



STATE OF LOUISIANA  
DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT  
TECHNICAL SPECIFICATIONS FOR

**TRUCK TRACTOR, TANDEM AXLE, 53,200 LBS. GVWR**

**SERIES NO. 158-500**  
**EQUIPMENT SPECIFICATION 158-500C**

**REV. 9/19/2024**

**GENERAL**

This specification sets forth the minimum requirements for a class 8, tandem axle truck tractor with 53,200 lbs. GVWR.

Equipment shall be new, a production model of current manufacture, and must meet all state and Federal safety and emission standards in effect at time of order.

**REPRESENTATIVE SPECIFICATIONS**

An International HX620, with appropriate options and standard features, was used to develop these specifications and establish equivalency evaluation criteria.

Equipment of similar style, type, character, quality, features, and purpose conforming to the following detailed requirements/specifications will be considered. For evaluation purposes, bidders proposing an exception/equivalent option/feature to those specified herein, may be required to provide manufacturer/product information (catalogue sheets, detailed specifications, pictures, etc.). This information will be evaluated against the minimum requirements of this specification. Proposed submittals that are determined not to be equivalent to the established criteria will be rejected.

**LOUISIANA AUTHORIZED DEALER(S)**

Proposed item(s) must be from a manufacturer who has at least one (1) authorized dealer within the State of Louisiana where parts and service can be obtained. Authorized dealer(s) must have properly trained technicians plus all other resources necessary to perform warranty and repair services in complete accordance with the manufacturer's requirements. A letter certifying the ability to meet this requirement, inclusive of the company name(s) and address(es) of the Louisiana authorized dealer(s), should be supplied with the bid submittal and may be required prior to award.

**DELIVERY & ACCEPTANCE**

Vendor shall perform a test run of each unit to verify that all features and capabilities are operating properly at time of delivery. Documentation of testing may be required prior to acceptance by the Department.

Unit(s) must be delivered completely assembled (including all components, accessories, etc.) and ready for operation without any additional preparation including, but not limited to, ensuring all fluid levels are at their full mark, fuel tank(s) is full, all necessary lubrication has been performed, etc. A Louisiana safety inspection shall be performed on each vehicle prior to delivery and a Louisiana safety inspection sticker properly affixed.

Any unit delivered under this specification is subject to rejection if there is evidence of poor workmanship, by either the vendor or the original manufacturer. Noted defects and/or nonconformance findings may



be corrected by the vendor. Corrections must be completed and approved by the Equipment Engineer or his representative prior to final acceptance.

Unit(s) shall be delivered "**on the ground**;" DOTD will not unload nor provide any unloading equipment to the vendor/delivery driver in order to offload the unit(s).

**NOTE:** The Department will have space available for equipment to be unloaded.

**EACH UNIT MUST BE SUPPLIED WITH THE FOLLOWING DOCUMENTATION AT TIME OF DELIVERY:**

1. Notarized Bill of Sale
2. Original Certificate of Origin (MSO), (no photocopy)
3. Dealer's Service Policy
4. Owner's/Operator's Manual(s)
  - a. One (1) Hardcopy
  - b. One (1) Digital Copy
    - i. Acceptable Formats: PDF delivered via USB "Flash Drive", or E-mail
5. Service Manual(s)
  - a. One (1) Hardcopy
  - b. One (1) Digital Copy
    - i. Acceptable Formats: PDF delivered via USB "Flash Drive", or E-mail
6. Build Sheet(s) – as applicable
  - a. One (1) Hardcopy
  - b. Build sheets should be writing in plain language (not company specific codes) and include, at a minimum, all standard & optional features of the delivered unit.

**NOTE:** Invoices will not be processed for payment until the unit(s) have been inspected by the Equipment Engineer or their representative and deemed in compliance with the specifications.

**BID SUBMITTALS**

Any additions, deletions, or variations from the specifications should be noted in the "Bidder's Exceptions" page of this specification. Exceptions that are noted to be less than a minimum requirement will not be accepted.

Any additions, deletions or variations from the manufacturer's standard published specifications should be noted on the "Bidder's Exceptions" page of this specification. Unless otherwise noted, any items appearing in the manufacturer's standard published specifications furnished by the Bidder are assumed to be included in the Bidder's submittal.

Bidder should note on their submittal any installation(s) to the equipment that will be performed by the vendor instead of the manufacturer.

Failure to note any specification exceptions, manufacturer specification alterations, and/or vendor installations prior to award may result in rejection of the equipment at the time of delivery.

**THE NUMBER OF DELIVERY DAYS AFTER RECEIPT OF ORDER (ARO) MAY BE USED AS A FACTOR IN THE AWARD.**

## EQUIPMENT SPECIFICATIONS

### NOTICE TO BIDDERS

Bidder should review the detailed "Equipment Specification" completely and respond to the compliance question at the end of each section by marking "X", in the space provided, for "Yes" or "No". Mark "Yes" to indicate that the equipment bid meets the section exactly as specified. Mark "No" if there are exceptions to any part of that section. Exceptions/deviations to any part of the specification are to be detailed on the "Bidder's Exceptions" page of this specification.

**IN ORDER TO BE CONSIDERED FOR AWARD, BIDDER SHOULD RETURN THIS SPECIFICATION, COMPLETED IN FULL, WITH THEIR BID SUBMITTAL.**

Note: All values listed below are minimums unless noted otherwise.

### 1. Cab & Chassis

1.1. GVWR: 53,200 lbs.

Comply: \_\_\_Yes \_\_\_No

### 1.2. Frame

1.2.1. Frame rails with tapered rear, heat treated alloy steel

1.2.2. 2,000,000 RBM (Resisting Bending Moment) – Bidder should list section modulus and yield strength below

Section Modulus: \_\_\_\_\_ Yield Strength: \_\_\_\_\_

Comply: \_\_\_Yes \_\_\_No

### 1.3. Cab & Axle Positions

1.3.1. Cab to Axle (CA): 134"

1.3.2. Center of rear axle to end of frame (AF): 65"

1.3.3. Wheelbase: 203"

Comply: \_\_\_Yes \_\_\_No

### 1.4. Front Bumper

1.4.1. Full width steel, aluminum or stainless steel front bumper

1.4.2. Tow Hook(s): Two (2) mounted on front of frame

Comply: \_\_\_Yes \_\_\_No

### 1.5. Cab

1.5.1. Conventional day cab

1.5.2. Tinted safety glass

1.5.3. Full width exterior cab mounted sun shade with integral clearance lights

1.5.4. Cab entry handles, driver & passenger side

## EQUIPMENT SPECIFICATIONS

- 1.5.5. Left side back of cab access step
- 1.5.6. Outside mirrors, driver & passenger side
  - 1.5.6.1. Power adjustable
  - 1.5.6.2. 90 sq. in. minimum
  - 1.5.6.3. Heated with integrated turn signals
  - 1.5.6.4. Two (2) adjustable spot mirrors, one (1) per outside mirror
- 1.5.7. Two (2) roof mounted air horns & one (1) standard electric horn
- 1.5.8. Air ride: driver seat, cab suspension
- 1.5.9. Manufacturer's highest level sound insulation package
- 1.5.10. Gauge package including the following gauges:
  - 1.5.10.1. Air cleaner restriction
  - 1.5.10.2. Coolant temperature
  - 1.5.10.3. DEF
  - 1.5.10.4. Fuel
  - 1.5.10.5. Oil pressure
  - 1.5.10.6. Primary and secondary air pressure
  - 1.5.10.7. Speedometer
  - 1.5.10.8. Tachometer
  - 1.5.10.9. Voltmeter
  - 1.5.10.10. Gear indicator
  - 1.5.10.11. Odometer
  - 1.5.10.12. Total engine hours
  - 1.5.10.13. Trip hours
  - 1.5.10.14. Trip odometer
  - 1.5.10.15. Rear axle oil temperature
  - 1.5.10.16. Auto transmission oil temperature
  - 1.5.10.17. Engine oil temperature
- 1.5.11. Dual sun visors
- 1.5.12. Two (2) cup holders, integral to dash
- 1.5.13. 3-point seat belt for each seat. If available, all seat belt webbing should be manufacturer's high visibility color (Orange, Red, Green, or Yellow)
- 1.5.14. Climate control, including : air conditioning, heater, & defroster
- 1.5.15. Power windows & power door locks
- 1.5.16. Tilting and telescoping steering wheel

Comply: \_\_\_ Yes \_\_\_ No

### 1.6. Engine

- 1.6.1. 14.8L, electronic diesel, turbocharged, liquid cooled, 6-cylinder inline configuration
- 1.6.2. 500 HP, 1850 lbs.-ft. torque
- 1.6.3. Engine must include turbo/engine compression exhaust brake
- 1.6.4. To include heavy duty air cleaner
- 1.6.5. To include heavy duty radiator
- 1.6.6. To include on/off fan

## EQUIPMENT SPECIFICATIONS

- 1.6.7. To include power down/shut down for high engine oil or coolant temperature
- 1.6.8. Truck must meet emission standards in place at the time of production
  - 1.6.8.1. If DEF is required, the DEF tank is to be located on drivers side next to fuel tank
  - 1.6.8.2. If required, DEF tank capacity: 7 gallon (minimum)
- 1.6.9. Engine must be biodiesel compatible
- 1.6.10. Horizontal exhaust with vertical tail pipe

Comply:  Yes  No

### 1.7. Fuel System

- 1.7.1. Two (2) Aluminum fuel tanks with drain, 120 gallon minimum each; One (1) tank on each side
- 1.7.2. 200 gallon fuel capacity minimum
- 1.7.3. Davco fuel processor or equal
- 1.7.4. Visual element change indication that is integral to and non-removable from unit
- 1.7.5. Water-in-fuel sensor and with indicator in cab
- 1.7.6. Entire fuel system to be biodiesel compatible

Comply:  Yes  No

### 1.8. Transmission

- 1.8.1. Allison 4500 RDS series 6<sup>th</sup> generation controls: wide ratio, 5 Speed with overdrive, neutral at stop, or Eaton Fuller Endurant automated or equal
- 1.8.2. Must include PTO aperture
- 1.8.3. To be filled with manufacture approved synthetic lubricants

Comply:  Yes  No

### 1.9. PTO

- 1.9.1. Single speed
- 1.9.2. PTO controls to be air operated and compatible with transmission
  - 1.9.2.1. Inside cab activated by dash mounted factory upfitter switch
  - 1.9.2.2. Indication of PTO engagement should be accomplished by lighted switch or separated dash mounted indicator light

Comply:  Yes  No

### 1.10. Hydraulics

- 1.10.1. Dual line wet kit
- 1.10.2. Hydraulic tipper valve
- 1.10.3. Direct mounted pump with a 17 GPM at 2500 PSI capacity
- 1.10.4. Minimum 40 gallon reservoir
- 1.10.5. Supply and return hoses must be long enough to reach end of frame rails and have dry-break quick disconnects (Parker-Hannifin FC-752-12FO nipple with mating half, or approved equal)

## EQUIPMENT SPECIFICATIONS

Comply: \_\_\_\_ Yes \_\_\_\_ No

### 1.11. Front Axle/Suspension

- 1.11.1. Meritor MFS-13-143A wide track, I-beam or approved equivalent
- 1.11.2. Spring parabolic taper leaf, shackle type
- 1.11.3. Integral power steering
- 1.11.4. Shock absorbers
- 1.11.5. Set back
- 1.11.6. Minimum 12,000 lbs. GAWR at tire/ground interfaces
- 1.11.7. Stemco wet-type visible cap axle seals or approved equal
- 1.11.8. To be filled with manufacture approved synthetic lubricants

Comply: \_\_\_\_ Yes \_\_\_\_ No

### 1.12. Rear Axle/Suspension

- 1.12.1. Heavy duty tandem, Meritor MT-40-14X-4DFR-P or approved equal
- 1.12.2. In-cab controlled air ride
- 1.12.3. 40,000 lbs. GAWR at tire/ground interfaces
- 1.12.4. 55" nominal axle spacing
- 1.12.5. Shock absorbers
- 1.12.6. One (1) rear drive axle differential lock
- 1.12.7. To be filled with manufacture approved synthetic lubricants
- 1.12.8. Transmission and axle ratio shall be 3.70 or selected by manufacturer for performance to be optimized at 65 while permitting truck to operate up to 75 MPH Maximum on highway without excessive engine speed.

Comply: \_\_\_\_ Yes \_\_\_\_ No

### 1.13. Fifth Wheel

- 1.13.1. 44,000 lbs. vertical load capacity
- 1.13.2. 150,000 lbs. draw bar pull
- 1.13.3. Tilt or no tilt selectable
- 1.13.4. Mounted 4.0" inches ahead of rear axle centerline
- 1.13.5. 48" installed height
- 1.13.6. Mounting must be capable of withstanding rated loading

Comply: \_\_\_\_ Yes \_\_\_\_ No

### 1.14. Brakes

- 1.14.1. Dual air disc brake system with automatic traction control
- 1.14.2. ABS brake system with two axle parking brakes
- 1.14.3. System to include an 18 CFM air compressor
- 1.14.4. Bendix AD-HF air dryer or equal
- 1.14.5. Independent emergency brakes
- 1.14.6. Color coded air lines

## EQUIPMENT SPECIFICATIONS

**1.14.7.** Hand control air valve mounted in instrument panel

**1.14.8.** Parking brake control, yellow and red knobs mounted on instrument panel

**Comply:** \_\_\_ Yes \_\_\_ No

**1.15.** Collision Mitigation System: Bendix Wingman or approved equal

**1.15.1.** Enhanced collision mitigation

**1.15.2.** Multilane auto and stat vehicle braking

**1.15.3.** Stat object alert

**1.15.4.** Roadway and lane departure warning

**1.15.5.** Overspeed alert

**1.15.6.** Driver display

**Comply:** \_\_\_ Yes \_\_\_ No

**1.16.** Wheels

**1.16.1.** Hub piloted steel wheel

**1.16.2.** Front size – 8.25 x 24.5

**1.16.3.** Rear size – 8.25 x 24.5

**1.16.4.** 10-Stud flanged nut

**1.16.5.** White powder coat

**Comply:** \_\_\_ Yes \_\_\_ No

**1.17.** Tires

**1.17.1.** First line, first quality

**1.17.2.** Front - Single highway tread: 11R24.5

**1.17.3.** Rear - Dual on/off road tread: 11R24.5

**1.17.4.** Load ratings must meet or exceed GVWR of vehicle

**Comply:** \_\_\_ Yes \_\_\_ No

**1.18.** Electrical System & Lights

**1.18.1.** 12-volt system

**1.18.2.** 160-amp alternator

**1.18.3.** Batteries with a minimum 1980 CCA combined

**1.18.4.** Aluminum battery box

**1.18.5.** Remote jump start studs, with tethered protective caps, located outside of the battery box

**1.18.6.** Battery disconnect switch, located inside cab, near driver's seat, similar to the below picture.

## EQUIPMENT SPECIFICATIONS



**1.18.7.**

**1.18.8.** Four (4) dash mounted, rocker-style, factory installed, body circuit switches (upfitter switches) for simple on/off functions for accessories (PTO, warning lights, etc.).

**1.18.9.** All exterior lighting, except headlights, should be LED

**1.18.10.** Headlights:

**1.18.10.1.** Automatic daytime running lights

**1.18.10.2.** Automatic on if windshield wipers are turned on

**1.18.10.3.** Automatic on with low ambient light levels

**1.18.10.4.** Warning buzzer/alarm when headlight switch is on and ignition switch is in off position

**1.18.11.** Cruise control shall be governed to 72 MPH maximum

**1.18.12.** Intermittent windshield wipers with washers

**1.18.13.** Self-cancelling directional signals

**1.18.14.** Backup alarm, 97 dba

**1.18.15.** AM/FM/WB radio with auxiliary front input, Bluetooth/hands free function and steering wheel controls

**1.18.16.** Two (2) 12V accessory power outlets with covers, mounted in dash (for cell phone chargers, GPS devices, etc.)

**Comply:** \_\_\_ Yes \_\_\_ No

**1.19.** Headache Rack

**1.19.1.** Heavy duty, aluminum, adequately braced

**1.19.2.** Headache rack is to have opening to view through the rear glass of the cab with bars to protect glass

**1.19.3.** Headache rack is to have racks to store chains

**1.19.4.** Headache rack to include a beacon light mount which extends 12 to 15 inches above roof of the cab

**Comply:** \_\_\_ Yes \_\_\_ No

**1.20.** Paint

**1.20.1.** Cab: Manufacturer's standard white

**1.20.2.** Chassis: Manufacturer's standard black

**Comply:** \_\_\_ Yes \_\_\_ No

**1.21.** Safety Lighting

**1.21.1.** To be installed by vendor

**1.21.2.** One (1) 60" full size green/amber light bar mounted to top of headache rack (see picture below)



## EQUIPMENT SPECIFICATIONS



**1.21.2.1.**

**1.21.2.2.** SoundOff Signal nRoads Full Size or equal

**1.21.2.3.** Length: 60" (length is nominal and +/- 1" is acceptable)

**1.21.2.4.** Flash pattern must be capable of alternating between an asymmetric, low frequency, "wig-wag" pattern and a low-frequency double or quad flash.

**1.21.2.5.** UV resistant clear polycarbonate lens

**1.21.2.6.** 10-16 VDC

**1.21.2.7.** Light bars shall meet all applicable federal/state laws and regulations

**1.21.2.8.** Shall be SAE J845 360-degree Class 1 certified

**1.21.2.9.** Modules & Diodes

**1.21.2.9.1.** All modules shall be capable of fully displaying both colors

**1.21.2.9.2.** 6 - 8 inboard modules, 12 diodes per module (equal number of green & amber)

**1.21.2.9.3.** 4 corner modules, 18 diodes per module (green & amber)

**1.21.2.10.** Alley, takedown, puddle, and stop/tail/turn modules not required.

**1.21.2.11.** Programmable via Windows PC software

**1.21.2.12.** Capable of dimming automatically via photo-sensor

**1.21.2.13.** Life expectancy: 7+ years

**1.21.2.14.** Control

**1.21.2.14.1.** Light bar to be controlled by individual toggle switches or light manufacturers light controller. Either is acceptable provided as long as DOTD requested flash patterns can be achieved.

**1.21.3.** Four (4) front facing perimeter green/amber lights at grill corners (see picture below) and two (2) rear facing perimeter green/amber lights on back of headache rack (see picture 1.21.2.1 above)

## EQUIPMENT SPECIFICATIONS



**1.21.3.1.**

**1.21.3.2.** Brooking Industries M16 surface mount perimeter lighthouse or equal

**1.21.3.3.** Size: Length: 4.5-5.5 in., Height: 1.0-2.0 in., Depth: 0.3-0.5 in.

**1.21.3.4.** 12-24 VDC

**1.21.3.5.** UV resistant clear polycarbonate lens, black bezel trim

**1.21.3.6.** 16 diodes, dual color, equal number of green & amber (interleaved 8x8)

**1.21.3.7.** Lighthouse must be capable of displaying each color across full length

**1.21.3.8.** Capable of alternating between an asymmetric, low-frequency, "wig-wag" pattern and a low-frequency double or quad flash

**1.21.3.9.** Lighthouse shall meet all applicable federal/state laws and regulations

**1.21.3.10.** Shall be SAE J595 Class 1 certified

**NOTE: Vendor to contact DOTD Equipment Section for safety light requirements and flash pattern prior to installation.**

Comply: \_\_\_ Yes \_\_\_ No

**1.22. FMCSA/DOT Mandated Safety Items**

**1.22.1.** One (1) UL listed, 5 B:C rated, or higher, fire extinguisher securely mounted in cab

**1.22.2.** One (1) set of three (3) bidirectional reflective triangles conforming to FMVSS No. 125

**1.22.3.** At least one (1) spare fuse for each type/size used in the truck

Comply: \_\_\_ Yes \_\_\_ No

