

Patricia A. Peshka
Purchasing Agent



Scott Avedisian
Mayor

City of Warwick
Purchasing Division
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The following notice is to appear on the City of Warwick's website Thursday, October 12, 2017. The website address is <http://www.warwickri.gov/bids>.

**CITY OF WARWICK
BIDS REQUESTED FOR**

Bid2018-166 Purchase & Deliver CAT 430F2-IT Backhoe

Specifications are available in the Purchasing Division, Warwick City Hall, Monday through Friday, 8:30 AM until 4:30 PM on or after Thursday, October 12, 2017.

Sealed bids will be received by the Purchasing Division, Warwick City Hall, 3275 Post Road, Warwick, Rhode Island 02886 up until 11:00 AM, Monday, October 23, 2017. The bids will be opened publicly commencing at 11:00 AM on the same day in the Lower Level Conference Room, Warwick City Hall.

Awards shall be made on the basis of the lowest evaluated or responsive bid price. Please note that no bids can be accepted via email or fax.

Individuals requesting interpreter services for the hearing impaired must notify the Purchasing Division at 401-738-2013 at least 48 hours in advance of the bid opening date.

Original Signature on File

Patricia A. Peshka
Purchasing Agent

PLEASE COMPLETE THIS PAGE & SUBMIT WITH YOUR BID

Acknowledgement of Addendum (if applicable)

Addendum Number	Signature of Bidder
_____	_____
_____	_____

COMPANY NAME: _____

COMPANY ADDRESS: _____

COMPANY ADDRESS: _____

BIDDER'S SIGNATURE: _____

BIDDER'S NAME (PRINT): _____

TITLE: _____ TEL. NO.: _____

EMAIL ADDRESS: _____*

*Please include your email address. Future bids will be emailed, unless otherwise noted.
=====

II. AWARD AND CONTRACT:

The CITY OF WARWICK, acting as duly authorized through its Purchasing Agent/Finance Director/Mayor (delete if inapplicable), accepts the above bid and hereby enters into a contract with the above party to pay the bid price upon completion of the project or receipt of the goods unless another payment schedule is contained in the specifications. All terms of the specifications, both substantive and procedural, are made terms of this contract.

DATE: _____
Bid2018-166 Purchasing Agent

PLEASE COMPLETE THIS PAGE & SUBMIT WITH YOUR BID

CERTIFICATION & WARRANT FORM*

**This form must be completed and submitted with sealed bid.
Failure to do so will result in automatic rejection.**

Any and all bids shall contain a certification and warrant that they comply with all relevant and pertinent statues, laws, ordinances and regulations, in particular, but not limited to Chapter 16- Conflicts of Interest, of the Code of Ordinances of the City of Warwick. Any proven violation of this warranty and representation by a bidder at the time of the bid or during the course of the contract, included, but not limited to negligent acts, either directly or indirectly through agents and/or sub-contractors, shall render the bidder's contract terminated and the bidder shall be required to reimburse the City for any and all costs incurred by the City, including reasonable attorney fees, to prosecute and/or enforce this provision.

Signature

Date

Company Name

Address

Address

***This form cannot be altered in any way**

**CITY OF WARWICK
NOTICE TO BIDDERS**

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If you received this document from our homepage or from a source other than the City of Warwick Purchasing Division, please check with our office prior to submitting your bid to ensure that you have a complete package. The Purchasing Division cannot be responsible to provide addenda if we do not have you on record as a plan holder.

Bids received prior to the time of the opening will be securely kept, unopened. No responsibility will be attached to an officer or person for the premature opening of a bid not properly addressed and identified. No bids shall be accepted via facsimile or email.

The opening of bids shall be in the order established by the posted agenda and the agenda shall continue uninterrupted until completion.

Once an item has been reached and any bids on that item has been opened, no other bids on that item will be accepted and any such bid shall be deemed late.

The contractor will not discriminate against any employee or applicant for employment because of physical or mental handicap for any position for which the employee or applicant is qualified and that in the event of non-compliance the City may declare the contractor in breach and take any necessary legal recourse including termination or cancellation of the contract.

A bidder filing a bid thereby certifies that no officer, agent, or employee of the City has a pecuniary interest in the bid or has participated in contract negotiations on the part of the City, that the bid is made in good faith without fraud, collusion, or connection of any kind with any other bidder for the same call for bids, and that the bidder is competing solely in his own behalf without connection with, or obligation to, any undisclosed person or firm.

All bids should be submitted with one (1) original and one (1) copy in a sealed envelope, which should read: *YOUR COMPANY NAME* plainly marked on the exterior of the envelope as well as "Bid2018-166 Purchase & Deliver CAT 430F2-IT Backhoe."

Should you have any questions, please contact Daniel O'Rourke, Water Division, 935 Sandy Lane, Warwick, RI at 401-921-9734.

All bids should be written in ink or typed. If there is a correction with whiteout, the bidder must initial the change.

Negligence on the part of the bidder in preparing the bid confers no rights for the withdrawal of the bid after it is open.

Any deviation from the specifications must be noted in writing and attached as part of the bid proposal. The bidder shall indicate the item or part with the deviation and indicate how the bid will deviate from specifications.

The IRS Form W-9 available on www.warwickri.gov should be completed and submitted with the bid if the bidder falls under IRS requirements to file this form.

The successful bidder must provide the City of Warwick with an original **Certificate of Insurance** for General Liability and Automobile Liability in a minimum amount of \$1 million. The certificate of insurance must name the *City of Warwick as the additional insured* and so stated on the certificate with the bid name and bid number. It is the vendor's responsibility to provide the City of Warwick with an updated certificate of insurance upon expiration of the original certificate.

For a bid to be awarded to a corporation, limited liability company or other legal entity, prior to commencing work under the awarded bid, that corporation, company or legal entity may be required to provide to the Purchasing Agent a **Certificate of Good Standing** dated no more than thirty (30) days prior to the date upon which the bid approval was made.

The successful bidder will provide said **Certificate of Insurance** and **Certificate of Good Standing** (if required) within ten (10) calendar days after notification or the City reserves the right to rescind said award.

The contractor must carry sufficient liability insurance and agree to indemnify the city against all claims of any nature, which might arise as a result of his operations or conduct of work.

The City is exempt from the payment of the Rhode Island Sales Tax under the 1956 General Laws of the State of Rhode Island, 44-18-30, Paragraph I, as amended.

The Purchasing Agent reserves the right to reject any and all bids, to waive any minor deviations or informalities in the bids received, and to accept the bid deemed most favorable to the interest of the City.

The successful bidder must comply with all Rhode Island Laws applicable the public works projects, including, but not limited to provisions of Chapter 13 of Title 37 of the Rhode Island General Laws, pertaining to prevailing wage rates, and all other applicable local, state and federal laws.

The City reserves the right to terminate the contract or any part of the contract in the best interests of the City, upon 30-day notice to the contractor. The City shall incur no liability for materials or services not yet ordered if it terminates in the best interests of the City. If the City terminates in the interests of the City after an order for materials or services have been placed, the contractor shall be entitled to compensation upon submission of invoices and proper proof of claim, in that proportion which its services and products were satisfactorily rendered or provided, as well as expenses necessarily incurred in the performance of work up to time of termination.

No extra charges for delivery, handling or other services will be honored. All claims for damage in transit shall be the responsibility of the successful bidder. Deliveries must be made during normal working hours unless otherwise agreed upon.

All costs directly or indirectly related to the preparation of a response to this solicitation, or any presentation or communication to supplement and/or clarify any response to this solicitation which may be required or requested by the City of Warwick shall be the sole responsibility of and shall be borne by the respondent.

If the respondent is awarded a contract in accordance with this solicitation and the respondents bid or response and if the respondent fails or refuses to satisfy fully all of the respondents obligations thereunder, the City of Warwick shall be entitled to recover from the respondent any losses, damages or costs incurred by the City as a result of such failure or refusal.

The City reserves the right to award in part or full and to increase or decrease quantities in the best interest of the City.

Any quantity reference in the bid specifications are estimates only, and do not represent a commitment on the part of the City of Warwick to any level of billing activity. It is understood and agreed that the agreement shall cover the actual quantities ordered during the contract period.

The City reserves the right to rescind award for non-compliance to bid specifications.

The successful bidder must adhere to all City, State and Federal Laws, where applicable.

City of Warwick Water Division

Specifications for 2017/2018 CAT 430F2-IT Backhoe

Basic Specifications

Compliance

- Y__N__ Backhoe shall have a minimum digging depth of 15'4" (4686 mm) with standard stick and 19'6" (5935 mm) with extendible stick.
- Y__N__ Turbocharged engine net flywheel horsepower Shall be at least 109HP (81 kW) according to SAE J1349.
- Y__N__ Machine to be equipped with an economy control Function for maximum fuel efficiency.
- Y__N__ Unit should have a maximum overall transport Height of 11'9" (3577 mm) with standard tires and standard stick.
- Y__N__ Unit shall have a maximum overall transport height Of 11'11" (3631 mm) with standard tires and extendible stick.
- Y__N__ Unit shall have a maximum height to the top of the Canopy of 9'3" (2819 mm) with standard tires.
- Y__N__ Maximum overall transport length shall be 24'0" (7310 mm) with standard tires and standard stick.
- Y__N__ Maximum overall transport length shall be 24'0" (7327 mm) with standard tires and extendible stick.

Compliance

Y__N__ Unit shall have a maximum width of 7'7" (2322 mm) with a general purpose bucket.

Y__N__ Unit shall have a minimum wheelbase of 7'3" (2200 mm).

ENGINE

Compliance

Y__N__ Engine must comply with U.S. EPA Tier 4 Final /EU Stage IV off road emission requirements.

Y__N__ Machine must utilize Selective Catalytic Reduction (SCR).

Y__N__ Engine shall have an economy mode to help maximize fuel efficiency, while maintaining backhoe performance.

Y__N__ Turbocharged engine net peak flywheel horsepower shall be at least 109 HP (81 kW) @ according to SAE J1349.

Y__N__ Net peak torque at 1400 rpm shall be not less than 360 ft-lb (488 N-m) with 39% torque rise.

Y__N__ Engine compartment side panels shall have standard noise reduction and heat control insulation.

Y__N__ Units shall be equipped with a turbocharged, four cylinder, direct injection diesel engine with high strength, cast iron alloy single block design for high strength and long life. The engine shall have three-ring pistons made of lightweight, silicon/aluminum alloy for strength and maximum thermal conductivity.

Y__N__ The engine shall have a forged chrome/molybdenum-steel crankshaft with salt bath nitro carburized pins and journals.

Compliance

Y__N__

The engine shall have front and rear crankshaft oil seals that are "lip" type Viton and PTFE designs featuring an integral dust lip.

Y__N__

The engine shall have nitride, martensitic chrome silicon steel inlet valves and nitride, austenitic chrome manganese-nickel steel exhaust valves for durability.

Y__N__

The engine shall have a high strength, deep skirt cylinder block that is a cast iron alloy, Monobloc design for increased strength and long life.

Y__N__

The engine shall have a high strength cylinder head that is a cast iron alloy construction with extra duty wall and deck thickness, including intake and exhaust ports that are precision cast to promote optimum gas flow.

Y__N__

the engine shall have a high pressure, direct injection fuel system providing accurate fuel delivery with a mechanically driven fuel transfer pump for reliability.

Y__N__

Engine shall have a fuel filtration rating of no more than 10-micron for the primary fuel filter/water separator.

Y__N__

Engine shall have a secondary fuel filter with a rating of no more than 4-microns.

Y__N__

Engine shall have a vertical spin-on fuel filters.

Y__N__

Engine shall be equipped with electric fuel priming pump as standard equipment.

Y__N__

Engine shall have a water/sediment bowl with water separator service indicator light.

Compliance

- Y__N__ The engine shall have an internally mounted, dry-type, perimeter seal air cleaner with an integral precleaner, automatic dust ejection system, and filter condition indicator.
- Y__N__ The engine will have a standard glow plug starting aid for efficient cold weather starting to -20 degrees F (-28 degrees C) without using either.
- Y__N__ The engine shall have a high contact ratio gear train, peripheral fixed isolation top cover and open deck block design to reduce bare engine noise.
- Y__N__ Heat exchangers shall be located within the engine compartment for easy service access.
- Y__N__ Engine shall be protected to a minimum -34 degrees F (-36.7 degrees C) with extended life antifreeze that needs not to be replaced for 5 years.
- Y__N__ Engine cooling fan shall have a heavy-duty guard that fully prevents human contact while in operation.
- Y__N__ Radiator shall have a heavy-duty guard to resist continued impact at low speeds.
- Y__N__ Coolant circulation shall be provided by a gear-driven water pump, not solely belt driven, to prevent accessory belt slip and continue coolant circulation in the event of a belt failure.
- Y__N__ Engine shall be equipped with an alternator that has a charging capacity of minimum 150 amperes.

Compliance

- Y__N__ Engine shall be equipped with one maintenance-free 880 CCA battery, with the option for two such batteries.
- Y__N__ Engine shall be equipped with a 12-volt direct-electric starting and charging system.
- Y__N__ Machine shall be r=equipped with a standard battery disconnect switch.
- Y__N__ Engine shall be equipped with a single, automatically tensioned, serpentine accessory belt.
- Y__N__ Engine air filter shall have a pre-cleaner and a dust ejector.
- Y__N__ Engine shall have a variable speed, hand and foot governor controls.
- Y__N__ Engine shall have a full flow spun-on type oil filter that is vertically mounted below the crankshaft centerline.
- Y__N__ Engine shall have replaceable valve guides and valve seats for extended service life.
- Y__N__ Backhoe joystick shall be equipped with a quick idle down feature that lowers the engine speed to 1,000 rpm.
- Y__N__ Machine shall have Automatic Engine Speed Control that reduces engine speed when the backhoe is not in use. This will conserve fuel and lower emission noise.

POWERTRAIN
TRANSMISSION

Compliance

- Y__N__ Transmission shall have an electric neutral lock switch on the front console to prevent driveline engagement.
- Y__N__ Transmission, differentials, and hydraulics shall have separate fluid reservoirs.
- Y__N__ 4WD shall be pendulum mounted, grease-free with sealed for life kingpins, able to be engaged "on-the-go" while under load or any operating condition.
- Y__N__ 4WD shall be engaged at any time by activating switch on front console. An operator shall be able to activate the switch while the machine is moving or stopped, also with or without a load.
- Y__N__ 4WD guard shall provide full coverage between the frame rails to protect the front drive shaft.
- Y__N__ Unit shall be able to change direction and travel speed on-the-go.
- Y__N__ Forward/Reverse shuttle shall be a contactless unit for reliability.
- Y__N__ Units shall be equipped with a transmission disconnect button on the gear shifter and loader control to allow full engine power to the loader.
- Y__N__ Transmission shall be made, serviced and supported by the machine manufacturer.

Compliance

- Y__N__ Transmission shall have spin-on type oil filter vertically mounted.
- Y__N__ Differential lock shall be located on the loader joystick control.
- Y__N__ The automatically shifting transmission shall have a manual override switch to allow the operator full control over the gear selection.
- Y__N__ Unit shall be equipped with a digital torque converter temperature.
- Y__N__ Unit shall have a single stage torque converter of no less than 2.63:1 stall ratio.
- Y__N__ Unit shall have a high gear speed of no less than 25 mph (40.0 kph).
- Y__N__ Automatically shifting transmission with 6 forward and 3 reverse shall be offered as an option with "kick-down" capability.
- Y__N__ Planetary Drive shall have four reduction (sun gears) in the front drive.

STEERING

Compliance

- Y__N__ Oscillation shall be no less than 11 degrees each side direction from centerline.
- Y__N__ Machine shall have hydrostatic steering.
- Y__N__ Steering cylinder shall be double acting with a 52-degree steering angle.

Compliance

Y__N__ Standard variable speed steering for quicker steering.

Y__N__ Unit shall have a minimum 4WD steering cylinder size of 2.6 (65mm) bore, 4.7" (120mm) stroke, and 1.42" (36mm) rod diameter.

BRAKES

Compliance

Y__N__ Brake mode selector switch shall have a 3 position switch allowing 2WD, 2WD travel with 2WD braking and full time four wheel drive.

Y__N__ Two wheel drive with four wheel drive braking must be available at all speeds and when the machine is in any gear.

Y__N__ Parking/secondary brakes shall be independent of the service brake system, allow operator complete control for a modulated stop, and shall be mechanically applied and adjusted from the cab without the need for tools.

Y__N__ Foot operated brake pedals shall be able to be interlocked for roading.

Y__N__ Service brakes shall be hydraulically boosted for low pedal efforts.

Y__N__ Service brakes shall be completely enclosed and sealed using Kevlar as brake pad media.

Y__N__ Brakes shall be outboard oil-immersed, hydraulically actuated, multiple discs on final drive input drive shaft.

Y__N__ Service brakes shall be fully self-adjusting.

HYDRAULIC SYSTEM

Compliance

Y__N__

Hydraulic system shall include high-pressure hoses consisting of 4 layers of overlapping insulated spiral wire matrix.

Y__N__

A single, optional auxiliary hydraulic circuit shall be capable of operating hammers, compactors, cold planers, augers, thumbs, side tilt couplers and other work tools.

Y__N__

Machine must have adjustable auxiliary flow control for better controllability of attachments.

Y__N__

Machine should be able to reach maximum lift capacity at any engine speed.

Y__N__

Maximum hydraulic pump pressure shall be at least 3,600 psi (25,000 kPa) for the backhoe and at least 3,600 psi (25,000 kPa) for the loader.

Y__N__

Hydraulic system shall have a replaceable 6-micron vertically mounted, bowl and cartridge filter that is accessible from under the main frame.

Y__N__

Hydraulic pump shall be rated at 43gpm (163 lpm).

Y__N__

Machine shall have an electronically controlled variable displacement load sensing, axial piston pump for low idle lifting and maximum durability.

Y__N__

Closed center implement valves to allow for machine multifunction.

Compliance

- Y__N__ Machine shall be equipped with an electronic pump torque limiter.
- Y__N__ Hose fitting shall have O-ring face seal connections for maximum seal reliability.
- Y__N__ Hydraulic tank shall be mounted towards the rear of the engine above the pump, enabling the hood of the machine to slope downward for visibility and to keep positive pressure into the pump supply hose.
- Y__N__ Hydraulic tank shall be made of non-metallic material to eliminate both weld shop contamination and the possibility of rust formation.
- Y__N__ Supply hose to the pump shall be protected high within the chassis and not vulnerable to puncture.
- Y__N__ Backhoe hydraulic lines shall be fastened and constrained from hanging low within the chassis, preventing hoses from damage.
- Y__N__ Combination auxiliary lines shall be available for both one way or two way flow.
- Y__N__ All implement hydraulic lines will incorporate hoses with a high wear resistant coating.
- Y__N__ All hydraulic hoses restrained by rubber grommets and steel band clamps shall have full protective coverage by the rubber grommet, preventing cuts and chaffing by the band clamps.

AXLES

Compliance

- Y__N__ Front axle shall be pendulum mounted, permanently sealed and lubricated.
- Y__N__ Rear axle shall have differential lock with "on-the-go" engagement.
- Y__N__ 4WD front axle shall have a minimum static load rating of 50582 lbs (22964 kg).
- Y__N__ 4WD front axle shall have a minimum dynamic load rating of 20233 lbs (9186 kg).
- Y__N__ Rear axle shall have a minimum static load rating of 50582 lb (22964 kg).
- Y__N__ Rear axle shall have a minimum dynamic load rating of 20233 lbs (9186 kg).
- Y__N__ The final drives shall be heavy-duty outboard planetary type, distribution loads over three gears sealed in separate oil compartments for long-life and minimum service.
- Y__N__ Heavy duty rear axle shall be semi-floating with self-adjusting inboard brakes.

WHEELS/TIRES

Compliance

- Y__N__ Machine shall have 4WD.
- Y__N__ 4WD Tires shall be no less than 12.5/80-18 12PR (front) and 19.5-24 12PR (rear) with radial tires. Must be BKT TR461 Road tires.

Compliance

Y__N__ All valve stems to be protected by metal valve stem covers.

Y__N__ Front tires shall ride inside loader bucket cutting width.

**OPERATIONS
STATION**

Compliance

Y__N__ OSHA approved ROPS? FOPS shall be integral with cab and canopy.

Y__N__ Operator shall have complete control to disable, or lock, the backhoe PILOT Controls with a single switch on the console.

Y__N__ The backhoe Pilot Controls locking switch shall always indicate the correct state of the controls, "locked" or "unlocked" and be lighted when "locked".

Y__N__ Pilot Controls for the backhoe shall be adjustable fore/aft, side to side and actuated by a foot control.

Y__N__ Machine shall come standard with horn, audible back up alarm and electric fuel system shut off.

Y__N__ The governor pedal shall be hinged and mounted to the floor for maximum pedal positioning control.

Y__N__ Engine RPM shall also be controlled by electronic-rotary dial.

Compliance

Y__N__

Side instruments shall include a premium gauge cluster consisting of LCD Information screen and LCD warnings. LCD warns shall include: Engine Oil Pressure, Machine Locked, Service Due, Air filter blocked, High Coolant Temperature, Auto Idle Shutdown, High Torque Converter Temperature and Hydraulic Filter Bypass. Unit shall have a lighted instrument panel located on the right side of the cab so that it is visible from both loader and backhoe operating positions.

Y__N__

Indicator lights to include Water in Fuel, remote dial throttle active, engine warning, warning lamp, emissions module malfunction, AESC active, Regen Inhibited, Low battery/charging system warning, high hydraulic oil temperature, wait to start and eco mode active.

Y__N__

Unit shall include four front and four rear working lights.

Y__N__

Machine shall have stop and turn signals with flashing hazard lamps visible from front.

Y__N__

Electric auxiliary socket shall be available on roof for connection to items such as rotating beacon.

Y__N__

Roof cab shall have 2 front and 2 rear flashing LED safety lights wired to beacon switch.

Y__N__

Must have illuminated rear license plate bracket.

Y__N__

A switch, accessible to the operator from the seat, shall control the auxiliary socket, primarily used for beacon operation. Operator's compartment shall come equipped with a standard air suspension seat that can be adjusted in the fore/aft position and has a lever that controls the release for rotation at 180 degree swivel from anywhere on a sliding track mechanism.

Compliance

- Y__N__ Equipped with the standard steering wheel, the seat shall be able to swivel 180 degrees in a single motion without contacting the steering wheel of pilot control pods.
- Y__N__ Standard seat shall be covered with vinyl with open canopy models or cloth covered Mylar in enclosed cab models.
- Y__N__ With doors and windows closed, machine operating at maximum governed speed unit shall have a maximum operator sound exposure Leq of 79 dB(A) according to SAE J1166.
- Y__N__ Stabilizer controls shall be conveniently located to the operator's left side/hand.
- Y__N__ Tilt steering wheel shall be standard for operator comfort.
- Y__N__ Must have tilt and telescoping steering wheel for additional operator comfort.
- Y__N__ Cab shall have an air conditioner that provides the operator with a choice of fresh outside air drawn through filters or recirculating cab air with HVAC recirculation selector.
- Y__N__ Cab shall have heat settings.
- Y__N__ Cab shall be equipped with two doors and 6 opening windows and floor mat.
- Y__N__ Operator's compartment shall feature laminated safety glass on front, windshield and tempered glass on all other windows.
- Y__N__ Cab shall include factory-installed heater/defroster with multiple speed blower with the control in reach from the front and rear of the machine.

Compliance

Y__N__

Heater will have a minimum rated capacity of 28,742 BTU and be equipped with a 365 cfm fan.

Y__N__

All removable glass panels shall be flat glass for easy and low cost service.

Y__N__

All rear window sections shall stow overhead, inside the cab for maximum visibility, ventilation and operator comfort.

Y__N__

All rear window sections shall open upwards and store overhead with outside portion facing upwards to keep water droplets and dirt from falling on operator.

Y__N__

Each side of the cab shall have two windows sharing a common hinge that are of approximately equal size, can be fastened together, then swung to either a front or rear securing point to maximize cross flow ventilation.

Y__N__

If equipped with an enclosed cab, front and rear windshield wipers/washers shall be standard.

Y__N__

If equipped with an enclosed cab, unit shall have a pantography front windshield wiper and intermittent rear windshield wiper.

Y__N__

Enclosed cab shall have a front window visor that extends entire width of window.

Y__N__

Exhaust stack shall be located to the side and aligned with ROPS as to not obstruct operator's vision.

BACKHOE

Compliance

- Y__N__ Backhoe shall be center-pivot type complete with hydraulic stabilizers.
- Y__N__ Maximum boom width shall be no wider than 10.5 inches (265mm).
- Y__N__ Backhoe shall come standard with a curved boom for its ability to work in confined areas and to reach over obstacles, allowing a minimum of 10.5" (265mm) of clearance as measured in the deepest point from a plane, subtended through the axis of the rotation.
- Y__N__ Per SAE standards, rated bucket digging force shall be a minimum of 16,156 lb (71.9 kN) with a standard stick and 15,932 lb (70.9 kN) with an extendible stick.
- Y__N__ Per SAE standards, stick-digging force shall be a minimum of 10,067 lbs(44.8 kN) with a standard stick and 9,856 lb (43.8 kN) with a fully retracted extendible stick.
- Y__N__ Backhoe reach, from the swing pivot, shall be no less than 18'5" (5612mm) with a standard stick and 21'10" (6652 mm) with a fully extended stick.
- Y__N__ Backhoe shall have a loading height of no less than 13'0" (3961 mm) with a standard stick.
- Y__N__ Backhoe shall have a loading height of no less than 14'10" (4533 mm) with an extended extendible stick.
- Y__N__ Backhoe bucket shall have a minimum of 205 degrees of bucket rotation in a single pin position.

Compliance

- Y__N__ Backhoe shall have a minimum cushioned swing arc of 180 degrees.
- Y__N__ Per SAE J31, backhoe stick lifting ability at 8ft (2438mm) shall be no less than 5961 lb (2704 kg) with a standard stick.
- Y__N__ Per SAE J31, backhoe stick lifting ability a 8ft (2438mm) shall be no less than 5498 lb (2492 kg) with a fully retracted extendible stick.
- Y__N__ Per SAE J31, backhoe boom lifting at 8 ft (2438mm) shall be no less than 3700 lbs (1678 kg) with a standard stick.
- Y__N__ Per SAE J 31, backhoe boom lifting at 8 ft (2438mm) shall be no less than 3241 lbs (1470 kg) with a fully retractable extendible stick.
- Y__N__ Extendible stick shall be available.
- Y__N__ Optional extendible stick shall be field adjusted in less than 30 minutes to eliminate excessive clearance, using simple hand tools.
- Y__N__ All sticks shall have serrated edges, at least 28" (760mm) long, to help clamp objects securely with bucket.
- Y__N__ All sticks shall be thumb-ready with thumb cylinder mounts and stops standard. Thumb must be able to be added without welding.
- Y__N__ Extendible stick shall be self-lubricating, adjusted with shims, and require no grease.
- Y__N__ Boom cylinder shall be exterior mounted for serviceability.

Compliance

- Y__N__ Backhoe shall be equipped with a swing transport lock.
- Y__N__ Backhoe shall be equipped with a boom lock that can be controlled from the seat.
- Y__N__ Pattern changer shall be available for switching backhoe and excavator control patterns with an electric switch, located within the operator's station.
- Y__N__ Backhoe controls shall be available as pilot operated joystick controls with a standard pattern changer for SAE excavator or ISO backhoe control patterns.
- Y__N__ Backhoe shall be controlled with adjustable excavator style pilot operated joystick controls.
- Y__N__ Auxiliary controls shall be controlled by an electro-hydraulic thumb roller.
- Y__N__ Auto-up stabilizer controls shall be available.
- Y__N__ Stabilizers shall be pilot operated for low efforts and located on the side console for easy access whether facing front or rear.
- Y__N__ Stabilizer guards shall be available to protect stabilizer cylinders from damage
- Y__N__ Backhoe shall have stabilizer lock valves as standard equipment.
- Y__N__ Flip over stabilizer pads shall have a dirt grouser.

Compliance

Y__N__ Stabilizer spread in the operating position to the center of the pad shall be at least 10'10" (3310mm).

Y__N__ Stabilizers shall be able to lift the machine high enough to clear tires, on concrete with street pads

Y__N__ Swing trunnion shall be supported on each side by two bolts loaded in tension.

LOADER
(SELECT BUCKET)

Compliance

Y__N__ Loader bucket shall not roll back, and must not move under normal dig operations.

Y__N__ Loader shall have positive down pressure sufficient to lift tractor front end off level ground.

Y__N__ 1.5 CYD General Purpose bucket. Machine shall meet the following specs:
Minimum breakout force of 11,197 lbs (49.8 kN)
Minimum dump clearance of 9'0" (2746mm) at full lift and 44 degree discharge
Minimum dig depth of 3" (83mm)
Minimum hinge pin height 11'5" (3474mm)
Minimum lift capacity 7,237 lbs (3283kg)
Minimum rackback angle at ground level of 37 degrees.

Y__N__ Loader shall be equipped with a return-to-dig mechanism.

Y__N__ Loader shall be equipped with a lift cylinder brace to mechanically hold the loader arms in the raised position.

Compliance

- Y__N__ Loader shall incorporate a steel bumper system to protect battery and engine components.
- Y__N__ Loader arm torque tube shall be constructed such that it is welded to each side of each loader arm section, providing maximum strength with minimal weld stress.
- Y__N__ Loader linkage shall incorporate a single, full width main tower pin for maximum strength and load distribution.
- Y__N__ Loader bucket shall be suitable for general purpose with heavy duty characteristics including high strength wear material in the leading edges of the lower side corners, equaling the material properties of the base cutting edge.
- Y__N__ Loader bucket base cutting edge shall be especially hardened steel, achieving Rockwell hardness of 50 or greater.
- Y__N__ Loader bucket shall have a 2-piece or 3-piece bolt-on cutting edge for serviceability.
- Y__N__ Loader bucket dump time shall be no more than 3.0 seconds as full raised position.
- Y__N__ Loader bucket shall be self-leveling for truck loading spoil and equipped with a bucket tilt indicator.
- Y__N__ Loader bucket lower time from full raised position to digging position shall be no more than 3.0 seconds.
- Y__N__ Loader bucket raise time to full height shall be no more than 4.0 seconds.

**WORK TOOL
OPTIONS**

Compliance

Y__N__

Machine must come with 48" Forks with IT coupler fit.

Y__N__

Buckets shall be equipped with pin-on tooth tips that are exchanged whereby the pin retainers are diagonal or vertical, allowing them to be extracted or inserted with a hammer and punch only.

Y__N__

A quick coupler system shall be available (mechanical and hydraulic), which will pick up the "direct mounted" work tools.

Y__N__

All backhoe sticks shall be made thumb-ready, allowing bolt-on installation of thumbs, cylinder, hydraulics and hardware without welding.

SERVICEABILITY

Compliance

Hood release to be lockable and easily accessible from inside the cab.

Y__N__

Engine oil, transmission oil, hydraulic oil, brake fluid, washer fluid, coolant, engine air filter, and engine air filter monitor shall all be consolidated service points, accessible under the hood with loader arms down.

Y__N__

Entire machine cooling package, including radiator, transmission oil cooler, hydraulic oil cooler, fuel cooler and ATAAC shall be easily accessible without use of tools.

Y__N__

Water and sediment shall be drained from the fuel/water filter from a standing position without tools.

Compliance

- Y__N__ The battery(ies) shall be accessible without the use of hand tools to remove panels, toolboxes, etc.
- Y__N__ Unit shall come standard with machine jump posts.
- Y__N__ The swing frame shall have replaceable bushings installed in the pin joints for the boom, swing cylinder rod ends and swing post.
- Y__N__ Swing cast shall utilize serrated pins and dimpled bearings for grease rotation.
- Y__N__ Machine shall have easily accessible jumper posts to aid in jump-starting machine or other machines.
- Y__N__ The hydraulic tank shall be drained through a petcock and drain hose, without need for hand tools.
- Y__N__ The rear axle shall have brake wear check ports, allowing access to inspect brake pad wear.
- Y__N__ The machine will be equipped with an electronic diagnostic port within the operator station, allowing service codes to be downloaded and electronic parameters to be adjusted.
- Y__N__ Fuel tank shall contain a debris screen.
- Y__N__ Machine fault codes shall be accessible from LCD screen.
- Y__N__ The unit shall be provided with a master electrical disconnect switch.
- Y__N__ Extendible stick shall be field adjustable using common hand tools.

**MINIMUM SERVICE
FILL CAPACITIES**

Compliance

- Y__N__ Standard front axle capacity (4WD) shall not be less than 2.9 gallons (11 L), with planetary capacity no less than 0.2 gallons (0.7 L).
- Y__N__ Standard rear axle capacity shall not be less than 4.4 gallons (16.5 L).
- Y__N__ Standard high-ambient cooling system capacity shall not be less than 5.9 gallons (22.5 L).
- Y__N__ Standard engine oil with filter capacity shall not be less than 2.3 gallons (8.8 L).
- Y__N__ Standard fuel tank capacity shall not be less than 42 gallons (160 L).
- Y__N__ Standard diesel exhaust fluid tank capacity shall not be less than 5 gallons (19 L).
- Y__N__ Standard hydraulic system capacity shall not be less than 25.1 gallons (95 L).
- Y__N__ Standard hydraulic tank capacity shall not be less than 10.6 gallons (40 L)>
- Y__N__ Standard transmission (4WD, Power Shuttle) capacity shall not be less than 4.0 gallons (15 L).

**OWNING AND
OPERATING COSTS**

Compliance

- Y__N__ Front axles shall have sealed king pin and center pendulum bearings.
- Y__N__ Driveshaft universal joints shall be maintenance free.
- Y__N__ Standard fill hydraulic oil must be advanced HYDO 10 with up to 6000hr service interval in typical applications.
- Y__N__ Load sensing Variable Displacement pump shall be standard for optimized fuel efficiency and performance.
- Y__N__ Front and rear axle oil change shall have 1000-hr change interval for lowering operating maintenance cost.
- Y__N__ Cooling System shall have 12,000 hr change interval for lowering operating maintenance cost.
- Y__N__ Engine shall have a 500-hr oil change interval for lowering operating maintenance cost.

**ADDITIONAL
FEATURES**

Compliance

- Y__N__ Machine shall be equipped with an optional, on-board machine communication system, recording and transmitting GPS, service hour reading, fuel tank reading and ignition status.
- Y__N__ GPS system will have 3 year subscription to Product Link Pro.
- Y__N__ Machine will come with 3 year 1500 hour full warranty.

Compliance

Y__N__

Machine with come standard with Bluetooth Radio.

Y__N__

Machine must come with: Operational and Maintenance Manual, Parts and Service CD'S.

Y__N__

Ride-control shall be standard and will smooth the ride under all operating conditions.

PLEASE COMPLETE THIS PAGE & SUBMIT WITH YOUR BID

CITY OF WARWICK

BID AND CONTRACT FORM

TITLE OF SPECIFICATION: Bid2018-166 Purchase & Deliver CAT 430F2-IT Backhoe

I. BID:

WHEREAS, the CITY OF WARWICK has duly asked for bids for performance of services and/or supply of goods in accordance with the above-indicated specifications.

The person or entity below does irrevocably offer to perform the services and/or furnish the goods in accordance with the specifications, which are hereby incorporated by reference in exchange for the bid price below;

This offer shall remain open and irrevocable until the CITY OF WARWICK has accepted this bid or another bid on the specifications or abandoned the project.

The bidder agrees that acceptance below by the CITY OF WARWICK shall transform the bid into a contract. This bid and contract shall be secured by Bonds, if required by the specifications.

Description	Bid
Year	
Make	
Model	
Warranty	
Total Cost	\$
Delivery in Calendar Days ARO	