

MINIMUM SPECIFICATIONS FOR TWO EXCAVATORS

It is the intent of these specifications to describe two New 2019 Excavators. To be used in drainage grading, demolitions and other related construction activities. These specifications are describing and stating the minimum requirements of the excavators to perform this function. Bids with equipment not meeting these minimum capacities and requirements will be subject to rejection.

The apparent silence of this specification and any supplement specification as to any details or the omission from it of a detailed description concerning any point shall be regarded as meaning that only the best commercial practices are to prevail and that only materials of first quality and correct type, size, and design are to be used. All interpretations of the specification shall be made upon the basis of this statement.

All bidders must write in the blanks, YES if meeting or exceeding specifications and NO IF EXCEPTIONS ARE TAKEN. Any exceptions must be explained in detail writing on bidders own letter head and attached to the bid when submitted. All proposals include delivery, training of operator and service personnel. Bidder must attach copy of complete warranty of unit and components. The City reserves the right to reject any and all bids.

Delivery of bid on Excavators, to be within 90 days upon receiving the above said truck. The successful bidder will deliver completed unit F.O.B. to City of Laurel with a minimum of one full day training.

	Bid Spec Sheet
	Compact Hydraulic Excavators
	Class- > 8 Ton
	GENERAL INFORMATION
	The hydraulic excavator must be new, unused current production track mounted model.
	It shall have all standard equipment as shown in the manufacturer's printed literature.
	Modifications of existing models to meet these specifications will not be permitted.
	BASIC SPECIFICATIONS
	Operating weight shall be at least 18,739 lb (8500 kg) equipped with a 3405 mm 11'2" one-piece boom, 2100 mm 6'11" arm, SAE heaped 0.26 cubic yard bucket (0.2 cubic meter), rated capacity of lubricants, coolant, full fuel tank, operator, 450mm 18" roadliner shoes, and standard equipment.
	Lift capacity at 10' (3 m) over the front at ground level shall be not less than 3600 lb (1630 kg). Equipped with a 2100 mm (6'11" stick), 450mm roadliner pads, without bucket.
	Machine shall have a ground clearance of at least 1'4" (395 mm).
	Shipping height shall be 9'1" (2760) mm) with a 6'11" (2100 mm) stick.
	Shipping length shall be 21'11" (6430 mm) with a 6'11" (2100 mm) stick.
	Tail swing radius shall be 4'10" (1485 mm)
	Track length shall be 9'6" (2890 mm)
	Transport width shall be 7'8" (2330 mm) equipped with 450 mm track
	A 2320mm 7'7" blade will be included as standard equipment
	A rearview monitoring system including a camera will be included as standard
	A pattern change valve will be included as standard
	ENGINE SPECIFICATIONS

	The engine shall be manufactured by the equipment manufacturer.
	The engine shall be a 4 cycle, 4 cylinder, 16 valve variable flow turbo charged, air to air after cooler, EPA emission certified Tier 4 Engine or equivalent
	The engine, including engine cooling fan, and all necessary accessories, shall deliver at least 65.5 hp (48.8 kW) at the flywheel (SAE J1349 rated).
	Standard equipment to include an air cleaner with two stage filtering, water pump, fuel pump with hand primer, muffler with diesel oxidation catalyst and lubricating oil pump.
	Pre-fuel filter shall be rated to 10 micron filtration and have standard water separator. Main fuel filter shall be rated to 2 micron filtration
	The engine shall meet the US EPA Tier 4 Final exhaust emission certification and use a diesel oxidation catalyst with no diesel particulate filter. Engine shall not utilize emission flex credits.
	Engine shall be direct injection with electronically controlled common rail injection system.
	Engine displacement shall be at least 199 in ³ (3.26 L).
	Peak power shall be rated at 1950 rpm.
	Machine shall be equipped with 24-volt electrical starting and operating system.
	The alternator shall be a minimum of 35 amps, 24V.
	The engine shall provide full hp up to 7,546 ft. (2,300 m) before altitude deration.
	Fuel tank capacity shall be no less than 33 gal (125 L) and include a filler neck strainer.
	The engine shall be equipped with a grid heater as a starting aid in cold weather.
	Engine air filter shall have a restriction indicator on the instrument panel.
	The engine shall be equipped with a 24 volt starting and charging system.
	Auto Idle shutdown system shall provide a method for shutting down engine when unit is left to idle for extended amounts of time and the shutdown time interval must be adjustable.
	UNDERCARRIAGE
	Machine shall have a maximum ground pressure of 5.54 psi (38.2 kPa) with 450 mm roadliner shoes.
	Each track shall be driven by one independent, axial-piston motor via integral planetary final drives.
	Machine shall have a max travel speed of 3.1 mph / 5.0 kph.
	Machine shall have 5 track rollers and 1 carrier rollers.
	Track tension shall be grease adjusted.
	An audible alarm shall indicate when machine travel is engaged.
	The travel system shall be fully hydrostatic with atleast 2 speed settings.
	The machine shall have a drawbar pull of 15,040 lbs. (66.9 kN)
	HYDRAULIC SYSTEM
	Hydraulic system for boom, arm, bucket and travel circuits shall be a closed-center system with load sensing valves and pressure compensated valves.
	Hydraulic system for boom, arm, bucket and travel circuits shall have a flow of 42.2 gal/min (160 L/min).
	Pilot system pressure shall be achieved by pressure reducing valves.
	Maximum pressure for the implement circuit shall be at least 3,844 psi (26.5 MPa)
	Maximum pressure for the swing circuit shall be at least 3,060 psi (21.1 MPa)
	The machine shall have a standard lock lever, which deactivates the hydraulic function and prevents start-up when lever is in free position.
	SWING SYSTEM
	Swing effort shall be provided to the upper structure by a hydraulic motor through double reduction planetary gearing.

	The holding brake shall be a mechanical lock disc brake released by pilot pressure.
	The swing speed shall be at least 10.0 rpm.
	OPERATOR CAB
	The operator compartment shall protect the operator from the environment.
	The front windshield shall be mounted on tracks and be able to be raised up into a secure position in the cab ceiling by the operator in order to provide improved visibility forward and down.
	The hydraulic implement system shall use pilot-operated controls for low-effort, smooth modulation.
	The seat shall have a high back rest and be fully adjustable for height, weight, fore/aft, seat back, and armrests.
	The cab shall utilize a 7" high resolution LED color monitor panel with language options with English.
	The cab shall have a standard lock lever that does not allow for travel, blade, swing or boom articulation while in locked position.
	Machine shall have a skylight that can be opened and cab is rated to OPG-1
	Monitor panel shall have a wide angle lens camera positioned to see behind the counterweight.
	Monitor panel shall have 6 working modes for implement system.
	Any system abnormalities detected shall be displayed on high resolution LED monitor.
	Automatic climate control that maintains a constant temperature setting shall be available as standard equipment.
	WORK EQUIPMENT
	The work equipment shall contain full castings on the boom foot, boom tip, and bucket linkage for uniform toughness and strength.
	Maximum reach at ground level shall be at least 24' (7345 mm) with a 6'11" (2100 mm) stick.
	Maximum dumping height shall be at least 15'6" (4770 mm) with a 6' 11" (2100 mm) stick.
	Bucket digging force (ISO) shall not be less than 13,781 lb. (6,250 kgf) with a 6' 11" (2100 mm) stick.
	Stick digging force (ISO) shall not be less than 8,161 lb. (3700 kgf) with a 6' 11" (2100 mm) stick.
	AUTO LEVER-LOCK Feature shall stop all pilot oils when PPC activation is detected within 0.5 seconds of operating Lever Lock.
	SERVICEABILITY
	The hydraulic tank shall have an oil level sight gauge that allows checking the fluid level without removing the filler cap.
	A cartridge-type hydraulic return filter shall be located inside of the hydraulic tank.
	Fuel level shall be monitored in the high resolution LED monitor
	Left rear service door shall allow access to the engine radiator and hydraulic oil cooler
	Grease lubricated seals shall protect the track link
	OTHER/GENERAL
	A fusible link which can cut out the current from the battery instantly must be installed.
	The electric wire connectors must be fixed to the structural members of the machine body.
	An engine cooling fan guard must be installed.
	Seat belts must be three inches in width.
	The Operator Identification system shall offer a way to prevent unauthorized operation.

	SERVICE FILL CAPACITY
	The fuel tank shall have a capacity of at least 33.0 gallons (125 L).
	The cooling system shall have a capacity of at least 3.4 gal (13.0 L).
	Engine oil shall have a capacity of at least 3 gal (11.5 L).
	Swing drive shall have a capacity of at least 0.74 gal (2.8 L).
	Each final drive shall have a capacity of at least 0.29 gal (1.1 L).
	Hydraulic tank shall have a capacity of at least 14.8 gal (56 L).
	Service Agreement
	3 year or 2000 hour service agreement.
	500/1000/1500/2000 hour intervals. (250 hr. initial interval for some products) Complimentary Maintenance Interval includes: Replacement of Oils & Fluid Filters with genuine Parts, 50-Point inspection, Oil & Wear Analysis Sampling / Travel & Mileage Engine air filter not included.
	Genuine Care Agreement
	100% core guarantee, and 7 year 10,000 hour component assurance
	Undercarriage
	48 months or 5000 hour assurance program.

SUPPLIER BID FORM (Compact Excavator)

Name of bidder: _____

Address of bidder: _____

Make of unit: _____

Model of unit: _____

Price of unit.....\$ _____

Lease price of unit.....\$ _____

36 month lease payment.....\$ _____

Balloon payment.....\$ _____

48 month lease payment.....\$ _____

Balloon payment.....\$ _____

60 month lease payment.....\$ _____

Balloon payment.....\$ _____

Guaranteed buy back @ 36 months or 5000 hours.....\$ _____

Guaranteed buy back @ 48 months or 6000 hours.....\$ _____

Guaranteed buy back @ 60 months or 7500 hours.....\$ _____

Interest rate (APR) – 36 mo. @ _____%, 48 mo. @ _____%, 60 mo. @ _____%

Warranty (Enclose copy)..... _____

Labor rate for non warranty work(per hour)..... _____

Travel mileage rate...(per mile)..... _____

Distance from nearest facility..... _____

Delivery Date..... _____

Exceptions and Justifications to Specifications; _____

Representative _____

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Bid Spec Sheet

Hydraulic Excavator:

	GENERAL INFORMATION
	The hydraulic excavator must be new, unused current production track mounted model
	It shall have all standard equipment as shown in the manufacturer's printed literature
	Modifications of existing models to meet these specifications will not be permitted
	BASIC SPECIFICATIONS
	Minimum published operating weight shall be at least 41,100 lb (18708 kg) equipped with a 5150mm 16'11" one-piece boom, 2610 mm 8'7" arm, SAE heaped 1.24 cubic yard bucket (0.95 cubic meter), rated capacity of lubricants, coolant, full fuel tank, operator, 28"(700mm) triple grouser track shoes, and standard counterweight
	Lift capacity at 20' (6.1 m) over the front at ground level shall be not less than 10,690 lb (4850 kg). Equipped with a (2900 mm) 9'6" arm, 24" (600mm) triple grouser track shoes, standard counterweight, and no bucket installed
	Lift capacity at 20' (6.1 m) over the side at ground level shall be not less than 6,722 lb (3050 kg). Equipped with a (2900 mm) 9'6" arm, 24" (600mm) triple grouser track shoes, standard counterweight, and no bucket installed
	Machine shall have a published ground clearance of at least 1'5" (440 mm) with triple grouser track shoes

	Maximum published digging depth shall be 20'6" (6250mm) with an 9'6" (2500 mm) arm
	Published transport height shall be 10'4" (3140) mm) with a 9'6" (2900 mm) arm
	Published transport length on ground shall be 15'0" (4565 mm) with a 9'6" (2900 mm) arm
	Published tail swing radius shall be no greater than 8'2" (2500 mm)
	Published track gauge shall be no less than 6'6" (1990 mm)
	Published track length shall be at least 13'0" (3965 mm)
	Published overall width shall be no wider than 8'6" (2590 mm) when equipped with 24" (600 mm) triple grouser track shoes. Track roller frames or walkways shall not be removed or adjusted to achieve maximum overall width
	Machine shall be equipped with full length upper body revolving frame guards (excludes CWGT)
	ENGINE SPECIFICATIONS
	Machine shall have a four cylinder, variable geometry turbo charged / water-cooled diesel engine with cooled exhaust gas recirculation (EGR), Diesel Oxidation Catalyst (DOC), and Selective Catalytic Reduction (SCR) system
	Net engine flywheel power according to SAE J1349 shall be at least 120 hp (88.9 kW)
	Engine displacement shall be at least 272 cubic inches (4.46 L)
	Engine bore shall be 4.21" (107 mm) and stroke shall be 4.88" (124 mm)
	The engine shall be EPA TIER 4 Final emissions certified
	Engine shall have be equipped with a Diesel Oxidation Catalyst (DOC), DEF system and a Selective Catalytic Reduction (SCR) emissions treatment systems
	The Diesel Exhaust Fluid (DEF) system shall have electrically heated DEF lines, DEF pump and engine coolant heated DEF tank with thermostatically controlled coolant valve
	The DEF system shall have an automatic thawing system that purges DEF lines automatically at engine shut down
	DEF consumption shall be no greater than 3% of fuel consumption during a normal 40-60% working cycle
	The engine shall be direct injection with electronically controlled common rail injection system
	The engine shall be equipped with a viscous fan clutch
	The engine shall be equipped with a 24 volt starting and charging system
	An engine air pre-filter shall be available as standard equipment
	Fuel filter shall be rated to 2 micron filtration and have standard water separator
	DRIVE SYSTEM / UNDERCARRIAGE
	Machine shall have a maximum published ground pressure of 6.56 psi (0.46kg/cm2) with 24" (600mm) shoes per ISO standard 16754
	Track links shall be grease lubricated
	Each track shall be driven by one independent, axial-piston motor via integral planetary final drive
	Machine shall have a max travel speed of 3.4 mph / 5.5 kph
	An audible travel alarm shall indicate when machine travel is engaged
	The transmission shall be fully hydrostatic with 2 travel speed settings
	Machine shall have 7 track rollers and 2 carrier rollers
	Track tension shall be hydraulically adjusted
	The machine shall have a minimum drawbar pull of 35,164 lbs (156kN 15950kg)

	HYDRAULIC SYSTEM
	Hydraulic system shall be a closed-center system with load sensing and pressure compensated valves
	The hydraulic system shall contain O-ring face seals
	Hydraulic system shall have a maximum flow of at least 78.7 gal/min (298 L/min)
	Pilot system pressure shall be achieved by pressure reducing valves and not use a gear pump
	Maximum pressure for the implement circuit shall be at least 5,400 psi (37.3 MPa)
	Maximum pressure for the travel circuit shall be at least 5,400 psi (37.3 MPa)
	Maximum pressure for the swing circuit shall be at least 4,150 psi (28.9 MPa)
	The machine shall have a standard hydraulic control lock lever that deactivates travel, swing, boom, arm and bucket functions and prevents start-up when in the locked position
	The main hydraulic system shall operate with a single, variable displacement, load sensing, axial-piston pump
	The backhoe boom and arm shall be equipped with load holding valves
	The hydraulic system shall include a pattern change valve for switching between excavator and backhoe control patterns
	SWING SYSTEM
	Swing effort shall be provided to the upper structure by a hydraulic motor through double reduction planetary gearing
	The swing system shall have a minimum swing torque of 31,300 ft-lbs (4331 kg-m)
	The holding brake shall be a mechanical lock disc brake released by pilot pressure
	The swing speed shall be at least 12.0 rpm
	OPERATOR CAB
	The operator compartment shall protect the operator from the environment and shall have an integrated ROPS design meeting ISO 12117-2 and also meet OPG top guard Level 1 requirements
	Machine shall have a skylight that can be opened and is rated for OPG level 1 requirements
	The operator compartment shall be equipped with an A/C system with automatic climate control and a cabin air filter to maintain positive internal cab pressure
	The front windshield shall be mounted on tracks and be able to be swung up into a secure position in the cab ceiling by the operator to provide improved visibility forward and down
	The hydraulic implement system shall use pilot-operated controls for smooth modulation
	The cab shall be mounted on multi-layer viscous cab mounts for comfort and noise reduction
	An air-suspension heated seat shall be standard and have a high reclining back rest and be fully adjustable for height, weight, fore/aft, seat back, and armrests. The seat and console shall move as an integrated unit
	The operator seat should include retractable 3-inch seat belts with a seat belt warning indicator integrated into the display monitor

	The cab shall utilize a landscape display orientation with LCD monitor panel with language options with English. The monitor is to include indicators for DEF level, auto-decelerator, working modes, travel speeds, engine water temperature gauge, hydraulic oil temperature gauge, fuel gauge, ECO gauge, fuel consumption display, and low DEF level
	Machine shall be equipped with a standard rear view monitoring system with wide angle lens camera positioned to see the work area behind the counterweight. Monitor panel shall be capable of providing rear camera display and key machine status information at same time
	Monitor panel shall have 6 working modes for implement system
	Any system abnormalities detected shall be displayed on the LCD monitor
	The machine shall have an automatic climate control that maintains a constant temperature setting as standard equipment
	The cab shall have an AM/FM radio and a 3.5 mm auxiliary input jack for connecting an MP3 player or other device
	The cab shall contain 2 speakers for audio playback
	The cab shall have a ground level access secondary engine shut off switch
	WORK EQUIPMENT
	The work equipment shall contain full high strength steel castings on the boom foot, boom tip, arm tip and bucket linkage for uniform added toughness and strength
	The boom shall include full length top and bottom plates without transverse welds
	Maximum reach at ground level shall be at least 29'9" (9075 mm) with a 9'6" (2900 mm) arm
	Maximum dumping height shall be at least 21'5" (6525 mm) with a 9'6" (2900 mm) arm
	Bucket digging force (ISO) shall not be less than 27,651lb (123 Kn/12500Kg) with a 9'6" (2900 mm) arm
	Arm digging force (ISO) shall not be less than 17,849 lb (79.4 Kn/8100Kg) with a 9'6" (2900 mm) arm
	When equipped with auxiliary hydraulics, circuit shall have return filter and one way flow accumulator
	SERVICEABILITY
	The hydraulic tank shall have a sight gauge that allows checking of fluid level without removing the filler cap
	Fuel level and DEF level shall be monitored in the LCD Monitor
	DEF tank shall also have sight glass to check fill level
	DEF pump and filter must be remote mounted away from the tank and be accessible by means not requiring hand tools
	A cartridge-type hydraulic return filter shall be located outside of the hydraulic tank for easy service and to avoid system contamination with a replacement interval of 1,000 hr
	Skid resistant material or equivalent shall cover the normal walking surface of the machine's upper structure
	A master battery disconnect switch must be installed
	Machine must be equipped with a secondary ground level engine shut-down switch
	The monitor panel will display lights to inform the operator when the machine approaches or exceeds the oil and filtration replacement interval

	All work equipment bushing lubrication intervals except arm tip and bucket linkage to be no less than 500 hr
	The machine shall include a manufacturer authorized complimentary scheduled maintenance program for the first 3 years or 2,000 hours, whichever occurs first
	GENERAL/OTHER
	The electric harnesses and connectors must be fixed to the structural members of the machine body
	An engine cooling fan guard must be installed
	Machine shall have hand rails on the right hand and left hand side of the upper structure The right side must also have an access hand rail
	The machine shall include a manufacturer designed telematics system with equipment management and monitoring capability, maintenance tracking, abnormality display with error codes, diagnostics, fuel consumption and machine location. Information shall be accessible through the web or a smart phone application and be provided without a subscription fee for life of machine
	Machine should be capable of recording and reporting key operation information by individual operator identification codes
	The electrical system shall include a 24V to 12V converter with no fewer than 2 12V power ports in the cab
	A track frame undercover (swivel guard) shall be provided
	The machine shall be equipped with an electric travel alarm and warning horn
	SERVICE FILL CAPACITY
	The fuel tank shall have a capacity of at least 79.25 gallons (300 L)
	The cooling system shall have a refill capacity of at least 7.2 gal (27.3 L)
	Engine oil shall have a refill capacity of at least 4.8 gal (18 L)
	Swing drive shall have a refill capacity of at least 1.2 gal (4.5 L)
	Each final drive shall have a capacity of at least 1.43 gal (5.4 L)
	DEF fluid shall have a capacity of at least 7.82 gal (29.6 L)
	DEF tank must have enough fluid capacity to operate on a 70% (35°) slope with less than 5% DEF volume
	Hydraulic tank shall have a refill capacity of at least 32.0 gal (121 L)
	Service Agreement
	3 year or 2000 hour service agreement.
	500/1000/1500/2000 hour intervals. (250 hr. initial interval for some products) Complimentary Maintenance Interval includes: Replacement of Oils & Fluid Filters with genuine Parts, 50-Point inspection, Oil & Wear Analysis Sampling / Travel & Mileage Engine air filter not included.
	Genuine Care Agreement
	100% core guarantee, and 7 year 10,000 hour component assurance
	Undercarriage
	48 months or 5000 hour assurance program.

SUPPLIER BID FORM (Hydraulic Excavator)

Name of bidder: _____

Address of bidder: _____

Make of unit: _____

Model of unit: _____

Price of unit.....\$ _____

Lease price of unit.....\$ _____

36 month lease payment.....\$ _____

Balloon payment.....\$ _____

48 month lease payment.....\$ _____

Balloon payment.....\$ _____

60 month lease payment.....\$ _____

Balloon payment.....\$ _____

Guaranteed buy back @ 36 months or 5000 hours.....\$ _____

Guaranteed buy back @ 48 months or 6000 hours.....\$ _____

Guaranteed buy back @ 60 months or 7500 hours.....\$ _____

Interest rate (APR) – 36 mo. @ _____%, 48 mo. @ _____%, 60 mo. @ _____%

Warranty (Enclose copy)..... _____

Labor rate for non warranty work(per hour)..... _____

Travel mileage rate...(per mile)..... _____

Distance from nearest facility..... _____

Delivery Date..... _____

Exceptions and Justifications to Specifications;_____

Representative_____