers side)

Cylindrical. Aluminum or stainless steel, unpainted.

Heavy-duty mounting 2 inch wide stainless steel straps with rubber shims/liners.

Tank mounting hardware and brackets shall be for "severe duty" applications.

Accessible fill pipe, (located at either end of tank to avoid interference with steps).

SPECIFICATIONS  
A-48-DB-C-AT

I. GENERAL TRUCK SPECIFICATIONS: (Continued)

D. VEHICLE COMPONENTS: (Continued)

19. WHEELS/TIRES:

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 12.25, 10 hole - 285.75mm bolt circle with 220mm bore, tubeless steel disc wheel rated at 10,500 LBS at a maximum inflation pressure of 120 PSIG. Accuride part number 29806 or 29807. **(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: All tires shall be radials.

Front Tires: 425/65R22.5 (Load Range L).

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

MANUFACTURER

Goodyear

Michelin

Bridgestone

FRONT TIRE

G-296

XZY3 Wide Base

M854

REAR TIRE

G-282 MSD / G-622 RSD

XDN-2

L320

SPECIFICATIONS  
A-48-DB-C-AT

I. GENERAL TRUCK SPECIFICATIONS: (Continued)

D. VEHICLE COMPONENTS: (Continued)

20. TRANSMISSION

Oil cooler for transmission required due to prolonged transmission torque converter operation in low gears. Cooler size must be provided to keep the transmission fluid at an acceptable operating temperature under these prolonged conditions. (Water-to-oil type cooler.) An Allison approved cooling system shall be installed regardless of whether 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 clutch-operated or transmission-operated safety starting switch.

**NOTE:** Transmission gear (Manual or Automatic), and drive axle gear ratio selection shall be made to ensure an obtainable ground speed in the lowest useable gear of 3-5 MPH at 1300 RPM's for spraying applications. If a suitable ratio cannot be obtained, than an Eaton 1202 auxiliary transmission shall be used.

21. ON BOARD GREASE SYSTEM

There shall be a centralized on board chassis lubrication system installed. Ref: EQN-501.



SPECIFICATIONS  
A-48-DB-C-AT

I. GENERAL TRUCK SPECIFICATIONS: (Continued)

E. OIL DISTRIBUTOR:

The design of the tank and its equipment shall meet regulations of the United States Department of Transportation, Hazardous Substances Transportation Board, for asphaltic materials having a flash point of 100 degrees F or higher and shall comply with the Federal Motor Carrier Safety Regulations title no. 49, as applicable.

1. ALARM - BACKUP:

Ecco Model 450, shock mounted.

2. TANK - BODY - INSTALLATION:

It shall be the responsibility of the successful vendor to have this tank mounted on the specified chassis. The installation shall be engineered and approved by the vehicle manufacturer

Tank Mounting: The tank mounting shall be as low as possible

Tank Gauge: Float type with dial calibrated in 50-GAL increments, located in ground positioned to allow unobstructed visibility.

Measuring Stick: Steel or aluminum, calibrated in 50-GAL increments. Designed and calibrated to read tank contents.

Any tank-mounted accessory required shall be mounted on a pad which is welded to the tank in lieu of welding the accessory directly to the tank. E.g. steps, catwalk, etc.

All mounting brackets attached to the truck body shall be stainless steel and shock mounted.

3. CABINET, TOOL BOX:

Stainless steel hinges.

Drip edge over top of doors, plus 3 inch overhang on both sides of door.

Watertight doors-gaskets required.

Key-locked, with matching keys.

Installation on frame rail, or supported by skirting and tank shell, size as permitted.

Corrugated rubber matting to facilitate full shelf size

4. CALIBRATION CONTROL CONSOLE:

The truck cab-mounted console shall provided the following functions and controls properly identified:

- a. Spray-bar on-and-off switch with controls in cab and at rear operator platform, or only in the cab.
- b. Electronic sensing device (no substitute, mechanical unacceptable).
- c. High and low level bitumen indicator light and an alarm audible from the front or rear of unit.
- d. High temperature hydraulic oil warning light.
- e. Variable-displacement hydrostatic pump control.
- f. Control to increase pump speed for loading and unloading.
- g. Front and or rear suction devices, air or electric over air operated.

SPECIFICATIONS  
A-48-DB-C-AT

I. GENERAL TRUCK SPECIFICATIONS: (Continued)

E. OIL DISTRIBUTOR: (Continued)

5. AUTOMATIC RATE CONTROL SYSTEM:

This system will be capable of the following as a minimum.

- a. Fully cab-controlled.
- b. Wing lift and lower (also rear control).
- c. Bar lift and lower (also rear control).
- d. Bar side shift, 26 inch overall, 13 inch from center. Also rear control.
- e. Spray width controlled in increments of minimum 12 inch maximum 24 inch on Main Bar and 12 inch on wings.
- f. Solvent injection system to clean bar and outside of unit. (Front or rear control).
- g. Fully self-adjusting mechanism to control application rate regardless of spray bar width and ground speed (if specified as automatic rate control).
- h. System will be capable of loading and unloading with full pump capacity and still retain preset rate selection (if specified as automatic rate control).
- i. All digital readout gauges, gallons per mm and feet per minute.

6. AIR CONTROLS:

Distributor shall be equipped with driver-operated air controls. Air for the controls shall be obtained from the air system on the truck chassis. The distributor air system shall include its own air reservoir (using truck chassis reservoir not acceptable) with check valve set at 80 PSI to prevent loss of air on truck chassis brakes in case lines are ruptured. Truck manufacturer's engineering concurrence required. Relief valve on tank air system shall be set at 80 PSI. System shall have its own air line oiling device.

7. CIRCULATION SYSTEM:

Quick-connecting coupler for attaching loading hose to distributor fill and discharge lines shall be provided.

Strainer in filling line.

Filling line shall be above the intake valve.

Pump discharge or suction strainer shall be provided to keep foreign matter from plugging nozzles, easily removed for cleaning.

Internal fill line with anti-siphoning dome or closing valve to prevent material from flowing into pump when tank is full.

The circulating system to spray bar shall be constructed using steel piping and/or ball joints and/or flexible lines using high pressure rubber or steel hose for flexibility and "optimum safety" due to potential high temperature material.

SPECIFICATIONS  
A-48-DB-C-AT

I. GENERAL TRUCK SPECIFICATIONS: (Continued)

E. OIL DISTRIBUTOR: (Continued)

7. CIRCULATION SYSTEM: (Continued)

a. Spray Bar:

- i. Type: Full-circulating, shut-off at nozzle, 16 feet minimum in length, hinged or retractable for traveling. Length of bar in folded position not to exceed 8 feet. Bar shall be air operated or hydraulic operated to shift bar 26 inches and raise for traveling.
- ii. Spray bar valves: There shall be an individual valve and quick disconnect for each individual valve.
- iii. Nozzles: Spaced on 4 inch centers on spray bar. A complete set of brass slotted non-clogging nozzles to be provided on the machine as defined below.
- iv. Relieving leak-proof sections on each side of spray bar shall allow bar ends to bend backward or forward if an obstruction is hit.
- v. Cutoff switch on wing that prevents accidental spraying when wings are raised.

Each unit shall be fitted with one complete set of emulsion nozzles AC-20 and two (2) end nozzles. The spray bar shall consist of 16 ft of spray bar.

b. Hand Spray Unit:

Each unit shall be furnished with a steel reinforced rubber hand spray hose, 25 feet x 1 inch (ID) with a steel or aluminum hand spray gun with cold handle and 2 spray nozzles. A on and off control valve shall be provided.

A means must be provided to clean out the hand gun and hose assembly, and to suck back the material left in the hose assembly and hand gun.

8. DECALS AND SIGNS (TANK):

The tank shall have all necessary appropriate material warning decals on all sides mounted in unobstructed view to alert near-by personnel of tank contents and operational hazards as required by Federal and State Standards.

Appropriate placards shall be provided as per 49CFR.

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 pre build meeting.

SPECIFICATIONS  
A-48-DB-C-AT

I. GENERAL TRUCK SPECIFICATIONS: (Continued)

E. OIL DISTRIBUTOR: (Continued)

9. FENDERS (TANK):

Bolted fenders or catwalk/fender, removable type.

Tank fenders shall be full, flanged type using 0.080 inch aluminum or mild steel construction, or catwalk and integral steel fender assembly.

Mud flaps front and rear of rear wheel, fenders to meet Motor Vehicles Code. Rear mud flaps, 6 inch off-deck.

NOTE: If skirting incorporates the fenders design, disregard these fender requirements.

There shall be full width back-flap/mg fabricated from black 0.2500 inch rubber. (Final location shall be made at the pre-build meeting.)

10. FILTER SYSTEM:

The tank pump shall be protected by means of strainer to eliminate foreign material entry. The strainer shall be easily accessible for cleaning.

11. FIRE EXTINGUISHERS:

Shall comply with NFPA Standard No. 385, and General Regulations governing the Highway Transportation of Hazardous Substance and Federal Motor Carrier Safety Regulations, Title 49.

Two (2) rechargeable 10 LB dry chemical 20BC-rated fire extinguishers with charge condition indicator and red waterproof snap-on covers. One (1) extinguisher mounted at right front side of the tank and one (1) mounted at the front of the tank on the driver's side near the cab.

12. FLASHING:

The tank shall have gutter type flashing for hose support including brackets on the right or left side to store the fill hose.

13. HEATING SYSTEM:

a. FLUE:

One (1) 0.172 inch (8 gauge) to 0.125 inch (11 gauge) U-type minimum 6 inch steel flue, located below center of tank for fast heating of load and heating of small amounts of material. Flue welded to flanged openings in tank rear head and supported by sleeves in surge plates to prevent wear and allow for expansion. Stainless steel external exhaust stack with hinged cover and stainless steel hinge pin to prevent heat loss, or a system approved by manufacturer's engineering department. Flue exhaust opening on right or left side of tank away from operator. The inlet and exhaust opening of the flue shall be in the same horizontal plane, allowing heating with a minimum of material in the tank. Flue shall run the full length of the tank. Exhaust shall not be directed at any component.

SPECIFICATIONS  
A-48-DB-C-AT

I. GENERAL TRUCK SPECIFICATIONS: (Continued)

E. OIL DISTRIBUTOR: (Continued)

13. HEATING SYSTEM: (Continued)

b. BURNER:

One (1), minimum, oil-fired atomizing-type with minimum capacity of 935,000 Btu per hour burner with pressure regulator, valves, piping, blower, flue liner, fuel pump, with solid state electronic ignition.

14. HYDROSTATIC DRIVE:

Note: Automatic transmission driven PTO

Manual transmission engine driven PTO.

- a. Variable displacement hydraulic pump.
- b. Hydrostatic motor.
- c. Type: Hydrostatic transmission.

NOTE: Hydraulic oil may reach temperatures up to 200 degrees F without damage to the unit.

Unit shall have internal valving, and shall be fitted with relief valve and high oil temperature signal in cab.

- d. Flywheel Type full time live power.
- e. Hydraulic Lines:

- i. High-pressure hose with swaged type split flange "O" ring fittings as per SAE standards.
- ii. Low-pressure hose installation shall be made according to transmission manufacturer's recommendation. Only top quality fittings, tubing and hoses to be used.
- f. Controls: Micro-control of hydrostatic transmission for setting asphalt pump discharge rate shall be located in truck cab. Control to permit stopping the variable pump discharge without disconnecting the drive and be equipped with an override of the micro-control which shall allow increases in asphalt pump output for filling, sucking back, etc., without affecting application rate setting. (Only applicable if automatic rate control specified).

15. IDENTIFICATION, ASPHALT TANK:

The gallon capacity shall be shown as:

- a. Maximum capacity - gallons/liters
- b. Legal capacity - pounds of payload

A heavy metal tag, minimum 0.063 inch (16 gauge) steel or aluminum identifying the above information shall be attached.

SPECIFICATIONS  
A-48-DB-C-AT

I. GENERAL TRUCK SPECIFICATIONS: (Continued)

E. OIL DISTRIBUTOR: (Continued)

16. INSULATION, TANK:

The thermal insulation between the inner shell and outer jacket, including bulkhead, shall be a minimum of 2 inch fiberglass or mineral wool with a density of 1 LB per cubic foot. The insulation shall be installed and bound to prevent shifting or sagging. (Vendor shall verify insulation compliance's). Spacers shall be furnished to prevent insulation compression and collapse.

17. INSTRUMENTS AND ACCESSORIES:

a. Thermometers:

- i. A 2 inch minimum dial size, dial type, 50 degrees F to 500 degrees F. REF: WEISS or equal.
- ii. A steel-armored and engraved pencil type thermometer shall be located next to the dial thermometer in a blind well.

b. Loading Hose:

Each unit shall be furnished with a 3 inch x 15 feet steel flexible loading hose with male threaded ends and vendor's quick couplers.

c. Hydraulic Hose Clamping:

Ref: EQN 94. HYCON or equal clamps, as required.

18. LADDER, TANK:

Full length ladder, 12 inch step increments and 16 inch wide. First step height approximately 12 inch to 16 inch above ground level. A folding step shall be used below the ICC bumper with the ability to be locked in the up position during operation or transportation, with step in the folder position it shall provide the same clearance as the ICC bumper.

A safety decal shall be furnished and installed at the ladder location.

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 pre build meeting.

1 inch minimum OD tubular handrails. Ladder reinforcements shall be dual and sturdy in design.

Ladder location shall be determined at the pre-build meeting.

Steps/ladders shall be serrated swage lock with end band steel or aluminum. (Overlay is unacceptable)

The outer step edge must be serrated in lieu of plain, smooth metal edge.

All edges must be banded on the outer perimeter.

Steps/ladders design and material shall be the same design and material on the left and right side of the equipment if applicable.

Referenced acceptable material – Bustin NST4, Ohio Grating JA2119SG4 or IKG Industries BS4.

Landing/s and or catwalks shall be furnished using plain non-serrated safety grating, manufacturer's standard according to tank configuration.

SPECIFICATIONS  
A-48-DB-C-AT

I. GENERAL TRUCK SPECIFICATIONS: (Continued)

E. OIL DISTRIBUTION: (Continued)

19. MANHOLES, TANK & STRAINER:

a. Manholes:

18 inch to 20 inch minimum, non-relieving type manholes, in accordance with the most current Federal guidelines. Cover shall be furnished with woven-wire impregnated composition gaskets. Cover shall be hinged and quick-opening type.

b. Strainer:

Strainer removable type designed to fit inside the above manhole.

c. Spillage Collar:

Circular or rectangular collar around manhole with 3 inch internal drain with expansion joint to catch any excessive material overflow while loading, and shall drain excess material onto the ground.

20. TANK-PAINT, BODY:

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.

All non-aluminum parts shall be primed and painted black.

The tank body shall have conspicuity tape on left and right side, full length Ref: EQN-127.

**Under no circumstances shall the aluminum skin be painted.**

21. TANK, PIPING:

The tank plumbing shall incorporate a Department-approved sampling valve.

22. PLATFORMS: Ref: EQN-231

a. Tank Top:

A minimum of 54 inch x 54 inch square manhole platform, or 32 inch x 32 inch spill-box assembly (total overall).

b. Operator Station:

Operator platform to provide access to all rear distributor controls, if required.

Adequate hand rails for operator safety and proper entry and exit locations.

All sensor wiring shall be protected by piping and easily removable for service.

If all controls are accessible from ground level, additional platform is not necessary.

SPECIFICATIONS  
A-48-DB-C-AT

I. GENERAL TRUCK SPECIFICATIONS: (Continued)

E. OIL DISTRIBUTOR: (Continued)

23. TANK, POWER-TAKE-OFF:

Extending the bumper forward to accommodate a pump that is placed forward of the bonnet (hood) is unacceptable.

24. PUMP, ASPHALT CIRCULATOR SYSTEM:

Pump: Positive displacement type, minimum capacity 400 GPM. Located to provide a constant head pressure in order to eliminate pump cavitation.

Tank: With front and rear suction devices.

Connection to hydraulic motor: Pump to be connected to the hydraulic motor by a double universal coupling or a thermoid coupling or direct coupled 3:1 gear box. Coupling shall be fitted to provide proper flexibility and reliability due to minor misalignment of hydraulic motor and pump shafts.

To prevent the contamination collected in the discharge strainer from re-entering the pump and tank, the clean-out system shall be filtered or so designed as to prevent this from occurring. Units with filter system shall incorporate a clean-out sump. All vendors must provide adequate plumbing to provide this option to eliminate the potential of abrasive materials being continually passed through the pump.

Recirculating cleanout system: Unit shall be equipped a with recirculating cleanout system, this system shall consists of a separate solvent holding tank mounted on the distributor with necessary valves and piping to circulate solvent through the spray-bar, asphalt pump and piping for cleaning, and then return the solvent to the holding tank. The system is to allow for the use of clean fuel from the diesel burner supply tank as solvent and also allow reusing solvent from the holding tank.

25. PUMP FLUSHING LINE:

A pump flushing line, completed with valve, shall be supplied at a minimum.

26. SUMP (if applicable):

Designed and manufactured to allow all material in tank to flow by gravity into pump or sump.

27. TANK INNER SHELL:

The tank capacity shall be approximately 3,000 GAL LPM "MINIMUM" relative to maximum utilization of each GAWR of the truck chassis.

The tank shall be constructed of 0.141 inch (10 gauge) thick steel.

The tank heads shall be a minimum 10 gauge thick, dished and flanged or 8 gauge flat, and shall be fully welded inside and out, continuous electric welding.

The inner tank shall incorporate two (2) "full cross section" material surge baffles 0.141 in (10 gauge) thick. The baffle shall have crawl spaces (staggered) for a man. The baffle shall provide for material drainage and air circulation and shall be welded continually.

Overflow: A minimum of 3 inch diameter, extending a minimum of 6 inch above the tank to prevent loss of material due to material surging while transporting. This overflow pipe shall be located near the tank center. The overflow shall provide proper drainage through the bottom of the tank in a location to clear all truck accessories and equipment.



SPECIFICATIONS  
A-48-DB-C-AT

I. GENERAL TRUCK SPECIFICATIONS: (Continued)

E. OIL DISTRIBUTOR: (Continued)

28. TANK OUTER SHELL:

The tank outer jacket shall be from 0.040-inch thick aluminum of grade 5052-H38, or 0.050 inch thick aluminum of grade 3003-H14.

The outer shell shall be fabricated with sufficient overlap to prevent rain and water entry into the insulation area and constructed in such a manner as to allow for expansion and contraction.

29. WEIGHT DISTRIBUTION, TANK:

The tank body and cabinets shall be designed to provide proper weight distribution for the chassis cab-to-axle dimension proposed. The weight of the tank assembly less chassis weight is required at the pilot model inspection.

30. WIRING AND LIGHTING, TANK:

All lights provided on tank shall meet Pennsylvania Motor Vehicle Code and all wiring shall be Grote Ultra Blue seal throughout. All lights shall be sealed, shock mounted. Wiring shall conform in gauge and color with ATA Standard for asphalt transports. There shall be no connections made outside of a weatherproof box.

31. OPTIONAL PUMP HEAT CHASE:

**OPTION:** If specified, the unit/s shall be equipped with a heat chase from the truck engine cooling system installed. This system consists of two ball valves necessary piping and a jacketed material pump that will allow engine coolant to circulate and heat the material pump.

SPECIFICATIONS  
A-48-DB-C-AT

II. DRAWINGS:

EQN-66	dated	Rev.	07-20-09	2 sheets	SPLASH GUARDS-RUBBER
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-82D	dated	Rev.	07-22-15	1 sheet	CHOCK AND HOLDER
EQN-94	dated	Rev.	04-18-13	sheet 1 of 2	HOSES AND COUPLERS
EQN-120Q	dated	Rev.	08-06-12	sheet 1	TRUCK LIGHTING UNIVERSAL
EQN-127	dated	Rev.	03-01-07	1 sheet	CONSPICUITY TAPE
EQN-127A	dated	Rev.	01-02-09	1 sheet	REFLECTIVITY ENHANCEMENT
EQN-231	dated	Rev.	06-12-07	1 sheet	TANK CATWALK AND OPERATOR PLATFORM
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.	05-29-13	1 sheet	MAX. TRAVEL HEIGHT
EQN-552-1	dated	Rev.	03-23-15	1 sheet	THREE POINTS OF CONTACT STICKER

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  
A-48-DB-C-AT

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  
A-48-DB-C-AT

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 3 training sessions of not more than 22.5 hours at 1 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.**

SPECIFICATIONS  
A-48-DB-C-AT

IV. WARRANTY: Per PCID No. 1075.

**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 60 months, 100% parts and labor.

**NOTE:** The oil pan shall be warranted against corrosion, rust, rust thru etc. regardless of atmospheric conditions for 60 months, 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.

**RADIATOR WARRANTY:**

Manufacturer 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.

**TRANSMISSION WARRANTY:**

Manufacturer service and warranty policy for automatic and manual transmissions shall be 60 months 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.

**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.