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ADDENDUM 002
Aerials/Digger Derricks
Request for Bid 3-141210TV

Bidders should acknowledge receipt of Addendum 002 (TWO) by **signing** and **including it** with the original bid. The due date for receipt of bids was extended by Addendum 001 to **December 18, 2014** at 2:00PM Local Time. Accordingly, the following clarifications, questions and answers are believed to be of general interest to all potential Bidders. All other terms and conditions remain unchanged and in full force.

Name and Title of Signer (Print or type)	Name and Title of Department Authority Name: Tom Veasman Title: Sr. General Services Specialist
Bidder Signature (Signature of person authorized to sign)	Department of Transportation Tom Veasman (Authorizing Signature)
Date Signed:	Date Signed: December 4, 2014

The Specification for the **70' TRUCK MOUNTED AERIAL PLATFORM DEVICE, FRONT MOUNTED TURRET** in the original Request for Bid preceding the ITEM #3 Pricing Pages shall be removed and replaced with the Specification included with this addendum.

70' TRUCK MOUNTED AERIAL PLATFORM DEVICE, FRONT MOUNTED TURRET (with MoDOT Provided Cab/Chassis)

I. CONFIGURATION

A. UNIT

1. Aerial device shall include base assembly supporting front mounted rotating turret, hydraulically powered continuous rotation mechanism.
2. Boom shall consist of three sections with two sections telescoped hydraulically.
3. The boom shall attain an arc of travel no less than 80 degrees above horizontal to 18 degrees below horizontal, 98 degrees total.
4. All sharp edges on the unit and the boom(s) shall be rounded off for safety.

B. PLATFORM

1. Aerial device shall be provided with one rotating platform manufactured of steel.
2. Platform shall include a hydraulic rotator capable of allowing the operator to rotate the platform up to +-90 degrees.
3. Platform shall be of supported by an inverted "A" subframe.
4. Platform shall be rectangular in shape.
5. Platform dimensions shall be 40 inches x 60 inches.
6. Platform rails shall be 40 inches in height.
7. Platform shall be built per ANSI A92.2.
8. Platform shall be equipped with safety chain on opening.
9. The platform shall be equipped with two safety lanyard attachments.

C. BOOM CONSTRUCTION

1. The boom shall be constructed of high-strength steel rectangular tube sections with 70,000-PSI min.
2. The boom assembly shall include heavy-duty cylinder fittings, heavy pivot pins and replaceable, ultra-high molecular weight polyethylene wear plates.
3. The boom shall be equipped with a steel cable carrier mounted external to the boom.
4. The cable carrier shall be stowed in the open without cover.

D. CAPACITY

1. The rated capacity of the platform shall not be less than 600 pounds in any boom position.

E. LIFT

1. Lift shall be accomplished with one 7" I.D. double-acting, 62" stroke cylinder.
2. Lift cylinder shall come equipped with a holding valve to prevent boom from falling in event of hose failure.

F. EXTENSION

1. Extension shall be accomplished using two opposing "piggyback" double acting 3" I.D. cylinders, 2" diameter rod, and interconnecting the three boom sections (no cables).
2. The cylinder shall be pinned in place and equipped with holding valves for both in and out.

II. PERFORMANCE

A. Attainable height of the unit as measured from ground level to the bottom of the platform shall not be less than 70 feet.

B. The maximum attainable horizontal reach of the unit as measured from the centerline of rotation to the centerline of the platform shall not be less than 56 feet.

III. MOUNTING

A. Aerial turret box shall be subframe mounted to the chassis of the carrying vehicle by bolting. If sill strips are used, they must be made of steel. Wood or other organic materials are not acceptable.

B. Aerial unit turret shall be located behind the cab of the carrying vehicle so that the platform will stow at the rear of the vehicle.

C. Overhang of the stowed aerial device in relationship with rear bumper of the vehicle will not exceed 30".

D. The unit, when mounted on the carrying vehicle and in the stowed position, shall not exceed a 13 feet travel height (as measured from the highest point of the unit to ground level). This is attainable assuming truck frame is 42".

E. Torque frame from main to rear outriggers shall be a box structure 11" H x 34-1/2" W.

IV. BOOM STORAGE

A. The vehicle shall be provided with a permanently installed boom rest at the rear of the bed.

B. The boom rest shall be of adequate design as to withstand stow loads from the unit and withstand 500 pounds applied in any direction without deformation.

V. TURRET & TURRET BEARING

A. The turret shall be a one-piece weldment with reverse offset design.

B. The turret shall rotate on a ball bearing.

VI. ROTATION

A. Unit shall provide continuous turret rotation with no stops.

B. A hydraulic motor, driving the turret through a self-locking worm gearbox (no brake) shall accomplish rotation. The gearbox is mounted on turret above rotation.

C. The rotation system shall be capable of rotating the maximum rated load capacity of the unit at the maximum attainable horizontal distance away from the pedestal upwards on a five degree incline.

VII. LEVELING

A. The platform shall be maintained in a level position relative to the chassis frame in all operating positions of the unit by a "closed" hydraulic system comprised of twin 2 1/2" platform cylinders interacting with a boom-actuated 4" master cylinder mounted in the boom support turret.

B. The leveling system shall be provided with factory-set relief valves to compensate for oil expansion or overload during platform leveling operation.

C. A leveling valve shall be provided in the boom control bank.

D. The leveling system shall be permanently connected to the boom valve bank and be capable of being remotely re-leveled with an electrical switch in the platform.

VIII. STABILITY

A. Completed unit shall be stability tested prior to delivery and shall be in conformance with ANSI A92.2.

IX. EMERGENCY LOWERING

A. Unit shall be provided with a twelve-volt emergency lowering system.
B. Switches shall be located at both the lower controls and upper controls.

X. HYDRAULIC SYSTEM

A. The hydraulic system shall be of open center design with 2,500-psi minimum design pressure.
B. The hydraulic pump shall be a gear type 14 GPM at 1,200 engine RPM.
C. The pump shall be of domestic manufacture.
D. The hydraulic pump shall be driven by a cable-shift PTO mounted to the transmission.
E. The PTO shall include an indicator/warning light.
F. The hydraulic pump shall be flange mounted to the PTO by means of an S.A.E. type flange mount.
G. The load bearing ends of all hydraulic cylinders shall be equipped with check or counter balance valves capable of hydraulically locking the cylinder and preventing movement of the cylinder in the event of loss of hydraulic power or line failure.
H. Hydraulic oil reservoir shall be properly labeled near the filler opening.
I. Hydraulic oil reservoir shall be mounted to the side of the sub frame below the bed with a capacity of 35 gallons.
J. Hydraulic oil reservoir filler opening shall be of such design as to prevent oil from splashing out of the reservoir.
K. Hydraulic oil reservoir filler shall be easily accessible and have a removable strainer.
L. Hydraulic oil reservoir shall have sight level gauge and thermometer.
M. Hydraulic oil shall be supplied to the turret-mounted control valve through a rotary manifold.
N. All cylinders, control valves, hoses and hydraulic fittings shall be of domestic convention (no metric adapters permitted).
    1. HOSES
        a) All high-pressure hose to be wire braid reinforced with a minimum safety factor of 4:1.
    2. CYLINDERS
        a) All cylinders must have micro-honed I.D. cylinder tubing, chrome shafts, top grade packing and protective rod wipers.
    3. FILTRATION
        a) The hydraulic filtration system shall consist of the following:
            (1) Suction strainer
            (2) Return line filter, capable of providing 10 micron nominal filtration
            (3) Pressure filter capable of providing 5 micron nominal filtration

XI. OUTRIGGERS

A. Unit shall be stabilized by five, hydraulically operated outrigger assemblies.
B. The main front outriggers shall be out-and-down design with an 18 foot spread. The vertical legs shall telescope under the bed floor.
C. Horizontal and vertical movement of the main outriggers shall be individually controlled.
D. The secondary rear outriggers shall be "A" type underslung with an 8' spread.

E. Front shall be stabilized with an outrigger on front bumper with mounting brackets to truck frame. Minimum 20" front frame extensions and stationary front grill must be provided to adequately mount front stabilizer.
F. Vertical outrigger cylinders shall be of the double acting type equipped with integral pilot operated check valves capable of preventing drift from both the retracted and the extended positions even in the event of loss of hydraulic power or line failure.
G. Main and secondary outrigger assemblies shall be solidly mounted to the subframe assembly.
H. Penetration of outrigger shoes shall not be less than six inches below normal ground level.

XII. OPERATOR CONTROL SYSTEM

A. The medium for transmitting control signals from the platform to the lower control station shall be by means of electric cable.
B. The aerial device controls located at the platform shall consist of three control handles for operating boom extension, lift and rotation. Actuation of these three functions shall be accomplished by means of proportional electric controls.
C. Controls shall meter pilot operated pressure compensated modulating valves.
D. Control handles shall incorporate safety collars for unlocking handles prior to movement.
E. The aerial device controls located at the platform shall include a remote chassis engine, start-stop system.
F. The lower boom controls shall have individual control valve handles to override each boom function.
G. The lower boom controls shall be mounted on the curbside of the turret above rotation.
H. The lower controls shall include engine speed and start/stop switches, along with upper/lower controls switch to override upper controls.
I. The outrigger-boom selector shall be mounted at the rear, under the bed.
J. The main outrigger controls and the rear vertical outrigger controls shall be mounted at the rear, under each corner of the bed with roadside valve controlling roadside outriggers and curbside valve controlling curbside outriggers.
K. A separate valve shall be located at the front bumper stabilizer.
L. The outrigger controls shall include a truck level bull's eye.

XIII. BODY

A. The bed shall be 24 feet long with 3/16" tread plate floor.
B. A standard DOT type bumper shall be installed at the rear of bed with taillights.
C. White anti-sail spray suppressant, splashguards shall be provided.
D. Step shall be provided on each side at the front of the body to provide access to the walk-around control platform with non-slip steps and grab handles.

XIV. HEAVY-DUTY HYDRAULIC BOOM WINCH

A. Winch shall be a high-efficiency planetary type with integral load-holding brake.
B. The winch shall be rated for 5,000 lbs. bare drum.
C. The winch shall be controlled from an additional valve section on the lower control valve. It shall be pressure compensated to allow feathering the winch and one boom section simultaneously.
D. Winch shall be mounted at the base of the boom for a long fleet angle and flat, level spooling of cable.
E. The winch shall be supplied with 210 feet of 3/8" diameter 6x37 Improved Plow Steel Iron Wire Rope Core wire rope and a weighted swivel hook.

F. Unit shall be equipped with anti-2-block switch, weight and hydraulic valve to protect the unit from damage due to lifting the hook into the boom.
G. Three-ton top dead end snatch block shall be provided to operate with 2-part line.
H. One 50 lb. down haul ball required.
I. Required lifting rating 1,000 lbs. at 56-ft. radius, 5,900 lbs. at 2-ft. radius with platform removed.
J. Main boom section shall be equipped with a retainer at platform end to stow cable when not in use.

XV. MISCELLANEOUS

A. A 110-volt duplex receptacle shall be accessible to the operator in the platform for using electric tools.

XVI. CAB EQUIPMENT

A. The master control switch with indicator lights shall be installed in truck cab.
B. U/L approved 2-1/2 lbs., 5:BC dry chemical fire extinguisher shall be installed in the truck cab.
C. A holder for operator's manuals shall be provided.

XVII. PLACARD/DECAL LABELS, MANUALS, VIDEO, ETC.

A. Each control and switch shall be clearly labeled to define function and direction of operation.
B. Two safety harnesses and 72" lanyards shall be delivered with the unit.
C. Two complete sets of operating, service, maintenance and parts manuals applicable to the aerial unit, as delivered, containing detailed parts and maintenance information inclusive of all optional equipment installed shall accompany the vehicle at the time of delivery.
D. One safety and operating video, covering safe use of the manufacturer's products shall accompany the vehicle at the time of delivery.

XVIII. RECOMMENDED MINIMUM CHASSIS REQUIREMENTS

A. 33,000 lb. GVWR; 156" CA, 110" AF
B. Include hot shift PTO for automatic transmission and air shift PTO for manual transmission.
C. MoDOT chassis to be drop shipped to vendor. By request the vendor can provide chassis pricing.