



JEFFERSON COUNTY PURCHASING DEPARTMENT

Deborah L. Clark, Purchasing Agent

1149 Pearl Street, 1st Floor, Beaumont, TX 77701 409-835-8593 Fax 409-835-8456

LEGAL NOTICE

Advertisement for Invitation for Bids

May 21, 2018

Notice is hereby given that sealed bids will be accepted by the Jefferson County Purchasing Department for IFB 18-013/JW, Re-bid Heavy Equipment for Jefferson County Precinct No. 3 (To Replace Unrepairable Equipment Damaged by Hurricane Harvey). **Specifications for this project may be obtained from the Jefferson County website, <http://www.co.jefferson.tx.us/Purchasing/main.htm> or by calling 409-835-8593.**

Bids are to be sealed and addressed to the Purchasing Agent with the bid number and name marked on the outside of the envelope or box. Bidders shall forward an original and three (3) copies of their bid to the address shown below. Jefferson County does not accept bids submitted electronically. Late bids will be rejected as non-responsive. Bids will be publicly opened and read aloud in the Jefferson County Commissioners' Courtroom at the time and date below. Bidders are invited to attend the sealed bid opening.

BID NAME: Re-bid Heavy Equipment for Jefferson County Precinct No. 3
(To Replace Unrepairable Equipment Damaged by Hurricane Harvey)

BID NO: IFB 18-013/JW

DUE DATE/TIME: 11:00 AM CDT, Tuesday, June 19, 2018

MAIL OR DELIVER TO: Jefferson County Purchasing Department
1149 Pearl Street, 1st Floor
Beaumont, Texas 77701

Any questions relating to these requirements should be directed to Jamey West, Assistant Purchasing Agent, at 409-835-8593 or jwest@co.jefferson.tx.us. Bidders may submit technical questions to: Jason Castille, Precinct No. 3 Superintendent at 409-736-2851 or pct3sc@co.jefferson.tx.us.

Jefferson County encourages Disadvantaged Business Enterprises to participate in the bidding process. Jefferson County does not discriminate on the basis of race, color, national origin, sex, religion, age or disability in employment or the provisions of services. Individuals requiring special accommodations are requested to contact our office at 409-835-8593 to make arrangements no later than seven (7) calendar days prior to the submittal deadline. Jefferson County reserves the right to accept or reject any or all proposals, to waive technicalities and to take whatever action is in the best interest of Jefferson County.

All interested firms are invited to submit a bid in accordance with the terms and conditions stated in this bid.

RESPONDENTS ARE STRONGLY ENCOURAGED TO CAREFULLY READ THE ENTIRE INVITATION.

A handwritten signature of Deborah L. Clark in black ink, written over a circular official stamp of the Jefferson County Purchasing Department.

Deborah L. Clark, Purchasing Agent
Jefferson County, Texas

Publish: Beaumont Enterprise & Port Arthur News – May 23, 2018 & May 30, 2018

**IFB 18-013/JW, Re-bid Heavy Equipment for Jefferson County Precinct No. 3
(To Replace Unrepairable Equipment Damaged by Hurricane Harvey)
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Table of Contents

Table of Contents	1
Instructions to Bidders	2
General Conditions of Bidding and Terms of Contract.....	6
Special Requirements/Instructions	16
Minimum Specifications	20
Instructions to Bidders (Re: Brand Reference / Equivalent Bid Items)	20
Bid Item 1: Description & Technical Specifications Checklist Form Instructions	21
Bid Item 1: Technical Specifications Checklist Form.....	22
Bid Item 1: Bidder Alternative Features Offered & Exceptions List	37
Bid Item 2: Description & Technical Specifications Checklist Form Instructions	38
Bid Item 2: Technical Specifications Checklist Form.....	39
Bid Item 2: Bidder Alternative Features Offered & Exceptions List	41
Bid Item 3: Description & Technical Specifications Checklist Form Instructions	42
Bid Item 3: Technical Specifications Checklist Form.....	43
Bid Item 3: Bidder Alternative Features Offered & Exceptions List	45
Bid Item 4: Description & Technical Specifications Checklist Form Instructions	46
Bid Item 4: Technical Specifications Checklist Form.....	47
Bid Item 4: Bidder Alternative Features Offered & Exceptions List	49
Bid Item 5: Description & Technical Specifications Checklist Form Instructions	50
Bid Item 5: Technical Specifications Checklist Form.....	51
Bid Item 5: Bidder Alternative Features Offered & Exceptions List	52
Bidder Information Form	53
Offer to Contract Form.....	54
Acceptance of Offer Form	55
Bid Form.....	56
Vendor References.....	62
Signature Page	63
Conflict of Interest Questionnaire	64
Local Government Officer Conflict Disclosure Statement Forms (OFFICE USE ONLY)	65
Good Faith Effort Determination Checklist	66
Notice of Intent	67
HUB Subcontracting Participation Declaration Form	68
Residence Certification/Tax Form	72
Bid Affidavit	73
TECHNICAL SPECIFICATIONS	(APPENDIX A-E)

Instructions to Bidders

1. Bid Submission

Bids must be submitted in complete original form by mail or messenger to the following address:

Jefferson County Purchasing Department
1149 Pearl Street, 1st Floor
Beaumont, TX 77701

Bids will be accepted at the above address until the time and date specified herein, and immediately after will be publicly opened and read aloud.

Bidder shall submit bid in a tightly sealed opaque envelope or box, plainly marked "SEALED BID." The outside of the envelope or box shall also include the Bid Number, Bid Name, Bid Due Date, and the Bidder's Name and Address; and shall be addressed to the Purchasing Agent.

Late bids will not be accepted and will be returned unopened to the bidder.

All bids submitted in response to this invitation shall become the property of Jefferson County and will be a matter of public record available for review.

Bidder is responsible for submitting:

- One (1) *original* bid copy to include a completed copy of this specifications packet, in its entirety.
- Three (3) numbered bid *copies* to include at a minimum all pages requiring completion and/or marked with instructions to be returned with bid submission and any other documentation requested within these specifications.

Additionally, Bidder must monitor the Jefferson County Purchasing Department Website (below) to see if addenda or additional instructions have been posted. Failure to return all required forms could result in a response being declared as non-responsive.

<http://www.co.jefferson.tx.us/purchasing/main.htm>

2. Bid Submissions During Time of Inclement Weather, Disaster, or Emergency

In case of inclement weather or any other unforeseen event causing the County to close for business on the date of a bid/proposal/statement of qualifications submission deadline, the closing will automatically be postponed until the next business day that County offices are open to the public. Should inclement weather conditions or any other unforeseen event cause delays in courier service operations, the County may issue an addendum to all known vendors interested in the project to extend the deadline. It will be the responsibility of the vendor to notify the county of their interest in the project should these conditions impact their ability to submit a bid/proposal/statement of qualifications submission before the stated deadline. The County reserves the right to make the final judgement call to extend any deadline.

Should an emergency or unanticipated event interrupt normal County processes, and bid/proposal/statement of qualifications submissions cannot be received by the Jefferson County Purchasing Department's office by the exact time specified in the IFB and urgent County requirements preclude amendment to the IFB, the time specified for receipt of bids will be deemed to be extended to the same time of day specified in the solicitation on the first business day on which normal County processes resume.

3. Courthouse Security

Bidders are advised that all visitors to the Courthouse must pass through Security. **Bidders planning to hand deliver bids must allow time to get through Security, as a delay in entering the Courthouse will not be accepted as an excuse for late submittal.** Mondays and Tuesdays are particularly heavy days. Bidders are strongly urged to plan accordingly.

4. Preparation of Bids

The bid shall be legibly printed in ink or typed.

The County requests that bid submissions NOT be bound by staples or glued spines.

If a unit price or extension already entered is to be altered, it shall be crossed out and initialed in ink by the bidder.

The bid shall be legally signed and shall include the complete address of the bidder.

Jefferson County is exempt from Federal and State Sales Taxes, and such taxes shall not be included in bid prices.

5. Signatures

All bids, notifications, claims, and statements must be signed by an individual authorized to bind the bidder. The individual signing certifies, under penalty of perjury, that he or she has the legal authorization to bind the bidder.

6. County Holidays – 2018:

January 1	Monday	New Year's
January 15	Monday	Martin Luther King, Jr. Day
February 19	Monday	President's Day
March 30	Friday	Good Friday
May 28	Monday	Memorial Day
July 4	Wednesday	Independence Day
September 3	Monday	Labor Day
November 12	Monday	Veteran's Day
November 22 & 23	Thursday & Friday	Thanksgiving
December 24 & 25	Monday & Tuesday	Christmas
January 1, 2019	Tuesday	New Year's

7. Rejection or Withdrawal

Submission of additional terms, conditions or agreements with the bid document are grounds for deeming a bid non-responsive and may result in bid rejection. Jefferson County reserves the right to reject any and all bids and to waive any informalities and minor irregularities or defects in bids. Bids may be withdrawn in person by a bidder or authorized representative, provided their identity is made known and a receipt is signed for the bid, but only if the withdrawal is made prior to the time set for receipt of bids. Bids are an irrevocable offer and may not be withdrawn within 90 days after opening date.

8. Emergency/Declared Disaster Requirements

In the event of an emergency or if Jefferson County is declared a disaster area, by the County, State, or Federal Government, this Acceptance of Offer may be subjected to unusual usage. Contractor shall service the county during such an emergency or declared disaster under the same terms and conditions that apply during non-emergency/disaster conditions. The pricing as specified in this Acceptance of Offer shall apply to serving the County's needs regardless of the circumstances. If Contractor is unable to supply the services under the terms of the Acceptance of Offer, then Contractor shall provide proof of such disruption and a copy of the invoice from Contractor's supplier(s). Additional profit margin as a result of supplying services during an emergency or declared disaster shall not be permitted. In the event that additional equipment,

supplies, and materials are required during the declared disaster, additional shipping, handling and drayage fees may apply.

9. Award

The bid will be awarded to the responsible, responsive bidder(s) whose bid, conforming to the solicitation, will be most advantageous to Jefferson County – price and other factors considered. Unless otherwise specified in this IFB, Jefferson County reserves the right to accept a bid in whole or in part, and to award by item or by group, whichever is deemed to be in the best interest of Jefferson County. Any bidder who is in default to Jefferson County at the time of submittal of the bid shall have that bid rejected. Jefferson County reserves the right to clarify any contractual terms with the concurrence of the Contractor; however, any substantial nonconformity in the offer, as determined by Jefferson County, shall be deemed non-responsive and the offer rejected.

In evaluating bids, Jefferson County shall consider the qualifications of the bidders, and, where applicable, operating costs, delivery time, maintenance requirements, performance data, and guarantees of materials and equipment. In addition, Jefferson County may conduct such investigation as it deems necessary to assist in the evaluation of a bid and to establish the responsibility, qualifications, and financial ability of the bidders to fulfill the contract.

Jefferson County reserves the right to award this contract on the basis of **lowest and best bid** in accordance with the laws of the State of Texas, to waive any formality or irregularity, to make awards to more than one offeror, and/or to reject any or all bids. In the event the lowest dollar offeror meeting specifications is not awarded a contract, Offeror may appear before the Commissioners' Court and present evidence concerning Offeror responsibility after officially notifying the Office of the Purchasing Agent of Offeror's intent to appear.

10. Contract

A response to an IFB is an offer to contract with Jefferson County based upon the terms, conditions, and specifications contained in the IFB. Bids do not become contracts unless and until they are executed by Jefferson County, eliminating a formal signing of a separate contract. For that reason, all of the terms and conditions of the contract are contained in the IFB, unless any of the terms and conditions is modified by an IFB Amendment, a Contract Amendment, or by mutually agreed terms and conditions in the contract documents.

11. Waiver of Subrogation

Bidder and bidder's insurance carrier waive any and all rights whatsoever with regard to subrogation against Jefferson County as an indirect party to any suit arising out of personal or property damages resulting from bidder's performance under this agreement.

12. Fiscal Funding

A multi-year contract (if requested by the specifications) continuing as a result of an extension option must include fiscal funding out. If, for any reason, funds are not appropriated to continue the contract, said contract shall become null and void.

13. Bid Results

Bid results are not provided in response to telephone inquiries. A preliminary tabulation of bids received will be posted on the Purchasing web page (<http://co.jefferson.tx.us/purchasing/main.htm>) as soon as possible following bid opening. A final tabulation will be posted following bid award, and will also be available for review in the Purchasing Department.

14. Changes and Addenda to Bid Documents

Each change or addendum issued in relation to this IFB document will be on file in the Office of the Purchasing Agent, and will be posted on the Purchasing web site as soon as possible. It shall be the bidder's responsibility to make inquiry as to change or addenda issued, and to monitor the web site. All such changes or addenda shall become part of the contract and all bidders shall be bound by such addenda. Information on all changes or addenda issued will be available at the Office of the County Purchasing Agent.

15. Specifications

Unless otherwise stated by the bidder, the bid will be considered as being in accordance with Jefferson County's applicable standard specifications, and any special specifications outlined in the bid document. References to a particular trade name, manufacturer's catalogue, or model number are made for descriptive purposes to guide the bidder in interpreting the requirements of Jefferson County, and should not be construed as excluding bids on other types of materials, equipment, and supplies. However, the bidder, if awarded a contract, will be required to furnish the particular item referred to in the specifications or description unless departure or substitution is clearly noted and described in the bid. Jefferson County reserves the right to determine if equipment/ product being bid is an acceptable alternate. All goods shall be new unless otherwise so stated in the bid. Any unsolicited alternate bid, or any changes, insertions, or omissions to the terms and conditions, specifications, or any other requirements of the bid, may be considered non-responsive.

16. Delivery

Bids shall include all charges for delivery, packing, crating, containers, etc. Unless otherwise stated by the bidder (in writing on the included Bid Form), prices bid will be considered as being based on F.O.B. destination/delivered freight included.

17. Interpretation of Bid and/or Contract Documents

All inquiries shall be made within a reasonable time prior to the date and time fixed for the bid opening, in order that a written response in the form of an addendum, if required, can be processed before the bids are opened. Inquiries received that are not made in a timely fashion may or may not be considered.

18. Currency

Prices calculated by the bidder shall be stated in U.S. dollars.

19. Pricing

Prices shall be stated in units of quantity specified in the bid documents. In case of discrepancy in computing the amount of the bid, the unit price shall govern.

20. Notice to Proceed/Purchase Order

The successful bidder may not commence work under this contract until authorized to do so by the Purchasing Agent.

21. Certification

By signing the offer section of the Offer and Acceptance page, bidder certifies:

- The submission of the offer did not involve collusion or other anti-competitive practices.
- The bidder has not given, offered to give, nor intends to give at any time hereafter, any economic opportunity, future employment, gift, loan, gratuity, special discount, trip, favor, or service to any public servant in connection with the submitted offer.
- The bidder hereby certifies that the individual signing the bid is an authorized agent for the bidder and has the authority to bind the bidder to the contract.

22. Definitions

"County" – Jefferson County, Texas.

"Contractor" – The bidder whose proposal is accepted by Jefferson County.

23. Minority-Women Business Enterprise Participation

It is the desire of Jefferson County to increase the participation of Minority (MBE) and women-owned (WBE) businesses in its contracting and procurement programs. While the County does not have any preference or set aside programs in place, it is committed to a policy of equitable participation for these firms.

General Conditions of Bidding and Terms of Contract

By execution of this document, the vendor accepts all general and special conditions of the contract as outlined below and in the specifications and plans.

1. Bidding

1.1 Bids. All bids must be submitted on the bid form furnished in this package.

1.2 Authorized Signatures. The bid must be executed personally by the vendor, duly authorized partner of the partnership, or duly authorized officer of the corporation. If executed by an agent, a power of attorney or other evidence of authority to act on behalf of the vendor shall accompany the bid to become a valid bid.

1.3 Late Bids. Bids must be in the office of the Jefferson County Purchasing Agent before or at the specified time and date bids are due. Bids received after the submission deadline shall be rejected as non-responsive and returned unopened.

1.4 Withdrawal of Bids Prior to Bid Opening. A bid may be withdrawn before the opening date by submitting a written request to the Purchasing Agent. If time allows, the bidder may submit a new bid. Bidder assumes full responsibility for submitting a new bid before or at the specified time and date bids are due. Jefferson County reserves the right to withdraw a request for bids before the opening date.

1.5 Withdrawal of Bids after Bid Opening. Bidder agrees that its offer may not be withdrawn or cancelled by the vendor for a period of ninety (90) days following the date and time designated for the receipt of bids unless otherwise stated in the bid and/or specifications.

1.6 Bid Amounts. Bids shall show net prices, extensions where applicable and net total. In case of conflict between unit price and extension, the unit price will govern. Any ambiguity in the bid as a result of omission, error, unintelligible or illegible wording shall be interpreted in the favor of Jefferson County.

1.7 Exceptions and/or Substitutions. All bids meeting the intent of the specifications and plans will be considered for award. Vendors taking exception to the specifications and plans, or offering substitutions, shall state these exceptions in the section provided. If bid is made on an article other than the one specified, which a bidder considers comparable, the name and grade of said article must be specified in the bid and sufficient specifications and descriptive data must accompany same to permit thorough evaluation. The absence of stated exceptions and/or substitutions shall indicate that the vendor has not taken any exceptions to the specifications and shall be responsible to perform in strict accordance with the specifications. As a matter of practice, Jefferson County rejects exception(s) and /or substitutions as non-responsive but reserves the right to accept any and/or all of the exception(s) and/or substitution(s) deemed to be in the best interest of Jefferson County.

1.8 Alternates. The Invitation for Bid and/or specifications may expressly allow bidder to submit an alternate bid. Presence of such an offer shall not be considered an indication of non-responsiveness.

1.9 Descriptions. Unless otherwise specified, any reference to make, manufacturer and/or model used in the bid specifications is merely descriptive and not restrictive, and is used only to indicate type, style, or quality of material desired.

1.10 Bid Alterations. Bids cannot be altered or amended after submission deadline. Any interlineations, alterations, or erasures made before opening time must be initialed by the signer of the bid, guaranteeing authenticity.

1.11 Tax Exempt Status. Jefferson County is exempt from federal excise tax and state sales tax. Unless the bid form or specifications specifically indicate otherwise, the bid price must be net, exclusive of above-mentioned taxes and will be so construed. Therefore, the bid price shall not include taxes.

1.12 Quantities. Quantities indicated are estimated quantities only and are not a commitment to buy. Approximate usage does not constitute an order, but only implies the probable quantity that will be used. Commodities will be ordered on an as-needed basis. Bidder is responsible for accurate final counts.

1.13 Bid Award. Award of contract shall be made to the most responsible, responsive bidder, whose offer is determined to be the best value, taking into consideration the relative importance of price. Jefferson County reserves the right to be the sole judge as to whether items bid will serve the purpose intended.

Jefferson County reserves the right to accept or reject in part or in whole any bid submitted, and to waive any technicalities or informalities for the best interest of the County. Jefferson County reserves the right to award based upon individual line items, sections or total bid.

1.14 Silence of Specifications for Complete Units. All materials, equipment and/or parts that will become a portion of the completed work, including items not specifically stated herein but, necessary to render the service(s) complete and operational per the specifications, are to be included in the bid price. Vendor may be required to furnish evidence that the service, as bid, will meet or exceed these requirements.

1.15 Addenda. Any interpretations, corrections or changes to the specifications and plans will be made by addenda no later than forty-eight (48) hours prior to the bid opening. Addenda will be posted on the Purchasing web site. Vendors are responsible for monitoring the web site in order to remain informed on addenda. Vendors shall acknowledge receipt of all addenda with submission of bid.

1.16 General Bid Bond/Surety Requirements. Failure to furnish bid bond/surety, if requested, will result in bid being declared non-responsive. Non-responsive bids will not be considered for award.

1.17 General Insurance Requirements. Failure to furnish Affidavit of Insurance, if required in these specifications, will result in bid being declared non-responsive. Non-responsive bids will not be considered for award.

1.18 Responsiveness. A responsive bid shall substantially conform to the requirements of this Invitation to Bid and/or specifications contained herein. Bidders who substitute any other terms, conditions, specifications and/or requirements or who qualify their bids in such a manner as to nullify or limit their liability to the contracting entity shall have their bids deemed non-responsive. Also, bids containing any clause that would limit contracting authority shall be considered non-responsive. Examples of non-responsive bids include but shall not be limited to: a) bids that fail to conform to required delivery schedules as set forth in the bid request; b) bids with prices qualified in such a manner that the bid price cannot be determined, such as with vague wording that may include "price in effect at the time of delivery," and c) bids made contingent upon award of other bids currently under consideration.

1.19 Responsible Standing of Bidder. To be considered for award, bidder must at least: have the ability to obtain adequate financial resources, be able to comply with required or proposed delivery/completion schedule, have a satisfactory record of performance; have a satisfactory record of integrity and ethics, and be otherwise qualified and eligible to receive award.

1.20 Confidential/Proprietary Information

If any material in the bid submission is considered by Bidder to be confidential or proprietary information (including manufacturing and/or design processes exclusive to the Bidder), Bidder **must** clearly mark the applicable pages of Bidder's bid submission to indicate each claim of confidentiality. Additionally, Bidder must include a statement on company letterhead identifying all Bid Submission section(s) and page(s) that have been marked as confidential. Jefferson County will protect from public disclosure such portions of a bid, unless directed otherwise by legal authority, including existing open records acts. Merely making a blanket claim that the entire bid submission is protected from disclosure because it contains some proprietary information is not acceptable, and will make the entire bid submission subject to release under the Texas Public Information Act.

By submitting a bid, Bidder agrees to reproduction by Jefferson County, without cost or liability, of any copyrighted portions of Bidder's bid submission or other information submitted by Bidder.

1.21 Public Bid Opening. Bidders are invited to be present at the opening of bids. After the official opening of bids, a period of not less than one week is necessary to evaluate bids. The amount of time necessary for bid evaluation may vary and is determined solely by the County. Following the bid evaluation, all bids submitted are available for public review.

2. Performance

2.1 Design, Strength, and Quality. Design, strength, and quality of materials and workmanship must conform to the highest standards of manufacturing and engineering practices. The apparent silence of specifications and/or plans as to any detailed description concerning any point shall be regarded as meaning that only the best commercial practices are to prevail. All interpretations of these specifications and/or plans shall be made on the basis of this statement.

2.2 Age and Manufacture. All tangible goods being bid must be new and unused, unless otherwise specified, in first-class condition, of current manufacture, and furnished ready to use. All items not specifically mentioned that are required for a complete unit shall be furnished.

2.3 Delivery Location. All deliveries will be made to the address(es) specified on the purchase order during normal working hours of 8:00 a.m. to 4:00 p.m., Monday through Friday, unless otherwise authorized by the Purchasing Agent or designee.

2.4 Delivery Schedule. Delivery time may be an important consideration in the evaluation of best value. The maximum number of days necessary for delivery ARO shall be stated in the space, if provided, on the bid form.

2.5 Delivery Charges. All delivery and freight charges, F.O.B. destination shown on Jefferson County purchase order, as necessary to perform contract are to be included in the bid price.

2.6 Installation Charges. All charges for assembly, installation and set-up shall be included in the bid price. Unless otherwise stated, assembly, installation and set-up will be required.

2.7 Operating Instructions and Training. Clear and concise operating instructions and descriptive literature will be provided in English, if requested. On-site detailed training in the safe and efficient use and general maintenance of item(s) purchased shall be provided as needed at the request of Jefferson County. Instructions and training shall be at no additional cost to the County.

2.8 Storage. Bidder agrees to provide storage of custom ordered materials, if requested, for up to thirty (30) calendar days.

2.9 Compliance with Federal, State, County, and Local Laws. Bids must comply with all federal, state, county and local laws, including, but not limited to, all applicable standard safety, emission, and noise control requirements. Any vehicles or equipment shall contain all standard safety, emission, and noise control requirements required for the types and sizes of equipment at the time of their manufacture. The contractor agrees, during the performance of work or service, to comply with all applicable codes and ordinances of Jefferson County or the State of Texas as they may apply, as these laws may now read, or as they may hereafter be changed or amended.

2.10 OSHA. The bidder will certify all equipment complies with all regulations and conditions stipulated under the Williams-Steiger Occupational Safety and Health Act of 1971, as amended. The successful bidder will further certify that all items furnished under this project will conform and comply with federal and State of Texas OSHA standards. The successful bidder will agree to indemnify and hold harmless Jefferson County for any and all damages that may be assessed against the County.

2.11 Patents and Copyrights. The successful vendor agrees to protect the County from claims involving infringements of patents and/or copyrights.

2.12 Samples, Demonstrations and Testing. At Jefferson County's request and direction, bidder shall provide product samples and/or testing of items bid to ensure compliance with specifications. Samples, demonstrations and/or testing may be requested at any point prior to or following bid award. Samples, demonstrations and/or testing may be requested upon delivery and/or any point during the term of resulting contract. All samples (including return thereof), demonstrations, and/or testing shall be at the expense of the bidder/vendor.

2.13 Acceptability. All articles enumerated in the bid shall be subject to inspection by an officer designated for that purpose by Jefferson County. If found inferior to the quality called for, or not equal in value to the specifications, deficient in workmanship or otherwise, this fact shall be certified to the Purchasing Agent, who shall have the right to reject the whole or any part of the same. Items and/or work determined to be contrary to specifications must be replaced at the vendor's expense. Inferior items not retrieved by the vendor within thirty (30) calendar days, or an otherwise agreed upon time, shall become the property of the County. If disposal of such items warrants an expense, an amount equal to the disposal expense will be deducted from amounts payable to the vendor.

2.14 Maintenance. Maintenance required for equipment bid should be available in Jefferson County by a manufacturer authorized maintenance facility. Cost for this service shall be shown on the bid sheet as requested or on a separate sheet, as required. If Jefferson County opts to include maintenance, it shall be so stated in the purchase order and said cost will be included. Service will commence only upon expiration of applicable warranties and should be priced accordingly.

2.15 Material Safety Data Sheets. Under the “Hazardous Communications Act,” common known as the “Texas Right to Know Act,” a bidder must provide the user department, with each delivery, material safety data sheets which are applicable to hazardous substances defined in the Act. Failure of the bidder to furnish this documentation, will be cause to reject any bid applying thereto.

2.16 Evaluation. Evaluation shall be used as a determinant as to which services are the most efficient and/or most economical for the County. It shall be based on all factors having a bearing on price and performance of the items in the user environment. All bids are subject to tabulation by the Jefferson County Purchasing Department and recommendation to Jefferson County Commissioners’ Court. Compliance with all bid requirements and needs of the using department are considered in evaluating bids. Pricing is not the only criteria for making a recommendation. The Jefferson County Purchasing Department reserves to right to contact any bidder, at any time, to clarify, verify or requirement information with regard to this bid.

3. Purchase Orders and Payment

3.1 Purchase Orders. A purchase order(s) shall be generated by the Jefferson County Purchasing Agent to the successful vendor. The purchase order number must appear on all itemized invoices and packing slips. The County will not be held responsible for any work orders placed and/or performed without a valid current purchase order number. Payment will be made for all services rendered and accepted by the contract administrator for which a valid invoice has been received.

3.2 Invoices. All invoices shall reference the Purchase Order number. Invoices shall reference the bid item number or a detailed description for each item invoiced. If an item purchased and itemized on the invoice does not correspond to an item in any of the categories awarded to the vendor, invoice shall reference the item as “N/C” to indicate that it is a non-contract item. This requirement is to assist the County in verifying contract pricing on all invoices. Payment will be made under terms of net thirty (30) days unless otherwise agreed upon by seller and the purchasing department.

3.3 Prompt Payment. In accordance with the State of Texas Prompt Payment Act, Article 601f V.T.C.S., payment will be made after receive and acceptance by the County of the merchandise ordered and of a valid invoice. Successful bidder(s) is required to pay subcontractors within ten (10) days after the successful bidder receives payment from the County.

3.4 Funding. Jefferson County is operated and funded on an October 1 to September 30 basis; accordingly, the County reserves the right to terminate, without liability to the County, any contract for which funding is not available.

4. Contract

4.1 Contract Definition. The General Conditions of Bidding and Terms of Contract, Specifications, Plans, Bidding Forms, Addenda, and any other documents made a part of this bid shall constitute the complete bid. This bid, when duly accepted by Jefferson County, shall constitute a contract equally binding between the successful bidder and Jefferson County.

4.2 Change Order. No different or additional terms will become part of this contract with the exception of a change order. No oral statement of any person shall modify or otherwise change, or affect the terms, conditions or specifications stated in the resulting contract. All change orders to the contract will be made in writing and at the discretion and approval of Jefferson County. No change order will be binding unless signed by an authorized representative of the County and the vendor.

4.3 Price Re-determination. A price re-determination may be requested at the time of annual renewal. All requests for price re-determination shall be in written form. Cause for such request, i.e., manufacturer’s direct cost, postage rates, Railroad Commission rates, Federal/State minimum wage law, Federal/State unemployment taxes, F.I.C.A, Insurance Coverage Rates, etc., shall be substantiated in writing by the source of the cost increase. The bidder’s past experience of honoring contracts at the bid price will be an important consideration in the evaluation of the lowest and best bid. Jefferson County reserves the right to accept or reject any/all requests for price re-determination as it deems to be in the best interest of the County.

4.4 Termination. Jefferson County reserves the right to terminate the contract for default if the bidder breached any of the terms therein, including warranties of bidder or if the bidder becomes insolvent or commits acts of bankruptcy. Such right of termination is in addition to and not in lieu of any other remedies which Jefferson County may have in law or equity. Default may be construed as, but not limited to, failure

to deliver the proper goods and/or service within the proper amount of time, and/or to properly perform any and all services required to Jefferson County's satisfaction and/or to meet all other obligations and requirements. Contracts may be terminated without cause upon thirty (30) days' written notice to either party unless otherwise specified. Jefferson County reserves the right to award canceled contract to the next lowest bidder. Bidder, in submitting this bid, agrees that Jefferson County shall not be liable to prosecution for damages in the event that the County declares the bidder in default.

4.5 Conflict of Interest. Employees of the County are not permitted to maintain financial interest in, or receive payment, directly or indirectly, borrow from, lend to, invest in, or engage in any substantial financial transaction with any individual, organization, supplier, or subcontractor who does business with the County without disclosure. When conflict of interest is discovered, it shall be grounds for termination of contract.

4.6 Injuries or Damages Resulting from Negligence. Successful vendor shall defend, indemnify and save harmless Jefferson County and all its officers, agents and employees from all suits, actions, or other claims of any character, name and description brought for or on account of any injuries or damages received or sustained by any person, persons, or property on account of any negligent act or fault of the successful vendor, or of any agent, employee, subcontractor or supplier in the execution of, or performance under, any contract which may result from bid award. Successful vendor shall pay any judgment with cost which may be obtained against Jefferson County growing out of such injury or damages.

4.7 Interest by Public Officials. No public official shall have interest in this contract, in accordance with Texas Local Government Code.

4.8 Warranty. The successful vendor shall warrant that all materials utilized in the performance of this contract shall conform to the proposed specifications and/or all warranties as stated in the Uniform Commercial Code and be free from all defects in material, workmanship and title.

4.9 Uniform Commercial Code. The successful vendor and Jefferson County agree that both parties have all rights, duties, and remedies available as stated in the Uniform Commercial Code.

4.10 Venue. This agreement will be governed and construed according to the laws of the State of Texas. This agreement is performable in the County of Jefferson, Texas.

4.11 Sale, Assignment, or Transfer of Contract. The successful vendor shall not sell, assign, transfer or convey this contract, in whole or in part, without the prior written consent of Jefferson County.

4.12 Silence of Specifications. The apparent silence of these specifications as to any detailed description concerning any point, shall be regarded as meaning that only the best commercial practices are to prevail. All interpretations of these specifications shall be made on the basis of this statement.

5. Federal Emergency Management Agency (FEMA) Mandated Contract Clauses

If applicable to the work and services being performed by CONTRACTOR under the parties' AGREEMENT, the following provisions are adopted and form part of this AGREEMENT:

(A) DAMAGES, 2 CFR §200.326 Appendix II to Part 200 (A)

(1) All work to be performed under this AGREEMENT shall be timely commenced. A breach of this AGREEMENT by Contractor would cause substantial delay in the completion of the required services affecting the safety and welfare of the public.

(2) In the event of Contractor's breach of its performance obligations, County shall have all rights and remedies against Contractor as provided by law.

(B) TERMINATION RIGHTS, 2 CFR §200.326 Appendix II to Part 200 (B)

Termination for Convenience: Whenever the interests of the County so require, County may terminate the parties' Agreement, in whole or in part, for the convenience of the County. County shall give Contractor thirty (30) days prior written notice of termination specifying the portions of the Agreement to be terminated and when such termination will become effective. If only portions of the parties' agreement are terminated, Contractor has the right to withdraw from the parties' Agreement, without adverse action or claims. In the event of a termination for convenience by County, Contractor shall be entitled to payment for all work and services performed by it up to the effective date of such termination.

Termination for Cause: The County may, by written notice of default to Contractor, terminate the parties' Agreement, in whole or in part, if the Contractor fails to satisfactorily perform any provisions of the parties' agreement after a period of ten (10) following Contractor's receipt of a Notice of Deficiency provided by County.

(C) EQUAL EMPLOYMENT OPPORTUNITY CLAUSE (2 CFR §200.326 Appendix II to Part 200 (C))

If applicable to the work and services performed by CONTRACTOR under the AGREEMENT, during the performance of the AGREEMENT, CONTRACTOR shall comply with the Equal Employment Opportunity Clause (41 CFR 60-1.4(b)):

(1) CONTRACTOR will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. CONTRACTOR will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, or national origin. Such action shall include, but not be limited to the following: Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. AGREEMENTOR agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.

(2) CONTRACTOR will, in all solicitations or advertisements for employees placed by or on behalf of the CONTRACTOR, state that all qualified applicants will receive considerations for employment without regard to race, color, religion, sex, or national origin.

(3) CONTRACTOR will send to each labor union or representative of workers with which it has a collective bargaining agreement or other agreement or understanding, a notice to be provided advising the said labor union or workers' representatives of the CONTRACTOR'S commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

(4) CONTRACTOR will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.

(5) CONTRACTOR will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor for purpose of investigation to ascertain compliance with such rules, regulations, and orders.

(6) In the event of the CONTRACTOR'S noncompliance with the nondiscrimination clauses of this AGREEMENT or with any of the said rules, regulations or orders, this AGREEMENT may be canceled, terminated, or suspended in whole or in part and the CONTRACTOR may be declared ineligible for further government contracts or federally assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

(7) CONTRACTOR will include the portion of the sentence immediately preceding paragraph (1) and the provisions of subparagraphs 1 through 7 in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or contractor. CONTRACTOR will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for noncompliance: provided, however, that in the event CONTRACTOR becomes involved in, or is threatened with, litigation with a subcontractor or contractor as a result of such direction by the administering agency the CONTRACTOR may request the United States to enter into such litigation to protect the interest of the United States.

D. DAVIS-BACON ACT AND COPELAND "ANTI-KICKBACK" ACT, 2 CFR §200.326 Appen. II to Part 200 (D)

If applicable to the work and services performed by CONTRACTOR under the parties' AGREEMENT:

(1) Bacon-Davis Act: Applicable to construction or repair of public buildings or public works. see FEMA Public Assistance Program and Policy Guide, Ch.2(V)(G)(2), page 32 (FP 104-009-2/January 2016);

(2) Copeland "Anti-Kickback" Act: In contracts subject to the Davis-Bacon Act, CONTRACTOR shall comply with the Copeland "Anti-Kickback" Act (40 U.S.C. §3145), as supplemented by Department of Labor regulations (29 CFR Part 3, "Contractors and Subcontractors on Public Building or Public Work Financed in Whole or in Part by Loans or Grants from the United States"). The Act provides that the contractor and subcontractor must be prohibited from inducing, by any means, any person employed in the construction, completion, or repair of public work, to give up any part of the compensation to which he or she is otherwise entitled. The GOVERNMENT must report all suspected or reported violations to the appropriate Federal agency.

If applicable to the work and services performed by CONTRACTOR under the parties' AGREEMENT:

(a) CONTRACTOR shall comply with 18 U.S.C. § 874, 40 U.S.C. § 3145, and the requirements of 29 C.F.R. pt. 3 as may be applicable, which are incorporated by reference into this AGREEMENT.

(b) CONTRACTOR or subcontractor shall insert in any subcontract the clause above and such other clauses as FEMA may by appropriate instructions require, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The CONTRACTOR shall be responsible for the compliance by any subcontractor or lower tier subcontract with all of these contract clauses.

(c) A breach of the AGREEMENT clause above may be grounds for termination of the AGREEMENT, and for debarment as a contractor and subcontractor as provided in 29 C.F.R. §5.12.

E. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT, 2 CFR §200.326 Appendix II to Part 200 (E) (40 U.S.C. 3701-3708)

Contracts in excess of \$100,000 that involve the employment of mechanics or laborers shall comply with 40 U.S.C. 3702 and 3704, as supplemented by Department of Labor regulations (29 CFR Part 5). Under 40 U.S.C. 3702 of the Act, each contractor and its subcontractors shall compute the wages of every mechanic and laborer on the basis of a standard work week of 40 hours. Work in excess of the standard work week is permissible provided that the worker is compensated at a rate of not less than one and a half times the basic rate of pay for all hours worked in excess of 40 hours in the work week.

(1) Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

(2) Violation: liability for unpaid wages: liquidated damages. In the event of any violation of the clause set forth in paragraph (I) of this section the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (I) of this section, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (I) of this section.

(3) Withholding for unpaid wages and liquidated damages. The GOVERNMENT shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2) of this section.

(4) The contractor and subcontractor shall insert in any subcontract the clauses set forth in paragraphs (1) through (4) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts.

F. RIGHTS TO INVENTIONS MADE UNDER A CONTRACT OR AGREEMENT, 2 CFR §200.326 Appendix II to Part 200 (F)

If applicable to the work and services performed by CONTRACTOR under the parties' AGREEMENT and if the Federal award meets the definition of "funding agreement" under 37 CFR §401.2 (a) and the GOVERNMENT wishes to enter into a contract with a small business firm or nonprofit organization regarding the substitution of parties, assignment or performance of experimental, developmental, or research work under that "funding agreement," the GOVERNMENT must comply with the requirements of 37 CFR Part 401, "Rights to Inventions Made by Nonprofit Organizations and Small Business."

G. CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT, 2 CFR §200.326 Appendix II to Part 200 (G)

CONTRACTOR shall comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act (42 U.S.C. 7401-7671q.) and the Federal Water Pollution Control Act as amended (33 U.S.C. 1251-1387). Violations must be reported to the Federal awarding agency and the Regional Office of the Environmental Protection Agency (EPA).

CONTRACTOR shall include the foregoing requirements in each subcontract exceeding \$100,000.

H. ENERGY EFFICIENCY AND CONSERVATION, 2 CFR §200.326 Appendix II to Part 200 (H)

If applicable to the work and services performed by CONTRACTOR under the parties' AGREEMENT, CONTRACTOR shall comply with the mandatory standards and policies of the state regulation promulgated in accordance with the Energy Policy and Conservation Act (42 U.S.C. § 6201).

I. DEBARMENT AND SUSPENSION, 2 CFR §200.326 Appendix II to Part 200 (I)

(1) This AGREEMENT is a covered transaction for purposes of 2 C.F.R. pt. 180 and 2 C.F.R. pt. 3000. As such, the CONTRACTOR is required to verify that none of the contractor, its principals (defined at 2 C.F.R. § 180.995), or its affiliates (defined at 2 C.F.R. § 180.905) are excluded (defined at 2 C.F.R. § 180.940) or disqualified (defined at 2 C.F.R. § 180.935).

(2) The CONTRACTOR must comply with 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C and must include a requirement to comply with these regulations in any lower tier covered transaction it enters into.

(3) This certification is a material representation of fact relied upon by GOVERNMENT. If it is later determined that the CONTRACTOR did not comply with 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C, in addition to remedies available to GOVERNMENT, the Federal Government may pursue available remedies, including but not limited to suspension and/or debarment.

(4) The CONTRACTOR agrees to comply with the requirements of 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C AGREEMENT is valid and throughout the period of performance. The CONTRACTOR further agrees to include a provision requiring such compliance in its lower tier covered transactions.

J. BYRD ANTI-LOBBYING AMENDMENT, 2 CFR §200.326 Appendix II to Part 200 (J)

CONTRACTOR must file with the GOVERNMENT the required certification. Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any Federal contract, grant or any other award covered by 31 U.S.C. 1352. Each tier must also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Such disclosures are forwarded from tier to tier up to the non-Federal award. If not provided with the bid response, CONTRACTOR must complete and submit the Certification Regarding Lobbying Form.

K. PROCUREMENT OF RECOVERED MATERIALS, 2 CFR §200.326 Appendix II to Part 200 (K) and 2 CFR §200.322)

(1) In the performance of this contract, the Contractor shall make maximum use of products containing recovered materials that are EPA-designated items unless the product cannot be acquired-

- (a) Competitively within a timeframe providing for compliance with the contract performance schedule;
- (b) Meeting contract performance requirements; or
- (c) At a reasonable price.

(2) Information about this requirement is available at EPA's Comprehensive Procurement Guidelines web site, <http://www.epa.gov/cpg/>. The list of EPA-designate items is available at <http://www.epa.gov/cpg/products/htm>.

L. AGREEMENTING WITH SMALL AND MINORITY BUSINESSES, WOMEN'S BUSINESS ENTERPRISES, AND LABOR SURPLUS AREA FIRMS (2 CFR §200.321)

Should the CONTRACTOR subcontract any of the work under this AGREEMENT, CONTRACTOR shall take the following affirmative steps: place qualified small and minority businesses and women's business enterprises on solicitation lists; assure that small and minority businesses, and women's business enterprises are solicited whenever they are potential sources; divide total requirements, when economically feasible, into smaller tasks or quantities to permit maximum participation by small and minority businesses, and women's business enterprises; establish delivery schedules, where the requirement permits, which encourage participation by small and minority businesses, and women's business enterprises; and use the services and assistance, as appropriate, of such organizations as the Small Business Administration and the Minority Business Development Agency of the Department of Commerce.

M. ACCESS TO RECORDS

(1) CONTRACTOR agrees to provide GOVERNMENT, the FEMA Administrator, the Comptroller General of the United States, or any of their authorized representatives' access to any books, documents, papers, and records of the Contractor which are directly pertinent to this AGREEMENT for the purposes of making audits, examinations, excerpts, and transcriptions.

(2) CONTRACTOR agrees to permit any of the foregoing parties to reproduce by any means whatsoever or to copy excerpts and transcriptions as reasonably needed.

(3) CONTRACTOR agrees to provide the FEMA Administrator or his authorized representatives' access to construction or other work sites pertaining to the work being completed under the contract.

N. SEAL, LOGO AND FLAGS

CONTRACTOR shall not use the U.S. Department of Homeland Security's seal(s), logos, crests, or reproductions of flags or likenesses of the U.S. Department of Homeland Security's agency officials without specific FEMA preapproval.

O. COMPLIANCE WITH FEDERAL LAW, REGULATIONS AND EXECUTIVE ORDERS

This is an acknowledgement that FEMA financial assistance will be used to fund the AGREEMENT only. CONTRACTOR will comply with all federal law, regulations, executive orders, FEMA policies, procedures, and directives.

P. NO OBLIGATION BY FEDERAL GOVERNMENT

The Federal Government is not a party to this AGREEMENT and is not subject to any obligations or liabilities to GOVERNMENT, CONTRACTOR, or any other party pertaining to any matter resulting from the contract.

Q. PROGRAM FRAUD AND FALSE OR FRAUDULENT STATEMENTS OR RELATED ACTS

CONTRACTOR acknowledges that 31 U.S.C. Chap. 38 (Administrative Remedies for False Claims and Statements) applies to the CONTRACTOR'S actions pertaining to this contract.

Special Requirements/Instructions

The following requirements and instructions supersede General Requirements where applicable.

1. Bid Requirement

Each bidder shall ensure that required parts of the bid are completed with accuracy and submitted as per the requirements within this specifications packet, including any addenda.

Bidder is responsible for submitting one (1) *original* bid copy to include a completed copy of this specifications packet in its entirety; and three (3) numbered bid *copies* to include at a minimum all pages requiring completion and/or marked with instructions to be returned with bid submission and any other documentation requested within these specifications.

All bids shall be tightly sealed in an opaque envelope or box and plainly marked "SEALED BID." The outside of the envelope or box shall also include: Bid Number, Bid Name, Bid Due Date, Bidder's Name and Address; and shall be addressed to the Purchasing Agent.

Jefferson County shall not be responsible for any effort or cost expended in the preparation of a response to this IFB. All protests should be coordinated through the Purchasing Office prior to award recommendation to Commissioners' Court.

2. Vendor Registration: SAM (System for Award Management).

Vendors doing business with Jefferson County are **required** to be registered with The System for Award Management (SAM), with an "active" status. The System for Award Management (SAM) is the Official U.S. Government system that consolidated the capabilities of CCR/FedReg, ORCA, and EPLS. There is NO fee to register for this site. Entities may register at no cost directly from the SAM website at: <https://www.sam.gov>

Bidders are strongly encouraged to review their firm's SAM (System for Award Management) status prior to Bid Submission.

3. Awarded Vendor(s): Submission of FORM 1295 (Texas Ethics Commission)

In accordance with House Bill 1295 (passed January 1, 2016), Vendors entering into contracts and professional agreements with Jefferson County will be required to complete a Certificate of Interested Parties (FORM 1295).

In 2017, the Texas legislature amended the law to require Form 1295 to include an "unsworn declaration" which includes, among other things, the date of birth and address of the authorized representative signing the form. The unsworn declaration, including the date of birth and address of the signatory, replaces the notary requirement that applied to contracts entered into before January 1, 2018. The TEC filing application does not capture the date of birth or street address of the signatory and it will not appear on forms that are filed using the TEC filing application.

Upon entering into a contract or professional agreement, the Jefferson County Purchasing Department will submit a request to the Vendor to both:

1. Submit a FORM 1295 online via the Texas Ethics Commission website link below.

Vendors must enter the required information on Form 1295, and print a copy of the completed form. The form will include a certification of filing that will contain a unique certification number.

2. Submit a FORM 1295 hard copy (completed & signed by an Authorized Agent of the Awarded Vendor), to the Jefferson County Purchasing Department.

FORM 1295, Completion Instructions, and Login Instructions are available via the Texas Ethics Commission Website at: https://www.ethics.state.tx.us/whatsnew/elf_info_form1295.htm

4. Multiple Vendor Award

Jefferson County reserves the right to award this contract to more than one vendor at the County's discretion.

5. Delivery

If delivery is required, all items must be packaged so as to be protected from damage during shipping and handling. Any item(s) damaged in shipping must be replaced in kind, or repaired, by the contractor, at the discretion of, and at no additional charge to, Jefferson County.

6. Payment

Jefferson County will pay original invoices that clearly itemize the goods and/or services provided as to quantity, part number, description, price, applicable discount (if any), labor charges showing time differential, if applicable and if previously agreed to, and delivery, installation, and set-up costs, if applicable and if previously agreed to. Only charges as stated on the Bid Form(s) submitted as a part of the bid will be considered.

Invoices must indicate Jefferson County as applicable, the address to which the product(s) and/or service(s) were delivered, and the applicable purchase order number. Invoices will be matched to delivery tickets prior to payment; therefore, all delivery tickets should have an accurate description of the product(s) and/or service(s).

Invoices shall be submitted to: Jefferson County Auditing Department, Attention: Accounts Payable, 1149 Pearl Street, 7th floor, Beaumont, TX 77701.

7. Usage Reports

Jefferson County reserves the right to request, and receive at no additional cost, up to two (2) times during the contract period, a usage report detailing the products and/or services furnished to date under a contract resulting from this IFB. The reports must be furnished no later than five (5) working days after written request and itemize all purchases to date by Jefferson County department, description of each item purchased, including manufacturer, quantity of each item purchased, per unit and extended price of each item purchased, and total amount and price of all items purchased.

8. Insurance

The contractor (including any and all subcontractors as defined in Section 9.1.3 below) shall, at all times during the term of this contract, maintain insurance coverages with not less than the type and requirements shown below. Such insurance is to be provided at the sole cost of the contractor. These requirements do not establish limits of the contractor's liability.

All policies of insurance shall waive all rights of subrogation against the County, its officers, employees and agents; a copy of the policy wording or endorsement is required.

Contractor shall furnish Jefferson County with Certificate of Insurance and applicable endorsements.

All insurance must be written by an insurer licensed to conduct business in the State of Texas.

Minimum Insurance Requirements

General Liability, including Products	\$1,000,000
Business Auto Liability	\$1,000,000
Cargo / Transit Coverage	Replacement Cost Value of Equipment Purchased
Excess Liability	\$1,000,000
Workers' Compensation	Statutory Coverage

9. Workers' Compensation Insurance

9.1 Definitions:

- 9.1.1 **Certificate of coverage ("Certificate")** – A copy of a certificate of insurance, a certificate of authority to self-insure issued by the commission, or a coverage agreement, DWC-81, DWC-82, DWC-83, or DWC-84 showing statutory workers' compensation insurance coverage for the person's or entity's employees providing services on a project, for the duration of the project.
- 9.1.2 **Duration of the project** – Includes the time from the beginning of the work on the project until the contractor's/person's work on the project has been completed and accepted by the governmental entity.
- 9.1.3 **Persons providing services on the project ("subcontractor") in article 406.096** – Includes all persons or entities performing all or part of the services under the contractor has undertaken to perform on the project, regardless of whether that person contracted directly with the contractor and regardless of whether that person has employees. This includes, without limitation, independent contractors, subcontractor, leasing companies, motor carriers, owner-operators, employees of any such entity, or employees of any entity which furnishes persons to provide services on the project. "Services" includes, without limitation, providing, hauling or delivering equipment or materials, or providing labor, transportation, or other service related to a project. "Services" does not include activities unrelated to the project, such as food/beverage vendors, office supply deliveries, and delivery of portable toilets.
- 9.2 The Contractor shall provide coverage, based on proper reporting of classification code and payroll amounts and filing any coverage agreements, which meets the statutory requirements of Texas Labor Code, Section 401.011(44) for all employees of the contractor providing services on the project, for the duration of the project.
- 9.3 The Contractor must provide a certificate of coverage to the governmental entity prior to being awarded the contract – refer to Section 8 above.
- 9.4 If the coverage period shown on the Contractor's current certificate of coverage ends during the duration of the project, the Contractor must, prior to the end of the coverage period, file a new certificate of coverage with the governmental entity showing that coverage has been extended.
- 9.5 The Contractor shall obtain from each person providing services on a project, and provide to the governmental entity:
 - 9.5.1 A certificate of coverage, prior to that person beginning work on the project, so the governmental entity will have on file certificates of coverage showing coverage for all persons providing services on the project; and
 - 9.5.2 No later than seven (7) days after receipt by the Contractor, a new certificate of coverage showing extension of coverage, if the coverage period shown on the current certificate ends during the duration of the project.
- 9.6 The Contractor shall retain all required certificates of coverage for the duration of the project and for one (1) year thereafter.
- 9.7 The Contractor shall notify the governmental entity in writing by certified mail or personal delivery, within ten (10) days after the contractor knew or should have known, of any change that materially affects the provision of coverage of any person providing services on the project.
- 9.8 The Contractor shall post on each project site a notice, in the text, form and manner prescribed by the Texas Department of Workers' Compensation, informing all persons providing services on the project that they are required to be covered, and stating how a person may verify coverage and report lack of coverage.

- 9.9 The Contractor shall contractually require each person with whom it contracts to provide services on a project to:
- 9.9.1 Provide coverage, based on reporting of classification codes and payroll amounts and filing of any coverage agreements, which meets the statutory requirements of Texas Labor Code, Section 401.011(44) for all its employees providing services on the project, for the duration of the project.
 - 9.9.2 Provide to the Contractor, prior to that person beginning work on the project a certificate of coverage showing that coverage is being provided for all employees of the person providing services on the project, for the duration of the project.
 - 9.9.3 Provide the Contractor, prior to the end of coverage period, a new certificate of coverage showing extension of coverage, if the coverage period shown on the current certificate of coverage ends during the duration of the project.
 - 9.9.4 Obtain from each person with whom it contracts, and provide to the Contractor:
 - 9.9.4.1 A certificate of coverage, prior to the other person beginning work on the project; and
 - 9.9.4.2 the coverage period, if the coverage period shown on the current certificate of a new certificate of coverage showing extension of coverage, prior to the end of coverage ends during the duration of the project.
 - 9.9.5 Retain all required certificates of coverage on file for the duration of the project and for one (1) year thereafter.
 - 9.9.6 Notify the governmental entity in writing by certified mail or personal delivery, within ten (10) days after the person knew or should have known, of any change that materially affects the provision of coverage of any person providing services on the project; and
 - 9.9.7 Contractually require each person with whom it contracts to perform as required by paragraphs 9.1. – 9.7., with the certificates of coverage to be provided to the person for whom they are providing services.
- 9.10 By signing this contract or providing or causing to be provided a certificate of coverage, the Contractor is representing to the governmental entity that all employees of the contractor who will provide services of the project will be covered by workers' compensation coverage for the duration of the project, that the coverage will be based on proper reporting of classification codes and payroll amounts, and that all coverage agreements will be filed with the appropriate insurance carrier or, in the case of a self-insured, with the commission's Division of Self-Insurance Regulation. Providing false or misleading information may subject the contractor to administrative penalties, criminal penalties, civil penalties, or other civil actions.
- 9.11 The Contractor's failure to comply with any of these provisions is a breach of contract by the Contractor which entitles the governmental entity to declare the contract void if the Contractor does not remedy the breach within ten (10) days after receipt of notice of breach from the governmental entity.

Minimum Specifications

The following requirements and specifications supersede General Requirements where applicable. Any questions relating to these requirements should be directed to Jamey West, Assistant Purchasing Agent, at 409-835-8593 or jwest@co.jefferson.tx.us. Bidders may submit technical questions to: Jason Castille, with Jefferson County Precinct No. 3 at pct3sc@co.jefferson.tx.us. Please reference bid number IFB 18-013/JW.

Please be sure to review these bid specifications *carefully*, as the item that you are offering must **MEET OR EXCEED** these specifications.

Scope

Jefferson County is soliciting bids for heavy equipment to replace equipment that was damaged and rendered unrepairable due to Hurricane Harvey. **All bids should be for brand new, completely unused equipment.**

The specifications shown in this bid packet are intended to define the level of quality, performance, and features ONLY. Products offered shall be of equivalent dimensions, quality, performance and features or better (the brand name product listed is not required).

Instructions to Bidders (Re: Brand Reference / Equivalent Item Bids)

References to a Manufacturer's Product by Brand Name or Number are done solely to establish the minimum quality and performance characteristics required.

Bidders Submitting Bids for Alternate/Equivalent Items:

► Bidders may submit bids on alternate/equivalent items, but **MUST** attach TWO (2) COPIES of the MANUFACTURER SPECIFICATIONS (to include full warranty terms) for any alternate at the time of the bid.

► Bidders offering alternate/equivalent items **MUST ALSO** submit an ITEMIZED COMPARISON documenting equivalence for dimensions, quality, performance, and features of the products offered.

Further, the Bidder must demonstrate that the alternate proposed has a sufficient operating track record to show the equipment will perform per the specified brand. The acceptance of a Bidder's alternate rests solely with Jefferson County.

Bidders Submitting Bids for Exact Make/Model as specified:

► Bidders offering the exact make/model as specified, **MUST** attach TWO (2) COPIES of the MANUFACTURER SPECIFICATIONS (to include full warranty terms).

Bid Item 1: Motor Grader

One (1) Mustang CAT Model: 120M2 Motor Grader or Equivalent to replace a similar piece of equipment that was damaged and rendered unrepairable due to Hurricane Harvey. This piece of equipment is to be in new, unused condition.

For full technical specifications for this bid item, see APPENDIX A.

Warranty Term for this equipment (included, without additional cost) should be at least: Five (5) calendar years from the date of delivery of equipment. The first year of warranty should cover the powertrain and hydraulics for an unlimited amount of hours; with warranty years 2-5 to cover 3,000 hours for powertrain and hydraulics.

Trade-In: Jefferson County will be trading in a used and **flood-damaged** 1998 Champion Motor Grader Model 710 A towards the purchase of this piece of equipment. Bidder is to include trade-in value for this piece of equipment on the Bid Form provided.

TECHNICAL SPECIFICATIONS CHECKLIST FORM:

In addition to providing all information requested within this bid packet, BIDDER must complete the following Bid Item 1: TECHNICAL SPECIFICATIONS CHECKLIST FORM, (Pages 22-36).

IMPORTANT NOTE: Bidder MUST COMPLETE a Technical Specifications Checklist Form for EACH ITEM BID. Failure to complete the Technical Specifications Checklist Form may result in a bid being deemed non-responsive.

Bid Item 1: Motor Grader TECHNICAL SPECIFICATIONS CHECKLIST FORM COMPLETION INSTRUCTIONS

Bidder Instructions:

► Place a check mark ✓ in the space provided next to each feature that **WILL** be included on the piece of equipment that you are offering, for the bid price submitted.

► If a feature is listed that **WILL NOT** be included on the piece of equipment you are offering, please write “N/A” in the space provided next to each feature.

If you are offering an **ALTERNATIVE FEATURE** or need to provide an **EXCEPTION EXPLANATION** for a feature listed, you may provide this information on the **BIDDER ALTERNATIVE FEATURES OFFERED & EXCEPTIONS LIST**, (Page 37).

Bid Item 1: Motor Grader

TECHNICAL SPECIFICATIONS CHECKLIST FORM

BASIC SPECIFICATIONS

✓ Check Here If Feature

Is to be INCLUDED (for Price Bid):

- ☐ Machine designed and built by the manufacturer
- ☐ Base Machine Weight shall not be less than 37,214 lbs. Weight shall include: standard machine configuration, lubricants, coolants, full fuel tank and operator of 200 lbs.
- ☐ Machine height to top of the cab shall not exceed 131 in.
- ☐ Machine length from the front outside edge tire to end of tow hitch shall not be less than 344 in.
- ☐ Machine length from counterweight to ripper not exceed 394 in.
- ☐ Machine Wheel Base (distance from front axle to mid tandem) shall not be less than 233 in.
- ☐ Rear frame includes two box section channels with an integrated bumper as standard.
- ☐ Toolbox
- ☐ Window protectors
- ☐ Cruise control
- ☐ Drain, ecology, engine Wiggins
- ☐ Cat Product Link 321SR

BASIC SPECIFICATIONS – OPTIONAL ATTACHMENTS

✓ Check Here If Feature

Is to be INCLUDED (for Price Bid):

- ☐ Vandal protection standard including locks for cab doors, engine side shields, (4) top tank radiator access door, engine coolant surge tank, hydraulic reservoir cap, fuel tank cap and toolbox.
- ☐ Rear hitch.

ENGINE

✓ Check Here If Feature

Is to be INCLUDED (for Price Bid):

- ☐ Engine designed and built by the manufacturer.
- ☐ Engine is turbo-charged, direct injection, four stroke, 6-cylinder diesel engine.
- ☐ 209 horsepower
- ☐ Engine is certified EPA Tier 4 Final.

Bid Item 1: Motor Grader

TECHNICAL SPECIFICATIONS CHECKLIST FORM (Continued)

ENGINE (Continued)

✓ Check Here If Feature
Is to be INCLUDED (for Price Bid):

- ☐ Engine electronically controlled for more efficient fuel injection and fuel burn.
- ☐ Engine able to achieve rated power requirement with engine displacement not less than 7.1L (428 in.³) for better fuel economy.
- ☐ Engine capable of increasing its low idle to 1,000 rpm when the battery voltage is below 24.5 volts for more than 5 minutes to ensure adequate system voltage and battery reliability.
- ☐ Altitude deration will not occur at altitudes less than 10,000 ft. The deration rate above 10,000 ft. shall be 1.5% per 1,000 ft.
- ☐ Rated engine power shall not be achieved at an engine speed greater than 2,100 rpm.
- ☐ Engine will have a minimum torque rise of 56% from 2,100 rpm to peak torque following SAE J1349 (net power with max fan).
- ☐ Engine enclosure and daily service points accessible from ground level and grouped on the left side of the machine.
- ☐ Engine fan automatically adjusts fan speed via a variable hydraulic fan pump to meet engine cooling requirements thus reducing demand on the engine, putting more horsepower to the ground, reducing noise, improving fuel economy, and reducing heat.
- ☐ Engine allows for at least 500 hours of operation between oil changes.
- ☐ Engine is isolation/resilient mounted to minimize sound and vibration.
- ☐ Engine compartment doors are lockable without the use of external locks.
- ☐ Engine automatically lowers engine torque and alerts the operator if critical conditions are detected.
- ☐ Engine has air-to-air after cooler for superior engine performance.
- ☐ Engine oil cooler is a water to oil shell and tube cooler system.
- ☐ Machine has a 12,000 hour coolant interval from factory.
- ☐ The cooling package air intake has 2.8 mm perforated inlet screen.
- ☐ The charged air cooler (ATAAC) has 9 fins per inch.
- ☐ Heater, engine coolant: 120 V
- ☐ Heater, engine coolant: 240 V

Bid Item 1: Motor Grader

TECHNICAL SPECIFICATIONS CHECKLIST FORM (Continued)

ENGINE-OPTIONAL ATTACHMENTS

✓ Check Here If Feature

Is to be INCLUDED (for Price Bid):

- ☐ A jacket water heater to assist in cold weather starting.
- ☐ An engine coolant heater to assist in cold weather starting.
- ☐ Ether starting aid included to automatically meter ether injection to prevent engine damage.

POWERTRAIN/TRANSMISSION

✓ Check Here If Feature

Is to be INCLUDED (for Price Bid):

- ☐ Transmission built by the machine manufacturer.
- ☐ Transmission is direct drive, power shift, countershaft type.
- ☐ Transmission is equipped with built-in self-diagnostic capability.
- ☐ Transmission shall have no less than 8 forward speeds and 6 reverse speeds (for added safety).
- ☐ Transmission has 5 working gears between 0-10.4 mph, for dirt applications.
- ☐ Transmission is isolated/resilient mounted to reduce sound and vibration.
- ☐ Transmission: auto shift.
- ☐ Powertrain: fuel tank, fast fill.
- ☐ Powertrain: Oil, hydraulic, biodegradable synthetic.
- ☐ Starter: heavy duty, 1,000 Amp
- ☐ A controlled throttle shifting system to smooth directional gear changes without use of inching pedal
- ☐ Electronic Throttle Control (cruise control), controlled by a push button, located on a 3-axis joystick as standard on the right joystick control for resuming and decreasing throttle set.
- ☐ Electronic Throttle Control modes, set and accelerate functions, located on the right control column for easy access.
- ☐ A load compensating system for transmission to ensure consistent shift quality in all applications.
- ☐ Automatic Differential Lock/Unlock feature included and shall not have speed, shuttle shifting or tandem spinning restrictions for engaging/disengaging. System is load-sensing for optimal performance.
- ☐ Automatic mode that shall not be overridden via manual intervention for optimal performance and to prevent unintended differential engagement.

Bid Item 1: Motor Grader

TECHNICAL SPECIFICATIONS CHECKLIST FORM (Continued)

POWERTRAIN/TRANSMISSION (Continued)

✓ Check Here If Feature

Is to be INCLUDED (for Price Bid):

- ☐ Differential Lock/Unlock that is electro-hydraulically controlled, as a standard feature.
- ☐ Differential Lock/Unlock that is multi-disc design.
- ☐ Final drive with planetary design.
- ☐ The rear axle with a bolt-on modular design offering easy access to differential components, improving serviceability and contamination control.
- ☐ The total surface area of all the transmission clutch packs not be less than 1,495 in.².
- ☐ Diameter at the output end of the transmission shaft no less than 2.29 in..
- ☐ Electronic inching pedal for improved modulation and machine control.
- ☐ Electronic over-speed protection to prevent the engine and transmission from over speeding, as a standard feature.
- ☐ Machine shall have no drive shafts that cross over the articulation hitch.

POWERTRAIN/TRANSMISSION - OPTIONAL ATTACHMENTS

✓ Check Here If Feature

Is to be INCLUDED (for Price Bid):

- ☐ An auto-shift transmission option available on all forward and reverse gears.

STEERING & IMPLEMENT CONTROLS

✓ Check Here If Feature

Is to be INCLUDED (for Price Bid):

- ☐ Steering wheel shall not be required to operate machine.
- ☐ Joystick steering capabilities shall be ISO 5010.
- ☐ Machine shall employ a friction pack style steering mechanism, utilizing the follow steer concept.
- ☐ The left 3-axis joystick that controls wheel lean with individual left and right wheel lean buttons as standard.
- ☐ Primary steering capable of being achieved via a left hand, multifunction, 3-axis, joystick as standard, using an intuitive steering control system that automatically adjusts steering sensitivity as machine ground speed increases.
- ☐ Articulation to the right or left shall be achieved by multifunction, 3-axis left joystick with the twist of such to the right or left by the left-hand, multifunction, 3-axis joystick.

Bid Item 1: Motor Grader

TECHNICAL SPECIFICATIONS CHECKLIST FORM (Continued)

STEERING & IMPLEMENT CONTROLS (Continued)

✓ Check Here If Feature

Is to be INCLUDED (for Price Bid):

- ☐ An articulation return-to-center button on the left multifunction, 3-axis, joystick, shall return the machine to a straight frame position from any articulation angle with the touch of a single button.
- ☐ The right 3-axis joystick shall primarily control the Drawbar, Circle, and Moldboard.
- ☐ Machine, Drawbar, Circle, and Moldboard control shall be achieved via right-hand multifunction, 3-axis, joystick, including moldboard slide and tip, drawbar center shift through a 4-way hat switch and circle turn by a left or right twist intuitively.
- ☐ Blade lift cylinders individually controlled by the multifunction, 3-axis joysticks; Lift and drop of cylinders shall be achieved forward and back motion of the respective joystick. Forward (left joystick) lowers the left cylinder, back (left joystick) raises the left lift cylinder, forward (right joystick) lowers the right lift cylinder, back (right joystick) raises the right lift cylinder.
- ☐ Joystick controls mounted to adjustable pedestals, hard mounted to the cab floor, independent of the operator seat.
- ☐ Secondary steering with primary and secondary power supply in the event the primary source is lost.
- ☐ Transmission direction control with a 3-position rocker switch for selecting forward, neutral, and reverse incorporated into a single, 3-axis, multi-function, left-hand joystick control.
- ☐ Manual Differential Lock/Unlock that is operator controlled, via a push-button, located on a single, 3-axis, multi-function, right-hand joystick control.
- ☐ Two redundant articulation sensors.
- ☐ Two redundant sensors shall be standard in the steering cylinders (one in each).
- ☐ Three redundant sensors shall be provided in the steering joystick for additional safety.

BRAKES

✓ Check Here If Feature

Is to be INCLUDED (for Price Bid):

- ☐ Primary and secondary service brakes.
- ☐ Entire braking system shall meet all requirements of ISO 3450: 1996.
- ☐ Two separate left and right hydraulic brake accumulators shall be standard for safety.
- ☐ Parking brake shall be multi-disc, oil-cooled, spring-applied, hydraulically released, sealed, adjustment-free and integrated into the transmission. Park brake shall not be externally located.
- ☐ Parking brake shall be serviceable without removing the transmission.
- ☐ Service brakes shall be multi-disc, oil-cooled and completely sealed; they will also provide access to check and determine brake wear without removing or disassembling the brake assembly.

Bid Item 1: Motor Grader

TECHNICAL SPECIFICATIONS CHECKLIST FORM (Continued)

BRAKES (Continued)

✓ Check Here If Feature
Is to be INCLUDED (for Price Bid):

- _____ Service brake disc surfaces shall be grooved and carry oil between discs and plates with brakes fully applied.
- _____ Service brakes shall be hydraulically actuated, utilizing dual independent brake circuits.
- _____ Brakes shall be continuously pressurized, filtered, oil cooled.
- _____ Individual brake pods for each rear wheel, located at each rear wheel inside the tandem box, independent of tandem chains.
- _____ Compensation components at all four tandem brake pods in addition to the brake wear indicator.
- _____ Brake line protection, including tandem walkways and hydraulic brake line guarding, shall be required to prevent line damage.
- _____ Service brakes shall provide a minimum of 3,565 in.² of total friction material surface area used at each of the four tandem wheels to eliminate braking loads on the power train.

HYDRAULIC SYSTEM

✓ Check Here If Feature
Is to be INCLUDED (for Price Bid):

- _____ Triple redundant hydraulic relief system shall protect machine hydraulic components.
- _____ Hydraulic implement pump shall produce between 0 and 55.5 gal/min (210L/min) of oil flow at high idle.
- _____ Hydraulic system shall be a closed center, load sensing type, with a variable displacement, axial piston-type pump.
- _____ Hydraulic system shall be fully sealed, using Duo-cone and O-ring face seals to prevent leaks, contamination, and spillage.
- _____ Hydraulic tank shall have a baffling system to reduce potential pump cavitations.
- _____ Maximum hydraulic system pressure shall be no more than 3,500 psi.
- _____ Implement valves shall be electro-hydraulic, designed and built by the machine manufacturer.
- _____ Implement pump shall not be mounted under cab floor, minimizing sound and vibration.
- _____ Hydraulic arrangements with one or more additional hydraulic valves for rear ripper, dozer.
- _____ Implement valves shall be proportional priority pressure compensating for consistent response, when multi-functioning any combination of implement controls and independent of engine speed.
- _____ Implement pump solely dedicated to implement controls and not shared with any other components.
- _____ Lock valves integrated into the main implement valve to prevent cylinder drift.

Bid Item 1: Motor Grader

TECHNICAL SPECIFICATIONS CHECKLIST FORM (Continued)

HYDRAULIC SYSTEM (Continued)

✓ Check Here If Feature

Is to be INCLUDED (for Price Bid):

- _____ The hydraulic stand-by pressure shall be no more than 609 psi.
- _____ Provision to install up to fifteen modulating hydraulic valves, controlled by two, three-axis, multi-functioning, joystick controls and auxiliary controls inside the cab.
- _____ Hydraulic valves shall not be mounted under the cab floor, minimizing sound and vibration.
- _____ Left and right blade lift cylinders shall have independent float capability, actuated by two multifunction, 3-axis joystick controls inside the cab, as a standard feature.
- _____ Sight gauge provided for checking hydraulic reservoir fluid.
- _____ Hydraulic oil change service interval shall be no less than 6,000 hours with oil sampling.
- _____ Hydraulic system shall have a separate oil tank solely dedicated to the implement pump.

FRONT AXLE AND TANDEMS

✓ Check Here If Feature

Is to be INCLUDED (for Price Bid):

- _____ Front axle oscillation shall be no less than 32 degrees total, per side 16 degrees up, 16 degrees down.
- _____ Front axle with arched design for maximum ground clearance.
- _____ Wheel spindle shall be a "live" spindle design and rotate inside a sealed compartment with lightweight oil for lubrication of the bearings.
- _____ Front spindle that is heat induction hardened.
- _____ Front wheel spindle bearings shall be a double-tapered design with the larger diameter bearing mounted closest to the centerline of the front tire.
- _____ Front wheel spindle maintenance intervals shall be no less than 2,000 hours.
- _____ Front wheel steering angle no less than 47.5 degrees left or right.
- _____ Maximum front wheel lean no less than 18 degrees left or right.
- _____ Machine turning radius not exceed 24 ft. 3 in. using front steering, full articulation and unlocked differential.
- _____ Distance between center of tandem wheels no less than 59.5 in..
- _____ Tandem chain pitch not be less than 1.8 in..
- _____ Tandems capable of oscillating 15 degrees front tandem up and 25 degrees front tandem down, with full machine articulation and having no interference between tandem wheel and machine structure.

Bid Item 1: Motor Grader

TECHNICAL SPECIFICATIONS CHECKLIST FORM (Continued)

FRONT AXLE AND TANDEM (Continued)

✓ Check Here If Feature

Is to be INCLUDED (for Price Bid):

- _____ Electronic and mechanical steering stops located at each wheel and steering cylinder relief valves shall be present to prevent steering system damage during normal operation.
- _____ Steering tie rod ends shall be heat induction hardened.
- _____ Two steering cylinders for maximum steering force.
- _____ When equipped with a ripper, the machine shall have a minimum ramp angle of 15 degrees.

TIRES AND RIMS

✓ Check Here If Feature

Is to be INCLUDED (for Price Bid):

- _____ A 10 inch by 24 inch size 3-piece tire rim shall be available to provide mounting for 14.00R24 conventional tires.

TIRES AND RIMS – OPTIONAL ATTACHMENTS

✓ Check Here If Feature

Is to be INCLUDED (for Price Bid):

- _____ A 14 inch by 25 inch size 3-piece tire rim shall be available to provide mounting for 17.5-R25 tires.

GUARDS

✓ Check Here If Feature

Is to be INCLUDED (for Price Bid):

- _____ Guards: Sound suppression (bottom)
- _____ Guards: Sound suppression (enclosure)
- _____ Guards: Transmission

OPERATORS STATION

✓ Check Here If Feature

Is to be INCLUDED (for Price Bid):

- _____ An enclosed cab with ROPS (Rollover Protective Structure) according to ISO 3471 shall be provided.
- _____ Cab door with hold-open clasp with a ground-level release and in addition to, a release in the cab.
- _____ Cab shall be isolation-mounted to the front frame section of the machine.
- _____ Cab shall have fixed front window of laminated glass with intermittent wiper.

Bid Item 1: Motor Grader

TECHNICAL SPECIFICATIONS CHECKLIST FORM (Continued)

OPERATORS STATION (Continued)

✓ Check Here If Feature

Is to be INCLUDED (for Price Bid):

- ☐ FOPS (Falling Object Protective Structure) shall be provided according to ISO 3499.
- ☐ Machine shall have no less than 17 adjustable vents, positioned to direct air to front windows and operator.
- ☐ Radio ready arrangement will include 24V to 12V converter, two speakers, antenna, and wiring.
- ☐ An instrument cluster that includes a speedometer, tachometer, coolant temperature, fuel and articulation angle gauge.
- ☐ Operator cab fresh air-filter accessible for clean out and replacement, from outside of the cab at ground level.
- ☐ A real-time information system shall monitor all system data and alert the operator of any faults through a digital text display. This information system shall be programmable for multiple languages.
- ☐ Left and right side cab doors shall be provided.
- ☐ Wipers on side and rear windows.
- ☐ Digital machine hour meter.
- ☐ Electronic message system shall provide real-time machine performance and diagnostic data.
- ☐ Mirrors, outside: heated 24 V
- ☐ Mirrors, outside: mounted
- ☐ Precleaner: HVAC
- ☐ Radio Ready, AM/FM
- ☐ Shade, sun
- ☐ Forward visibility shall be continuous and unobstructed glass from roofline to floor providing visibility of the blade, heel and toe, back of the cutting edge, and front tires.
- ☐ Access to cab shall be three anti-skid steps.
- ☐ Cab shall have cup holder, personal cooler holder/storage compartment for operator's manual, with a molded floor mat.
- ☐ Window washer fluid bottle refill spout shall be located external of the cab.
- ☐ Auxiliary control pod, with implement float control capability, shall be available.

Bid Item 1: Motor Grader

TECHNICAL SPECIFICATIONS CHECKLIST FORM (Continued)

OPERATORS STATION – OPTIONAL ATTACHMENTS

✓ Check Here If Feature
Is to be INCLUDED (for Price Bid):

- _____ Auxiliary controls shall be available for control of attachment implements and/or work tools, and shall be programmable via computer software.
- _____ Auxiliary controls shall be a fingertip control type and located beside the right-hand joystick control.
- _____ Integrated display and wiring for a rear vision camera shall be available with capability to view at all times without interfering with the gauge and diagnostic display.
- _____ A rear sun shade shall be available.
- _____ A rear defroster fan shall be available.
- _____ An air suspension seat shall be available.

CIRCLE & MOLDBOARD

✓ Check Here If Feature
Is to be INCLUDED (for Price Bid):

- _____ Drawbar, circle, and moldboard shall be controlled with a maximum of two multifunction, 3-axis joysticks, as standard.
- _____ Drawbar wear strips shall be replaceable drop-in inserts made from nylon composite materials, replaceable and adjustable from the top of the drawbar plate via removable cover plates.
- _____ The drawbar shall feature welded protective war plates to prevent lift group contact with the primary drawbar structure.
- _____ The moldboard shall be 12 ft. long, 24 in. high and no less than 7/8 in. thick.
- _____ Moldboard shall have a bank slope angle capability of at least 90 degrees to both sides.
- _____ Moldboard shall have no less than 16.3 in. arc radius (blade curvature) for optimum productivity.
- _____ The moldboard retention system shall have no more than two retention points located on the left and right side of the moldboard. The surface area shall no be less than 78.13 in.².
- _____ Moldboard shall have a hydraulic tip control through a range of 40 degrees fore and 5 degrees aft.
- _____ Moldboard wear strips shall be adjusted with lock screws, providing shim-less adjustment capability both vertical and horizontal.
- _____ The moldboard shall be pre-stressed during manufacturing for superior strength and durability.
- _____ Moldboard side rails shall be constructed of heat-treated, high carbon steel and have replaceable bronze alloy wear inserts on top and bottom.

Bid Item 1: Motor Grader

TECHNICAL SPECIFICATIONS CHECKLIST FORM (Continued)

CIRCLE & MOLDBOARD (Continued)

✓ Check Here If Feature

Is to be INCLUDED (for Price Bid):

- ☐ Circle shall be a single piece, rolled-ring forging, with raised wear surfaces on the top and bottom.
- ☐ Circle shall be rotated by a hydraulically driven motor with a minimum circle pinion torque capability of 44,253 ft.-lb.
- ☐ Circle teeth contact surfaces shall be induction-hardened on the front 240 degrees of the circle.
- ☐ Blade lift and center shift cylinders shall have replaceable bronze-alloy wear inserts in the ball sockets with removable shims to insure the ability to remove free play throughout the useful wear insert life.
- ☐ The lift cylinder casting shall be welded to the front frame for added strength and structural integrity.
- ☐ The standard mounting hardware for cutting edges and end bits shall be 3/5 inch.
- ☐ Linkbar pin shall be separate from pin pulling mechanism for easier service and lower O&O costs.
- ☐ The draft frame pivot connection shall have a single ball stud with grease zerk. Ball stud shall be bolt-on, shimable and adjustable to allow for quick and easy field serviceable design.
- ☐ Three sideshift anchor positions shall be provided for extended reach capability as standard.
- ☐ Pinion Gear shall be separate from the Pinion Shaft to allow for a quick and easy serviceable design.
- ☐ Circle outside diameter shall be no less than 60.2 in.
- ☐ Throat clearance with standard moldboard shall be at least 126 mm.
- ☐ There will be no more than 6 replaceable wear inserts between the circle and drawbar providing at least 163 inc.² of wear surface area.

CIRCLE & MOLDBOARD – OPTIONAL ATTACHMENTS

✓ Check Here If Feature

Is to be INCLUDED (for Price Bid):

- ☐ Blade lift accumulators shall be provided, protecting cutting edge and other components from damage shock loads as an option.

Bid Item 1: Motor Grader
TECHNICAL SPECIFICATIONS CHECKLIST FORM (Continued)

WORK TOOLS

✓ Check Here If Feature
Is to be INCLUDED (for Price Bid):

- _____ Blade extension, left hand (2 ft.)
- _____ Cutting edges, curved
- _____ Endbits, overlay
- _____ Front lift group, mounting
- _____ Front lift group, mechanical
- _____ Grader bit, narrow and super penetration
- _____ Push plate, counterweight
- _____ Ripper, mounting
- _____ Ripper, rear
- _____ Ripper tooth

ELECTRICAL

✓ Check Here If Feature
Is to be INCLUDED (for Price Bid):

- _____ Six 3 X 3 halogen mounted cab lights.
- _____ 24 V to 12 V converter with 10-amp capacity.
- _____ Starting system shall be a 24 V direct electric type.
- _____ Incandescent white reversing lamps and LED stop lamps shall be provided.
- _____ Electrical system shall have a master disconnect switch with a removable key (in addition to the ignition switch), accessible from the ground level.
- _____ Core machine systems shall be electronically connected, optimizing performance and preventing machine damage.
- _____ All wiring arranged and located so as to facilitate regular visual inspections, not to be in contact with hot surfaces and not routed with other services lines (e.g. fuel, oil, etc.)
- _____ All harnesses/cabling secured with clipping clamps providing a gap between the conduit/harness and the mounting surface preventing material build-up.

Bid Item 1: Motor Grader
TECHNICAL SPECIFICATIONS CHECKLIST FORM (Continued)

ELECTRICAL – OPTIONAL ATTACHMENTS

✓ Check Here If Feature
Is to be INCLUDED (for Price Bid):

- _____ 800 CCA batteries
- _____ 80 amp alternator
- _____ High and low bar headlights with front turn signals.
- _____ Amber LED high-speed strobe beacon.
- _____ 24V to 12V converter with 25 amp capacity.
- _____ Lights: high
- _____ Lights: low
- _____ Lights: Working lights, basic
- _____ Lights: Working lights, plus
- _____ Lights: Warning: beacon or strobe
- _____ Lights: Mounting for warning light

SERVICEABILITY

✓ Check Here If Feature
Is to be INCLUDED (for Price Bid):

- _____ High-speed oil drain system with ground level quick-connect access.
- _____ Lockable swing-out cooling fan housing featuring a latch-style mechanism (shall not be of a bolted design), allowing easy access to cores. Ability to open/close shall be ground level accessible, eliminating need to climb on machine.
- _____ Dip stick (at ground level) for checking transmission fluid.
- _____ Hydraulic tank site gauge, readable from the ground.
- _____ Hydraulic tank filter (cartridge style filter) providing a separate filter element, housing, and drain valve for quick and clean servicing.
- _____ Ability for ground level fueling.
- _____ Sampling ports accessible from the tandem level and providing access to the engine, hydraulic, coolant, and fuel ports.
- _____ A two-way communication tool shall give service technicians easy access to stored diagnostic data and allow configuration of machine parameters.

Bid Item 1: Motor Grader

TECHNICAL SPECIFICATIONS CHECKLIST FORM (Continued)

SERVICEABILITY (Continued)

✓ Check Here If Feature
Is to be INCLUDED (for Price Bid):

- ☐ The articulation joint shall have mechanical locking device to prevent frame articulation while servicing or transporting the machine.
- ☐ Left and right side tandem case assemblies shall be covered with punched steel plate to provide an adequate platform for standing and walking.
- ☐ Sampling ports shall be accessible from the tandem level and provide access to the engine, hydraulic coolant, and fuel ports.
- ☐ Engine primary and final fuel filters with 500 hour service replacement interval.
- ☐ Engine with primary fuel filter with fuel water separator and electronic sensor, quick release dual stage filter and primer pump.
- ☐ Centralized lube bank at the articulation joint to give access to difficult zerks.
- ☐ Transmission filter restriction indicator displayed in the cab.
- ☐ Lock-out Tag-out capabilities provided standard to increase the safety levels during down time; ensuring that an energy isolating device and the machine which are being worked cannot be operated.

SERVICEABILITY – OPTIONAL ATTACHMENTS

✓ Check Here If Feature
Is to be INCLUDED (for Price Bid):

- ☐ Guard to protect the machine's transmission from debris.
- ☐ Guard to suppress sound from the engine.

MINIMUM SERVICE FILL CAPABILITIES

✓ Check Here If Feature
Is to be INCLUDED (for Price Bid):

- ☐ Standard fuel tank capacity of at least 90 gallons.
- ☐ Standard cooling system capacity of at least 12.9 gallons.
- ☐ Standard hydraulic tank capacity of at least 16.9 gallons.
- ☐ Standard engine oil capacity of at least 7.9 gallons.
- ☐ Standard tandem housing capacity of at least 15.6 gallons.
- ☐ Standard front wheel spindle bearing housing capacity of at least 0.1 gallons.
- ☐ Standard circle drive housing capacity of at least 1.8 gallons.

Bid Item 1: Motor Grader

TECHNICAL SPECIFICATIONS CHECKLIST FORM (Continued)

SAFETY AND ENVIRONMENTAL

✓ Check Here If Feature

Is to be INCLUDED (for Price Bid):

- _____ Circle drive slip clutch to reduce horizontal moldboard impact damage.
- _____ Black glare-reducing paint on the front frame and engine enclosure to decrease glare from other equipment lights and reflection from the sun and snow.
- _____ Hydraulic implement lock-out, achievable by actuating a single electrical switch within the operator station.
- _____ An external emergency kill switch for ground level engine shut down.
- _____ Secondary, electric steering pump with redundant wiring as a back-up to the primary implement hydraulic pump.
- _____ Laminated glass for the front windows and doors, to protect the operator from shattered glass.
- _____ Dual exits allowing for emergency egress should one side become obstructed.
- _____ Electrical system with master disconnect switch with a removable key and lock for added safety (in addition to ignition switch).
- _____ Steering software system to automatically reduce steering sensitivity as the ground speed increases.
- _____ Back-up lights and sounding alarm when reverse gears are selected.
- _____ Environmentally friendly drain valves for the hydraulic oil, engine oil, engine coolant, transmission, differential and fuel tank.
- _____ Cooling fan with both shroud and rear grill for protection during service.
- _____ Machine shall allow cab interior and exterior lights to remain on separate from ignition switch, for safe exit of the machine during night operation.
- _____ Engine and transmission shall be rubber isolation mounted to reduce noise and vibration.

SAFETY AND ENVIRONMENTAL – OPTIONAL ATTACHMENTS

✓ Check Here If Feature

Is to be INCLUDED (for Price Bid):

- _____ Guard shall be available to protect the machine's transmission from debris.
- _____ Rear vision camera with integrated display and wiring.

Please Print Clearly or Type.

For Feature Exception Explanations: Below, list the feature(s) that you marked “N/A” on the Technical Specifications Checklist Form & provide an explanation for this exception (should you prefer to do so).

[illegible]

Bid Item 2: Pneumatic Roller

One (1) BOMAG Model: BW11RH-5 Pneumatic Roller or Equivalent to replace a similar piece of equipment that was damaged and rendered unrepairable due to Hurricane Harvey.

The Pneumatic Roller is to be complete with All Standard Equipment including ROPS/FOPS, Water Sprinkler System, Rotary Beacon, and Additional Ballast to 2,313 lbs., Cocoa Mats and Back-Up Alarm.

For full technical specifications for this bid item, see APPENDIX B.

Warranty term for this equipment (included, without additional cost) should be at least: One (1) calendar year from the date of the delivery of equipment, with warranty to cover the Full Machine; with warranty to include a (3) three-year/3,000 hour warranty that covers the powertrain (including engine).

Trade In: Jefferson County will be trading in a used and **flood-damaged** Dynapac CP142 (SN: 1000-500C0B000882) towards the purchase of this piece of equipment. Bidder is to include trade-in value for this piece of equipment on the Bid Form provided.

TECHNICAL SPECIFICATIONS CHECKLIST FORM:

In addition to providing all information requested within this bid packet, BIDDER must complete the following Bid Item 2: TECHNICAL SPECIFICATIONS CHECKLIST FORM, (Pages 39-40).

IMPORTANT NOTE: Bidder MUST COMPLETE a Technical Specifications Checklist Form for EACH ITEM BID. Failure to complete the Technical Specifications Checklist Form may result in a bid being deemed non-responsive.

Bid Item 2: Pneumatic Roller TECHNICAL SPECIFICATIONS CHECKLIST FORM COMPLETION INSTRUCTIONS

Bidder Instructions:

► Place a check mark ✓ in the space provided next to each feature that **WILL** be included on the piece of equipment that you are offering, for the bid price submitted.

► If a feature is listed that **WILL NOT** be included on the piece of equipment you are offering, please write “N/A” in the space provided next to each feature.

If you are offering an **ALTERNATIVE FEATURE** or need to provide an **EXCEPTION EXPLANATION** for a feature listed, you may provide this information on the **BIDDER ALTERNATIVE FEATURES OFFERED & EXCEPTIONS LIST**, (Page 41).

Bid Item 2: Pneumatic Roller

TECHNICAL SPECIFICATIONS CHECKLIST FORM

BASIC SPECIFICATIONS

✓ Check Here If Feature

Is to be INCLUDED (for Price Bid):

- _____ Base Machine weight should not be less than 27,000 lbs
- _____ Capable of speed: 15.5 mph or higher
- _____ Water Tank Capacity of at least 150 gallons
- _____ Turning Radius: 9 ft.
- _____ ROP Height: 9.4'
- _____ Self-lubricating bushings that are maintenance-free
- _____ Maintenance-free braking system
- _____ Flashing lights and blinkers for on-road safety

STANDARD EQUIPMENT

✓ Check Here If Feature

Is to be INCLUDED (for Price Bid):

- _____ Scraper per wheel
- _____ Hour meter
- _____ Warning horn
- _____ Control panel for: engine oil pressure, engine temperature, air filter vacuum, charge control, hydraulic oil filter, coolant level, fuel tank capacity
- _____ (2) outside mirrors
- _____ Lockable anti-vandal dashboard protection
- _____ Operator's platform with: one steering wheel, laterally sliding swivels
- _____ Back-up alarm
- _____ Hydrostatic transmission
- _____ Tier 4 Kubota Diesel Engine
- _____ Nine 7.50 X 15 X 14 ply tires
- _____ Fuel gauge
- _____ Hydrostatic, center articulated steering with +/- 10 degree frame oscillation

Bid Item 2: Pneumatic Roller

TECHNICAL SPECIFICATIONS CHECKLIST FORM (Continued)

STANDARD EQUIPMENT (Continued)

✓ Check Here If Feature

Is to be INCLUDED (for Price Bid):

_____ Rear wheel oscillation: +/- 4 degrees outside & +/- 5 degrees center

_____ Spring-Applied, Hydraulically Released (SAHR) brakes

OPTIONAL FEATURES

✓ Check Here If Feature

Is to be INCLUDED (for Price Bid):

_____ Headlights (front and rear)

_____ Turn signals and 4-way flashers

_____ Pressurized water spray system

_____ Radial tires w/ approx. 14 ply rating

_____ Steel ballast

_____ Heat retention shields

_____ Pressurized water spray system

_____ Special paint, 1 color (Enamel only)

_____ Indicator and hazard lights

Bid Item 3: Vibratory Tandem Roller

One (1) BOMAG Model: BW161AD-5 Vibratory Tandem Roller or Equivalent to replace a similar piece of equipment that was damaged and rendered unrepairable due to Hurricane Harvey.

The Vibratory Tandem Roller is to be complete with All Standard Equipment including 90 degree swivel seat unit, Economizer, ROPS, Temperature Gauge, and Joint with Crabwalk.

For full technical specifications for this bid item, see APPENDIX C.

Warranty term for this equipment (included, without additional cost) should be at least: (1) one calendar year from the date of the delivery of equipment, with warranty to cover the Full Machine; with warranty to include a (3) three-year/3,000 hour warranty that covers the powertrain (including engine).

Trade-In: Jefferson County will be trading in a used and **flood-damaged** CAT CB534-C (SN: 5HN00552) towards the purchase of this piece of equipment. Bidder is to include trade-in value for this piece of equipment on the Bid Form provided.

TECHNICAL SPECIFICATIONS CHECKLIST FORM:

In addition to providing all information requested within this bid packet, BIDDER must complete the following Bid Item 3: TECHNICAL SPECIFICATIONS CHECKLIST FORM, (Pages 43-44).

IMPORTANT NOTE: Bidder MUST COMPLETE a Technical Specifications Checklist Form for EACH ITEM BID. Failure to complete the Technical Specifications Checklist Form may result in a bid being deemed non-responsive.

Bid Item 3: Vibratory Tandem Roller TECHNICAL SPECIFICATIONS CHECKLIST FORM COMPLETION INSTRUCTIONS

Bidder Instructions:

► Place a check mark ✓ in the space provided next to each feature that **WILL** be included on the piece of equipment that you are offering, for the bid price submitted.

► If a feature is listed that **WILL NOT** be included on the piece of equipment you are offering, please write “N/A” in the space provided next to each feature.

If you are offering an **ALTERNATIVE FEATURE** or need to provide an **EXCEPTION EXPLANATION** for a feature listed, you may provide this information on the **BIDDER ALTERNATIVE FEATURES OFFERED & EXCEPTIONS LIST**, (Page 45).

Bid Item 3: Vibratory Tandem Roller

TECHNICAL SPECIFICATIONS CHECKLIST FORM

BASIC SPECIFICATIONS

✓ Check Here If Feature

Is to be INCLUDED (for Price Bid):

- _____ Operating Weight should be at least 21,600 lbs
- _____ Turning Radius: 192.1"
- _____ Vibratory Frequency for Drums: 3,000/4,200 VPM
- _____ Engine: 114 horsepower
- _____ Top speed should be at least 7.5 mph
- _____ No grease nipples.
- _____ Sealed bearings.
- _____ Economizer System
- _____ Economode Feature
- _____ Tango Oscillation Feature
- _____ Visible sight lines to drum edge
- _____ Open operator's platform
- _____ 180 degree seat & steering, so the driver can have their front or back turned to the edge of the machine for a better view.

STANDARD EQUIPMENT

✓ Check Here If Feature

Is to be INCLUDED (for Price Bid):

- _____ 2 amplitudes / 2 frequencies
- _____ Kubota Tier 4i engine
- _____ Automatic vibration operation
- _____ Individual vibration control
- _____ Adjustable driver's seat – 180 degrees; laterally slidable with steering wheel
- _____ On-board indicators: engine speed, speedometer, fuel consumption, engine temperature
- _____ Pressure sprinkling system with 2 pumps
- _____ Low water level indicator

Bid Item 3: Vibratory Tandem Roller TECHNICAL SPECIFICATIONS CHECKLIST FORM (Continued)

STANDARD EQUIPMENT (Continued)

✓ Check Here If Feature
Is to be INCLUDED (for Price Bid):

- ☐ Indicator and hazard lights
- ☐ Back-up alarm
- ☐ Battery disconnect switch
- ☐ Storage for documents and tools
- ☐ Emergency stop button
- ☐ ROPS/FOPS w/safety

OPTIONAL EQUIPMENT

✓ Check Here If Feature
Is to be INCLUDED (for Price Bid):

- ☐ Economizer
- ☐ Asphalt temperature display
- ☐ Edge cutter
- ☐ Rotary beacon
- ☐ Environmentally friendly hydraulic oil

Bid Item 3: Vibratory Tandem Roller

Please Print Clearly or Type.

Bidder Instructions:

For Alternative Features: Below, list the feature(s) for which you marked “N/A” on the Technical Specifications Checklist Form & describe the alternative feature that you are offering instead.

For Feature Exception Explanations: Below, list the feature(s) that you marked “N/A” on the Technical Specifications Checklist Form & provide an explanation for this exception (should you prefer to do so).

This image shows a blank sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

Bid Item 4: Single Drum Padfoot Roller

One (1) BOMAG Model: BW211PD-5 84” Single Drum Padfoot Roller or Equivalent to replace a similar piece of equipment that was damaged and rendered unrepairable due to Hurricane Harvey.

The Single Drum Padfoot Roller is to be complete with All Standard Equipment including Magnetic Flashing Beacon.

For full technical specifications for this bid item, see APPENDIX D.

Warranty term for this equipment (included, without additional cost) should be at least: One (1) calendar year from the date of the delivery of equipment, with warranty to cover the Full Machine; with warranty to include a (3) three-year/3,000 hour warranty that covers the powertrain (including engine).

Trade-In: Jefferson County will be trading in a used and **flood-damaged** BOMAG BW213DH-40 (SN: 901582561088) towards the purchase of this piece of equipment. Bidder is to include trade-in value for this piece of equipment on the Bid Form provided.

TECHNICAL SPECIFICATIONS CHECKLIST FORM:

In addition to providing all information requested within this bid packet, BIDDER must complete the following Bid Item 4: TECHNICAL SPECIFICATIONS CHECKLIST FORM, (Pages 47-48).

IMPORTANT NOTE: Bidder MUST COMPLETE a Technical Specifications Checklist Form for EACH ITEM BID. Failure to complete the Technical Specifications Checklist Form may result in a bid being deemed non-responsive.

Bid Item 4: Single Drum Padfoot Roller TECHNICAL SPECIFICATIONS CHECKLIST FORM COMPLETION INSTRUCTIONS

Bidder Instructions:

► Place a check mark ✓ in the space provided next to each feature that **WILL** be included on the piece of equipment that you are offering, for the bid price submitted.

► If a feature is listed that **WILL NOT** be included on the piece of equipment you are offering, please write “N/A” in the space provided next to each feature.

If you are offering an **ALTERNATIVE FEATURE** or need to provide an **EXCEPTION EXPLANATION** for a feature listed, you may provide this information on the **BIDDER ALTERNATIVE FEATURES OFFERED & EXCEPTIONS LIST**, (Page 49).

Bid Item 4: Single Drum Padfoot Roller

TECHNICAL SPECIFICATIONS CHECKLIST FORM

BASIC SPECIFICATIONS

✓ Check Here If Feature

Is to be INCLUDED (for Price Bid):

- ☐ Operating weight should be at least 28,109 lbs
- ☐ Transmission: (4) Gears
- ☐ Motor: 2-wheel drive
- ☐ Vibration Settings: (4)
- ☐ Idle Speed Controller
- ☐ No grease nipples

STANDARD EQUIPMENT

✓ Check Here If Feature

Is to be INCLUDED (for Price Bid):

- ☐ ECOMODE
(adjusts the engine speed to respective power requirements to save 30% less fuel consumption)
- ☐ Warning, information and operation displays with LCD
- ☐ Loading mode
- ☐ Noise insulation
- ☐ Hydrostatic travel and vibration drive
- ☐ Hydrostatic articulated steering
- ☐ Articulated joint lock
- ☐ Rear axle with twin spring accumulator brakes
- ☐ No-spin differential lock
- ☐ Warning horn
- ☐ Single lever control for travel and vibration
- ☐ Seat with arm rest and adjustable for position and height
- ☐ (2) Scrapers
- ☐ Emergency STOP

Bid Item 4: Single Drum Padfoot Roller TECHNICAL SPECIFICATIONS CHECKLIST FORM

STANDARD EQUIPMENT (Continued)

✓ Check Here If Feature
Is to be INCLUDED (for Price Bid):

- ☐ Back-up alarm
- ☐ Working lights front/rear
- ☐ Sliding window
- ☐ Battery disconnect switch

OPTIONAL EQUIPMENT

✓ Check Here If Feature
Is to be INCLUDED (for Price Bid):

- ☐ ROPS/FOPS with safety belt
- ☐ BOMAG ECOSTOP Feature (shuts down the engine automatically depending on temperatures, charging condition, etc.)
- ☐ Indicator and hazard lights
- ☐ Rotary beacon
- ☐ Environmentally compliant hydraulic oil
- ☐ Measuring-and-machine data interface for third-party suppliers

Bid Item 4: Single Drum Padfoot Roller

Please Print Clearly or Type.

Bidder Instructions:

For Alternative Features: Below, list the feature(s) for which you marked "N/A" on the Technical Specifications Checklist Form & describe the alternative feature that you are offering instead.

For Feature Exception Explanations: Below, list the feature(s) that you marked “N/A” on the Technical Specifications Checklist Form & provide an explanation for this exception (should you prefer to do so).

[illegible]

Bid Item 5: Utility Tractor

One (1) John Deere 5065E Utility Tractor OOS 4WD or Equivalent to replace a similar piece of equipment that was damaged and rendered unrepairable due to Hurricane Harvey.

For full technical specifications for this bid item, see APPENDIX E.

Warranty term for this equipment: Warranty term for this equipment (included without additional cost) should be at least: (2) two calendar years/or 2,000 hours from the date of delivery of equipment or whichever comes first, with the warranty to cover powertrain and components as described below in Paragraphs A & B.

A. WHAT IS WARRANTED – Subject to Paragraph B, all parts of any new Equipment are to be warranted for the time period or number of operating hours as specified. Included In 5E Series Tractor and Compact Utility Tractor Powertrain Warranty- Engine: cylinder block, cylinder head, valve covers, oil pan, emissions control components, timing gear covers, flywheel housing, and all parts contained therein. Powertrain: transmission, transmission case, differential and axle housings, clutch housings, MFWD front axle assembly, and all parts contained therein (does not include external drivelines, dry clutch parts, or steering cylinders). SWEEPS, SHOVELS, PLOWSHARES, AND DISK BLADES: A replacement part will be furnished without charge if breakage occurs and the amount of wear is less than the wear limits established by the Manufacturer.

B. ITEMS COVERED SEPARATELY- (1) Tires, rubber tracks and batteries; When applicable, a separate emissions warranty statement will be provided by Selling Dealer.

Trade-In: Jefferson County will be trading in a used and **flood-damaged** Ford 5000 Tractor towards the purchase of this piece of equipment. Bidder is to include trade-in value for this piece of equipment on the Bid Form provided.

TECHNICAL SPECIFICATIONS CHECKLIST FORM:

In addition to providing all information requested within this bid packet, BIDDER must complete the following Bid Item 5: TECHNICAL SPECIFICATIONS CHECKLIST FORM, (Page 51).

IMPORTANT NOTE: Bidder MUST COMPLETE a Technical Specifications Checklist Form for EACH ITEM BID. Failure to complete the Technical Specifications Checklist Form may result in a bid being deemed non-responsive.

Bid Item 5: Utility Tractor TECHNICAL SPECIFICATIONS CHECKLIST FORM COMPLETION INSTRUCTIONS

Bidder Instructions:

► Place a check mark ✓ in the space provided next to each feature that **WILL** be included on the piece of equipment that you are offering, for the bid price submitted.

► If a feature is listed that **WILL NOT** be included on the piece of equipment you are offering, please write “N/A” in the space provided next to each feature.

If you are offering an **ALTERNATIVE FEATURE** or need to provide an **EXCEPTION EXPLANATION** for a feature listed, you may provide this information on the **BIDDER ALTERNATIVE FEATURES OFFERED & EXCEPTIONS LIST**, (Page 52).

Bid Item 5: Utility Tractor

TECHNICAL SPECIFICATIONS CHECKLIST FORM

BASIC SPECIFICATIONS

✓ Check Here If Feature
Is to be INCLUDED (for Price Bid):

- ☐ 12F/12R PowrReverser Transmission – 540/540E (PR)
- ☐ 540 economy PTO
- ☐ Less Loader Prep Package
- ☐ Open Operator Station
- ☐ Duel Mid Valves with Joystick Control
- ☐ 16.9 – 28 in. 6PR R1 Bias
- ☐ Mechanical Front Wheel Drive (MFWD)
- ☐ 9.5 – 24 in. 6PR R1 Bias
- ☐ Engine: John Deere PowerTech 3029
- ☐ Engine – Aspiration: Turbocharged
- ☐ Engine – Cylinders liners: Wet sleeved
- ☐ Engine – Displacement: 3 cylinders: 2.9 L, 179 cu. in.
- ☐ Engine Performance – Rated Power: At 2100 rpm: 49.9 kW, 67 hp
- ☐ Engine Performance – Rated PTO power (hp SAE): At 2100 rpm: 36.5 kw, 49 PTO hp
- ☐ Final Tier 4-compliant PowerTech engine; provides improved visibility – a smaller, more efficient after-treatment device provides more space under the hood.
- ☐ Diesel oxidation catalyst (DOC/diesel particulate filter (DPF) system.
- ☐ Exhaust filter cleaning switch
- ☐ Hand throttle: located on the right-hand console

Bidder Information Form

Instructions: Complete the form below. Please provide legible, accurate, and complete contact information. PLEASE PRINT.

Bid Name & Number: (IFB 18-013/JW),
Re-bid Heavy Equipment for Jefferson County Precinct No. 3
(To Replace Unrepairable Equipment Damaged by Hurricane Harvey)

Bidder's Company/Business Name: _____

Bidder's TAX ID Number: _____

Contact Person: _____ **Title:** _____

Phone Number (with area code): _____

Alternate Phone Number if available (with area code): _____

Fax Number (with area code): _____

Email Address: _____

Mailing Address (Please provide a physical address for bid bond return, if applicable):

Address

City, State, Zip Code

OFFER AND ACCEPTANCE FORM

OFFER TO CONTRACT

Re-bid Heavy Equipment for Jefferson County Precinct No. 3 (To Replace Unrepairable Equipment Damaged by Hurricane Harvey)

To Jefferson County:

We hereby offer and agree to furnish the materials or service in compliance with all terms, conditions, specifications, and amendments in the Invitation for Bid and any written exceptions in the offer. We understand that the items in this Invitation for Bid, including, but not limited to, all required certificates are fully incorporated herein as a material and necessary part of the contract.

The undersigned hereby states, under penalty of perjury, that all information provided is true, accurate, and complete, and states that he/she has the authority to submit this bid, which will result in a binding contract if accepted by Jefferson County.

We acknowledge receipt of the following amendment(s): _____, _____, _____, _____.

I certify, under penalty of perjury, that I have the legal authorization to bind the firm hereunder:

_____ Company Name			For clarification of this offer, contact:	
_____ Address			_____ Name	
_____ City	_____ State	_____ Zip	_____ Phone	_____ Fax
_____ Signature of Person Authorized to Sign			_____ E-mail	
_____ Printed Name				
_____ Title				

Bidder Shall Return Completed Form with Offer.

Acceptance of Offer

HEAVY EQUIPMENT FOR JEFFERSON COUNTY PRECINCT NO. 3 (TO REPLACE UNREPAIRABLE EQUIPMENT DAMAGED BY HURRICANE HARVEY)

The Contractor is now bound to sell the materials or services listed by the attached contract and based upon the Invitation for Bid, including all terms, conditions, specifications, amendments, etc., and the Contractor's Offer as accepted by Jefferson County.

This contract shall henceforth be referred to as Contract No. 18-013/JW, Re-bid Heavy Equipment for Jefferson County Precinct No. 3 (To Replace Unrepairable Equipment Damaged by Hurricane Harvey). The Contractor has not been authorized to commence any billable work or to provide any material or service under this contract until Contractor receives a purchase order and/or a notice to proceed from the Jefferson County Purchasing Agent.

Countersigned:

Jeff R. Branick
County Judge

Date

Attest:

Carolyn L. Guidry
County Clerk

Bidder Shall Return Completed Form with Offer.

Bid Form

Bid Item 1 - IMPORTANT BIDDER INSTRUCTIONS:

Full technical specifications for this bid item can be found in **APPENDIX A**.

References to a Manufacturer's Product by Brand Name or Number are done solely to establish the minimum quality and performance characteristics required.

Bidders may submit bids on alternates, but MUST attach Two (2) Copies of the Manufacturer Specifications (to include full warranty terms) for any alternate at the time of the bid. Further, the Bidder must demonstrate that the alternate proposed has a sufficient operating track record to show the equipment will perform per the specified brand. The acceptance of a Bidder's alternate rests solely with Jefferson County.

Bidders offering the exact make/model as specified, MUST attach Two (2) Copies of the Manufacturer Specifications (to include full warranty terms).

In addition to completing this BID FORM and providing all information requested within this bid packet, Bidder must complete the Bid Item 1: TECHNICAL SPECIFICATIONS CHECKLIST FORM, (Pages 22-36).

IMPORTANT NOTE: Bidder MUST COMPLETE a Technical specifications checklist form for EACH ITEM BID. Failure to complete the Technical Specifications may result in a bid being deemed non-responsive.

Item No.	Item Description	Bid Price
1	Mustang CAT Model 120M2 Motor Grader or Equivalent	\$ _____ . ____
		Trade-In Value
Trade-In Value for used & flood-damaged: 1998 Champion Motor Grader Model 710 A		\$ _____ . ____
Total Bid Price (Minus Trade-In Value) \$ _____ . ____		
Projected Delivery Lead Time from Date of Purchase:		_____ weeks
Equivalent Item Description (Make & Model) for Item No. 1: _____		

Bid Form

Bid Item 2 - IMPORTANT BIDDER INSTRUCTIONS:

Full technical specifications for this bid item can be found in **APPENDIX B**.

References to a Manufacturer's Product by Brand Name or Number are done solely to establish the minimum quality and performance characteristics required.

Bidders may submit bids on alternates, but MUST attach Two (2) Copies of the Manufacturer Specifications (to include full warranty terms) for any alternate at the time of the bid. Further, the Bidder must demonstrate that the alternate proposed has a sufficient operating track record to show the equipment will perform per the specified brand. The acceptance of a Bidder's alternate rests solely with Jefferson County.

Bidders offering the exact make/model as specified, MUST attach Two (2) Copies of the Manufacturer Specifications (to include full warranty terms).

In addition to completing this BID FORM and providing all information requested within this bid packet, Bidder must complete the Bid Item 2: TECHNICAL SPECIFICATIONS CHECKLIST FORM, (Pages 39-40).

IMPORTANT NOTE: Bidder MUST COMPLETE a Technical specifications checklist form for EACH ITEM BID. Failure to complete the Technical Specifications may result in a bid being deemed non-responsive.

Item No.	Item Description	Bid Price
2	BOMAG Model BW11RH-5 Pneumatic Roller or Equivalent	\$ _____ . ____
		Trade-In Value
Trade-In Value for used & flood-damaged: Dynapac CP142 (SN: 1000-500C0B000882)		\$ _____ . ____
Total Bid Price (Minus Trade-In Value) \$ _____ . ____		
Projected Delivery Lead Time from Date of Purchase:		_____ weeks
Equivalent Item Description (Make & Model) for Item No. 2: _____		

Bid Form

Bid Item 3 - IMPORTANT BIDDER INSTRUCTIONS:

Full technical specifications for this bid item can be found in **APPENDIX C**.

References to a Manufacturer's Product by Brand Name or Number are done solely to establish the minimum quality and performance characteristics required.

Bidders may submit bids on alternates, but MUST attach Two (2) Copies of the Manufacturer Specifications (to include full warranty terms) for any alternate at the time of the bid. Further, the Bidder must demonstrate that the alternate proposed has a sufficient operating track record to show the equipment will perform per the specified brand. The acceptance of a Bidder's alternate rests solely with Jefferson County.

Bidders offering the exact make/model as specified, MUST attach Two (2) Copies of the Manufacturer Specifications (to include full warranty terms).

In addition to completing this BID FORM and providing all information requested within this bid packet, Bidder must complete the Bid Item 3: TECHNICAL SPECIFICATIONS CHECKLIST FORM, (Pages 43-44).

IMPORTANT NOTE: Bidder MUST COMPLETE a Technical specifications checklist form for EACH ITEM BID. Failure to complete the Technical Specifications may result in a bid being deemed non-responsive.

Item No.	Item Description	Bid Price
3	BOMAG Model BW161AD-5 Vibratory Tandem Roller or Equivalent	\$ _____ . ____
		Trade-In Value
Trade-In Value for used & flood-damaged: CAT CB534-C (SN: 5HN00552)		\$ _____ . ____
Total Bid Price (Minus Trade-In Value) \$ _____ . ____		
Projected Delivery Lead Time from Date of Purchase:		_____ weeks
Equivalent Item Description (Make & Model) for Item No. 3: _____		

Bid Form

Bid Item 4 - IMPORTANT BIDDER INSTRUCTIONS:

Full technical specifications for this bid item can be found in **APPENDIX D**.

References to a Manufacturer's Product by Brand Name or Number are done solely to establish the minimum quality and performance characteristics required.

Bidders may submit bids on alternates, but MUST attach Two (2) Copies of the Manufacturer Specifications (to include full warranty terms) for any alternate at the time of the bid. Further, the Bidder must demonstrate that the alternate proposed has a sufficient operating track record to show the equipment will perform per the specified brand. The acceptance of a Bidder's alternate rests solely with Jefferson County.

Bidders offering the exact make/model as specified, MUST attach Two (2) Copies of the Manufacturer Specifications (to include full warranty terms).

In addition to completing this BID FORM and providing all information requested within this bid packet, Bidder must complete the Bid Item 4: TECHNICAL SPECIFICATIONS CHECKLIST FORM, (Pages 47-48).

IMPORTANT NOTE: Bidder MUST COMPLETE a Technical specifications checklist form for EACH ITEM BID. Failure to complete the Technical Specifications may result in a bid being deemed non-responsive.

Item No.	Item Description	Bid Price
4	BOMAG Model BW211PD-5 84" Single Drum Padfoot Roller or Equivalent	\$ _____ . ____
		Trade-In Value
Trade-In Value for used & flood-damaged: BOMAG BW213DH-40 (SN: 901582561088)		\$ _____ . ____
Total Bid Price (Minus Trade-In Value) \$ _____ . ____		
Projected Delivery Lead Time from Date of Purchase:		_____ weeks
Equivalent Item Description (Make & Model) for Item No. 4: _____		

Bid Form (Continued)

Bid Item 5: IMPORTANT BIDDER INSTRUCTIONS:

Full technical specifications for this bid item can be found in **APPENDIX E**.

References to a Manufacturer's Product by Brand Name or Number are done solely to establish the minimum quality and performance characteristics required.

Bidders may submit bids on alternates, but MUST attach Two (2) Copies of the Manufacturer Specifications (to include full warranty terms) for any alternate at the time of the bid. Further, the Bidder must demonstrate that the alternate proposed has a sufficient operating track record to show the equipment will perform per the specified brand. The acceptance of a Bidder's alternate rests solely with Jefferson County.

Bidders offering the exact make/model as specified, MUST attach Two (2) Copies of the Manufacturer Specifications (to include full warranty terms).

In addition to completing this BID FORM and providing all information requested within this bid packet, Bidder must complete the Bid Item 5: TECHNICAL SPECIFICATIONS CHECKLIST FORM, (Page 51).

IMPORTANT NOTE: Bidder MUST COMPLETE a Technical specifications checklist form for EACH ITEM BID. Failure to complete the Technical Specifications may result in a bid being deemed non-responsive.

Item No.	Item Description	Bid Price
5	John Deere 5065E Utility Tractor OOS 4WD or Equivalent	\$ _____ . ____
		Trade-In Value
Trade-In Value for used & flood-damaged: Ford 5000 Tractor		\$ _____ . ____
Total Bid Price (Minus Trade-In Value) \$ _____ . ____		
Projected Delivery Lead Time from Date of Purchase:		_____ weeks
Equivalent Item Description (Make & Model) for Item No. 5: _____		

Bid Form – Acknowledgement of Addenda

Acknowledgment of Addenda (if any):

Addendum 1 _____ Date Received _____

Addendum 2 _____ Date Received _____

Addendum 3 _____ Date Received _____

Bidder Shall Return Completed Form with Offer.

Vendor References

Please list at least three (3) companies or governmental agencies (preferably a municipality) where the same or similar products and/or services as contained in this specification package were recently provided.

THIS FORM MUST BE RETURNED WITH YOUR BID.

REFERENCE ONE

Government/Company Name: _____

Address: _____

Contact Person and Title: _____

Phone: _____ Fax: _____

Email Address: _____ Contract Period: _____

Scope of Work: _____

REFERENCE TWO

Government/Company Name: _____

Address: _____

Contact Person and Title: _____

Phone: _____ Fax: _____

Email Address: _____ Contract Period: _____

Scope of Work: _____

REFERENCE THREE

Government/Company Name: _____

Address: _____

Contact Person and Title: _____

Phone: _____ Fax: _____

Email Address: _____ Contract Period: _____

Scope of Work: _____

Bidder Shall Return Completed Form with Offer.

Signature Page

As permitted under Article 4413 (32c) V.A.C.S., other governmental entities may wish to participate under the same terms and conditions contained in this contract (i.e., piggyback). In the event any other entity participates, all purchase orders will be issued directly from and shipped directly to the entity requiring supplies/services. Jefferson County shall not be held responsible for any orders placed, deliveries made or payment for supplies/services ordered by another entity. Each entity reserves the right to determine their participation in this contract.

Would bidder be willing to allow other governmental entities to piggyback off this contract, if awarded, under the same terms and conditions?..... Yes ☐ No ☐

This bid shall remain in effect for ninety (90) days from bid opening and shall be exclusive of federal excise and state and local sales tax (exempt).

The undersigned agrees, if this bid is accepted, to furnish any and all items upon which prices are offered, at the price and upon the terms and conditions contained in the Invitation for Bid, Conditions of Bidding, Terms of Contract, and Specifications and all other items made a part of the accepted contract.

The undersigned affirms that they are duly authorized to execute the contract, that this company, corporation, firm, partnership or individual has not prepared this bid in collusion with any other bidder, and that the contents of this bid as to prices, terms or conditions of said bid have not been communicated by the undersigned nor by any employee or agent to any other bidder or to any other person(s) engaged in this type of business prior to the official opening of this bid. And further, that neither the bidder nor their employees nor agents have been for the past six (6) months directly nor indirectly concerned in any pool or agreement or combination to control the price of goods or services on, nor to influence any person to bid or not to bid thereon.

Bidder (Entity Name)

Signature

Street & Mailing Address

Print Name

City, State & Zip

Date Signed

Telephone Number

Fax Number

E-mail Address

Bidder Shall Return Completed Form with Offer.

Conflict of Interest Questionnaire

CONFLICT OF INTEREST QUESTIONNAIRE For vendor doing business with local governmental entity		FORM CIQ
<p>This questionnaire reflects changes made to the law by H.B. 23, 84th Leg., Regular Session.</p> <p>This questionnaire is being filed in accordance with Chapter 176, Local Government Code, by a vendor who has a business relationship as defined by Section 176.001(1-a) with a local governmental entity and the vendor meets requirements under Section 176.006(a).</p> <p>By law this questionnaire must be filed with the records administrator of the local governmental entity not later than the 7th business day after the date the vendor becomes aware of facts that require the statement to be filed. See Section 176.006(a-1), Local Government Code.</p> <p>A vendor commits an offense if the vendor knowingly violates Section 176.006, Local Government Code. An offense under this section is a misdemeanor.</p>		OFFICE USE ONLY <div style="border: 1px solid black; height: 100px; width: 100%;"></div>
1 Name of vendor who has a business relationship with local governmental entity. <div style="border: 1px solid black; height: 40px; width: 100%;"></div>		
2 <input type="checkbox"/> Check this box if you are filing an update to a previously filed questionnaire. <p style="font-size: small;">(The law requires that you file an updated completed questionnaire with the appropriate filing authority not later than the 7th business day after the date on which you became aware that the originally filed questionnaire was incomplete or inaccurate.)</p>		
3 Name of local government officer about whom the information in this section is being disclosed. <div style="text-align: center; margin-bottom: 10px;"> <div style="border-bottom: 1px solid black; width: 200px; margin: 0 auto;"></div> <p style="margin: 0;">Name of Officer</p> </div> <p>This section (item 3 including subparts A, B, C, & D) must be completed for each officer with whom the vendor has an employment or other business relationship as defined by Section 176.001(1-a), Local Government Code. Attach additional pages to this Form CIQ as necessary.</p> <p>A. Is the local government officer named in this section receiving or likely to receive taxable income, other than investment income, from the vendor?</p> <div style="margin-left: 40px;"> <input type="checkbox"/> Yes <input type="checkbox"/> No </div> <p>B. Is the vendor receiving or likely to receive taxable income, other than investment income, from or at the direction of the local government officer named in this section AND the taxable income is not received from the local governmental entity?</p> <div style="margin-left: 40px;"> <input type="checkbox"/> Yes <input type="checkbox"/> No </div> <p>C. Is the filer of this questionnaire employed by a corporation or other business entity with respect to which the local government officer serves as an officer or director, or holds an ownership interest of one percent or more?</p> <div style="margin-left: 40px;"> <input type="checkbox"/> Yes <input type="checkbox"/> No </div> <p>D. Describe each employment or business and family relationship with the local government officer named in this section.</p> <div style="border: 1px solid black; height: 100px; width: 100%; margin-top: 10px;"></div>		
4 <div style="display: flex; justify-content: space-between; margin-top: 20px;"> <div style="width: 45%; border-top: 1px solid black; text-align: center;"> Signature of vendor doing business with the governmental entity </div> <div style="width: 45%; border-top: 1px solid black; text-align: center;"> Date </div> </div>		

Adopted 8/7/2015

Bidder Shall Return Completed Form with Offer.

Local Government Officer Conflicts Disclosure Statement - OFFICE USE ONLY

LOCAL GOVERNMENT OFFICER CONFLICTS DISCLOSURE STATEMENT		FORM CIS
<p>This questionnaire reflects changes made to the law by H.B. 23, 84th Leg., Regular Session.</p> <p>This is the notice to the appropriate local governmental entity that the following local government officer has become aware of facts that require the officer to file this statement in accordance with Chapter 176, Local Government Code.</p>		OFFICE USE ONLY
1	Name of Local Government Officer	Date Received
2	Office Held	
3	Name of vendor described by Sections 176.001(7) and 176.003(a), Local Government Code	
4	Description of the nature and extent of employment or other business relationship with vendor named in item 3	
5	<p>List gifts accepted by the local government officer and any family member, if aggregate value of the gifts accepted from vendor named in item 3 exceeds \$100 during the 12-month period described by Section 176.003(a)(2)(B).</p> <p>Date Gift Accepted _____ Description of Gift _____</p> <p>Date Gift Accepted _____ Description of Gift _____</p> <p>Date Gift Accepted _____ Description of Gift _____</p> <p style="text-align: center;">(attach additional forms as necessary)</p>	
6	<p>AFFIDAVIT</p> <p>I swear under penalty of perjury that the above statement is true and correct. I acknowledge that the disclosure applies to each family member (as defined by Section 176.001(2), Local Government Code) of this local government officer. I also acknowledge that this statement covers the 12-month period described by Section 176.003(a)(2)(B), Local Government Code.</p> <p style="text-align: right; margin-right: 100px;">_____ Signature of Local Government Officer</p> <p>AFFIX NOTARY STAMP / SEAL ABOVE</p> <p>Sworn to and subscribed before me, by the said _____, this the _____ day of _____, 20 _____, to certify which, witness my hand and seal of office.</p> <p>_____ Signature of officer administering oath Printed name of officer administering oath Title of officer administering oath</p>	

Adopted 8/7/2015

Good Faith Effort (GFE) Determination Checklist

This information must be submitted with your bid.

Bidder intends to utilize subcontractors/subconsultants in the fulfillment of this contract (if awarded).

☐ Yes ☐ No

Instructions: In order to determine if a "Good Faith Effort" was made in soliciting HUBs for subcontracting opportunities, the following checklist and supporting documentation shall be completed by the Prime Contractor/Consultant, and returned with the Prime Contractor/Consultant's bid. This list contains the **minimum** efforts that should be put forth by the Prime Contractor/Consultant when attempting to achieve or exceed the goals of HUB Subcontractor participation. The Prime Contractor/Consultant may extend his/her efforts in soliciting HUB Subcontractor participation beyond what is listed below.

Did the Prime Contractor/Consultant . . .

- | | | |
|------------------------------|-----------------------------|---|
| <input type="checkbox"/> Yes | <input type="checkbox"/> No | 1. To the extent practical, and consistent with standard and prudent industry standards, divide the contract work into the smallest feasible portions, to allow for maximum HUB Subcontractor participation? |
| <input type="checkbox"/> Yes | <input type="checkbox"/> No | 2. Notify in writing a reasonable number of HUBs, allowing sufficient time for effective participation of the planned work to be subcontracted? |
| <input type="checkbox"/> Yes | <input type="checkbox"/> No | 3. Provide HUBs that were genuinely interested in bidding on a subcontractor, adequate information regarding the project (i.e., plans, specifications, scope of work, bonding and insurance requirements, and a point of contact within the Prime Contractor/Consultant's organization)? |
| <input type="checkbox"/> Yes | <input type="checkbox"/> No | 4. Negotiate in good faith with interested HUBs, and not reject bids from HUBs that qualify as lowest and responsive bidders? |
| <input type="checkbox"/> Yes | <input type="checkbox"/> No | 5. Document reasons HUBs were rejected? Was a written rejection notice, including the reason for rejection, provided to the rejected HUBs? |
| <input type="checkbox"/> Yes | <input type="checkbox"/> No | 6. If Prime Contractor/Consultant has zero (0) HUB participation, please explain the reasons why. |

If No was selected, please explain and include any pertinent documentation with your bid.

If necessary, please use a separate sheet to answer the above questions.

Printed Name of Authorized Representative

Signature

Title

Date

Bidder Shall Return Completed Form with Offer.

Notice of Intent (NOI) to Subcontract with Historically Underutilized Business (HUB)

This information must be submitted with your bid.

Bidder intends to utilize subcontractors/subconsultants in the fulfillment of this contract (if awarded).

☐ Yes ☐ No

Instructions for Prime Contractor/Consultant: Bidder shall submit this form with the bid; however, the information below may be submitted after contract award, but prior to beginning performance on the contract. Please submit one form for each HUB Subcontractor/Subconsultant with proper signatures, per the terms and conditions of your contract.

Contractor Name: _____ HUB: p Yes p No

Address: _____
Street City State Zip

Phone (with area code): _____ Fax (with area code): _____

Project Title & No.: _____

Prime Contract Amount: \$ _____

HUB Subcontractor Name: _____

HUB Status (Gender & Ethnicity): _____

Certifying Agency: ☐ Tx. Bldg & Procurement Comm. ☐ Jefferson County ☐ Tx Unified Certification Prog.

Address: _____
Street City State Zip

Phone (with area code): _____ Fax (with area code): _____

Proposed Subcontract Amount: \$ _____ Percentage of Prime Contract: _____ %

Description of Subcontract Work to be Performed: _____

Printed Name of Contractor Representative

Signature of Representative

Date

Printed Name of HUB

Signature of Representative

Date

NOTE: NOTHING ON THIS NOTICE OF INTENT FORM IS INTENDED TO CONFER ANY RIGHTS, EXPRESSED OR IMPLIED, TO ANY THIRD PARTIES.

Pre-Approval for Subcontractor Substitutions must be obtained from the Jefferson County Purchasing Agent's Representative. The "HUB Subcontractor/Subconsultant Change Form" must be completed and faxed to 409-835-8456.

Bidder Shall Return Completed Form with Offer.

Historically Underutilized Business (HUB) Subcontracting Participation Declaration Form

PAGE 1 OF 4

This information must be submitted with your bid.

Bidder intends to utilize subcontractors/subconsultants in the fulfillment of this contract (if awarded).

☐ Yes ☐ No

Prime Contractor: _____ HUB: ☐ Yes ☐ No

HUB Status (Gender & Ethnicity): _____

Address: _____
Street City State Zip

Phone (with area code): _____ Fax (with area code): _____

Project Title & No.: _____ IFB/RFP No.: _____

Total Contract: \$ _____ Total HUB Subcontract(s): \$ _____

Construction HUB Goals: 12.8% MBE:: _____ % 12.6% WBE: _____ %

Sub-goals: 1.7 African-American, 9.7% Hispanic, 0.7% Native American, 0.8% Asian American.
Use these goals as a guide to diversify.

FOR HUB OFFICE USE ONLY:

Verification date HUB Program Office reviewed and verified HUB Sub information Date: _____ Initials: _____

PART I. HUB SUBCONTRACTOR DISCLOSURE

HUB Subcontractor Name: _____

HUB Status (Gender & Ethnicity): _____

Certifying Agency: ☐ Texas Bldg & Procurement Comm. ☐ Texas Unified Certification Prog.

Address: _____
Street City State Zip

Contact person: _____ Title: _____

Phone (with area code): _____ Fax (with area code): _____

Proposed Subcontract Amount: \$ _____ Percentage of Prime Contract: _____ %

Description of Subcontract Work to be Performed: _____

Bidder Shall Return Completed Form with Offer.

Historically Underutilized Business (HUB) Subcontracting Participation Declaration Form

PAGE 2 OF 4

HUB SUBCONTRACTOR DISCLOSURE

PART I: Continuation Sheet

(Duplicate as Needed)

HUB Subcontractor Name: _____

HUB Status (Gender & Ethnicity): _____

Certifying Agency: ☐ Tx. Bldg & Procurement Comm. ☐ Jefferson County ☐ Tx Unified Certification Prog.

Address: _____
Street City State Zip

Contact person: _____ Title: _____

Phone (with area code): _____ Fax (with area code): _____

Proposed Subcontract Amount: \$ _____ Percentage of Prime Contract: _____ %

Description of Subcontract Work to be Performed: _____

HUB Subcontractor Name: _____

HUB Status (Gender & Ethnicity): _____

Certifying Agency: ☐ Tx. Bldg & Procurement Comm. ☐ Jefferson County ☐ Tx Unified Certification Prog.

Address: _____
Street City State Zip

Contact person: _____ Title: _____

Phone (with area code): _____ Fax (with area code): _____

Proposed Subcontract Amount: \$ _____ Percentage of Prime Contract: _____ %

Description of Subcontract Work to be Performed: _____

**All HUB Subcontractor Participation may be verified with the
HUB Subcontractor(s) listed on Part I.**

Bidder Shall Return Completed Form with Offer.

Historically Underutilized Business (HUB) Subcontracting Participation Declaration Form

PAGE 3 OF 4

PART II: STATEMENT OF NON-COMPLIANCE FOR NOT MEETING HUB SUBCONTRACTING GOALS

Please complete Good Faith Effort (GFE) Checklist and attach any supporting documentation.

Our firm was unable to meet the HUB goals for this project for the following reasons:

- ☐ All subcontractors to be utilized are "Non-HUBs." (Complete Part III)
- ☐ HUBs were solicited but did not respond.
- ☐ HUBs solicited were not competitive.
- ☐ HUBs were unavailable for the following trade(s):
- ☐ Other: _____

Was the Jefferson County HUB Office contacted for assistance in locating HUBs? ☐ Yes ☐ No

PART III: DISCLOSURE OF OTHER "NON-HUB" SUBCONTRACTS

The bidder shall use this area to provide a listing of all "Non-HUB" Subcontractors, including suppliers, that will perform under this project. A list of those "Non-HUB" Subcontractors the bidder selects, after bid submission, shall be provided to the Purchasing Office not later than five (5) calendar days after being notified that bidder is the apparent low bidder. A list of those "Non-HUB" Subcontractors that are selected after contract award must be provided **immediately** after their selection.

Subcontractor Name: _____

Address: _____
Street City State Zip

Contact person: _____ Title: _____

Phone (with area code): _____ Fax (with area code): _____

Proposed Subcontract Amount: \$ _____ Percentage of Prime Contract: _____ %

Description of Subcontract Work to be Performed: _____

Subcontractor Name: _____

Address: _____
Street City State Zip

Contact person: _____ Title: _____

Phone (with area code): _____ Fax (with area code): _____

Proposed Subcontract Amount: \$ _____ Percentage of Prime Contract: _____ %

Description of Subcontract Work to be Performed: _____

Bidder Shall Return Completed Form with Offer.

Historically Underutilized Business (HUB) Subcontracting Participation Declaration Form

PAGE 4 OF 4

Subcontractor Name: _____

Address: _____
Street City State Zip

Contact person: _____ Title: _____

Phone (with area code): _____ Fax (with area code): _____

Proposed Subcontract Amount: \$ _____ Percentage of Prime Contract: _____ %

Description of Subcontract Work to be Performed: _____

Subcontractor Name: _____

Address: _____
Street City State Zip

Contact person: _____ Title: _____

Phone (with area code): _____ Fax (with area code): _____

Proposed Subcontract Amount: \$ _____ Percentage of Prime Contract: _____ %

Description of Subcontract Work to be Performed: _____

I hereby certify that I have read the *HUB Program Instructions and Information*, truthfully completed all applicable parts of this form, and **attached any necessary support documentation as required**. I fully understand that intentionally falsifying information on this document may result in my not receiving a contract award or termination of any resulting contract.

Name (print or type): _____

Title: _____

Signature: _____

Date: _____

E-mail address: _____

Contact person that will be in charge of invoicing for this project:

Name (print or type): _____

Title: _____

Date: _____

E-mail address: _____

Bidder Shall Return Completed Form with Offer.

Residence Certification/Tax Form

Pursuant to Texas Government Code §2252.001 *et seq.*, as amended, Jefferson County requests Resident Certification. §2252.001 *et seq.* of the Government Code provides some restrictions on the awarding of governmental contracts; pertinent provisions of §2252.001 are stated below:

(3) "Nonresident bidder" refers to a person who is not a resident.

(4) "Resident bidder" refers to a person whose principal place of business is in this state, including a contractor whose ultimate parent company or majority owner has its principal place of business in this state.

☐ I certify that _____ [company name] is a Resident Bidder of Texas as defined in Government Code §2252.001.

☐ I certify that _____ [company name] is a Nonresident Bidder as defined in Government Code §2252.001 and our principal place of business is _____ (city and state).

Taxpayer Identification Number (T.I.N.):	
Company Name submitting bid/proposal:	
Mailing address:	
If you are an individual, list the names and addresses of any partnership of which you are a general partner:	

Property: List all taxable property owned by you or above partnerships in Jefferson County.

Jefferson County Tax Acct. No.*	Property address or location**

* This is the property amount identification number assigned by the Jefferson County Appraisal District.

** For real property, specify the property address or legal description. For business property, specify the address where the property is located. For example, office equipment will normally be at your office, but inventory may be stored as a warehouse or other location.

Bidder Shall Return Completed Form with Offer.

Bid Affidavit

The undersigned certifies that the bid prices contained in this bid have been carefully reviewed and are submitted as correct and final. Bidder further certifies and agrees to furnish any and/or all commodities upon which prices are extended at the price offered, and upon the conditions contained in the specifications and the Notice to Bidders.

STATE OF _____ COUNTY OF _____

BEFORE ME, the undersigned authority, a Notary Public in and for the State of _____,

on this day personally appeared _____, who

(name)

after being by me duly sworn, did depose and say:

"I, _____ am a duly authorized officer of/agent

(name)

for _____ and have been duly authorized to execute the

(name of firm)

foregoing on behalf of the said _____.

(name of firm)

I hereby certify that the foregoing bid has not been prepared in collusion with any other bidder or other person or persons engaged in the same line of business prior to the official opening of this bid. Further, I certify that the bidder is not now, nor has been for the past six (6) months, directly or indirectly concerned in any pool or agreement or combination, to control the price of services/commodities bid on, or to influence any person or persons to bid or not to bid thereon."

Name and address of bidder: _____

Fax: _____ Telephone# _____

by: _____ Title: _____

(print name)

Signature: _____

SUBSCRIBED AND SWORN to before me by the above-named

_____ on

this the _____ day of _____, 2018.

Notary Public in and for
the State of _____

Bidder Shall Return Completed Form with Offer.

APPENDIX A

APPENDIX A

~~120M2/120M2-AWD~~

Motor Graders



Engine

Engine Model	Cat® C7.1 ACERT™	
Base Power (1st gear) – Net	108 kW	145 hp
Base Power (1st gear) – Net (metric)		147 hp
VHP Plus Range – Net	108-141 kW	145-189 hp
VHP Plus Range – Net (metric)		147-192 hp
AWB Range – Net	114-156 kW	153-209 hp
AWB Range – Net (metric)		155-212 hp

Emissions

U.S. EPA Tier 4 Interim/EU Stage IIIB equivalent		
Moldboard		
Blade Width	3.7 m	12 ft
Weights		
Operating Weight, Typically Equipped	18 095 kg	39,892 lb
Weights – AWD		
Operating Weight, Typically Equipped	18 097 kg	41,059 lb

APPENDIX A

120M2/120M2 AWD Features

Operator Station

A revolutionary cab design provides unmatched comfort, visibility and ease of use, making the operator more confident and productive.

Engine and Power Train

Combining power management with advanced technology delivers maximum power and efficiency while reducing the environmental impact. M Series 2 Motor Graders perform at U.S. EPA Tier 4 Interim/ EU Stage IIIB equivalent emission levels using U.S. EPA and EU Flex provisions.

Structures, Drawbar, Circle and Moldboard

Durable structures with fast and simple DCM adjustments deliver precise material control while lowering operating costs.

Hydraulics

The M Series 2 Motor Grader electro-hydraulics enable advanced machine controls with precise and predictable movements.

Integrated Technologies

Cat® Connect makes smart use of technology and services to help you monitor, manage and enhance job site operations.

~~All-Wheel Drive (AWD)~~

~~Maximum productivity with six powered wheels. Hydrostatic Mode powers only the front wheels, perfect for precise finish work. Steering Compensation adjusts the outside front tire speed for tighter turns, less scuffing and tire wear, and improved control.~~

Contents

Operator Station.....	4
Steering and Implement Controls	5
Emissions Technology.....	6
Engine	6
Power Train.....	7
Structures and DCM.....	8
“Smart” Machine Systems.....	9
All-Wheel Drive (AWD).....	9
Integrated Technologies.....	10
Hydraulics	11
Work Tools and Attachments.....	12
Safety	13
Customer Support.....	15
Sustainability	14
Specifications.....	15
Standard Equipment.....	22
Optional Equipment.....	23



APPENDIX A



The M Series 2 continues the legacy of quality already established by Cat Motor Graders. The extensive validation program, combined with improvements to the manufacturing process, allows Caterpillar to further enhance our quality.

The end result of this development process is a motor grader line with breakthrough technologies, tested in the field and built around real applications and real customer needs. M Series 2 Motor Graders meet Tier 4 Interim/Stage IIIB equivalent emission standards.

APPENDIX A



Operator Station

Comfort, productivity, advanced technology

Visibility

Angled cab doors, a tapered engine enclosure and patented sloped rear window assure excellent visibility to the work area.

Maximum Control, Maximum Comfort

Caterpillar has built the most comfortable cab in the industry, replacing the control levers and steering wheel with two joystick controls, and lengthening the cab for more leg room. Machine design features, like angled doors, provide excellent visibility.

Operator Comfort

The Cat Comfort Series suspension seat and arm/wrist rests are fully adjustable for improved comfort and productivity. Extra leg room, easy-to-reach long-life rocker switches and revolutionary joystick controls make this the most comfortable cab in the industry.

Standard HVAC System

The high capacity system dehumidifies and pressurizes the cab, circulates fresh air, seals out dust and keeps windows clear.

Low Interior Sound and Vibration Levels

Multiple isolation mounts along with relocated hydraulic pump and valves significantly improve operator comfort and productivity.

In-Dash Instrument Cluster

Easy-to-read, high-visibility gauges and warning lamps keep the operator aware of critical system information.

APPENDIX A

Steering and Implement Controls

Unprecedented precision and ease of operation

Ease of Operation

Two electro-hydraulic joysticks require up to 78% less hand and wrist movement than conventional lever controls for greatly enhanced operator comfort and efficiency. The intuitive control pattern allows both new and experienced operators to quickly become productive.

Electronically adjustable control pods help position joysticks for optimal comfort, visibility and proper operation.

Joystick Functions

- The left joystick primarily controls the machine direction and speed including steering, articulation, return-to-center, wheel lean, gear selection, left moldboard lift cylinder and float.
- The right joystick primarily controls drawbar, circle and moldboard functions including right moldboard lift cylinder and float, moldboard slide and tip, circle turn, drawbar center shift, electronic throttle control and manual differential lock/unlock.

Intuitive Steering Control

Joystick lean angle mirrors the steer tires' turning angle. A brake tensioning system holds the joystick in position until the operator moves it. The steering control automatically reduces steering sensitivity at higher ground speeds for comfortable and predictable control.

Electronic Throttle Control

Provides easy, precise and consistent throttle operation. An automatic/manual mode switch offers flexibility for different applications and operator preferences.

Articulation Return-to-Center

Automatically returns the machine to a straight frame position from any angle with the touch of a button.

Auxiliary Pod and Ripper Control (Optional)

Ergonomically positioned to allow simple, comfortable operation for the multiple hydraulic options.

- Four fingertip controls and a mini joystick maximize control of up to six hydraulic circuits. Individual functions can be programmed with Electronic Technician (Cat ET). The auxiliary hydraulic pod is provided when the machine is configured with three or more auxiliary functions.
- Infinitely variable roller switches provide precise control of the rear ripper and/or front lift group (when equipped).



Optional Advanced Control Joysticks

Cat Advanced Control Joysticks allow the operator to easily control automated grading solutions, Cat GRADE with Cross Slope, AccuGrade™, and Snow Wing. Both new and experienced operators can also configure auxiliary hydraulic functions (such as ripper, front plow blade, etc.) without taking their hands off the controls decreasing fatigue, increasing productivity.

APPENDIX A

Engine Power and reliability



Emissions Technology

Reliable, integrated solutions

Cat NO_x Reduction System

The Cat NO_x Reduction System captures and cools a small quantity of exhaust gas, then routes it into the combustion chamber where it drives down combustion temperatures and reduces NO_x emissions.

Aftertreatment Technologies

To meet Tier 4 Interim/Stage IIIB equivalent emission standards and beyond, Cat aftertreatment components have been designed to match application needs. System components include a **Diesel Oxidation Catalyst (DOC)**, which uses a chemical process to convert regulated emissions in the exhaust system, and a **Diesel Particulate Filter (DPF)** that traps particulate matter that is carried into the exhaust stream.

The DOC, DPF and Cat Regeneration System are contained in a Caterpillar designed Clean Emission Module (CEM) that protects the components, minimizes the aftertreatment footprint and simplifies maintenance.

Cat Regeneration System

The Cat Regeneration System is designed to work transparently, without any interaction needed from the operator. Under most operating conditions, engine exhaust is hot enough to oxidize soot through passive regeneration. If supplemental regeneration is needed, the Cat Regeneration System elevates exhaust gas temperatures to remove soot in the Diesel Particulate Filter (DPF). This is a process that happens automatically, but the operator can initiate the cycle when convenient or interrupt regeneration as needed. A soot level monitor can be viewed on the Cat Messenger screen and regeneration indicator lights are integrated into the front console.

A C7.1 ACERT engine and Cat Clean Emissions Module deliver the performance and efficiency that customers demand, while meeting Tier 4 Interim/Stage IIIB equivalent emission standards.

The C7.1 ACERT has superior torque and lugging capability to pull through sudden, short-term loads and maintain consistent, desirable grading speeds to get work done faster without downshifting. The High Pressure Common Rail Fuel System improves precision and control with full electronic injection that boosts performance and reduces soot.

Hydraulic Demand Fan

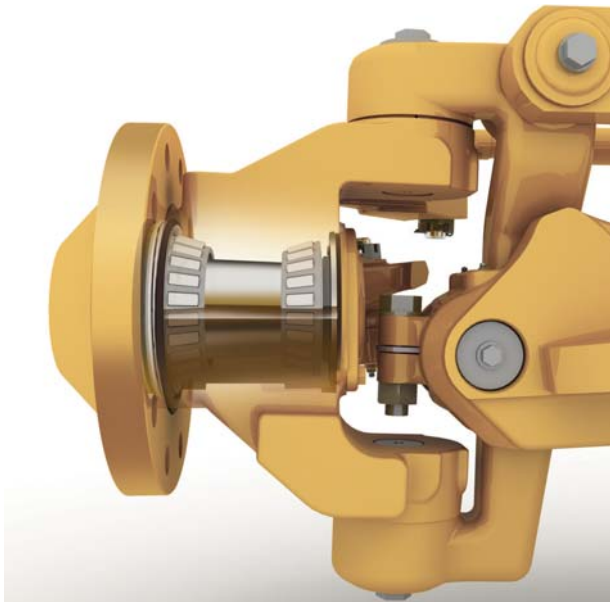
The hydraulic demand fan automatically adjusts cooling fan speed according to engine cooling requirements. This reduces demand on the engine, putting more horsepower to the ground and improves fuel efficiency. Swing-out design allows easy access to cooling cores and reduces clean out time.



APPENDIX A

Power Train

Maximum power to the ground



Automatic Differential Lock

Unlocks the differential during a turn, re-locks when straight, for easier operation and lower power train protection.

Front Axle

The Cat sealed spindle keeps bearings free from contaminants and lubricated in a light weight oil. The Cat “Live Spindle” design places the larger tapered roller bearing outboard where the load is greater, extending bearing life.

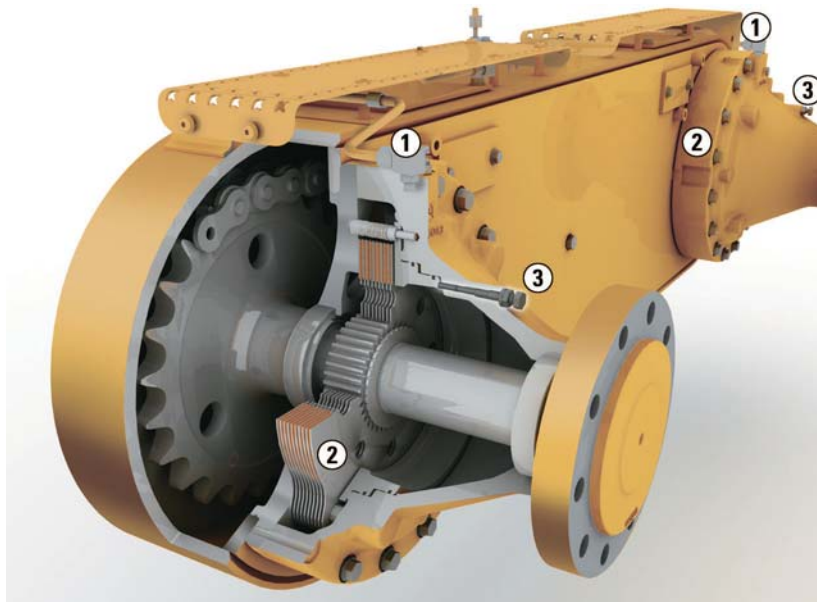
Inching Pedal

Allows precise control of machine movements and excellent modulation, critical in close-quarter work or finish grading.

Smooth Shifting Transmission

Several key innovations ensure smooth, powerful shifts.

- Full Electronic Clutch Pressure Control (ECPC) system optimizes inching modulation for smooth shifts and directional changes, reducing stress on gears.
- Controlled Throttle Shifting helps to smooth directional and gear changes without using the inching pedal.
- Load Compensation ensures consistent shift quality regardless of blade or machine load.



- This standard feature automatically shifts the transmission at optimal points so the operator can focus on the work to help improve safety, productivity and ease of operation.
- Power Shift Countershaft Transmission and the Cat C7.1 engine maximize power to the ground. Eight forward/six reverse gears optimize productivity.
- Engine Over-Speed Protection prevents downshifting until an acceptable safe travel speed has been established.

Bolt-On Modular Rear Axle

Improves serviceability and contamination control with easy access to differential components.

Hydraulic Brakes

Hydraulically actuated, oil bathed, multi-disc service brakes at each tandem wheel (1) offer the industry's largest total brake surface area (2) for dependable stopping power and long brake life. The brake wear indicator/compensator system (3) maintains brake performance and indicates brake wear without disassembly, for fast servicing and longer brake service life. The spring-applied, hydraulically released multi-disc parking brake, sealed and oil-cooled for long life and low service, is integrated into the Operator Presence System to prevent unintended machine movement.

APPENDIX A

Structures and DCM

Service ease and precise blade control

Heavy Duty Durability

The frame, drawbar and one-piece forged steel circle are designed for durability in heavy duty applications. The strong A-frame drawbar uses a durable tubular design. The front 240° of circle teeth are hardened to reduce wear and ensure component reliability.

Articulation Hitch

A large tapered roller bearing at the lower pivot carries loads evenly and smoothly. Sealed to prevent contamination, a locking pin prevents articulation for safety during service or transport.

Aggressive Blade Angle

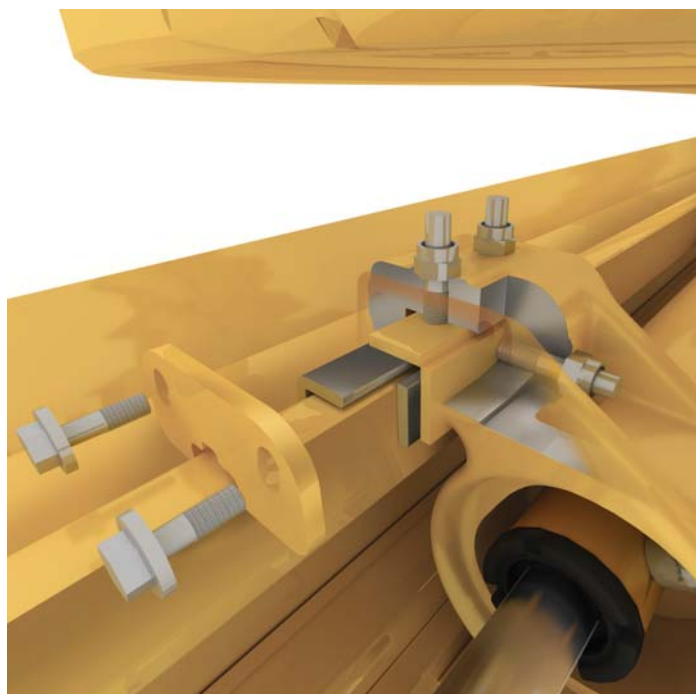
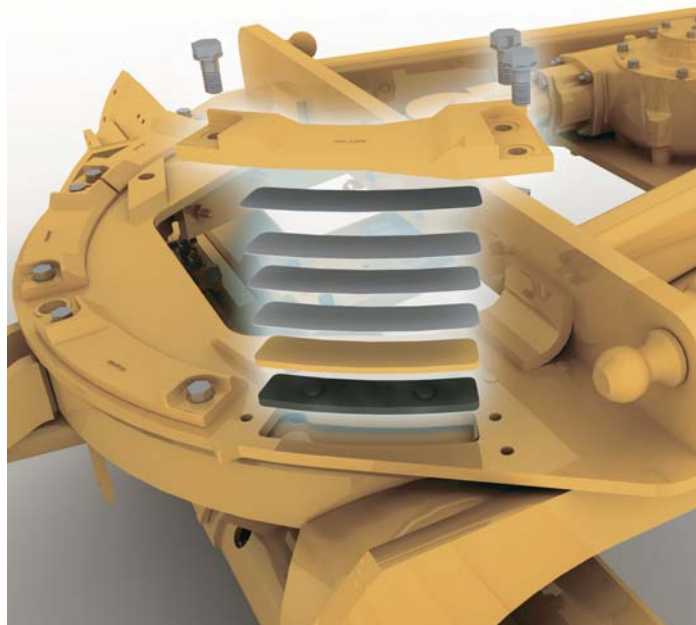
Allows material to roll more freely along the blade, particularly dry materials or cohesive soils. Better material control gets the job done faster, requires less power and saves fuel.

Fast, Easy Adjustment Means Tight Components

Shims and patented top-adjust wear strips are easy to add or replace, dramatically reducing downtime and operating costs. Durable nylon composite wear inserts maximize circle torque and component life. Sacrificial brass wear strips between the blade mounting group and moldboard can be replaced easily. Shimless Moldboard Retention System uses vertical and horizontal adjusting screws to keep moldboard wear strips aligned for reduced blade chatter, precise blade control and dramatic reductions in service time.

Moldboard

Heat-treated rails, hardened cutting edges and end bits, and heavy duty bolts assure reliability and long service life. The link bar allows extreme moldboard positioning for bank sloping, ditch cutting and cleaning.



APPENDIX A

"Smart" Machine Systems

Advanced diagnostics

Sharing key data among systems helps optimize machine performance and aids serviceability.

- Cat Messenger, combined with full systems integration, enhances diagnostic capability. Machine system errors are displayed in both text and fault codes for quick analysis of critical data.
- Electronic Technician (Cat ET) lets service technicians access stored diagnostic data and configure machine parameters through the Cat Data Link.
- Low Battery Elevated Idle raises idle speed when low system voltage is detected, ensuring adequate system voltage and improving battery reliability.
- Automatic Engine Deration protects the engine and aftertreatment by automatically lowering engine torque output and alerting the operator if critical conditions are detected.



All-Wheel Drive (AWD) Expanded machine versatility

All-Wheel Drive (AWD)

The AWD arrangement utilizes dedicated left and right pumps for precise hydraulic control. The infinitely variable pumps and motors maximize torque in each gear. This delivers the most power to the ground in the industry and increases productivity.

Maximum Tractor Power

When AWD is engaged, flywheel horsepower is automatically increased by an additional 45 kW (60 hp) from base power. This effect has parasitic losses and maximizes net power to the ground for increased productivity.

Hydrostatic Mode

Standard with AWD, this mode disengages the transmission and provides hydraulic power to the front wheels only. The ground speed is infinitely variable between 0.9 km/h (0.5 mph), perfect for precise finish work.

Steering Compensation

Cat Steering Compensation System enables a "powered turn" by adjusting the outside front tire speed up to 50% faster than the inside tire. The result is improved control, less damage to surfaces and a dramatic reduction of turning radius in poor underfoot conditions.



APPENDIX A

Integrated Technologies

Monitor, manage, and enhance job site operations



Cat Connect makes smart use of technology and services to improve your job site efficiency. Using the data from technology-equipped machines, you'll get more information and insight into your equipment and operations than ever before.

LINK Technologies

LINK technologies, like Product Link™, are deeply integrated into your machine and wirelessly communicate key information, including location, hours, fuel usage, idle time and event codes.

Product Link/VisionLink®

Easy access to Product Link data via the online VisionLink user interface can help you see how your machine or fleet is performing. You can use this information to make timely, fact based decisions that can boost job site efficiency and productivity, and lower costs.

APPENDIX A

Hydraulics

Advanced machine control

Advanced Electro-Hydraulic System

Incorporates a state-of-the-art electro-hydraulic system as the foundation for revolutionary changes in machine and advanced joystick controls.

Blade Float

Allows the blade to move freely under its own weight. By floating both cylinders, the blade can follow the contours of the road, especially useful when removing snow. Floating only one cylinder permits the toe of the blade to follow a hard surface while the operator controls the slope with the other lift cylinder.

Independent Oil Supply

Large, separate hydraulic oil supplies prevent cross-contamination and provide proper oil cooling, which reduces heat build-up and extends component life.

Load Sensing Hydraulics (PPPC)

The proven load-sensing system and the advanced Proportional Priority Pressure-Compensating (PPPC or “triple P – C”) electro-hydraulic valves provide superior implement control and enhanced machine performance in all applications. Continuously matching hydraulic flow/pressure to power demands creates less heat and reduces power consumption.

- Consistent, Predictable Movement – PPPC valves have different flow rates for the head (red) and rod ends (blue) of the cylinder, ensuring consistent extension and retraction speeds.
- Balanced Flow – Hydraulic flow is proportioned so all implements operate simultaneously with little effect on the engine or implement speeds.



APPENDIX A

Work Tools and Attachments

Equip your machine for the job



Moldboard Options

Standard 3.7 m (12 ft) ~~or optional 4.0 m (14 ft)~~. Left and right side extensions are also available.

Ground Engaging Tools (GET)

A variety of tools are available from Cat Work Tools, including cutting edges, graderbits and end bits, all designed for maximum service life and productivity.

Front Mounted Groups

A front mounted push plate/counterweight or front lift group are available. ~~The front lift group can be combined with a front dozer blade or front scarifier for added versatility.~~

Rear Ripper/Scarifier

Made to penetrate tough material fast and rip thoroughly for easier movement with the moldboard. The ripper includes three shanks (with holders for five). Nine scarifier shanks can also be added for additional versatility.

~~Snow Removal Work Tools~~

~~Multiple snow plow, snow wing and mounting options increase machine versatility and utilization throughout the year.~~

APPENDIX A

Safety

Protect your most valuable resource

Designed with Protection in Mind

Features are designed to enhance operator and job site safety, such as drop-down rear lights and a rearview camera. Among many standard safety features are laminated glass, back-up lights, and perforated tandem walkways and grab rails.

Operator Presence System

The parking brake remains engaged and hydraulic implements disabled until the operator is initially seated and the machine is ready for operation.

Secondary Steering System

Automatically engages an electric hydraulic pump in case of a drop in steering pressure, allowing the operator to steer the machine to a stop.

Hydraulic Lockout

A simple switch located in the cab disables all implement functions while still providing machine steering control. This safety feature is especially useful while roading.

Brake Systems

Brakes are located at each tandem wheel to eliminate braking loads on the power train. Redundant brake systems utilize accumulators to enable stopping in case of machine failure, further increasing operational safety.

Circle Drive Slip Clutch

This standard feature protects the drawbar, circle and moldboard from shock loads when the blade encounters an immovable object. It also reduces the possibility of abrupt directional changes in poor traction conditions.

Blade Lift Accumulators (Optional)

This optional feature uses accumulators to help absorb impact loads to the moldboard by allowing vertical blade travel. Blade lift accumulators help reduce unnecessary wear and also help reduce impact loading for enhanced operator safety.

Rearview Camera (Optional)

Visibility is further enhanced with an optional Work Area Vision System (WAVS) through a 178 mm (7 in) LCD color monitor in the cab. Developed specifically for rugged applications, this durable camera improves productivity and increases operator awareness of surroundings.

Front and Rear Fenders (Optional)

To help reduce objects flying from the tire, as well as build-up of mud, snow and debris, optional fenders can be added.



APPENDIX A

Customer Support

Unparalleled worldwide support

Renowned Dealer Service

From helping you choose the right machine to financing and ongoing support, your Cat dealer provides the best in sales and service.

Manage your costs with preventive maintenance programs like S-O-SSM analysis, Coolant Sampling and guaranteed maintenance contracts.

Stay productive with best-in-class parts availability. Your Cat dealer can even help boost your profits with operator training.

And when it's time for component replacement, your Cat dealer can help you save even more. Genuine Cat Remanufactured parts carry the same warranty and reliability as new products at savings of 40 to 70 percent for power train and hydraulic components.



Sustainability

Thinking generations ahead

M Series 2 Motor Graders are designed to benefit your business and reduce emissions.

- Cat engine and aftertreatment meet Tier 4 Interim/Stage IIIB equivalent emission standards.
- Integrated machine systems and technologies improve productivity for greater accuracy, lower fuel use and reduced machine wear.
- Replaceable wear parts save maintenance time and cost, and extend major component life.
- Major structures and components are built to be rebuilt, reducing waste and replacement costs.
- Extended service intervals reduce maintenance time/cost and waste.
- A variety of safety features help safeguard operators and others on the job site.



Engine		
Engine Model	Cat C7.1 ACERT	
Emissions	Tier 4 Interim/Stage IIIB equivalent	
Base Power (1st gear) – Net	108 kW	145 hp
Base Power (1st gear) – Net (metric)	147 hp	
VHP Plus Range – Net	108-141 kW	145-189 hp
VHP Plus Range – Net (metric)	147-192 hp	
AWD Range – Net	114-156 kW	155-209 hp
AWD Range – Net (metric)	155-212 hp	
Displacement	7.01 L	428 in ³
Bore	105 mm	4.13 in
Stroke	135 mm	5.31 in
Torque Rise	45%	
Maximum Torque	939 N·m	693 lbf·ft
Speed @ Rated Power	2,100 rpm	
Number of Cylinders	6	
Derating Altitude	3048 m	10,000 ft
Hi Ambient – Fan Speed		
Standard	1,000 rpm	
Maximum	1,350 rpm	
Minimum	500 rpm	
Standard Capability	43° C	109° F
Hi Ambient Capability	50° C	122° F

VHP Plus – Gear		
1F, Net	108 kW	145 hp
2F, Net	114 kW	153 hp
3F, Net	120 kW	161 hp
4F, Net	126 kW	169 hp
5F, Net	130 kW	174 hp
6F, Net	134 kW	179 hp
7F, Net	137 kW	184 hp
8F, Net	141 kW	189 hp

- Net power is tested per ISO 9249, SAE J1349, and EEC 80/1269 Standards in effect at the time of manufacture.
- VHP Plus is a standard attachment for the 120M2; standard for the 120M2 AWD.
- Net power advertised is the power available at rated speed of 2,100 rpm, measured at the flywheel when engine is equipped with fan running at minimum speed, air cleaner, muffler and alternator.
- No engine derating required up to 3048 m (10,000 ft).
- Power as declared per ISO 14396
Rated rpm 2,100
VHP+ = 142 kW (190 hp)
~~AWD = 157 kW (211 hp)~~
- All non-road Tier 4, Stage IIIB and IV certified diesel engines are required to use:
 - Ultra Low Sulfur Diesel (ULSD) and Sulfur-Free fuels that are 15 ppm (mg/kg) sulfur or less.
 - Cat DEO-ULS™ or oils that meet the Cat ECF-3, API CJ-4, and ACEA E9 specification.

Power Train

Forward/Reverse Gears	8 Forward/6 Reverse	
Transmission	Direct Drive, Powershift	
Brakes		
Service	Multiple Oil Disc	
Service, Surface Area	23 000 cm ²	3,565 in ²
Parking	Multiple Oil Disc	
Secondary	Dual Circuit	

Hydraulic System

Circuit Type	Parallel	
Pump Type	Variable Piston	
Pump Output	210 L/min	55.7 gal/min
Maximum System Pressure	24 150 kPa	3,500 psi
Reservoir Tank Capacity	60 L	15.85 gal
Standby Pressure	4200 kPa	609 psi

- Pump output measured at 2,150 rpm

Operating Specifications

Top Speed		
Forward	45.7 km/h	28.4 mph
Reverse	36.1 km/h	22.4 mph
Turning Radius, Outside Front Tires	7.4 m	24 ft 3 in
Steering Range – Left/Right	47.5°	
Articulation Angle – Left/Right	20°	
Forward		
1st	4.0 km/h	2.5 mph
2nd	5.4 km/h	3.4 mph
3rd	7.8 km/h	4.9 mph
4th	10.8 km/h	6.7 mph
5th	16.8 km/h	10.4 mph
6th	22.8 km/h	14.2 mph
7th	31.4 km/h	19.5 mph
8th	45.7 km/h	28.4 mph
Reverse		
1st	3.1 km/h	1.9 mph
2nd	5.9 km/h	3.9 mph
3rd	8.5 km/h	5.3 mph
4th	13.2 km/h	8.2 mph
5th	24.8 km/h	15.4 mph
6th	36.1 km/h	22.4 mph

Calculated with no slip and 14.0R24 tires.

Service Refill

Fuel Capacity	378 L	100 gal
Cooling System	49 L	12.9 gal
Hydraulic System		
Tank	64 L	16.9 gal
Engine Oil	30 L	7.9 gal
Trans./Diff./ Final Drives	62.5 L	16.5 gal
Tandem Housing (each)	59 L	15.6 gal
Front Wheel Spindle Bearing Housing	0.5 L	0.13 gal
Circle Drive Housing	7 L	1.8 gal

Frame

Circle		
Diameter	1530 mm	60.2 in
Blade Beam Thickness	35 mm	1.4 in
Drawbar		
Height	152 mm	6.0 in
Width	76.2 mm	3.0 in
Thickness	9.5 mm	0.4 in
Front-Top/Bottom Plate		
Width	255 mm	10.0 in
Thickness	22 mm	0.87 in
Front Frame Structure		
Height	280 mm	11.0 in
Width	204 mm	8.0 in
Front Axle		
Height to Center	572 mm	22.5 in
Wheel Lean, Left/Right	18°	

Front Axle – Total Oscillation Per Side 32°

- Front-top/bottom plate – width tolerance ± 2.5 mm (0.098 in)

Tandems

Height	502 mm	19.8 in
Width	172 mm	6.8 in
Sidewall Thickness		
Inner	14 mm	0.5 in
Outer	16 mm	0.6 in
Drive Chain Pitch	44.5 mm	1.8 in
Wheel Axle Spacing	1510 mm	59.5 in
Tandem Oscillation		
Front Up	15°	
Front Down	25°	

Moldboard		
Blade Width	3.7 m	12 ft
Moldboard		
Height	610 mm	24 in
Thickness	22 mm	0.87 in
Arc Radius	413 mm	16.3 in
Throat Clearance	123.9 mm	4.9 in
Cutting Edge		
Width	152 mm	6 in
Thickness	16 mm	0.6 in
End Bit		
Width	152 mm	6 in
Thickness	16 mm	0.6 in
Blade Pull		
Base GVW	10 767 kg	23,737 lb
Maximum GVW	13 599 kg	29,980 lb
Maximum GVW AWD	19 998 kg	44,088 lb
Blade Down Pressure		
Base GVW	6818 kg	15,030 lb
Maximum GVW	12 354 kg	27,235 lb
Blade Range		
Circle Centershift		
Right	656 mm	25.8 in
Left	656 mm	25.8 in
Moldboard Sideshift		
Right	660 mm	26 in
Left	510 mm	20.1 in
Maximum Blade Position Angle	90°	
Blade Tip Range		
Forward	40°	
Backward	5°	
Maximum Shoulder Reach Outside of Tires		
Right	1905 mm	75 in
Left	1742 mm	68.6 in
Maximum Lift Above Ground	427 mm	16.8 in
Maximum Depth of Cut	720 mm	28.3 in

Ripper		
Ripping Depth, Maximum	226.5 mm	8.9 in
Ripper Shank Holders	5	
Ripper Shank Holder Spacing	534 mm	21 in
Penetration Force	8024 kg	17,692 lb
Pryout Force	2567 kg	5,660 lb
Machine Length Increase, Beam Raised	1053 mm	41.5 in

Scarifier		
Front, V-Type Working Width	1205 mm	47.4 in
Front, V-Type, 5 or 11 Tooth Working Width	1031 mm	40.6 in
Scarifying Depth, Maximum	467 mm	18.4 in
Scarifier Shank Holders	5/11	
Scarifier Shank Holder Spacing	116 mm	4.6 in
Mid, V-Type Working Width	1184 mm	46.6 in
Scarifying Depth, Maximum	292 mm	11.5 in
Scarifier Shank Holders	11	
Scarifier Shank Holder Spacing	116 mm	4.6 in
Mid, Straight Working Width	1800 mm	71 in
Ripping Depth, Maximum	317 mm	12.5 in
Scarifying Depth, Maximum	426 mm	16.8 in
Scarifier Shank Holders	17	
Scarifier Shank Holder Spacing	111 mm	4.4 in

Weights		
Gross Vehicle Weight, Base		
Total	15 887 kg	35,025 lb
Front Axle	3924 kg	8,651 lb
Rear Axle	11 963 kg	26,374 lb
Gross Vehicle Weight, Maximum		
Total	22 220 kg	48,987 lb
Front Axle	7110 kg	15,675 lb
Rear Axle	15 110 kg	33,312 lb
Operating Weight, Typically Equipped		
Total	18 095 kg	39,892 lb
Front Axle	4791 kg	10,563 lb
Rear Axle	13 304 kg	29,329 lb

Weights – AWD		
Gross Vehicle Weight, Maximum		
Total	46 680 kg	102,914 lb
Front Axle	24 355 kg	53,677 lb
Rear Axle	22 325 kg	49,236 lb
Gross Vehicle Weight, Maximum		
Total	46 680 kg	102,914 lb
Front Axle	24 355 kg	53,677 lb
Rear Axle	22 325 kg	49,236 lb
Operating Weight, Typically Equipped		
Total	40 987 kg	90,459 lb
Front Axle	22 220 kg	49,014 lb
Rear Axle	18 767 kg	41,445 lb
• Gross operating weight calculated as shown does not include weight of ROPS, fall protection, or other equipment.		
• Typically equipped operating weight is calculated with push block, rear ripper/burner, and other equipment.		

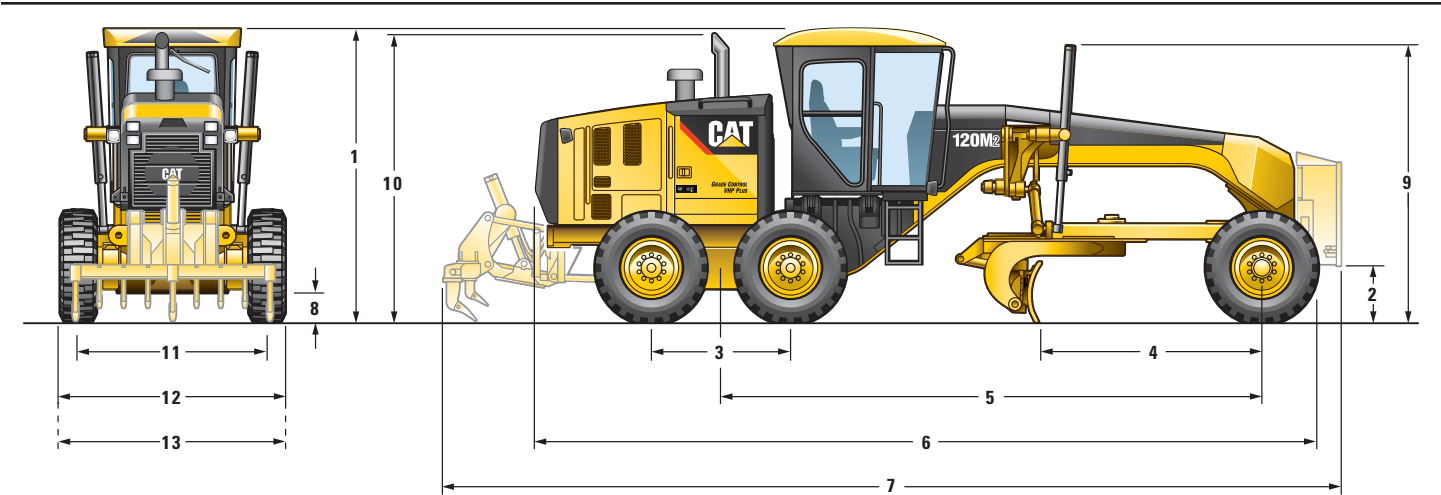
Standards	
ROPS/FOPS	ISO 3471/ISO 3449
Steering	ISO 5010
Brakes	ISO 3450
Sound	ISO 6394; ISO 6395
• The static sound operator sound pressure level measured according to ISO 6394:2008 for a cab offered by Caterpillar, when properly installed, maintained and tested with doors and windows closed and engine cooling hydraulic fan at maximum speed is 70 dB(A).	
• The dynamic spectator sound power level measured according to ISO 6395:2008 for the standard machine when equipped with optional sound suppression package and engine cooling hydraulic fan running at 70% of maximum speed, machine sound is 106 dB(A) for 120M2 and 120M2 AWD, complying with EU 2000/14/EC requirement.	

Tires		
17.5 R25 Tire (14x25 Rim) Dimension Adjustments – Standard and AWD		
Height to Dimensions 1, 2, 8, 9, 10	–20 mm	–0.8 in
Length Front Tire to Rear of Machine Dimension 6	–15 mm	–0.6 in
Width to Tire Centerline Dimension 11	+103 mm	+4.1 in
Width to Tire Front/Rear Tires Dimensions 12, 13	+192 mm	+7.6 in
• Note: Dimension changes may vary by brand/type and inflation of tires.		

Air Conditioning System	
The air conditioning system on this machine contains the fluorinated greenhouse gas refrigerant R134a (Global Warming Potential = 1430). The system contains 1.6 kg of refrigerant which has a CO ₂ equivalent of 2.88 metric tonnes.	

Dimensions

All dimensions are based on 14.0R24 tires.



1	Height – Top of Cab	3308 mm	130.2 in
2	Height – Front Axle Center	596 mm	23.5 in
3	Length – Between Tandem Axles	1510 mm	59.4 in
4	Length – Front Axle to Moldboard	2510 mm	98.8 in
5	Length – Front Axle to Mid Tandem	5917 mm	233 in
6	Length – Front Tire to Rear of Machine	8820 mm	347.2 in
7	Length – Counterweight to Ripper	10 032 mm	395.0 in
8	Ground Clearance at Rear Axle	348 mm	13.7 in
9	Height to Top of Cylinders	2917 mm	114.8 in
10	Height to Exhaust Stack	3258 mm	128.3 in
11	Width – Tire Center Lines	2119 mm	83.4 in
	Width – Tire Center Lines Front (AWD)	2223 mm	87.5 in
12	Width – Outside Rear Tires	2490 mm	98.0 in
13	Width – Outside Front Tires	2511 mm	98.9 in
	Width – Outside Front Tires (AWD)	2594 mm	102.1 in

Optional Tire Arrangements

Wheel Group		Tires	Tire Arrangement Weight (Total – 6 Tires)	
9x24 SP	13.00-24	Firestone SGG RB 12PR	775 kg	1,709 lb
14x25 MP	17.5-25	Goodyear HRL DL 3A 16 PR	1487 kg	3,278 lb
14x25 MP	17.5R25	Michelin XHA 1 Star	1523 kg	3,357 lb
14x25 MP	17.5R25	Michelin XTLA 1 Star	1373 kg	3,026 lb
10x24 MP	14.0-24	Goodyear SGG-2A 16 PR	1173 kg	2,586 lb
10x24 MP	14.0R24	Michelin XGLA2 1 Star	1209 kg	2,666 lb
10x24 MP	14.0R24	Bridgestone VKT 1 Star	1371 kg	3,023 lb
10x24 MP	14.0R24	Michelin XSNO+ 1 Star	1305 kg	2,877 lb
10x24 MP	14.0R24	Bridgestone VUT 1 Star	1269 kg	2,798 lb
9x24 SP	14.0R24	Michelin XGLA2 1 Star	1049 kg	2,313 lb
14x25 MP	17.5R25	Bridgestone VKT 1 Star	1523 kg	3,357 lb
13x25 SP	17.5R25	Michelin XHA 1 Star	1320 kg	2,911 lb
13x25 SP	17.5R25	Michelin XTLA 1 Star	1170 kg	2,580 lb
120M2 AWD				
14x25 MP	17.5R25	Michelin XSNO+ 1 Star	1402 kg	3,094 lb
14x25 MP	17.5-25	Firestone SGG 12PR	1207 kg	2,661 lb
14x25 MP	17.5R25	Bridgestone XSW 1 Star	1672 kg	3,688 lb
10x24 MP	14.0R24	Bridgestone VSW 1 Star	1305 kg	2,876 lb

For a complete list of tire options, contact your local Cat dealer.

Standard Equipment

Standard equipment may vary. Consult your Cat dealer for details.

POWER TRAIN

- Air cleaner, dual stage, dry type, diesel, with automatic engine derate and automatic dust ejector, service indicator through Cat Messenger
- Air-to-air after cooler (ATAAC)
- Belt, serpentine, automatic tensioner
- Brakes, oil disc, four-wheel, hydraulic
- Demand fan, hydraulic, swing-out
- Differential lock/unlock, automatic
- Drain, engine oil, ecology
- Electronic over speed protection
- Engine, C7.1 with ACERT Technology, Tier 4 Interim and Stage IIIB equivalent emission standards
- Fuel tank, 378 L (100 gal), ground level access and sediment drain
- Parking brake – multi-disc, sealed, oil-cooled
- Priming pump, fuel
- Rear axle, modular
- Sediment drain, fuel tank
- Tandem drive
- Transmission, 8F/6R, power shift, direct drive
- VHP Plus (Variable Horsepower)

ELECTRICAL

- Alarm, back up
- Alternator, 150 ampere, sealed
- Batteries, maintenance free, heavy duty, 1,125 CCA
- Breaker panel, ground accessible
- Cab harness and electrical hydraulic valves
- Electrical system, 24V
- Grade Control Ready – Cab harness, software, electrical hydraulic valves, bosses and brackets
- Lights, roof-mounted roading, reversing, LED stop and tail
- Product Link Ready
- Starter, electric

OPERATOR ENVIRONMENT

- Accelerator
- Air conditioning with heater
- Arm and wrist rest, electronically adjustable
- Articulation, automatic Return-to-Center
- Ashtray and lighter
- Cat Messenger operator information system
- Centershift pin indicator
- Coat hook
- Cup holder
- Display, digital speed and gear
- Doors, left and right side with wiper
- Gauge, machine level
- Gauge cluster (analog) – fuel, articulation, engine coolant temp, engine RPM, hydraulic oil temp, regen
- Hour meter, digital
- Joystick hydraulic controls right/left blade lift with float position, circle drive, blade sideshift and tip, centershift, front wheel lean, articulation and power steering
- Joystick, adjustable armrests
- Joystick gear selection
- Joystick hydraulic power steering
- Ladders, cab, left and right side
- Lights, night time cab
- Mirror, inside rearview, wide angle
- Power port, 12V
- Radio Ready, Entertainment
- ROPS cab, sound suppressed 70 dB(A)
- Seat, cloth-covered, comfort suspension
- Seat belt, retractable 76 mm (3 in)
- Storage area for cooler/lunchbox
- Throttle control, electronic
- Windows, laminated glass:
 - fixed front with intermittent wiper
 - side and rear (3)

FLUIDS

- Antifreeze
- Extended Life Coolant to -35°C (-30°F)

TIRES, RIMS AND WHEELS

- Partial allowance for tires on 254×607 mm (10×24 in) multi-piece rims is included in the base machine price and weight

OTHER STANDARD EQUIPMENT

- Accumulators, brake, dual certified
- Anti-glare paint
- Bumper, rear, integrated with hitch
- CD ROM Parts Book
- Clutch, circle drive slip
- Cutting edges
 - 152×16 mm ($6 \times 5/8$ in)
 - curved DH-2 steel
 - 19 mm (3/4 in) mounting bolts
- Doors (3), engine compartment, locking
- Drawbar – 6 shoes, replaceable wear strips
- Electrical hydraulic valves, hydraulic lines for base 8 functions
- Endbits
 - 16 mm (5/8 in) DH-2 steel
 - 19 mm (3/4 in) mounting bolts
- Fluid check, ground level
- Frame, articulated, with safety lock
- Ground level engine shutdown
- Hammer (emergency exit)
- Horn, electric
- Hydraulic lines for base functions
- Lockout, hydraulic implement (for roading and servicing)
- Moldboard – $3658 \times 610 \times 22$ mm ($12 \text{ ft} \times 24 \text{ in} \times 7/8 \text{ in}$)
- Mounting, cab roof accessories
- Pump, hydraulic, high capacity, 98 cm^3 (6 in^3)
- Radiator, cleanout access (both sides with swing doors)
- Secondary steering
- Serviceability, LH side
- S·O·S ports: engine, hydraulic, transmission, coolant, fuel
- Tandem walkway/guards
- Tool box
- Tow hitch

Optional equipment may vary. Consult your Cat dealer for details.

	kg	lb
WORK TOOLS/G.E.T.		
Black extension, left hand, 610 mm (2 ft)	142	319
Cutting edges, curved	43	95
Endbits, overlay	24	52
Front lift group, mounting	5	11
Front lift group, mechanical	680	1,500
Grader bit, narrow and super penetration	181	400
Mid-Mount Scarifier, Package	942	2,077
Mid-Mount Scarifier, Mounting	57	125
Moldboard		
207 mm x 610 mm x 100 mm (14 ft x 24 in x 7/8 in)	100	220
4267 mm x 686 mm x 257 mm (14 ft x 27 in x 10 in)	257	567
Push plate, counterweight	1285	2,833
Ripper, mounting	32	70
Ripper, rear	962	2,120
Ripper tooth	28	61
Snow Arrangement	101	225
Snow Wing Ready Package	114	255
MACHINE ARRANGEMENTS		
Canadian Arrangement	2	4
European Arrangement	289	637
European Roding Arrangement	451	994

APPENDIX B

Pneumatic Tired Roller

BW11RH-5



TIRE INFLATION PRESSURE P.S.I			GROUND CONTACT PRESSURE P.S.I						
Wheel Loads	Ballast Combinations	lbs	14 Ply tire pressure			Opt 14 Ply Radial tire pressure			
lbs	Front	Rear	45	75	100	45	75	100	130
1,500 (680 kg)	3,355 (1,521 kg)	0	46	49	55	32	46	61	81
2,000 (907 kg)	5,855 (2,655 kg)	1,070 (485 kg)	53	63	77	40	57	72	99
2,222 (1,006 kg)	6,965 (3,153 kg)	1,958 (886 kg)	X	68	82	X	61	73	94

Operating weight, 12,231 lbs (5547 kg), includes ROPS, full fuel tank, 1/2 full water spray tank, and 175 lbs (80 kg) operator.



BW11RH-5

APPENDIX B



■ BW11RH-5 - continuing the tradition of excellence...

The BW11RH-5 pneumatic tired roller is one of the most versatile machines in the Bomag line. This roller achieves its high compaction performance through the combined effect of vertical pressure with the horizontal forces directed to all sides under each of the nine, overlapping tires.

Wheels and frame oscillate to deliver balanced wheel loads and uniform compaction. Further enhancing its versatility and maneuverability, the BW11RH-5's hydrostatic, centerpoint, articulated steering delivers a short, ten foot turning radius achieving optimum compaction on tight, curving curblines.

■ Applications:

- Highway construction and maintenance
- Driveways
- Parking lots
- Chip and seal



BW11RH in action on an asphalt resurfacing application

APPENDIX B

Featuring...



Center swivel seat provides excellent comfort and visibility in both travel directions

Handling is Easier & Safer:

- Hydrostatic Steering with automotive type steering wheel provides controlled maneuverability through turns.
- Brakes apply automatically when engine is shut down or with loss of transmission system hydraulic pressure.
- Functional frame design incorporates strategically placed ballast compartments providing a low center of gravity, exceptional stability and uniform weight distribution when fully ballasted.
- Standard ROPS/FOPS, which also functions as sun canopy, with seat belts deliver operator safety.
- Operating Safety is further enhanced by adding the optional turn signals and 4-way flashers.
- Zero overhang; two inches overhang with optional pressurized water spray system and heat shields

*Pneumatic tired models
provide maximum versatility*

Achieve Maximum Productivity:

- Centerpoint steering allows the wheels to provide full width coverage on turns requiring fewer passes to achieve optimum compaction results.
- Three speed hydrostatic transmission provides maximum gradeability in low range, optimum performance in medium or work range and top production in high range.
- Short, ten foot inside turning radius, accomplished through 35 degree centerpoint articulation, takes compaction up to tight, curving curblines.
- Ten degrees oscillation assures uniform compaction on irregular surfaces.
- Center swivel seat cockpit design places controls within easy reach and provides excellent visibility in both travel directions.
- Optional heat retention shields help maintain high tire temperatures, preventing asphalt pickup that could damage the mat.
- Optional pressurized water spray system provides efficient water usage, extending time between refills.

Less Service & Maintenance:

The purchase price is important, but so are the operating costs. Check these features:

- Maintenance-free SAHR brakes are an integral part of the travel motors, allowing an emergency/parking brake provision. Brakes meet highest standards, ISO 3450.
- Wide opening engine hood allows easy access for servicing.
- Maintenance and check points are accessible while standing on the ground.
- The heavy duty, maintenance free centerpoint oscillating and articulating centerjoint provides long life.
- Self-lubricating bushings are virtually maintenance-free.
- The frame is constructed of heavy steel plate to provide maximum strength and durability.

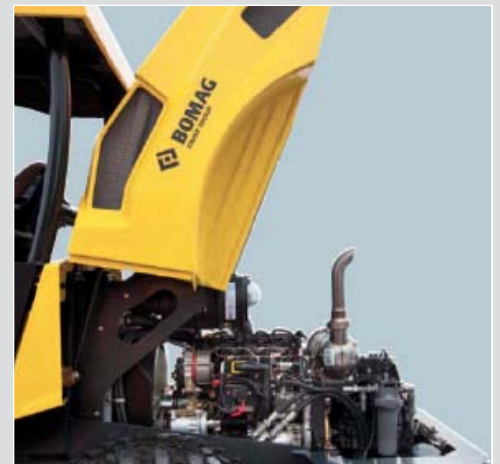
Best for
COMPACTION



Cockpit design places controls within easy reach and provides unobstructed visibility



Cocoa mats on each tire help eliminate material pick-up



Easy access means fast servicing

With these features and many more, it's easy to see why this model maintains a high residual value while delivering lower lifetime operating costs.

Technical Specifications

BW11RH-5

Shipping dimensions

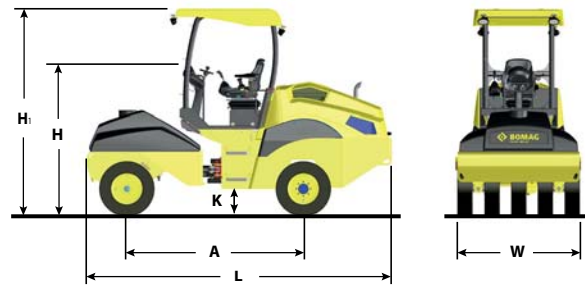
in cubic feet (m³)	without	with ROPS/FOPS
BW 11 RH-5	568.7 (16.1)	824 (23.3)

Standard equipment

- ☒ Hydrostatic transmission
- ☒ Tier 4 final Kubota Diesel Engine
- ☒ Nine 7.50 x 15, 14 ply tires
- ☒ Fuel gauge
- ☒ Horn
- ☒ Hydrostatic, center articulated steering with $\pm 10^\circ$ frame oscillation
- ☒ Rear wheel oscillation:
 - $\pm 4^\circ$ outside
 - $\pm 5^\circ$ center
- ☒ Spring-Applied, Hydraulically-Released (SAHR) brakes
- ☒ 150 gallon polyethylene water tank
- ☒ Roll-Over, Falling-Object Protective Structure (ROPS/FOPS) and seat belts

Optional equipment

- ☒ ~~Roll-Over, Falling-Object Protective Structure (ROPS/FOPS) and seat belts~~
- ☒ Headlights (front and rear)
- ☒ Turn signals and 4-way flashers
- ☒ ~~Clear retention shields~~
- ☒ Pressurized water spray system
- ☒ ~~Special paint, BOMAG logo~~
- ☒ ~~(BOMAG logo)~~
- ☒ Radial Tires w/ approx. 14 ply rating
- ☒ Steel ballast



Dimensions in inches (mm)

	A	H	H ₁	K	L	W
BW 11 RH-5	100 (2540)	82 (2083)	113 (2870)	13 (330)	173 (4445)	68 (1727)

Technical data

Weights

Basic/Shipping weight.....	lb (kg)	11075 (5022)
Operating weight (unballasted).....	lb (kg)	12231 (5547)
Operating weight (max. allowable ballast) w/ ROPS/FOPS.....	lb (kg)	20000 (9054)
Operating weight (max. allowable ballast) w/ cab.....	lb (kg)	20000 (9054)
Average wheel load, (max.).....	lb (kg)	2222 (1006)

Dimensions

Working width.....	in (mm)	68 (1727)
Wheel track overlap.....	in (mm)	0.5 (12.5)
Height with ROPS/FOPS.....	in (mm)	113 (2870)
Track radius, inner.....	in (mm)	122 (3099)
Dimensions.....		see sketch

Driving Characteristics

Speed (low).....	mph (kmph)	8.0 (12.9)
Speed (medium).....	mph (kmph)	10.5 (16.9)
Speed (high).....	mph (kmph)	15.5 (25.0)

Drive

Engine manufacturer.....	Kubota
Type.....	V3307
Emissions Standard	Tier 4 final
Cooling.....	water
Number of cylinders	4
Performance SAE J1995	hp (kW)
Speed	rpm
Fuel.....	diesel
Electric equipment.....	V
Drive system	hydrostatic
Driven axles	front

Tires

Number of tires, front/rear.....	5/4
Tire size	7.50 x 15, 14 ply
Oscillation of tires front, outside/center..... deg	4/5

Brakes

Service brake.....	hydrostatic
Secondary/Parking brake.....	SAHR

Steering

Steering system.....	oscillating, articulating
Steering method.....	hydrostatic
Steering angle +/- deg	35
Oscillating angle +/- deg	10

Water Spray System (optional)

Type of water spray system.....	pressurized
---------------------------------	-------------

Capacities

Fuel.....	gal (l)	50 (190)
Water.....	gal (l)	140 (532)
Engine oil.....	gal (l)	2.5 (9.5)
Hydraulic fluid.....	gal (l)	28.5 (108)

APPENDIX C

Tandem Vibratory Rollers

BW161AD-5 HF, ~~BW190AD-5 HF~~



KEY FEATURES

- 2 Amplitudes / 2 Frequencies
- Kubota Tier 4i engine
- ECOMODE
- ECONOMIZER option
- Visible sightlines to drum edge
- Open operator's platform
- 180 degree swivel operator's seat
- Crab walk option



Technical Specifications

BW161AD-5 HF, BW190AD-5 HF

Shipping dimensions

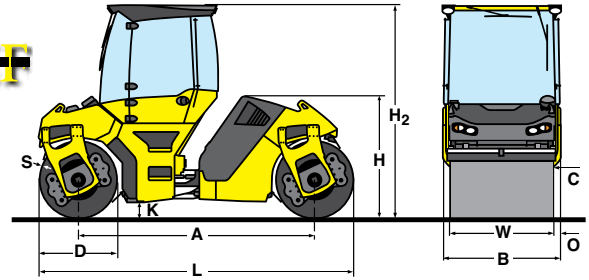
in cubic feet (m³)	with ROPS	without ROPS
BW161AD-5 HF	957.1 (27.1)	726.5 (20.6)
BW190AD-5 HF	1119 (31.7)	849.1 (24.0)

Standard Equipment

- ☒ 2 amplitudes / 2 frequencies
- ☒ Automatic vibration operation
- ☒ Individual vibration control
- ☒ Adjustable driver's seat - 180 degrees
 - laterally slidable with steering wheel
- ☒ On-board indicators
 - engine speed, speedometer, fuel consumption, engine temperature
- ☒ Pressure sprinkling system with 2 pumps
- ☒ Low water level indicator
- ☒ Indicator and hazard lights
- ☒ Back-up alarm
- ☒ Battery disconnect switch
- ☒ Storage for documents and tools
- ☒ Emergency stop button
- ☒ ROPS/FOPS w/ safety belt

Optional Equipment

- ☐ ~~ECONOMIZER~~
- ☐ ~~Asphalt temperature display~~
- ☐ ~~ROPS cab w/ seat belts~~
 - ~~- heating~~
 - ~~- 4 working head lights~~
- ☐ ~~Air conditioning w/ cab option~~
- ☐ ~~Radio w/ cab option~~
- ☐ ~~2 LED lights for cab roof (flat beam)~~
- ☐ ~~Edge cutter~~
- ☐ ~~Grab walls on both sides - 6.7 in (170 mm)~~
- ☐ ~~Lighting for drum edge front and rear~~
- ☐ ~~Seat heating~~
- ☐ ~~Outside mirrors~~
- ☒ Rotary beacon
- ☒ Environmentally friendly hydraulic oil
- ☐ ~~BOMAG TELEMATIC POWER~~



Dimensions in inches (mm)

	A	B	C	D	H	H2	K	L	O	S	W
BW161AD-5 HF	142.5 (3620)	72.3 (1836)	26.4 (670)	48 (1220)	91.1 (2315)	120.1 (3050)	9.8 (250)	190.6 (4840)	3.1 (78)	0.67 (17)	66.1 (1680)
BW190AD-5 HF	142.5 (3620)	95.1 (2418)	26.4 (670)	48 (1220)	91.1 (2315)	120.1 (3050)	9.8 (250)	190.6 (4840)	3.1 (78)	0.75 (19)	78.2 (1990)

Technical Data

Weights

Operating weight with ROPS	lb (kg)
Operating weight with cab	lb (kg)

Drive

Engine manufacturer	Kubota
Type	V3800 CR-TI
Emission stage	Tier 4i
Cooling	water
Number of cylinders	4
Performance ISO 14396	hp (kW)
Speed	rpm
Electric equipment	V

Brakes

Service brake	hydrop.
Parking brake	multi disc

Steering

Steering system	oscil. artic.
Track radius, inner	in (mm)
Lateral displacement right/left (crab steer option)	in (mm)

Exciter system

Vibrating drum	front + rear
Automatic vibration shut off	standard
Frequency	vpm (Hz)
Amplitude	in (mm)
Centrifugal force	lb (kN)

Capacities

Fuel	g (l)
Water	g (l)

Technical modifications reserved. Machines may be shown with options.

APPENDIX C



SUPERIOR TECHNOLOGY. OPTIMAL COMPACTION.

ARTICULATED TANDEM ROLLERS, 15,000 LB AND OVER.



APPENDIX C



ENHANCING PRODUCTIVITY.

ASPHALT COMPACTION WITH BOMAG EXPERTISE.

Better is the enemy of good. With this motto, BOMAG has developed, designed and built compaction equipment for the last 60 years. Our engineers strive to make each new model generation a little better, more economical and productive than the previous generation. And they always pursue one target: a BOMAG must be able to finish work quicker, more comfortably and professionally.

The close contact we maintain with our customers helps us to find ways to achieve true increases in productivity, enabling you to complete your work perfectly and productively.

With ECONOMIZER, TanGO and ~~ASPHALT-MANAGER~~ we have once again set new standards and demonstrated that real innovation always meets a need: not just what is technically feasible: practicality means progress.

APPENDIX C



With an operating weight of 15,000 lb and above, BOMAG tandem rollers are the first choice for many applications. With cab or ROPS, productivity and operating comfort is always there.

Trust in the expertise of our engineers and the strength of our sales and service network. Trust in proverbial BOMAG quality. Because at BOMAG we concentrate on just one target: enhancing your productivity.



FIVE GOOD REASONS TO CHOOSE BOMAG.

1

MAINTENANCE: FAST!

Daily maintenance is essential and with EasyService all maintenance points can be easily reached from the ground. And without any grease nipples.

5

ECONOMY: OUTSTANDING!

ECOMODE provides load-dependent and economical working without high engine speeds. Giving excellent fuel economy and maximum efficiency on every type of road construction project.



4

VIBRATION: THREE CHOICES!

Only BOMAG tandem rollers offer you three vibration systems. With double vibration, TanGO and ASPHALT MANAGER you have three technologies to choose from.



2

THE DRIVER'S STATION: OPTIMISED!

BOMAG always considers the roller driver. His work place provides the best view and offers space and operating comfort at the highest level. This ensures good workmanship and efficiency.

3

COMPACTION: RIGHT FIRST TIME!

Simple and reliable compaction thanks to ECONOMIZER and BCM. Unnecessary passes are avoided, compaction is accurately documented. Optimised compaction is so easy.



APPENDIX C

YOUR CHOICE.

Each application is different - all construction sites come with new challenges. This is why the right philosophy is not what matters in asphalt compaction, but the right technology! With BOMAG you can choose how to match your operation and your work. We always have the right technology at hand for every application. And all from one source.



OUR STANDARD: DOUBLE VIBRATION

With two amplitudes and individually operable drums, this technology covers a wide range of applications on many projects. Proverbial BOMAG quality goes without saying and our equipment specs meet every requirement.

FOR SENSITIVE WORK: TanGO

Wherever careful compaction is required, TanGO oscillation from BOMAG is the answer. The high wear-resistant drums and a factory warranty of 8,000 operating hours always put you on the safe side.

~~NO MORE GUESSWORK. ASPHALT MANAGER.~~

~~Exclusively from BOMAG. This is a Manager that you really can trust. Dial in the layer thickness and off you go. Everything is controlled and monitored by the ASPHALT MANAGER: material, degree of compaction, temperature, control of the direction of compaction. The driver just concentrates on the rolling pattern and co-ordinates with colleagues on interconnected rolling operations.~~

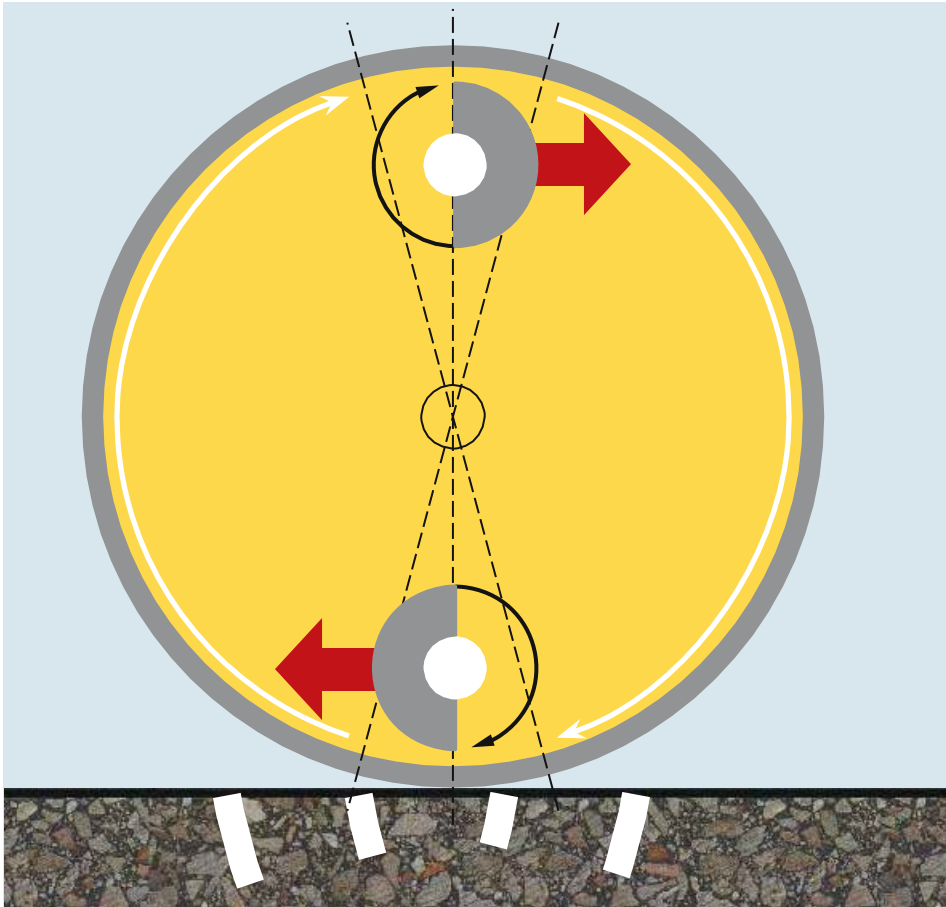


Which manufacturer offers a choice of three vibration systems? BOMAG. Because BOMAG knows exactly what every contractor wants.

APPENDIX C



APPENDIX C



360°
TECHNOLOGY

THE TECHNOLOGY FOR SENSITIVE ROLLING: TanGO.

TanGO is the answer when sensitive compaction is needed:

SIMPLE TO USE

TanGO compacts risk-free e.g. on seams, on bridges or near buildings. And even better, TanGO is simple to operate: it comes with only one amplitude, which is optimised for all applications.

ALWAYS CAREFUL

BOMAG tandem rollers with TanGO always compact with care. The drum cannot bounce, TanGO always works tangential to the surface. This has two advantages:

on one hand there is no crushing of aggregate; on the other hand no bow waves are created, even when working at higher working speeds. The TanGO drum is in the rear of the machine, so the front vibrating drum can be used for thicker layers or so the front vibrating drum can be used for thicker layers or for applications where additional conventional compaction would be beneficial.

THE CONCEPT

TanGO compaction uses two exciter shafts rotating in the same direction, so that a torque is generated around the drum axis. The drum quickly keeps alter-

APPENDIX C



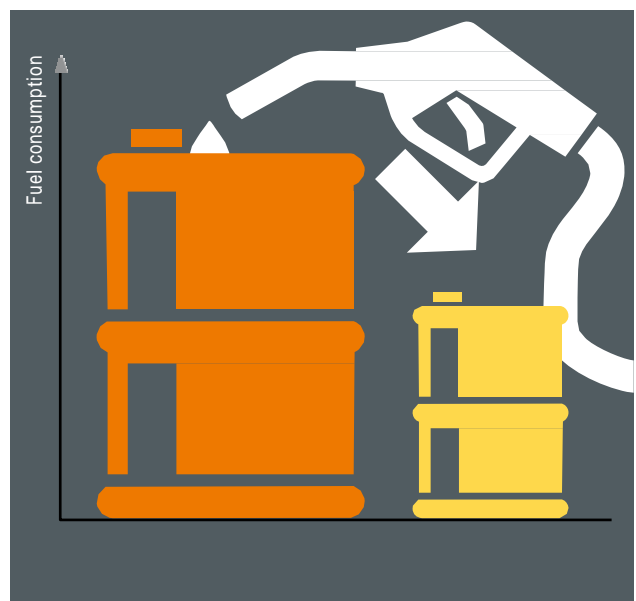
For sensitive rolling: BOMAG tandem rollers with TanGO oscillation. Careful compaction on seams & bridges.

nating its effective direction tangentially to the contact surface (forwards and backwards). The mat is actually compacted with double frequency.

HIGHEST QUALITY

Others talk about quality. BOMAG guarantees quality: the TanGO drum is made of highly wear-resistant fine grain steel. So BOMAG can guarantee a lifetime of at least 8,000 hours. Others can only be amazed ...

TanGO
...BOMAG-Oszillation



Compared with conventional oscillation rollers, TanGO consumes less fuel. Because BOMAG makes such good use of physics, the unbalanced masses are arranged towards the outside, reducing inertia forces and requiring less energy.

APPENDIX C

SAVING WITH EVERY PASS.

Fuel costs are one of the major items in the calculation of operating costs for any machine, because over its lifetime, in most cases, they will exceed the purchasing price. BOMAG engineers have addressed this with BOMAG ECOMODE, an energy efficiency system, which saves significant gallons of fuel per year -every year. This reduces the operating costs and aids the environment.



THE ADVANTAGES:

- Load-dependent engine speed control saves up to 30% fuel
- Less noise eases stress on the driver and environment
- Idle speed shut-down reduces wear and operating costs and increases resale values

SMART CONTROL.

Conventional rollers always work with full engine speed to reach vibration frequency. BOMAG ECOMODE controls the engine in relation to load to give the exact actual power needed. The vibration frequency is maintained at a constant level by infinitely adjusting the hydraulic components. This keeps the overall system within the optimum power range and fuel consumption is reduced, without losing power and productivity. A positive side effect: with reduced speed the machine works more quietly. This is not only beneficial for the crew on site, it has a positive effect on acceptability of urban projects.

SMART SHUT DOWN.

BOMAG ECOSTOP shuts the engine down after a defined period of time at idle speed with consideration for parameters like temperature, battery, etc. Unnecessary fuel consumption is avoided and the operating hour meter stays low.

ENVIRONMENTAL PROTECTION AS STANDARD.

Depending on the power class, SCR catalysts and/or particulate filters are being used to reduce pollutants. Maintenance is minor, because the filter regenerates automatically during operation. No action is required from the driver. In models with SCR- catalyst, the tank capacity for the additive (AdBlue®) is rated so that it only needs to be replenished about every third refueling.

APPENDIX C

WAIT NO LONGER!

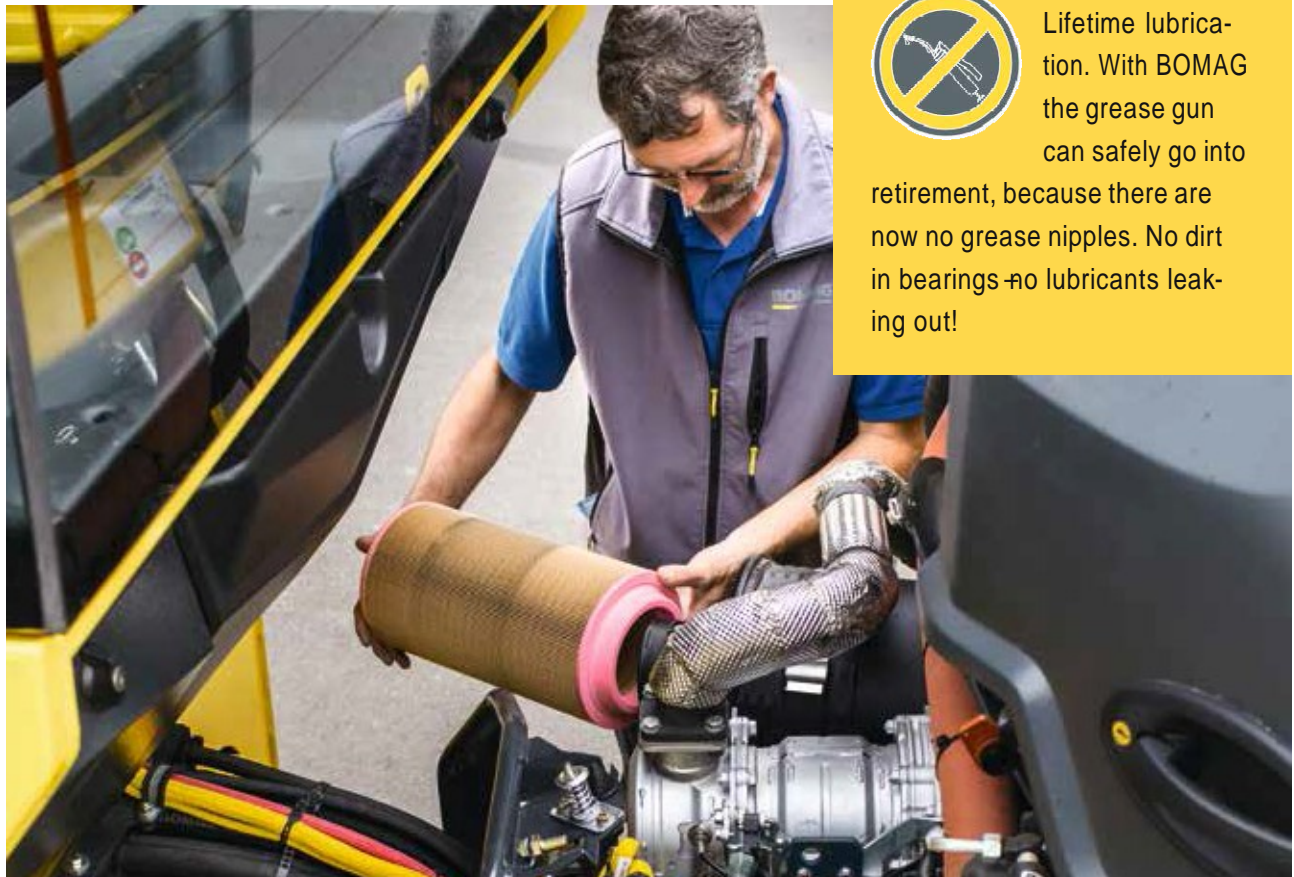
BOMAG tandem rollers are efficient to service because the easiest and most cost effective service is one that is not necessary. So BOMAG tandem rollers don't need a single grease nipple.

BOMAG engineers always have practical use in mind. Experience has shown that the BOMAG EasyService concept with no grease nipples maximizes reliability. Special bearings with hermetic sealing and a permanent high-quality grease filling guarantee reliable lifetime lubrication. And, another side effect, the machine stays clean.

BOMAG EasyService also means easy access to all maintenance points, which can be comfortably reached from the ground. The single-unit hood made of composite material with strong gas springs swings up readily and reveals the entire engine compartment. All fluids can be reliably and neatly drained through external drains.



Easy refilling with a folding step.



Lifetime lubrication. With BOMAG the grease gun can safely go into

retirement, because there are now no grease nipples. No dirt in bearings - no lubricants leaking out!

APPENDIX C

GOOD WORKMANSHIP IS MEASURABLE.

When has the right compaction for the material been reached? Only someone who knows the degree of compaction can make the right decision. Nowadays no one has the time and money to spend on unnecessary passes. BOMAG is a pioneer in measuring technology for compaction, which helps many operators to achieve optimum compaction results while still saving time and money. Minimum passes for maximum compaction.

A BOMAG DRIVER KNOWS WHEN COMPACTION IS FINISHED.

Unique in compaction technology: the ECONOMIZER from BOMAG, integrated in the central display, helps the driver achieve optimum compaction results. Operation is very simple because no activation or calibration is required. The ECONOMIZER automatically determines the compaction progress. A lighting strip informs the driver of the end of compaction, and avoids over-compaction. A warning light additionally indicates any risk of over-compaction. Also, the driver is informed about the optimum speed to use.

COMPACTION IS ACCURATELY DOCUMENTED WITH BCM: BOMAG COMPACTION MANAGEMENT

Many public tenders today ask for complete documentation of all works. BOMAG BCM (BOMAG Compaction Management) helps you to provide dependable documentation of the entire compaction process: a robust tablet PC in the cab and the BOMAG StarFire GPS-receiver are part of the BCM. Based on the GPS-data, the system generates continuous compaction charts in real-time.



APPENDIX C

THREE MODELS TO CHOOSE FROM

BOM start

The driver is informed about the number of passes and the asphalt temperature. With a freely definable colour scale he immediately sees where further passes are required. Once compaction is finished, the compacted area appears in green and the driver can be sure that every area has been compacted. All data saved can be passed to the client or monitoring body as a pdf file. BOM start is a convenient Plug&Play solution also for mixed fleets.

BOM 05

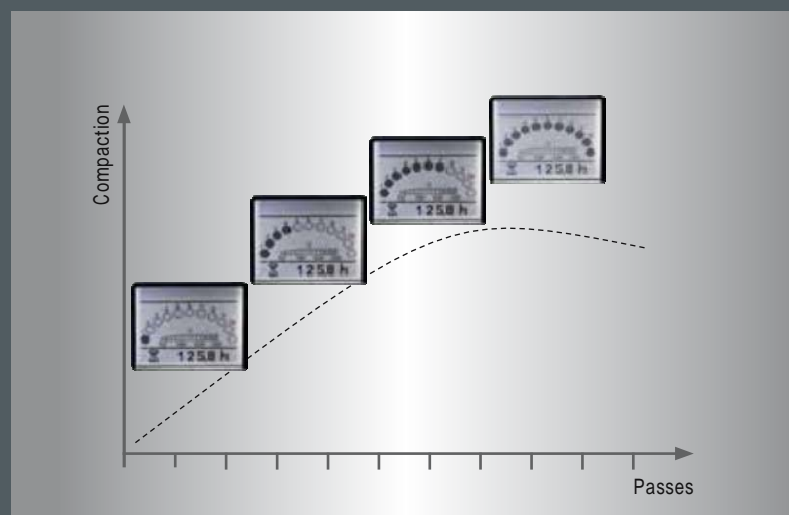
With BOM 05 the stiffness values E_{VB} in MN/m² measured by the ASPHALT-MANAGER are additionally documented. The E_{VB} value correlates with the asphalt density. This enables accurate weak spot ana-

lysis and the reduction of other test methods. With BOM 05 the BOMAG ASPHALT-MANAGER becomes a real tool for quality assurance.

BOM net

Asphalt rollers often work in interconnected operations. With BOM net rollers are cross-linked with each other. Each driver is able to see the passes, temperatures and E_{VB} values (with AM) of all machines in different colours in real time. This optimizes the rolling patterns, even if one roller is e.g. filling water tanks. With BOM net all data is saved for later evaluation. And machines from different manufacturers can be integrated.

Reliable and effective documentation provides evidence of all work performed. BOMAG has these answers, because BOMAG knows how sites operate.



ECONOMIZER knows when full compaction is reached: The lighting strip shows the degree of compaction and warns of over-compaction.



With BOMAG, all drivers have all the data they need. Drivers know when full compaction is reached.



APPENDIX C



YOUR ADVANTAGES:

- Extra large operators platform: more space for the operator means safe and comfortable working
- The cab is not mounted on the drive unit: no loads caused by heat, exhaust fumes and vibrations. The driver remains comfortable and fresh for longer shifts.

APPENDIX C

SPACE TO WORK BETTER.

Any machine is only as good as its driver. In any BOMAG tandem roller the driver can feel at home. And satisfied drivers are more productive.

EXCELLENT VISION.

The smart design of BOMAG tandem rollers with sliding seat and folding window always gives an unobstructed view of the drum edges. The driver can work along walls without risk because no parts of the cab or roller project over the sides. He can also keep an eye on the sprinkling system and, with the optional outside mirrors, he has unrestricted all-round vision.

EXTRA SPACE.

The ample space ensures stress-free work, even over longer working days. The powerful heating, also optionally with air conditioning, provides comfortable temperatures and condensation-free windscreens. On BOMAG rollers, engine and cab are separated. The driver is not troubled by cab vibration, noise, heat or exhaust fumes.

ERGONOMIC CONTROL.

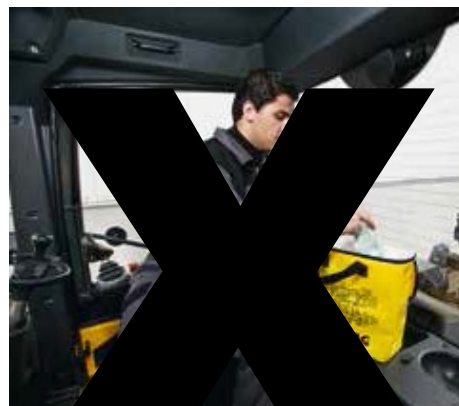
The seat unit with steering wheel, operating arm rest and instruments can be moved across the full width of the cab. The seat can swivel 90 degrees in each direction. This gives the driver optimum seat positioning at all times to operate the roller reliably and intuitively. BOMAG's attention to detail also shows here: the cab floor is completely flat and without openings for easy cleaning.

NO CONFUSION.

Safe operation even with different drivers: The self-explanatory operation is distinctly marked and the switch setting is always clearly identifiable. The displays indicate the operating status of the machine with clear symbols.



The driver's view and sliding seat ensure maximum comfort.



The driver's storage space is ample.



The driver always has all the essential displays safely in view. Operating the switches is simple and quickly becomes second nature.

APPENDIX C

THE DETAIL MAKES THE DIFFERENCE.

Many people build rollers. But only BOMAG build BOMAG rollers. We pay full attention to the small details, to make your work easier. Our engineers are where the action is, to learn from site practice. This knowledge can be found in all of our rollers. Well thought-out, with the highest quality and reliability. Because only BOMAG is BOMAG.



CLEANDRUMS.

Spring loaded, folding polyurethane contact scrapers ensure clean drums and optimum distribution of sprinkled water.



SHIELDED ELECTRICS.

For reliable current flow with no spark risk, all wiring looms are routed through nylon hoses. The central electrical system is installed in the cab, protected against water and dirt.



QUICK TRANSPORT.

Quick relocation off-site because the lashing eyes are amply dimensioned and easily accessible. The articulation lock is easy to operate.



PERFECT SPRINKLERS.

The drum sprinkling system works with two independent pumps. With a high number of nozzles per working width and a filler strainer, the wind protected system and the perfect view of the nozzles maximizes reliability and performance. The interval function reduces water consumption. The low position of the water tanks enhances driving stability and tank drainage is simple and quick.

APPENDIX C

ON A WIDE TRACK.

For work along edges and to increase the working width, the optional crab-walk feature is used to offset drums by up to 6.7 inch on either side



EFFECTIVE FUEL FILTERING.

The two-stage fuel filter with water separator and service indicator ensures reliable fuel flow. The air filter has two filter cartridges as standard and two-stage mechanical separation. This reduces maintenance and enhances reliability.



SAFE WORK AT NIGHT.

Night-work sites are no longer an exception. A total of eight halogen spotlights on the frame and roof bring daylight to the working area. Optional FlatBeam LED-lamps perfectly illuminate the lateral work areas and enhance comfort and safety. Drum illumination is also available on request.

APPENDIX C



Model types	Working width [in]	Drum diameter [in]	Operating weight approx. [lb]*
BW 141	58.1	40.6	15,211.8
BW 151	66.1	48.6	16,755.1
BW 161	66.1	48	18,068.4
BW 161	66.1	48	22,046.2
BW 190	78.7	48	26,455.5
BW 191	78.7	55.1	29,162.4
BW 200	84.1	55.1	33,214.4

*) Operating weights with cab and basic equipment. Actual operating weight is dependent on equipment and accessories.
Technical modifications reserved. Machines may be shown with options.

APPENDIX C



APPENDIX D

APPENDIX D



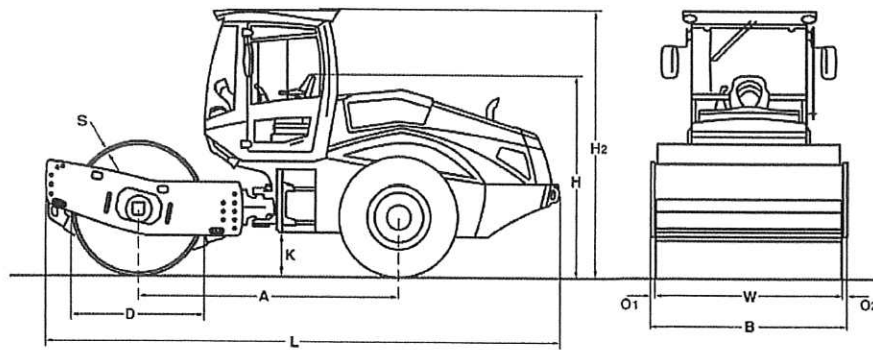
TECHNICAL DATA

SINGLE DRUM ROLLERS

~~BW 211 D-5~~, BW 211 PD-5



APPENDIX D



Dimensions in in

	A	B	D	H	H2	K	L	O1	O2	S	W
BW 211 D-5	117.1	89.4	59.1	89.0	117.7	19.3	231.1	2.8	2.8	1.0	83.9
BW 211 PD-5	117.1	89.4	58.3	89.0	117.7	19.3	231.1	2.8	2.8	1.0	83.9

Shipping dimensions in cub.yd

BW 211 D-5
BW 211 PD-5

without ROPS

39,405
39,405

with ROPS

52,112
52,112

Machine type	Compaction output (cub.yd/h)			
	Rock fill	Gravel, sand	Mixed soil	Silt, clay
BW 211 D-5	523.2-1046.4	353.1-706.3	287.7-575.5	143.9-287.7
BW 211 PD-5	523.2-1046.4	353.1-706.3	287.7-575.5	209.3-418.5

Machine type	Compacted layer thickness (in)			
	Rock fill	Gravel, sand	Mixed soil	Silt, clay
BW 211 D-5	27.6	19.7	15.7	7.9
BW 211 PD-5	27.6	19.7	15.7	9.8

APPENDIX D

Technical Data		BOMAG BW 211 D-5	BOMAG BW 211 PD-5
Weights			
Grossweight	lb	28,418	28,109
Operating weight CECE w. ROPS-cabin	lb	23,369	26,676
Axle load, drum CECE	lb	12,500	15,807
Axle load, wheels CECE	lb	10,869	10,869
Static linear load CECE	lb/in	149.1	
Dimensions			
Working width	in	83.9	83.9
Track radius, inner	in	144.9	144.9
Driving Characteristics			
Speed (1)	mph	0- 3.1	0- 3.1
Speed (2)	mph	0- 3.7	0- 3.7
Speed (3)	mph	0- 5.0	0- 5.0
Speed (4)	mph	0- 6.8	0- 6.8
Max. gradeability without/with vibr.	%	51/48	54/51
Drive			
Engine manufacturer		Deutz	Deutz
Type		TCD 3.6 L4	TCD 3.6 L4
Emission stage		4/4	4/4
Cooling		Liquid	Liquid
Number of cylinders		4	4
Performance ISO 3046	hp	127.4	127.4
Performance SAE J 1995	hp	128.0	128.0
Speed	min-1	2,000	2,000
Fuel		diesel	diesel
Electric equipment	V	12	12
Drive system		hydrost.	hydrost.
Drum driven		standard	standard
Drums and Tyres			
Number of pad feet			150
Area of one pad foot	sq.in		21.2
Height of pad feet	in		3.9
Tyre size		23.1-26 12PR	23.1-26 12PR
Brakes			
Service brake		hydrost.	hydrost.
Parking brake		hydromec.	hydromec.
Steering			
Steering system		oscil.artic.	oscil.artic.
Steering method		hydrost.	hydrost.
Steering / oscillating angle +/-	deg	35/12.0	35/12.0
Exciter system			
Drive system		hydrost.	hydrost.
Frequency	vpm	1,800/2,040	1,800/2,040
Amplitude	in	0.077/0.039	0.067/0.035
Centrifugal force	lb	53,954/35,520	64,071/43,613
Centrifugal force	t	24.5/16.1	29.1/19.8
Capacities			
Fuel	gal	66.0	66.0

Technical modifications reserved. Machines may be shown with options.

APPENDIX E

5E Utility Tractors

45 – 100 Horsepower Utility Tractors



Born to Work



Heat, dust, sweat, cold, rain, mud;

it's all part of the John Deere story. Part of a long, rich history of working the land. It's a teacher. And everything we've learned has made each generation of John Deere equipment better than the last. Made it run stronger, smarter, and longer. It's all part of a legacy. For over 175 years a story has been told by early mornings, long days, and an enduring commitment to building quality tools ... that were born to work.

Introducing the newest generation of rugged, reliable utility tractors – the John Deere 5E Series – with the options, the power, and the versatility to take on the toughest chores on your property or operation. Read on to learn more, then stop by your John Deere dealer for a demonstration.





CONTENTS

Introduction	2-3
5E Series	4-11
Attachments / Frontier / Loaders	12-13
Specifications	14-15

The 5E Series

3-CYLINDER MODEL	ENGINE HP	PTO HP*
5045E	50	37
5055E	59	44
5065E	67	49
5075E	73	57
4-CYLINDER MODEL	ENGINE HP	PTO HP*
5085E	85	70
5100E	100	85

*5045E PTO horsepower at rated speed Open Station with 9F/3R SyncShuttle™ Transmission. 5055E, 5065E, 5075E PTO horsepower at rated speed Cab with 9F/3R SyncShuttle™ Transmission. 5085E and 5100E PTO horsepower at rated speed Cab with 12F/12R PowerReverser™ Transmission.

The 5E Series Born to work

Meet the 5E Series by John Deere... six models, 45–100 horsepower, open station and cab options, and Final Tier 4 compliant engines, these utility tractors are truly born to take on tough tasks and keep coming back for more.

The 5E series in total now has 3 transmission options, 9F/3R SyncShuttle™ and 12F/12R PowrReverser™* in the 5E 3 cylinder machines, and 12F/12R and 24F/12R PowrReverser transmission in the 5E 4 cylinder machines.

Now you can have the rock-solid performance and versatility you expect in a John Deere – all at a price you might not.

*Not available on 5045E.



Born to work... and work... and work

Built Tough. For Every Job. And Every Season.

For lifting and loader work, rotary cutting, snow removal — even in hostile weather conditions ... conquer it all with the John Deere 5E Series.

If you thought you knew the 5E Series, take another look. You'll find new standard features and options that combine to create a full lineup of mid-spec machines that truly sits in a class of its own.

With 9F/3R SyncShuttle and 12F/12R PowrReverser available on 55-75 horsepower models and a 12F/12R PowrReverser and 24F/12R PowrReverser transmission available on 85 and 100 horsepower models you'll have easy directional control (forward and reverse) and speed-matching for any application.

The comfortable open station configuration comes standard, or opt for the climate-controlled cab on 5055E and higher horsepower models. No matter how you configure the new 5E Series, impressive can-do comes built right in.

Explore the new 5E Series and discover for yourself exactly what it means to be born to work.



Born to work. On your property. Within your budget.

45–75 horsepower 5E Series

Trying to find the perfect fit for your property or operation? It's as easy as climbing into the seat of the 45 to 75 horsepower 5E Series. You want options? You've found them. You can choose 2WD or MFWD. An open station, or a climate-controlled cab (55 - 75 hp models). The 9F/3R SyncShuttle™ Transmission or the 12F/12R PowrReverser™ (55 - 75 hp models). Why so many options? Because a job well done starts with the right tools. And with the 5E Series, it's easier than ever to customize your machine to fit your needs, AND your budget.

Handle rotary cutting chores, tackle loader work like moving gravel or dirt, or choose one of hundreds of compatible implements and attachments like post-hole augers, rear blades, box blades, wood chippers, or land planes, and get to work. Your property will thank you.

Capable without compromise ... That's what the 5E Series is all about.



Choose the climate-controlled cab option (not available on 5045E) and work in comfort all year long. Ergonomic seat and easy-to-reach pedals, levers, and joystick leave you relaxed and in control, even after hours of operating. The new integrated 12V charger keeps your devices running all day long.



Born to work **stronger**



85–100 horsepower 5E Series

Step up to the 85 or 100 horsepower 5E Series and you're getting a tractor with serious muscle and capability. These rugged machines can handle just about anything on your farm or your property; from heavy-duty loader work, to hay-making, to property maintenance chores, rotary tilling, and everything in between. We now offer more versatile speed selection with the 24F/12R PowerReverser™ transmission, which allows you to shift from high to low with the ease of a button. Plus, you'll get the choice of our comfortable open operator station or the cab configuration for year-round productivity.



Get a clearer view of the task at hand with the exhaust stack now located behind the cornerpost (on all cab models.) Plus, the 85–100 horsepower 5E models boast an improved control layout, access to SCV levers, and generous console storage space.

Born to work **stronger**

Powerful engineering... from the inside out.

At the heart of every 5E Series tractor you'll find a powerful yet efficient John Deere PowerTech™ turbocharged diesel engine. The 3-cylinder and 4-cylinder engines (depending on choice of horsepower) both feature a wet sleeve design for better heat dissipation. And with up to 100 available horsepower, the 5E Series can tackle just about anything on your chore list.

Choose the 45–75 horsepower 5E Series for a simple Final Tier 4 single fluid solution. No extra fuel additives, and no need to “arm” a regeneration system. That means you can run your tractor just like you always have and know it's working more efficiently than ever ... and with compliant emissions reduction. Plus a standard rated operating speed of just 2100 RPM for an engine that produces reduced noise, vibration, and wear and tear over the long run.



Early mornings? Late evenings? No problem ... Extra bright halogen headlights and rear work lights come standard on both open station and cab models.



The one-piece tilting hood allows easy access to service items like the air filter, engine oil checks, and more. Plus, ground-level fluid fills make regular maintenance a snap.

Born to work **under pressure**



Load more. Lift more. Do more.

When it comes to hydraulic power and capacity, it's hard to beat the 5E Series. With a rear hitch lift capacity of nearly 3,200 pounds (1451 kg), lifting and transporting those heavier implements – like rotary tillers and heavy seeders – just became a non-issue. The standard 3-point-hitch allows you to hook up to any Category 1 (with conversion kit) or Category 2 hitch standard-mounted implement. Plus, mid-mount hydraulic remotes allow for easy loader mounting.

Around front, add a John Deere loader for up to 3,548 pounds (1,610 kg) lift capacity,* Quik-Park™ capability and self-leveling options. Partner a John Deere loader with your 5E Series to transform your tractor into a lean, green, loading and lifting machine. And now with the factory installed loader prep package option on MFWD tractors and stackable mid SCVs (4-cylinder only), you'll be saving lots of time and money.



Loaders attach and detach in just a few minutes, with no tools.

With standard high-capacity hydraulics, you can sit back and let your new 5E Series handle the heavy lifting.

*Lift capacity for H240 NSL Loader at full height on 5100E tractor.

Born to work **smarter**

Intelligent efficiency.

The new John Deere 5E Series are our most advanced 5E utility tractors ever. What makes the new 5E Series so advanced? First, you get the option of a 24F/12R PowrReverser™ Transmission on 4-cylinder models (12/12 is standard on 5085E and 5100E). No-stop, in-line, forward/reverse shifting makes short work of loading, blading, or any chore with frequent directional changes — while 12 forward and 12 reverse speeds allow you the freedom to find just the right gear for the job. Or go with the standard 9F/3R SyncShuttle™ Transmission* (3-cylinder only) for proven-reliable performance in any application.

The standard, fully-independent 540 RPM PTO gives you power for PTO-driven implements and has been updated with an electrohydraulic actuator for smoother PTO activation. Plus, PowrReverser-equipped tractors benefit from a 540 Economy PTO mode, allowing you to operate with full PTO speeds at reduced engine rpm — saving fuel, lowering engine noise and reducing vibration. For operator convenience, we've relocated the EPTO lever to just behind the seat, well within reach of the seated operator.

No matter which options you choose, heavy-duty components and moving parts designed for high-hour usage translate to unmatched performance and long-term reliability. And that makes the 5E Series a smart investment any way you slice it.



*9F/3R only on 45–75 HP models

1. 5085E Tractor shown with H240 Loader and 3rd Function Grapple Bucket. 2. 5075E Tractor shown with Canopy and Frontier RC2072 Rotary Cutter. 3. 5100E Tractor shown with H240 Loader and 681 Rotary Tiller. 4. 5075E Tractor shown with Frontier Box Blade BB4172H

Born to work **anywhere**

Making the best even better.

The new 5085E and 5100E machines have a great new set of features that will help you get more done in less time.

The new sloping hood, deluxe standard cornerpost exhaust, and raised operator platform on cab models give you up to 3.6 feet of extra visibility in front of the tractor. Better sight-lines mean higher operator efficiency and comfort when performing many repetitive tasks with a loader.

With the new LCD instrument cluster, you can see ground speed, PTO speed, and engine hours all at the same time. In addition, you can now view important indicators such as PTO target bar, PowrReverser™ position, hi-lo indicator, and warning lights.

The new slide-out condenser (cab models only), radiator screen, tilt-able charge air cooler, and slide-out oil cooler allow you to quickly access the cooling system components to clean debris—with no tools. If it's easy to clean, it will get cleaned, so you'll never have to worry about an over-heated engine in tough conditions.

Finally, attaching rear implements to the 3-point hitch is now easier than ever. With the new standard sway bars and telescoping draft links, no tools are required to attach or detach implements. That's going to be appreciated when hooking up heavy implements that can match the rear hitch lift capacity of over 3,200 pounds (1451 kg).



1. New sloping hood on 5E 4 cylinder. 2. New LCD instrument cluster. 3. New standard sway bars and telescoping draft links. 4. New slide out condenser, radiator screen, tilt-able charge air cooler, and slide out condenser on 4 cylinder cab models.

Frontier makes the perfect match

From posthole diggers to food plot seeders to rotary cutters to land levelers, John Deere and Frontier Equipment offer a wide variety of front and rear attachments designed specifically for tractors like the 5E Series. Your John Deere dealer is the exclusive source for the full line of Frontier implements and attachments.

See your John Deere dealer, or visit us online to find out more about our complete line of attachments, including:

Grooming mowers
Box blades
Rotary tillers
Overseeders
Disk harrows
Rotary rakes
Sickle bar mowers
Pulverizers

Posthole diggers
Manure spreaders
Wheel rakes
Disc mowers
Rear blades
Core aerators
Pendular spreaders
Offset disks

Tedders
Wood chippers
Snowblowers
Bale huggers
Arena rakes
Bale spears
Food plot seeders
Land planes

Visit us online at www.BuyFrontier.com
or www.BuyFrontier.ca to get specs
and availability information.



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NEW John Deere loaders: Built Tough.

If you're looking for greater lift heights, higher capacity, user-friendly parking and attaching, look to the all-new John Deere H Series Loaders. Built to handle the demands of livestock and dairy producers, commercial and construction operators, or anyone with big-time material-handling chores, the H Series offers more cast-steel components for improved durability and capacity, a lower torque tube for better visibility, and concealed oil lines for a cleaner appearance and less risk of damage.

For owners and operators with less-demanding loader tasks, the 512 Loader offers field-proven performance across a wide range of material-handling applications. Your John Deere dealer can help you choose the right loader for your operation.



Loader (Non-Self-Leveling, Mechanical Self-Leveling)	512 NSL	H240MSL	H240NSL	H260 NSL
Lift capacity at full height, at pivot	2453 lb. (1115 kg)	2580 lb. (1170 kg)	3523 lb. (1598 kg)	3754 lb. (1703 kg)
Lift capacity at full height, 800 mm ahead of pivot	1538 lb. (697 kg)	2908 lb. (1319 kg)	2291 lb. (1040 kg)	2666 lb. (1212 kg)
Lift capacity @ 59 in. (1.5 m) lift height, at pivot	3295 lb. (1494 kg)	3607 lb. (1636 kg)	4030 lb. (1828 kg)	4960 lb. (2250 kg)
Lift capacity @ 59 in. (1.5 m) lift height, at 800 mm ahead of pivot	2350 lb. (1066 kg)	3481 lb. (1579 kg)	2974 lb. (1349 kg)	3783 lb. (1716 kg)
Boom breakout force, at pivot	4781 lb. (2169 kg)	4781 lb. (2169 kg)	4641 lb. (2105 kg)	6360 lb. (2885 kg)
Boom breakout force, 800 mm ahead of pivot	3172 lb. (1439 kg)	4052 lb. (1838 kg)	3168 lb. (1437 kg)	4639 lb. (2104 kg)
Maximum lift height	113 in. (2887 mm)	132 in. (3351 mm)	132 in. (3351 mm)	137 in. (3482 mm)
Clearance with bucket dumped	84 in. (2142.8 mm)	99.3 in. (2523 mm)	99.2 in. (2520 mm)	96 in. (2444 mm)
Reach at maximum height	24.5 in. (624 mm)	40.9 in. (1039 mm)	40.9 in. (1039 mm)	44 in. (1110 mm)
Reach at ground level	71.8 in. (1824 mm)	88.5 in. (2248 mm)	88.5 in. (2248 mm)	103 in. (2627 mm)
Digging depth	4 in. (108 mm)	-2.7 in. (-69 mm)	-3.9 in. (-73 mm)	-6 in. (-143 mm)
Dump angle @ full height	52.7 degrees	-55 degrees	-55 degrees	-73 degrees
Rollback angle @ ground	29 degrees	42 degrees	44 degrees	45 degrees

512 specifications as installed on 5E; capacities measured with 73 in. Materials bucket (351 lb.); H240 specifications as installed on 5E 3-cylinder; capacities measured with 73 in. GP bucket (392 lb.); H260 specifications as installed on 5101E; capacities measured with 73 in. Materials bucket (502 lb.)



Add More

Add more comfort, convenience, security, productivity...



Auxiliary work light kit

Increase productivity with our auxiliary work light kit. The round halogen lights mount to the roof of your cab, providing a great source of extra lighting for the front or rear (or both) of your tractor. Includes all hardware and components.



Air-ride suspension seat

Ride more comfortably over the longest roads and roughest terrain with an air seat suspension kit (4-cylinder models only). The vertical and horizontal seat suspension lets you work longer hours with minimal operator fatigue. Armrest included. See your John Deere dealer for more details.



Power beyond adaptor kit

Provide live hydraulic power to implements that have an open-center control valve. This kit is required for installing a backhoe on your tractor. See your John Deere dealer for more details.



Dual rear SCV kit with lever controls

Attach a wider range of implements than ever before with our dual rear selective control valve (SCV) kit. Easy lever controls are included for your convenience.

5 Series Utility Tractors | Specifications

Tractor Series	5045E	5055E	5065E	5075E	5085E	5100E
Engine HP (kW) @ Rated Speed*	50 (37.4) @ 2100	59 (44.4) @ 2100	67 (50.4) @ 2100	73 (55.0) @ 2100	85 (62.5) @ 2400	100 (74.6) @ 2400
PTO HP (kW) @ Rtd RPM**	37 (27.6) @ 2100	41 (30.6) @ 2100	49 (36.6) @ 2100	57 (43) @ 2100	70 (52.2) @ 2400	85 (63.4) @ 2400
Engine						
Make	John Deere PowerTech 3029	John Deere PowerTech 3029	John Deere PowerTech 3029	John Deere PowerTech 3029	John Deere PowerTech 4045	John Deere PowerTech 4045
Aspiration	Turbocharged	Turbocharged	Turbocharged	Turbocharged	Turbocharged	Turbocharged
Cylinders	3	3	3	3	4	4
Displacement, cu. in. (liters)	179 (2.9)	179 (2.9)	179 (2.9)	179 (2.9)	276 (4.5)	276 (4.5)
Cylinder Liners	Wet Sleeved	Wet Sleeved	Wet Sleeved	Wet Sleeved	Wet Sleeved	Wet Sleeved
Transmission						
Standard	9F/3R SyncShuttle	9F/3R SyncShuttle	9F/3R SyncShuttle	9F/3R SyncShuttle	12F/12R PowrReverser	12F/12R PowrReverser
Optional	---	12F/12R PowrReverser	12F/12R PowrReverser	12F/12R PowrReverser	24F/12R PowrReverser	24F/12R PowrReverser
Reverser	No	No	No	No	Yes	Yes
On-the-Go Shifting (Yes/No/Partial)	Partial	Partial	Partial	Partial	Partial	Partial
Traction Clutch - Standard/Option	Dry	Dry/Wet (12F/12R PowrReverser)	Dry/Wet (12F/12R PowrReverser)	Dry/Wet (12F/12R PowrReverser)	Wet	Wet
Fuel System						
Fuel Tank OOS - Gal. (L)	18.0 (68.0)	18.0 (68.0)	18.0 (68.0)	18.0 (68.0)	30 (114)	30 (114)
Fuel Tank Cab - Gal. (L)	---	21.6 (82)	21.6 (82)	21.6 (82)	30 (114)	30 (114)
Power Take-Off (PTO)						
Standard	Independent 540	Independent 540	Independent 540	Independent 540	Independent 540/540E	Independent 540/540E
Optional (PR)	---	Independent 540/540E	Independent 540/540E	Independent 540/540E	---	---
PTO Actuation - Standard/Optn	Mechanical	Mechanical/Electrohydraulic	Mechanical/Electrohydraulic	Mechanical/Electrohydraulic	Electrohydraulic	Electrohydraulic
Economy PTO	No	Yes	Yes	Yes	Yes	Yes
Hydraulics						
Type	Open Center	Open Center	Open Center	Open Center	Open Center	Open Center
Steering gpm (L/min)	6.8 (25.7)	6.8 (25.7)	6.8 (25.7)	6.8 (25.7)	6.6 (24.9)	6.6 (24.9)
Implement gpm(L/min)	11.4 (43.1)	11.4 (43.1)	11.4 (43.1)	11.4 (43.1)	15.9 (60.1)	15.9 (60.1)
Total	18.2 (68.8)	18.2 (68.8)	18.2 (68.8)	18.2 (68.8)	22.5 (85.1)	22.5 (85.1)
Rear SCVs						
Base	1	1	1	1	2	2
Optional	2	2	2	2	0, 3	0, 3
Mid SCVs						
Base	0	0	0	0	0	0
Optional	2	2	2	2	2, 3	2, 3
3-Point Hitch						
OECD Hitch Lift Cap @ 24 in. behind hitch balls lb. (kg)	3,192 (1,448)	3,192 (1,448)	3,192 (1,448)	3,192 (1,448)	3,213 (1,457)	3,213 (1,457)
Hitch Category	Category 2 (convertible to 1)	Category 2 (convertible to 1)	Category 2 (convertible to 1)	Category 2 (convertible to 1)	Category 2	Category 2
Draft Sensing Type	Top Link	Top Link	Top Link	Top Link	Top Link	Top Link
Operator Station						
Type - Standard/Option	Open Station	Open Station/Cab	Open Station/Cab	Open Station/Cab	Open Station/Cab	Open Station/Cab

*97/68 EC gross engine horsepower.

**5045E PTO horsepower at rated speed Open Station with 9F/3R SyncShuttle™ Transmission. 5055E, 5065E, 5075E PTO horsepower at rated speed Cab with 9F/3R SyncShuttle™ Transmission. 5085E and 5100E PTO horsepower at rated speed Cab with 12F/12R PowrReverser™ Transmission.

Tractor Series	5045E	5055E	5065E	5075E	5085E	5100E
2WD Dimensions						
Wheelbase, in. (mm)	80.7 (2,050)	80.7 (2,050)	80.7 (2,050)	80.7 (2,050)	---	---
Overall length (minimum)	137.8 in.	137.8 in.	137.8 in.	137.8 in.	---	---
Overall width, rear axle b/w flanges	57.3 in.	57.3 in.	57.3 in.	57.3 in.	---	---
MFWD Dimensions						
Wheelbase, in. (mm)	80.7 (2,050)	80.7 (2,050)	80.7 (2,050)	80.7 (2,050)	92.5 (2350)	92.5 (2350)
Overall length (minimum)*	137.8 in.	137.8 in.	137.8 in.	137.8 in.	159.13 in.	159.13 in.
Overall width, rear axle b/w flanges	57.3 in.	57.3 in.	57.3 in.	57.3 in.	57.2 in.	57.2 in.
Height from ground						
To top of hood	63.5 in.	64.8 in.	66.2 in.	66.9 in.	70.6 in.	70.6 in.
To top of ROPS	94.4 in.	96.4 in.	98.4 in.	98.4 in.	101.1 in.	101.1 in.
To top of folded ROPS	75.8 in.	77.1 in.	78.5 in.	78.5 in.	79.6 in.	79.6 in.
To top of Cab	---	94.3 in.	95.6 in.	97 in.	102.4 in.	102.4 in.
Front Axle Clearance 2WD in. (mm),	18.8 (480)	18.8 (480)	18.8 (480)	18.8 (480)	---	---
Front Axle Clearance MFWD OOS in. (mm),	13.4 (340)	13.4 (340)	13.4 (340)	13.4 (340)	17.0 (432)	17.0 (432)
Front Axle Clearance MFWD Cab in. (mm)	---	13.4 (340)	13.4 (340)	13.4 (340)	15.2 (386)	15.2 (386)
Standard Tires – 2WD						
Front	7.5 - 16; F2	7.5 - 16; F2	7.5 - 16; F2	7.5 - 16; F2	---	---
Rear	13.6 - 28; R1	14.9 - 28; R1	16.9 - 28; R1	16.9 - 28; R1	---	---
Standard Tires – MFWD						
Front	9.5 - 24; R1	9.5 - 24; R1	9.5 - 24; R1	9.5 - 24; R1	12.4-24; R1	12.4 - 24; R1
Rear	13.6 - 28; R1	14.9 - 28; R1	16.9 - 28; R1	16.9 - 28; R1	18.4-30; R1	18.4 - 30; R1
Weight						
Approx Weight, lb (kg), 2WD	4,414 (2,002)	4,524 (2,052)	4,634 (2,102)	4,634 (2,102)	---	---
Approx Weight, lb (kg), MFWD OOS	5,401 (2,450)	5,511 (2,500)	5,621 (2,550)	5,732 (2,600)	7,275 (3,300)	7,275 (3,300)
Approx Weight, lb (kg) MFWD Cab	---	7,054 (3,200)	7,165 (3,250)	7,275 (3,300)	8,150 (3,700)	8,150 (3,700)
Turn Radius**						
With brakes	10.2 ft.	10.2 ft.	10.2 ft.	10.2 ft.	11.6 ft.	11.6 ft.
Without brakes	11.5 ft.	11.5 ft.	11.5 ft.	11.5 ft.	14.3 ft.	14.3 ft.

*Front weight support extends past the front wheels. **With 4-wheel drive disengaged, where applicable.



Get peace of mind with PowerGard™

Protect your investment and increase your confidence in purchasing a high-quality John Deere tractor through John Deere PowerGard™ Programs.

The PowerGard™ Maintenance Program is an effective, preventative maintenance program designed to make sure your tractor operates at peak performance, offers exceptional reliability and maintains top residual value.

*PowerGard Protection Plan extended warranty covers failures due to defective materials or original workmanship of covered components for up to 3 years or 3,000 hours (whichever comes first). Customers have a choice between either the Limited (engine & powertrain) coverage form or the Comprehensive (full-machine) coverage form. See your dealer, www.deere.com or www.johndeere.ca/PowerGard for details.