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SPECIFICATIONS
034980

TRAILER, LOWBOY, PAVER STYLE, TRIAXLE, W/W-L, W/REAR LIFT AXLE, 50 TON, 102"

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May 6, 2025, GAW

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I. GENERAL 50 TON TRI-AXLE PAVER STYLE TRAILER SPECIFICATIONS:

A. INTENT STATEMENT:

The purpose of these specifications is to describe a "Paver Style" 50-ton, three-axle, drop-deck, low-bed semi-trailer to be used in hauling paver type construction machinery, with wet lined equipped department truck tractor. The trailer will be rated for a capacity load of 50 U.S. tons in 1/2 of the deck length at highway speeds of 70 MPH. It shall be equipped with a self-lifting (non-ground bearing) hydraulic detachable gooseneck so equipment can be loaded over the front of the deck. Tapered main beams shall be provided to permit the entire taper to be lowered as flush to the ground as possible. The gooseneck beam hooks and other components on the trailer portion must be flush to the slope front in order to facilitate the loading of rollers, and "all" Department equipment with a limited and reasonable amount of blocking/center ramping. The trailer must be new, including all component parts.

All vendors should review our fleet with the manufacturer's engineering department and our field personnel prior to bidding to ensure that the trailer manufacturer is aware of the tasks assigned to this unit.

The trailer must be compatible with the Department tandem axle tractor(s) in critical areas as hoses, electrical connectors, fifth wheel clearance and pin size.

EQN-250P is offered as reference except for ground to top of deck height which shall not exceed 23 inches to 25 inches.

It shall be the sole responsibility of the successful vendor to ensure compatibility with the Department's tractor(s), to include not surpassing the overall length ruling and meeting all bridge formulas. The vendor shall, prior to bid, inspect the Department's tractor/s to ensure this compatibility. For tractor location contact the Equipment Division at 717-783-2371.

Department of General Service PCID NO. 1075 is included as part of this specification. PCID NO. 1075 may be reviewed and downloaded from the Department of General Services website, www.dgs.state.pa.us.

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.

ALL units shall be delivered with current PA state Inspection.

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

Delivery as required per Department of General Service PCID NO. 1075 section G. All units must be delivered within **200** days after receipt of the purchase order by the successful bidder.

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I. GENERAL 50 TON TRI-AXLE PAVER STYLE TRAILER SPECIFICATIONS: (Continued)

B. TRAILER COMPONENTS:

1. ACCESS:

Two (2) 41-inch-long by 22-inch-wide approximately, front fold-down loading ramps with oak inserts shall be provided to form a 7.2-degree approach to the main deck area. These sliding ramps shall be adjustable from 92 inches to 112 inches outside to outside, 5 inches to the inside of the trailer (102") to 5 inches past the outside of the trailer (102"). Ramps shall be double hinged, allowing ramps to fold flat to deck with wood fill. Front ramps shall incorporate a heavy-duty spring assist, and a handle to the outside of the ramp. Minimum 0.250 welded chains with heavy duty snaps shall be supplied to hold ramps in the stowed position, flat to deck.

The front top of the main beams and side beams shall be tapered, and front bottom of main beam and side beams shall be tapered at minimum the first nine (9) feet to permit easy loading.

2. AXLE AND SUSPENSION:

The trailer shall be equipped with the following axles and suspension:

Each axle shall be rated at 25,000 lbs. capacity by the axle manufacturer. The wheel bearings shall be an oil-bathed type. Each shall be a through-type design with a 5 inch round outer dimension. They shall be of cast ductile iron.

SUSPENSION: Air Ride Suspension. Ref: Turner HT25OU, Neway, Ridewell, or approved equal. Each of the three axles shall be equipped with an air ride suspension rated at 25,000 lbs. capacity by the suspension manufacturer. The suspension shall require no lubrication. The suspension shall also include a height control system to mechanically adjust the ride height of the suspension by (3) three inches up or down. This system shall have (5) positions – (2) positions to increase the standard ride height, (1) standard ride height, and (2) positions to decrease the standard ride height. Unit shall be equipped with a lift axle. The lift axle shall be mounted at the rear most axle position. Wheels and tires shall match the existing trailer tires and wheels. Lift Axle shall be equipped with matching brake shoes and hardware as other axles. Shall be in accordance with PA State Inspection Laws. Lift axle control, regulator and pressure gauge shall be located in the rear bumper.

3. BRACKETS: - SIDE:

The main deck shall be equipped with a set of twenty (20) minimum heavy-duty side brackets. The side brackets will be cast from ductile iron, D5506, Tensile 80K, Yield 55K specification A-536-72, Grade 80-55-06. There will be required ten (10) each side minimum, to increase the width to 10 feet if desired.

When not in use, they shall be held in place against the side member with spring loaded clips. A full 2-inch x 10-inch (minimum) No. 1 grade oak planks shall be furnished to provide covering full length of the brackets on each side.

Fabricated side brackets shall be deemed unacceptable.

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I. GENERAL 50 TON TRI-AXLE PAVER STYLE TRAILER SPECIFICATIONS: (Continued)

B. TRAILER COMPONENTS: (Continued)

4. BRAKES:

The service brake shall be a two-line system with an emergency breakaway feature conforming to the most current FMVSS requirements and Commonwealth of Pennsylvania Specifications. The complete system shall include necessary tubing, glad hands connectors at the front of the gooseneck, reservoir(s), and minimum 1500 cubic inch capacity, remote drain cock and type 30 air chamber with self-adjusting slack adjusters of the clearance sensing type for each brake drum. Air chamber shall be mounted parallel to or below the axles. The brake shoes shall be the two (2) shoe internal expanding type with molded block lining 16.5-inch x 7-inch 4S, 2M ABS anti-lock system. There shall be a spring parking brakes installed on two (2) trailer axles.

All precautions shall be taken to prevent the brake mechanism from being damaged by road hazards.

At all times during coupling and uncoupling of gooseneck from trailer deck spring brakes must remain applied

5. DIMENSIONS:

King pin setting will be minimum 15 inches, maximum 16 inches.

Overall width of 102".

Tri-axle Deck length less ramp, actual usable flat deck 24 feet (+ or - 6 inches).

Roadway clearance, not less than 9-inch, light dimension.

Height from ground to underside of gooseneck fifth wheel plate at kingpin, loaded on level and parallel surface approximately 49 inches to 52 inches.

6. ELECTRIC SYSTEM:

All lights shall be LED.

The trailer shall be furnished with shock proof running lights, directional signals and reflectors, fully complying with ICC minimum requirements, and with the Motor Vehicle Laws and Regulations of the Commonwealth of Pennsylvania.

All lights shall be mounted with guards to prevent damage.

Rear lights shall be Whelen light kit # PADOTSY11. A six to eight-week lead time is required for delivery of light kits,

Whelen contact is Brad Walker (740) 325-6727 or bwalker@fleetreps.com

4-PN# 01-066E462-R1C (M6BTDD) Stop, Tail, Turn lights.

2-PN# 01-066A797-A1H (M6AD) Amber ONLY Warning lights

6-PN# 01-046C334-000 (M6BRUSH) brush guards.

1-PN# 01-0685953CPFP (L31HPF) AMBER/GREEN Strobe light to be mounted on Left rear corner of trailer.

1-PN# 01-0485953-00G (L360PMKT) pipe mounting kit

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).

Manufacture to provide remaining marker and ICC lighting, wiring shall be Grote, Trucklite, or pre-approved equal.

There shall be a "flasher kit" for all trailer lights, when disconnected from gooseneck.

It shall include an Optima dry cell battery, minimum of 540 CCA @ 0 degrees F (sealed) with stud type connector with all copper cables. Battery shall be shock-mounted with 0.25-inch rubber mat installed under battery.

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I. GENERAL 50 TON TRI-AXLE PAVER STYLE TRAILER SPECIFICATIONS: (Continued)

B. TRAILER COMPONENTS: (Continued)

6. ELECTRIC SYSTEM: (Continued)

All connection shall be sealed with heat shrink; open connections shall be coated with dielectric grease.

Battery charge will be maintained from 12-volt power supply from tractor. The following shall be installed with 4-gauge copper wires on each trailer. Ref. Tectran or pre-approved equal. Sockets PN#670-22, socket boots PN#670-722, Male plug PN# 670-19SG.

One (1) socket with boot at front bulkhead of gooseneck.

One (1) socket with boot installed in lower deck to allow connection from gooseneck.

- Two-pole socket, with protective boot installed in bulkhead, in close proximity to glad-hands and light plug.
- A second socket, with protective boot installed in the lower deck in close proximity to air lines and light cord connections.
- Light cord from upper socket to lower socket with male plug

There shall be a switch located in rear bumper, exterior sealed weather proof type, and permanently labeled that will operate on/off of all (including strobe) lights on trailer to flash when gooseneck is disconnected from trailer deck for safety in loading/unloading of equipment.

There shall be a separate switch in close proximity, exterior sealed weatherproof type, and permanently labeled that will operate on/off of amber lights only, both rear bumper amber warning and strobe light.

A color-coded electric wiring chart and schematic shall be provided with each unit.

7. FRAME:

The frame shall be constructed of two (2) heavy-duty beams and two (2), heavy duty channels. The main beams shall be W16 x 67# low alloy steel rated a minimum of 60,000 PSI ASTM-A 572 GR60 with a section modulus of 117. The front top and bottom of the main beams shall be tapered, running front to back. The bottom beam shall have a minimum taper of 9 feet front to back to ease loading. The front profile of the deck shall be tapered and no higher than 8 inches when detached from the gooseneck and in the loading position. The trailer's heavy-duty side channels shall be C12 x 20.7# low alloy steel rated a minimum of 50,000 PSI, ASTM-A 572 GR50 with a section modulus of 21.5. There shall be ten (10) total cross members in the trailer deck, pierced through the main beams. The first and last cross members shall be MC10 X 25#. The intermediate cross beams shall be W10 x 12#. There shall be supporting cross members at front and rear to support decking. All deck board splicing must be supported by a cross member.

The beam hooks must be designed to follow the sloping contours of the longitudinal main beams to allow a roller to be loaded without going over a "hump". The beam hooks shall be minimum 6 inches thick, made from ASTM-A572 GR 42 plate stock. Welding of two or more plates together to equal 6 inches shall not be acceptable.

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I. GENERAL 50 TON TRI-AXLE PAVER STYLE TRAILER SPECIFICATIONS: (Continued)

B. TRAILER COMPONENTS: (Continued)

8. GOOSENECK:

The longitudinal carrying members shall be fabricated, using high-strength, low-alloy steels. The web shall be fabricated using ASTM A572-GR50 50,000 psi minimum yield steel; and the flanges shall be fabricated using ASTM A514, 100,000 psi minimum yield steel.

The gooseneck shall be a tapered, self-lifting, detachable type with a "Scraper-neck" profile for additional load clearance.

It shall be equipped with two (2) 8-inch x 14-inch double acting hydraulic cylinders with 3-inch rods, anchored in a horizontal or vertical position in the gooseneck. These cylinders shall push off a lever which, in turn, pushes off the deck of the trailer. The cylinders shall require a maximum of 2,800 psi to operate the gooseneck. The lifting mechanism shall not carry the load in the normal transport of the trailer.

The gooseneck must also be equipped with a 2-inch kingpin (conforming to SAEJ700a) properly boxed to prevent cracking and dishing of the fifth wheel plate. The upper fifth wheel plate shall be adequate in size for coupling to a 36-inch fifth wheel or a full oscillation fifth wheel.

The design of the hydraulic detachable gooseneck shall be adjustable, up or down, to clear road obstacles, under full load, without shifting the load.

Trailer gooseneck shall be supplied with all necessary operating valves, relief valve and couplers to be an operating system upon connection to department truck tractors wet line system.

At all times during coupling and uncoupling of gooseneck from trailer deck spring brakes must remain applied. A toolbox shall be mounted in/on the gooseneck. Toolbox shall have steel hook hanger approximately full width minimum 3/16-inch-thick and 1 1/2-inch-wide accommodate chain and binder hook.

"Tear drop" type pins are acceptable in lieu of hooks.

The length of the gooseneck must be calculated based on the fifth wheel being placed 6 inches, to the front of the tractor axle using frame dimensions supplied by the truck manufacturer.

All items utilized shall be installed in accordance with SAE standards and practices.

9. LASHING RINGS:

Twelve (12) lashing rings shall be provided on lower deck, six (6) on each side. Six (6) on upper deck, three (3) to each side.

Four (4) on top off upper deck main beams, one to each side in close proximity to transition from lower deck. One to each side in close proximity to rear of bumper stop at rear end of deck. Ref. EQN-250P

All rings shall be constructed of 1-inch diameter drop forged lashing D's C1030 steel.

Bidders shall include test results from an independent testing agency detailing strength and characteristics of the lashing D's to be supplied. Testing shall be done in accordance with the Trailer Cargo Anchoring Devices Test Method 906, Transport Canada.

10. MISCELLANEOUS:

There shall be a flag holder welded to each side of the rear frame rail.

There shall be two red flags with each unit.

There shall be a two-piece hinged "OVERSIZED LOAD" sign mounted on the rear. The sign shall be mounted in such a way to afford hinging/concealing without the use of tools.

Clean yellow warning sign at least 7 feet wide by at least 18 inches high and containing only the words "OVERSIZE LOAD" in black letters at least 10 inches high with a 2-inch letter stroke, shall be mounted on the rear of the permitted oversize vehicle.

Oversize load sign must meet current DOT regulation.

A permanent decal stating the light weight of the trailer shall be attached on the roadside near the lift controls.

The decal shall be approximately 1.50 inches high and 3 inches long and read L.W. _____ LB.

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I. GENERAL 50 TON TRI-AXLE PAVER STYLE TRAILER SPECIFICATIONS: (Continued)

B. TRAILER COMPONENTS: (Continued)

11. PLATFORM SIZE AND CONSTRUCTION:

The platform shall have a minimum 1 3/4-inch oak or a minimum 1 1/4-inch Apitong full floor. The trailer decking shall be composed of #1 grade hardwood to carry the rated capacity within any 11-foot section of the deck and shall be supported by maximum 24-inch centered cross members laid longitudinally with the planking secured to the cross members with countersunk button head carriage bolts and floor clips. The hardwood decking shall be fitted to eliminate gaps.

The decking shall be the full width and length of the trailer, upper, lower decks and transition with no gaps to allow easy loading of rollers and other like style equipment. There shall be supporting cross members at front and rear to support decking. All deck board splicing must be supported by a cross member.

Platform to ground height shall not exceed that shown in EQN-250P.

12. Preparation, Primer, and Paint:

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

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

All metal surfaces shall have rust preventive treatment and 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.

Paint: PENNDOT yellow, ref. DuPont F9885, PPG 85246, Sherwin Williams 73266 and NAPA 73266 Sikken's 4017 for shade only. Entire unit shall be painted except, wood, rubber and those metallic accessories aluminum or stainless-steel fixtures constructed of rust-resistant or plated material not normally painted, tags must be readable.

The entire underside of the frame shall be coated with black, rustproof undercoating.

Aerosol can touch up paint and primer will not be accepted and will be rejected at the time of delivery inspection.

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

13. REAR FRAME:

The main carrying members of the rear frame shall be fabricated using high-strength, low alloy steel. The flanges shall be fabricated from 130,000 psi material. The web shall be fabricated from ASTM A572 GR50 material.

The rear riser section shall run at a 3:1 ratio for a maximum of 18° between the main deck and the rear frame area and have a maximum of 18-inch drop between the deck and the rear load platform of the trailer with a full width oak, or Apitong wood covering.

Rear deck shall have a full 1-1/2-inch oak or Apitong covering with a roller stop at the rear of the upper deck.

Rear mud flaps in accordance with PA State Inspection Laws. Rubber splash guards shall be unmarked.

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I. GENERAL 50 TON TRI-AXLE PAVER STYLE TRAILER SPECIFICATIONS: (Continued)

B. TRAILER COMPONENTS: (Continued)

14. TIRES, WHEELS, RIMS:

The trailer shall be provided with steel belted radial tubeless tires 255/70R 22.5 (H) 16 ply rating mounted on 22.5 x 8.25 hub piloted steel disc rims, Accuride **No Substitute**.

Rims Paint: The wheels shall be topcoat painted with TGIC Polyester Powder Paint MLD-82008 High Gloss Gray applied over Cathodic Electro-Disposition Gray Primer.

The hubs shall be ten (10) stud, hub-piloted type and made of cast ductile iron.

The tires shall not extend above the bridge beams.

Spare rim and tire mounted and stowed on the gooseneck. One (1) per trailer with locking tire carrier.

15. WET LINE:

All unit(s) shall be plumbed to accept hydraulic connections from the tractor to make the trailer completely functional as a "wet line unit". Fittings shall be AEROQUIP or prior approved equal.

Left / Drivers side shall be permanently marked "PRESSURE" Male AEROQUIP 5100-S2-12B 3/4-14.

Right / Passengers side shall be permanently marked "RETURN" Female (wing) AEROQUIP 5100-S5-12B.

For information on the hydraulic connectors contact the Equipment Division at (717) 783-2371.

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I. GENERAL 50 TON (034980) TRI-AXLE PAVER STYLE TRAILER SPECIFICATIONS: (Continued)

II. DRAWINGS:

EQN-81A	dated	Rev.	02-27-07	1 sheet	7 WAY TRAILER CONNECTOR
EQN-127A	dated	Rev.	01-02-09	1 sheet	CONSPICUITY TAPE STRIPING REQUIREMENTS
EQN-250P	dated	Rev.	08-08-18	5 sheets	LOWBOY PAVER STYLE TRAILER

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 pre-build meeting.

DRAWINGS APPEAR AT THE END OF THE SPECIFICATION.

III. MANUALS:

The successful vendor shall furnish all applicable manuals per unit:

- 1 Operator
- 1 Parts
- 1 Service
- 0 Engine
- 0 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 with the delivery of each unit(s).

Manuals shall be supplied on thumb drives (in PDF format) along with paper manuals.

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I. GENERAL 50 TON TRI-AXLE PAVER STYLE TRAILER SPECIFICATIONS: (Continued)

IV. TRAINING:

Mechanic:

The successful vendor shall provide services of qualified factory trained technicians for not more than 1 training session(s) of not more than 4.5 hours at 1 PENNDOT location(s) 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 1 training session(s) of not more than 3.5 hours at 1 PENNDOT location(s) 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. Training must be completed within 60 days after the dates established in the approved training plan.

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

V. WARRANTY:

Per PCID No. 1075

Trailer per section E 1, Construction Equipment – (2 years).

Trailer per section E. 3 plus the additional specific warranty items.