



STATE OF LOUISIANA  
DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT  
TECHNICAL SPECIFICATIONS FOR  
**DIRECTIONAL BORING MACHINE & TRAILER SYSTEM**

**SERIES NO. 254-000**  
**EQUIPMENT SPECIFICATION 254-000B**

**REV. 1/26/2024**

**GENERAL**

This specification sets forth the minimum requirements for a self-powered track mounted directional boring machine and trailer system.

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 Vermeer 20X22 S3 with a Belshe Trailer 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 at least ¼ tank full, all necessary lubrication has been performed, etc.

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 written 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. Boring Machine

- 1.1. Self-contained/self-propelled track mounted for directional horizontal fluid assisted boring system
- 1.2. Surface launch position for trenchless installations: Locator (on surface) and a transmitter (in down hole tool) to obtain location and guidance
- 1.3. Dimensions
  - 1.3.1. Length: 207" (max)
  - 1.3.2. Width: 51.5" (max)

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

### 1.4. Operating Requirements

- 1.4.1. Spindle speed: 200 RPM
- 1.4.2. Spindle torque: 2,000 ft.-lbs. (min)
- 1.4.3. Actual thrust minimum 16,000 lb.
- 1.4.4. Pullback minimum 16,000 lb.
- 1.4.5. Mechanical cutting action with fluid assist
- 1.4.6. Separate thrust/pullback and rotation levers
- 1.4.7. Disables rotation and thrust/pullback system functions when operator leaves seat
- 1.4.8. Emergency stop button on drill to shut down power
- 1.4.9. Drill pipe hydraulic breakout device standard with drill unit
- 1.4.10. Battery disconnect

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

### 1.5. Drilling Requirements

- 1.5.1. 74 HP, diesel engine
- 1.5.2. Two (2) anchors automatically installed through a plate with hydraulic driving mechanism
- 1.5.3. Drill to carry a minimum 40 drill stem sections, 10' in length
- 1.5.4. Drill stem total length: 400'
- 1.5.5. Equipped with automated pipe loader system
- 1.5.6. Bore

## EQUIPMENT SPECIFICATIONS

1.5.6.1. Initial bore diameter of 3.5" expandable by back reaming to 12"

1.5.6.2. Transmitter should be detectable to a depth of minimum 30'

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

### 1.6. Drill Tool

1.6.1. Drill pipe 10ft

1.6.2. Drill pipe tubing: 1.9" diameter

1.6.3. Pipe must come supplied with protective caps and plugs

1.6.4. Unit to include stabilizer bar (starter rod) with quick connect coupling

1.6.5. Directional head capable of accepting different fluid nozzles and cutting bits

1.6.6. Mechanical cutting action

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

### 1.7. Downhole Tools

1.7.1. Two (2) side loading becon/sonde housings (with becon/sondes as described in the specification) with a 4" and 6" stepped double sided carbide bits

1.7.2. 8" and 12" triple wing back reamers with connect adapters

1.7.3. 6" fluted cone for boring in sand

1.7.4. Two (2) pull back swivels and pulling sub, rated at 20,000 lbs.

1.7.5. Two (2) each: 1", 2" and 3" pulling plugs

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

### 1.8. Hydraulic System

1.8.1. Two (2) Hydrostatic pumps

1.8.1.1. Two (2) gear pumps for auxiliary functions

1.8.2. 30 gallon steel tank

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

### 1.9. Electrical Strike System

1.9.1. Drill frame equipped with and electrical strike system

1.9.2. Indicates and electrical strike through both current sensing and voltage sensing

1.9.3. Warning system on both drill frame and power unit

1.9.4. Unit equipped with standard jobsite safety cones

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

## 2. Locating Equipment

2.1.1. Downhole transmitter DigiTrak Beacon or approved equal

2.1.1.1. Capable of transmitting to the receiver: Depth, roll-angle, pitch, beacon battery status, and beacon temperature range

2.1.1.2. Beacon temperature must be displayed

## EQUIPMENT SPECIFICATIONS

### 2.1.2. Digitrak F2 Tracker

- 2.1.2.1. Receiver must have digital screen that displays depth in feet/inches and selectable by operator
- 2.1.2.2. Receiver equipped with a transceiver to send all beacon information to a digital remote display at drill unit
- 2.1.2.3. Remote capable of displaying roll angle and pitch of boring head on receiver
- 2.1.2.4. Battery charger with additional battery

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

### 3. Drilling Fluid System

- 3.1. Trailer mounted
- 3.2. Gas powered, 5.5 HP engine
- 3.3. Integrated mixing hopper
- 3.4. Drilling fluid pump
  - 3.4.1. Flow rate: 25 GPM
  - 3.4.2. Variable flow from 0 – 25 GPM; variable normal back reaming flow from 0 – 25 GPM
  - 3.4.3. Fluid pressure and flow controlled from operator station
  - 3.4.4. Fluid system must be self-contained within the drill unit
  - 3.4.5. Fluid tank capacity: 500 gallons
  - 3.4.6. Equipped with antifreeze tank for mud system
  - 3.4.7. 50' Hose (machine to tank)
- 3.5. Wash down system with spray wand

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

### 4. Trailer

- 4.1. GVWR: 20,000 lbs.
  - 4.1.1. Trailer must have adequate capacity to carry directional boring machine, 200ft. drill pipe and racks, fluid package including fluid pump, 500 gallon tank and power package
- 4.2. Tandem heavy duty Belshe axles
- 4.3. Leaf spring suspension
- 4.4. Dimensions:
  - 4.4.1. Deck Length: 16'
  - 4.4.2. Dovetail length: 33"
  - 4.4.3. Overall width 102"
- 4.5. Wheels/Tires
  - 4.5.1. 17.5", 10-Bolt
  - 4.5.2. 235/75R 17.5
- 4.6. Other Features/Accessories
  - 4.6.1. 5' Spring assist steel ramps
  - 4.6.2. Lockable tool box mounted on the trailer for tool storage
  - 4.6.3. Pintle hitch, adjustable height
  - 4.6.4. D-rings
  - 4.6.5. Fenders

## EQUIPMENT SPECIFICATIONS

- 4.6.6. 12,000 lb. drop leg jack
- 4.6.7. LED sealed wiring harness and LED lighting
- 4.6.8. Electric Brakes
- 4.6.9. Mounted spare tire
- 4.6.10. 3/8" Safety tongue chains
- 4.6.11. All required straps, chains, binders to safely secure machinery to trailer

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

