

# STATE OF LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT TECHNICAL SPECIFICATIONS FOR

### TRUCK, CAB & CHASSIS, 37,000#GVWR W/GRAPPLE BOOM AND DUMP BODY

# SERIES NO. 173-000 EQUIPMENT SPECIFICATION 173-000A

REV. 12/29/2023

#### GENERAL

This specification sets forth the minimum requirements for a single axle medium/heavy class truck chassis, 37,000 lbs. GVWR, with a debris dump body and grapple boom.

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**

A Kenworth T480 with a Palfinger Epsilon M110L97 Loader Grapple, both 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, bidder's 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 <u>within the</u> <u>State of Louisiana</u> 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:

- 1. Notarized Bill of Sale
- 2. Certificate of Origin (MSO)
- 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: 37,000 lbs.

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

#### 1.2. Frame

- **1.2.1.** Single channel heat treated alloy steel main frame rated at minimum 120,000 PSI
- 1.2.2. 1,800,000 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 center of axle (CA): 192"clear, min.\*
- **1.3.2.** Center of axle to end of frame (AF): 111" min.\*
- **1.3.3.** \*Truck vendor and body manufacturer/upfitter shall coordinate in selecting the CA & AF that works with the required body length and ensures proper load distribution to the front and rear axles in accordance with manufacturer specifications and industry practice. The required AF must be achieved with factory frame rails. Frame extensions to meet the required AF are not allowed. (See section 3.3).

**Note:** For the purposes of this solicitation, set-forward-axle (SFA) is considered equal to set-back-axle (SBA); however, SBA is the preferred option

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

1.4. Front Bumper

**1.4.1.** Full width all-steel front bumper

1.4.2. Two (2) frame mounted tow hooks, one on each frame rail



# **EQUIPMENT SPECIFICATIONS**

### 1.5. Cab

- **1.5.1.** Conventional day cab
- 1.5.2. Tinted safety glass
- 1.5.3. Cab entry handles, driver & passenger side
- **1.5.4.** Outside mirrors, driver & passenger side
  - 1.5.4.1. Power adjustable
    - 1.5.4.2. 90 sq. in. minimum
    - **1.5.4.3.** Heated with integrated turn signals
    - 1.5.4.4. Two (2) adjustable spot mirrors, one (1) per outside mirror
- 1.5.5. One (1) single trumpet air horn & one (1) standard electric horn
- **1.5.6.** Air ride vinyl seats (driver & passenger), with floor mounted center console
- 1.5.7. Manufacturer's highest level sound insulation package
- **1.5.8.** Gauge package including the following gauges:
  - 1.5.8.1. Coolant temperature
  - 1.5.8.2. DEF
  - 1.5.8.3. Fuel
  - 1.5.8.4. Oil pressure
  - 1.5.8.5. Air pressure
  - 1.5.8.6. Speedometer
  - 1.5.8.7. Tachometer
  - 1.5.8.8. Voltmeter
  - 1.5.8.9. Gear indicator
  - 1.5.8.10. Odometer
  - 1.5.8.11. Engine hours
  - 1.5.8.12. Trip odometer
  - 1.5.8.13. Auto transmission oil temperature
- **1.5.9.** Dual sun visors
- **1.5.10.** Two (2) cup holders
- **1.5.11.** 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).
- 1.5.12. Climate control, including air conditioning, heater, & defroster
- 1.5.13. Power windows & power door locks

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

- 1.6. Engine
  - 1.6.1. 8.9 L, electronic diesel, turbocharged, liquid cooled
  - 1.6.2. 330 HP, 1,000 FT-LBS @ 1,200 RPM
  - 1.6.3. Engine to include engine exhaust brake
  - 1.6.4. Horizontal exhaust

- 1.7. Fuel System
  - **1.7.1.** One (1) aluminum fuel tank with 50-gallon capacity (min.)



# **EQUIPMENT SPECIFICATIONS**

- **1.7.2.** Fuel/Water separator mounted to outside of frame
- **1.7.3.** Entire fuel system must be biodiesel compatible
- 1.7.4. Emission system must include DEF
  - **1.7.4.1.** DEF tank to be located on driver's side next to fuel tank
  - 1.7.4.2. DEF tank must have a minimum capacity of 6 gallons

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

#### 1.8. Transmission

- **1.8.1.** 6-Speed Automatic, Allison 3500 (preferred), or Allison 3000, or equal, with PTO provision
- 1.8.2. To be filled with manufacturer approved synthetic lubricants

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

### 1.9. PTO

- 1.9.1. PTO must be activated by dash mounted factory upfitter switch
- **1.9.2.** Hot shift PTO with direct mount, single circuit hydraulic pump
- **1.9.3.** Indication of PTO engagement should be accomplished by lighted switch or separate dash mounted indicator light

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

#### 1.10. Front Axle

- 1.10.1. Setback, 12,000 lbs. GAWR @ ground capacity with 4 in. drop
- **1.10.2.** Heavy Duty Shock absorbers
- 1.10.3. Taper leaf Springs
- **1.10.4.** Stemco, wet-type visible cap axle seals
- 1.10.5. Integral power steering
- 1.10.6. To be filled with manufacturer approved synthetic lubricants

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

#### 1.11. Rear Axle

- 1.11.1. Minimum 25,000 lbs. GAWR @ ground capacity single axle with 25,000 lbs. spring capacity
- **1.11.2.** Equipped with hub piloted steel hubs, outboard mount type brake drums
- **1.11.3.** Gear ratio installed must be capable of 70 MPH +/- 2 MPH geared road speed at full engine governed RPM
- **1.11.4.** Will be equipped with driver controlled differential lock (DCDL) with warning light and buzzer to indicate engagement located on dash.
- 1.11.5. Shock absorbers
- **1.11.6.** To be filled with manufacturer approved synthetic lubricants



# **EQUIPMENT SPECIFICATIONS**

#### 1.12. Brakes

- **1.12.1.** Full air disc brake system, ABS brake system with traction control
- 1.12.2. 18.7 CFM air compressor
- 1.12.3. Bendix air dryer or approved equal
- 1.12.4. Single rear brakes included w/rear hub package
- 1.12.5. Spring Brake: 3030 long stroke dual 30 square inches travel

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

- 1.13. Wheels & Tires
  - **1.13.1.** First line, first quality tires, size 11R22.5
    - 1.13.1.1. Front tires single highway tread
    - 1.13.1.2. Rear tires dual on/off road tread
  - 1.13.2. Combined load ratings must be compatible with axle ratings and GVWR

- 1.14. Chassis Electrical System & Lights
  - 1.14.1. 12-volt system
  - 1.14.2. 180-amp brushless alternator
  - 1.14.3. Three (3) batteries with 2700 CCA combined
  - **1.14.4.** Aluminum battery box
  - 1.14.5. Remote jump start studs, with tethered protective caps
  - **1.14.6.** Battery disconnect switch, located inside cab, near driver's seat, similar to the below picture.



- **1.14.7.** Four (4) dash mounted, rocker-style, factory installed, body circuit switches (upfitter switches) for simple on/off functions for accessories (PTO, warning lights, etc.; one (1) assigned to activate the PTO; one (1) assigned to operate the flashing warning lights; one (1) assigned to operate work lights, and one (1) blank to be assigned by DOTD personnel.
- 1.14.8. All exterior lighting, except headlights, should be LED
- 1.14.9. Headlights:



# EQUIPMENT SPECIFICATIONS

- 1.14.9.1. Automatic daytime running lights
- 1.14.9.2. Automatic on with low ambient light levels
- 1.14.9.3. Automatic on if windshield wipers are turned on
- 1.14.9.4. Warning buzzer/alarm when headlight switch is on and ignition switch is in off position
- **1.14.10.** Roof mounted clearance marker lights
- 1.14.11. Cruise control
- **1.14.12.** Intermittent windshield wipers with washers
- 1.14.13. Self-cancelling directional signals
- 1.14.14. Backup alarm, 97 dba
- 1.14.15. AM/FM radio with auxiliary front input, Bluetooth/hands free function and steering wheel controls
- 1.14.16. 110V power outlet
- **1.14.17.** Two (2) 12V accessory power outlets with covers, mounted in dash (for cell phone chargers, GPS devices, etc.). One (1) 12V power outlet and one (1) USB charging outlet will also satisfy this requirement.

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

1.15. FMCSA/DOT Mandated Safety Items

- **1.15.1.** One (1) UL listed, 5 B:C rated, or higher, fire extinguisher securely mounted in cab
- 1.15.2. One (1) set of three (3) bidirectional reflective triangles conforming to FMVSS No. 125
- 1.15.3. At least one (1) spare fuse for each type/size used in the truck

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

#### 2. Loader and Grapple

2.1. Capacities

- **2.1.1.** Net lifting moment: 75,970 ft. lbs.
- 2.1.2. Horizontal Reach: 31'6"
- 2.1.3. Vertical Reach (depth)
  - **2.1.3.1.** \*Boom must have reach depth of 20' below loader base (see depiction below for reference)

\*Note: The reach of depth should be from base of the loader which is mounted to the trucks chassis to a depth of 20ft below. This depth requirement is needed to remove debris and other material around bridge pilings and other drainage structures with the ability to load and haul material in the debris body. The chart shown below represents the required range.



# **EQUIPMENT SPECIFICATIONS**



#### 2.1.4. Loader reach below base:



# EQUIPMENT SPECIFICATIONS

### 2.2. Extension Length/System

- 2.2.1. 10'4" double extension
- **2.2.2.** Extension cylinder, hoses and pipes shall be located inside the outer boom and extension sections. No external hoses, pipes or cylinders are acceptable.
- 2.2.3. Extension system shall have adjustable wear pads and guide blocks

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

- 2.3. Hydraulic system
  - 2.3.1. 3,410 PSI main system pressure
  - **2.3.2.** 2 x 18 GPM pumps
  - 2.3.3. High pressure filter

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

- 2.4. Crane Base and Stabilizers
  - 2.4.1. Stabilizers shall be of an "H-Frame" design
  - **2.4.2.** Stabilizers in/out and up/down functions shall be hydraulically and independently controlled via lever controls at both operator control stations

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

- 2.5. Operator's Station and Controls
  - **2.5.1.** Crane base to have stand up operator control station platform on curb side, clear view of the entire hopper for loading
  - 2.5.2. Control station platforms to have perforated steel grip
  - **2.5.3.** Control station platforms to have pivoting safety bar on outside edge of platform for operator safety
  - 2.5.4. Each control station to have emergency stop button and toggle switch for truck rpm +/- throttle control
  - 2.5.5. Each control station to have bullseye style bubble levels
  - 2.5.6. Single bank manual lever control valve at control station
  - **2.5.7.** Single bank cable control levers street side control station
  - 2.5.8. LCD display hour counter and service timer
  - 2.5.9. Wireless radio remote control with joystick controls

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

#### 2.6. Column & Slewing

- 2.6.1. 19,910 ft. lbs. net slewing torque (minimum)
- **2.6.2.** 425° rotation, capable of 8 rotations/minute full flow
- 2.6.3. Solid cast crane column
- 2.6.4. Slewing derived via a solid double rack slewing system
- 2.6.5. Slewing racks immersed in oil bath with self-aligning roller bearing
- 2.6.6. End of stroke dampening for precision slewing control
- 2.6.7. Divided slewing pistons on ends of racks for easy service of piston



# EQUIPMENT SPECIFICATIONS

### 2.7. Main & Outer Boom

- 2.7.1. Main boom lift cylinder shall have a sliding steel guard to protect the cylinder load from damage
- **2.7.2.** Main boom section to have raised sides to create a protective recess for the steel hydraulic lines and hoses on the top of the main boom
- **2.7.3.** All line and hose connections on the top of the main boom shall be staggered and elevated off the top of the main boom structure for ease of service
- **2.7.4.** Loader shall have a linkage system between main and outer boom to provide a consistent rate of movement and load capacity throughout the arc of the loader's movement at a given horizontal reach. The load capacity at a given horizontal reach shall deviate more than 2.5% when evaluated at 0' vs. 10' elevation from ground level.
- **2.7.5.** Outer boom cylinder shall be mounted above the main and outer boom to help protect cylinder from contact with truck body and body debris (TOP MOUNTED CYLINDERS)
- 2.7.6. Outer boom shall articulate up an additional 25 degrees in relation to the main boom
- **2.7.7.** All bushings in the arm system shall be bronze and incorporate grease channels to maximize lubrication and maintenance

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

- 2.8. Suspension Link and Rotator
  - **2.8.1.** Cast steel suspension with open center for routing of rotator hoses. Hose routing outside of the suspension link is not acceptable.
  - **2.8.2.** Dual pin suspension link design at the attachment points where the link attaches to the loader extension section
  - **2.8.3.** 10-ton Epsilon Rotator model RB10F or approved equal
  - 2.8.4. 360° continuous rotation
  - 2.8.5. Rotator shall have side and bottom ports
  - **2.8.6.** Bolt on steel guard plate covering the hose fitting connections and ports on the rotator

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

#### 2.9. Grapple

- **2.9.1.** Bakker BDV100-42 or approved equal
- **2.9.2.** Clamshell, butt-style grapple
- **2.9.3.** 42" wide jaws
- 2.9.4. Bolt-on HARDOX steel cutting edges for jaws
- 2.9.5. 64" open width
- **2.9.6.** 6,744 ft. lbs. of closing force
- 2.9.7. Two (2) cylinder open/close design
- 2.9.8. Cylinders protected by steel plates underneath cylinders and grapple head above cylinders
- 2.9.9. Bolt-on grapple head for easy servicing of cylinders and hydraulic components
- **2.9.10.** 4,000 lbs. snap in load hooks on each side of grapple head
- **2.9.11.** Cylinder hoses routed through bottom ports on rotator and through top opening on grapple head assembly. Rotator side port hose routing not acceptable.



# EQUIPMENT SPECIFICATIONS

### 3. Body

- 3.1. Body shall be BeauRoc MPHD series body or approved equal
- 3.2. Debris capacity of 30 cu. yds. (min.)
- **3.3.** 20' length, min.
  - **3.3.1.** Length of body can be greater to insure the boom & grapple can rest inside for transport. Manufacturer & upfitter must consider this when selecting the chassis cab-to-axle & AF. (See section 1.3).
- 3.4. 72" high sides
- **3.5.** Side height shall taper down to a height of 60" near the front of the body to allow for loader arm clearance
- **3.6.** Side taper shall begin downwards at 58" from the front sheet and shall finish at 60" high at 34" from the front sheet.
- **3.7.** 72" high tailgate
- 3.8. Minimum ¼" HARDOX 450 floor
- 3.9. 86" floor width at front of body and 88" floor width at rear of body, tapered to assist in load breakaway
- **3.10.** Floor sheet to side sheet transition shall be constructed with a knee brace at angles upward from the floor to the side at 57 degrees
- **3.11.** Long sills shall be 8" x 18.4 lbs. I-beam structural steel with an outside support flange to support the floor with as wide a span as possible.
- 3.12. Body shall be crossmember-less
- 3.13. Minimum 3/16" HARDOX 450 front bulkhead
- **3.14.** Front bulkhead shall be constructed of 2 overlapping pieces with a formed recess, 12 ¼" deep by 17 ¼" wide, to house the trunnion mount hoist.
- **3.15.** The formed recess shall have chamfered 45° corners on the two front edges and the two rear edges to reduce stress points (no exceptions).
- **3.16.** Front bulkhead shall be designed with 7.5" x 7.5" 45° front corners for reduced wind resistance and aid in avoidance of exhaust interference issues (no exceptions).
- **3.17.** Front sheet to floor transition shall be a welded piece of steel at approximately 45° for easy cleanout. Transition steel shall be a minimum of 7-gauge HARDOX 450 steel (no exceptions).
- 3.18. Minimum 3/16" HARDOX 450 sides
- **3.19.** Side design shall include a formed side sheet plus a separate structural steel top rail and separate formed rub rail.
- **3.20.** Side shall be formed with a two-bend pressed-in horizontal brace to increase rigidity (no exceptions).
- **3.21.** Lower rub rail shall be a minimum of 3/16" high tensile steel, formed and welded to the side sheet and floor.
- **3.22.** Lower rub rail shall be dirt shedding with an angle of 40° and shall have a 90° end face of 3" high (rub rails finishing in a point or rounded edge are not acceptable)
- **3.23.** Top rail shall be a 4"x4"x1/4" minimum thickness structural tube
- **3.24.** Each side shall consist of one front post, minimum 10-gauge steel and one rear post of one-piece construction fabricated out of a structural tube of 12"x8"x3/8".
- **3.25.** Minimum 5/32" HARDOX 450 rear tailgate door
- 3.26. Tailgate shall be of manual side opening design ("Barn Door Style")
- **3.27.** Tailgate wear surface shall be a single piece, fully formed, with one pressed-in horizontal brace
- **3.28.** Tailgate outer frame shall consist of single, dirt shedding formed upper and lower brace. Outer side bracing shall be 3"x4"x1/4" structural tubing. Weld-on intermediate horizontal and/or vertical braces are not acceptable due to decrease resistance of tailgate plate to deformation.
- **3.29.** Side opening hardware shall consist of three side opening hinges with 1 ¼" diameter x 16 ½" long hinge pins



# **EQUIPMENT SPECIFICATIONS**

- 3.30. Hinge pins to have (2) grease zerks per pin
- 3.31. Tailgate latch shall be equipped with an ergonomic handle and must have a spring-loaded return for safety
- 3.32. All body seams to be 100% fully welded. No exceptions.
- **3.33.** Body shall have a low mounting front telescopic hoist with full nitrided cylinder surface
- **3.34.** Hoist cradle shall be 45 ton
- 3.35. Cradle frame shall consist of front and back frame rails of a minimum of 4"x2"x1/4" structural tubing
- **3.36.** Cylinder base mounting blocks shall be a minimum of 2" wide and shall have bolted on caps for easy cylinder replacement.
- **3.37.** Body shall have a 35-45 ton rear hinge assembly. Hinge assembly to be constructed of 4"x4"x3/8" structural angle with 2 1/4"x7 1/8" tempered steel hinge pins and 3" thick x 7 5/8" tempered steel hinge blocks/pivots. Fixed hinge blocks shall be 1 1/2"x4". Bearing points shall be greaseable.
- 3.38. Pivot blocks shall be adjustable with a bolt-on cap for easy pin replacement
- **3.39.** Rear truck frame and hinge area to have minimum 3/16" steel cover plate from bottom of hinge assembly angle to bottom of truck frame channel
- 3.40. Body shall have a single body prop
- 3.41. Body shall be sandblasted and primed with a 2-part epoxy primer at a minimum thickness of 4 mils
- 3.42. Primer salt spray resistance
- 3.43. Body to be painted with an industrial grade enamel gloss black paint

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

3.44. Lights & Electrical

- **3.44.1.** Lamps to be rubber-mounted snap-in shock-proof type with plug in connectors
- 3.44.2. Work Lights
  - **3.44.2.1.** All wiring and cables should be secured and protected with loom where possible. Rubber grommets shall be used where wires and cables penetrate any cab panels, body panels, or chassis structure. All cab and body penetrations shall be adequately sealed to prevent water from entering.
  - 3.44.2.2. Two (2) adjustable LED work lights
  - One (1) mounted on the grapple arm
  - One (1) mounted near the debris body

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

3.45. High Visibility Conspicuity Tape

**3.45.1.** DOT C2 approved high visibility reflective conspicuity tape, 2" wide, with alternating 6" segments of red and white, shall be placed along each side of the carrier bed and along the rear of the vehicle.

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

#### 3.46. Accessories

**3.46.1.** Back up camera with rearview mirror/monitor

**3.46.2.** Truck shall have truck-frame bolted, spring loaded mud flap brackets with DOT compliant mud flaps

3.46.3. Truck shall have a frame mounted lockable steel toolbox



# **EQUIPMENT SPECIFICATIONS**

4. Paint: Manufacturer's standard



# **BIDDER'S EXCEPTIONS**

**Instructions:** Bidder should note all exceptions in space provided below. List the detail number from the aforementioned specification in the column to the left and the exception in the column to the right. Responses may be typed or hand-written. Handwritten responses must be legible. If additional space is needed, please print a duplicate copy of this sheet. "Bidder's Exceptions" page(s) should be returned with the bid submittal.

Examples:

1.6	Engine has 325 horsepower
1.18.3	Batteries have 2000 CCA combined.
2.2.8	Crossmembers are 4" channel on 12" centers.

Spec./Detail	
Reference	Exception