

FLORENCE COUNTY

SOUTH CAROLINA

INVITATION-TO-BID NO. 10-11/12

INVITATION-TO-BID FOR (1) ONE 2012 MOTORGRADER

FLORENCE COUNTY PUBLIC WORKS



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**COUNTY OF FLORENCE, SOUTH CAROLINA
INVITATION-TO-BID #10-11/12**

Written sealed bids for (1) One 2012 Motorgrader for the Florence County Public Works Department will be opened by Florence County (hereinafter called the Owner) at 180 N. Irby Street, City-County Complex, Room B-5 Procurement Offices, Florence, South Carolina at 11:00 a.m. (ET) Tuesday, February 14, 2012. At that time and place, sealed bids will be publicly opened and bids read aloud.

The Project Documents, including Requirements and Specifications, may be obtained from the office of Florence County Procurement at the address listed below. When requesting project documents, provide the following information about your company: Mailing address, street (UPS) address, telephone number, and FAX number (if applicable).

Sealed bids must be received by Florence County Procurement at the following address:

Florence County Procurement
City-County Complex, MSC-R
180 N. Irby Street; Room B-5
Florence, SC 29501
(843) 665-3018

Sealed bids must be received at the above address no later than 11:00 a.m. (ET) on Tuesday, February 14, 2012 and submitted in a sealed envelope and clearly marked as follows:

"Invitation-To-Bid #10-11/12 – "(1) One 2012 Motorgrader"

Sealed bids MUST be in the actual possession of the Florence County Procurement Department on or before the exact time and date indicated above. Bids received after the published time and date shall not be opened and shall be disqualified and returned unopened to sender.

Sealed bids submitted by mail and/or carrier must meet the same requirements as above and should be addressed to the same address listed above. Florence County shall not be responsible for late delivery of bids.

No bid will be considered unless the responder is legally qualified under the provisions of the South Carolina Code. All bids must be completed typed or printed in ink and comply with all the terms and conditions of this Invitation-To-Bid and associated Project Documents. Emails or facsimiles will not be accepted.

Each responder, by submission of a bid, agrees to each and every term and condition set forth within this Invitation-To-Bid and associated Project Documents, including any addendum that may be issued, and to be bound thereby.

All bids and supporting documents will be retained by Florence County for a period of sixty (60) days from the date the bids are opened, and no bid shall be received, nor shall any responder be allowed to withdraw a bid after the opening hour commences.

Florence County reserves the right to accept or reject, in whole or in part, any and all responses as appears in its judgment to be in the best interests of the County, or to waive any and all technicalities and informalities in determining the action of each proposal.

ADVERTISED:

MORNING NEWS
SUNDAY, JANUARY 22, 2012

SCBO
MONDAY, JANUARY 23, 2012

INSTRUCTIONS TO RESPONDERS

1) RECEIPT AND OPENING OF SEALED BIDS:

- a) Sealed bids will be received and opened as specified in this Invitation-To-Bid document. **Please submit only page 9.**
- b) The Owner will consider as non-responsive any bid not prepared and submitted in accordance with the provisions hereof and may waive any informality or reject any and all bids. Any bid may be withdrawn prior to the above scheduled time for the opening of bids or authorized postponement thereof. Any bid received after the time and date specified shall not be considered.
No bidder may withdraw a bid within 60 days after the actual date of the opening thereof or as provided for in the bid documents whichever is later.

2) PREPARATION OF BID:

- a) All bids will be evaluated in accordance with procedures and specifications contained herein and Florence County Code. The responsiveness to same determined in accordance to the instructions and criteria in this document. Any bid not providing sufficient information and documentation to comply with the Invitation-To-Bid Evaluation requirements will be considered non-responsive and removed from further consideration.
- b) A proposal shall be made in the official name of the firm or individual under which business is conducted (showing the official business address) and must be signed in ink by a person duly authorized to legally bind the person, partnership, company, or corporation submitting the proposal.
- c) All information requested of the bidder shall be entered in the appropriate spaces on the provided forms. If additional space is required, attach additional pages as needed within the sealed bid response.
- d) Bidders mailing their proposal must allow a sufficient mail delivery period to insure timely receipt of their proposal. Florence County is not responsible for proposals delayed by mail and/or delivery services of any nature. It is the bidder's sole responsibility to insure that all documents are received by person (or office) at the time indicated in the bid document. No facsimile or email submissions.
- e) Bidders must clearly mark as "Confidential" each part of their offer which they consider to be proprietary information that could be exempt from disclosure under Section 30-4-40, Code of Laws of South Carolina, 1976 as amended (Freedom of Information Act). If any part is designated as "confidential", there must be attached to that part an explanation of how this information fits within one or more categories listed in Section 30-4-40. Florence County reserves the right to determine whether this information should be exempt from disclosure and no legal action may be brought against Florence County or his agents for its determination in this regard.
- f) All information shall be entered in ink or typewritten.
- g) All proposed costs shall be for all licenses, permits, taxes, labor, material, transportation, equipment and any other components/services that are required to complete the work embraced herein this Invitation-To-Bid document.
- h) Each bid must be submitted in a sealed envelope, addressed to the Owner along with the name of the project for which the bid is submitted. The bidder shall also show his name and address, on the outside of the envelope. Failure to show the required information may result in rejection of the response and removal from further consideration. If forwarded by mail or

carrier, the sealed envelope containing the bid must be enclosed in another outer envelope. Florence County shall not be responsible for unidentified proposals.

3) BIDDER QUALIFICATIONS:

- a) To be acceptable to the Owner, bidders must be skilled and/or licensed, if applicable, in the class of work on which they respond, and no bid will be considered from any bidder who is unable to show that he has actually performed considerable work of similar character to that on which he is bidding

4) METHOD OF AWARD:

- a) Purchase Order will be awarded to the bidder whose bid appears to serve the best interest of the owner. The successful bidder will be determined as prescribed herein this Document.
- b) Florence County reserves the right to accept or reject, in whole, in part, together or separately, any and all responses as appears in its judgment to be in the best interests of the County, or to waive any and all technicalities and informalities in determining the action of each proposal.

5) OBLIGATION OF BIDDER:

- a) At the time of the opening of bids, each bidder will be presumed to have inspected the site, if applicable, and to have read and to be thoroughly familiar with the Documents (including all addenda). The failure or omission of any bidder to examine any form, instruction or document shall in no way relieve any bidder from any obligation in respect to this Invitation-To-Bid.

END OF SECTION

VENDOR AGREEMENTS

1) STATEMENT OF RIGHTS

- a) Florence County reserves the right to obtain clarification or additional information necessary to properly evaluate a proposal. Vendors may be asked to give a verbal presentation of their proposal after submission. Failure of vendor to respond to a request for additional information or clarification could result in rejection of that vendor's proposal. Florence County reserves the right to accept or reject any and all bids, in whole or in part, separately or together, with or without cause; to waive technicalities in submissions, to secure a project that is deemed to be in the best interest of the County. Florence County also reserves the right to make purchases outside of the awarded contracts where it is deemed in the best interest of the County.

2) GENERAL TERMS:

- a) Each bidder by submitting a response to Florence County as a result of this Invitation-To-Bid agrees to and acknowledges its acceptance of and agreement with the procedures outlined below and the terms, conditions and requirements of the applicable Florence County Invitation-To-Bid document. Agreement is evident by the submission of a response to Florence County. If a vendor cannot agree to these terms, or violates these procedures, the response will be judged non-responsive and not considered. If the procedures are violated during the evaluation process or prior to the issuance of a contract by Florence County, the offer of the firm in question will be void and Florence County will procure the goods/services in question from other eligible vendors.

3) SPECIFIC TERMS:

- a) Products offered shall meet all requirements of the Uniform Commercial Code, if applicable.
- b) Responses submitted are final and complete offers by the vendor. No additions, corrections, modifications, changes or interpretations will be allowed. In the event questions arise on what is meant by an offer, the Procurement Officer will make a determination as to the county interpretation of the vendor's offer. If, after informing the vendor of the county's opinion, disagreement as to scope of the offer is present, the offer will be declared VOID.
- c) Florence County reserves the right to award proposals received on the basis of individual items, groups of items, or the entire list of items; to reject any and all proposals; and to waive any technicalities. In every case, Florence County reserves the right to make awards deemed to be in the best interest of the County and to negotiate further the offer determined by the County to be in the best interest of the County.
- d) Unit prices will govern over extended prices. Prices must be stated per unit and extended for the total quantity.
- e) Florence County is not exempt from sales tax, if applicable. Sales, use, or excise tax, as well as any handling and shipping charges, must be shown as separate items.
- f) In the event of a tie bid a coin toss will be conducted to decide the award. Local preference will be applied prior to tie determination.
- g) Florence County has a local preference of 2%, which may be applied in bid award determination.
- h) Any deviation from specifications in the bid solicitation must be clearly pointed out; otherwise, it will be considered that the items offered are in strict compliance with these specifications, and the successful bidder will be held responsible therefore. Unless otherwise stated, it is understood and agreed that any item offered or shipped on this bid shall be new and suitable for storage or shipment, and that prices include standard commercial packaging and handling.

- i) Any attempt by a vendor to influence the opinion of the county staff, or County Council, by discussion, promotion, advertising or any procedure to promote their offer, will constitute grounds to judge such an offer non-responsive. All offers presented to Florence County will be evaluated based on the current County Code and the offer as presented to the county on the date/time specified in the given solicitation.
- j) In the event of inconsistent or conflicting provision of this contract and referenced documents, the following descending order of precedence shall prevail: (1) Florence County Procurement Ordinance, as amended (2) Bid Announcement/Advertisement (3) Special Terms and Conditions, (4) Instructions to Responders and Vendor Agreements (5) Other provisions of the contract whether incorporated by reference or otherwise, and (6) the Specifications.
- k) Florence County reserves the right to make periodic inspections of the manner and means the service is performed or the goods are supplied.
- l) All vendors are informed that the Procurement Officer may exercise the County's option to extend the contract, (purchase order) under the provisions of County Code should such extension be mutually agreeable between the County and the selected vendor.
- m) The Bidder agrees to secure at Bidder's own expense all personnel necessary to carry out Bidder's obligations under this Proposal. Such personnel shall not be deemed to be employees of the County nor shall they or any of them have or be deemed to have any direct contractual relationship with the County. The County shall not be responsible for withholding taxes with respect to the Bidder's compensation hereunder. Bidder shall not hold himself out as an employee of the County, and shall have no power or authority to bind or obligate the County in any manner, except County shall make payment to Bidder for services as herein provided. Bidder shall obtain and maintain all licenses and permits required by law for performance of this contract by him. The Bidder shall have no claim against the County hereunder or otherwise for vacation pay, sick leave, retirement benefits, social security, worker's compensation, health or disability benefits, unemployment insurance benefits, or employee benefits of any kind. State or Federal governments, including but not limited to Social Security, workmen's compensation, Employment Security, sales or use tax and any other taxes and licenses or insurance premiums required by law. The County shall pay no employee benefits or insurance premiums of any kind to or for the benefit of Bidder or his employees, agents, and servants by reason of this contract. The Bidder will carry liability insurance relative to any service that he performs for the County. A certificate of insurance must be submitted to the procurement office prior to services performed, with the requested coverage and limits per the County, with Florence County listed as additional insured.
- n) The vendor will act in an independent capacity and not as officers or employees of the County. The vendor shall indemnify, defend and hold harmless Florence County, its officers, agents and employees from liability and any claims, suits, judgments, and damages of any nature brought because of, arising out of, or due to breach of the agreement by Vendor, its subcontractors, suppliers, agents, or employees or due to any negligent act or occurrence or any omission or commission of Vendor, its subcontractors, suppliers, agents, or employees.
- o) The successful vendor shall indemnify and hold harmless the Florence County, its officers, agents and employees from all suits or claims of any character resulting from patent, trademark or copyright infringement or accidents/injury at any point in the delivery of goods/services.
- p) It is the responsibility of the prospective bidder to review the entire invitation for bids packet and to notify the Procurement Department if the specifications are formulated in a manner that would unnecessarily restrict competition. Any such protest or question regarding the specifications or bidding procedures must be received by the Procurement Department not less than five (5) days prior to the time set for bid opening. These requirements also apply to specifications or instructions that are ambiguous.
- q) Should any vendor fail to perform or comply with any provision or terms and conditions of any documents referenced and made part hereof, Florence County may terminate this contract, in whole or in part, and may consider such failure or non compliance a breach/default of contract. The County, the County reserves the right to purchase any/all items or service in default on the

open market. By submittal of a response all vendors agree to this provision. No additional responses will be considered from a firm in default until the default expenses are paid. No principals of a defaulting firm may submit a response under another organization or individual name until their previous default is settled.

- r) Florence County may terminate this agreement with or without cause at anytime. In the event of termination by either party, fees due for services satisfactorily performed or goods accepted prior to the termination shall be paid.
- s) Unless specifically requested, submit one (1) copy of your response.
- t) In the event no funds are appropriated by Florence County for the goods or services in any fiscal year or insufficient funds exist to purchase goods or services, then the Contract shall expire upon the expenditure of previously appropriated funds or the end of the current fiscal year, whichever occurs first, with no further obligations owed to or by either party.
- u) All submittals become the property of Florence County.
- v) All bids (and supporting documents) will be retained by Florence County for a period of sixty (60) days from the date the bids are opened, and no bid shall be received nor shall any bidder be allowed to withdraw a bid after the opening hour commences.
- w) Brand names and numbers, when used, are for reference only to indicate character or quality desired and do not indicate a preference. Equal items will be considered; equal items shall state the brand name or quality; and Florence County's determination of what shall constitute equality shall be final and conclusive.
- x) S.C. LAW CLAUSE: Upon award of a contract or Purchase Order under this bid, the person, partnership, association, or corporation to whom the award is made must comply with the laws of South Carolina, which require such person or entity to be authorized and/or licensed to do business in this state. Notwithstanding the fact that applicable statutes may exempt or exclude the successful bidder from requirements that it be authorized and/or licensed to do business in this state, by submission of this signed bid, the bidder agrees to subject itself to the jurisdiction and process of the courts of the State of South Carolina, to all matters and disputes arising or to arise under the contract and performance thereof, including any questions as to the liability for taxes, licenses, or fees levied by the State.

END OF SECTION

BID SURETY REQUIREMENT

Bid Surety acts to protect the County from delays and expenses incurred in the lengthy competitive sealed bidding and competitive sealed proposal processes, and provides the County with some financial assurance that should the bidder be awarded the project, the successful bidder will enter into the contract with the County. The successful bidder forfeits its Bid Surety in the event it cannot perform the work required by the invitations-for-bid or request-for-proposals.

For all responses submitted with estimated project costs exceeding twenty-five thousand dollars (\$25,000.00), Bid Surety in the amount of at least five percent (5%) of the proposed project costs must be submitted with the response. Failure to satisfy this Bid Surety requirement will result in your bid being considered non-responsive and removed from further consideration for award of the subject contract. Bid Surety can be provided as discussed below.

BID SURETY OPTIONS:

Option A:

- i) Bid Surety will not be required from firms that have been in business for five (5) consecutive years without filing for bankruptcy. A certificate or statement on business letterhead from the firm stating it meets this qualification will replace the bid surety and must accompany the bid. Bidders not meeting this requirement must furnish Bid Surety as discussed in Option B below.

Option B:

- ii) For all bidders not meeting the criteria of "Option A" above, a deposit in the amount of five percent (5%) of the proposed contract price must accompany the bid. These deposits shall take the form of cash, certified check, cashier's check or a surety bond executed by a corporate surety licensed under the laws of this state. **PERSONAL OR COMPANY CHECKS DO NOT MEET THIS REQUIREMENT.** The cash, cashier's check or certified check shall be deposited to the County's account if the successful bidder fails to enter into the proposed contract. Bid deposits of unsuccessful bidders will be returned as soon as the contract is awarded.

One of the above requirements must be met and submitted with for your response. Failure to satisfy this Bid Surety requirement will result in your response being considered non-responsive and removed from further consideration for award of the subject project's contract.

Bidders failing to enter the proposed contract may be subject to Debarment or Suspension, as prescribed under Section 11-102 of the Florence County Code, from future consideration for award of contracts.

END OF SECTION

SAMPLE BID BOND

KNOW ALL MEN BY THESE PRESENTS, THAT WE, the undersigned, _____, as Principal, and _____, as Surety, are hereby held and firmly bound unto, As Owner, in the penal sum of _____ (\$ _____), for the payment of which, well and truly to be made, we hereby jointly and severally bind ourselves, our heirs, executors, administrators, successors and assigns.

Signed, this _____ day of _____, 20____.

The condition of the above obligation is such that whereas the Principal has submitted to _____ a certain Bid, attached hereto and hereby made a part hereof into a contract in writing, for the _____.

NOW, THEREFORE,

- (a) If said Bid shall be rejected, or in the alternate,
- (b) If said Bid shall be accepted and the Principal shall execute and deliver a contract in the Form of Contract attached hereto (properly completed in accordance with said Bid) and shall in all other respects perform the agreement caused by the acceptance of said Bid, then this obligation shall be void, otherwise the same shall remain in force and effect; it being expressly understood and agreed that the liability of the surety for any and all claims hereunder shall, in no event, exceed the penal amount of this obligation as herein stated.

The Surety, for value received, hereby stipulates and agrees that the obligations of said Surety and its bond shall be in no way impaired or affected by any extension of the time within which the Owner may accept such Bid; and said Surety does hereby waive notice of any such extension.

IN WITNESS WHEREOF, the Principal and the Surety have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be hereto affixed and these presents to be signed by their proper officers, the day and year first set forth above.


_____(L. S.)
PRINCIPAL

SURETY

By: _____

(SEAL)

END OF SECTION

FLORENCE COUNTY, SOUTH CAROLINA , a Body Politic and Corporate and a Political Subdivision of the State of SC	MAIL TO: Florence County Procurement 180 N. Irby Street City-County Complex MSC-R Florence, SC 29501	
SEALED BID #10-11/12 (1) One 2012 Motorgrader	HAND CARRY TO: Procurement Office, Room B-5 City-County Complex, 180 N. Irby Street Florence, South Carolina 29501	
Bids will be accepted until Tuesday, February 14, 2012 at 11:00 a.m. (EST)	TELEPHONE NO. (843) 665-3018	
Then Publicly Opened at: Florence County Procurement 180 N. Irby Street City-County Complex Room B-5 Florence, SC 29501	A SPECIFICATION SHEET MUST BE SUBMITTED WITH THE BID AND ANY DEVIATIONS FROM THE REQUIRED SPECIFICATIONS MUST BE LISTED ON A SEPARATE SHEET.	

VENDOR NAME: _____

ADDRESS: _____

CITY-STATE-ZIP: _____

TELEPHONE NO: _____ **FAX NO:** _____

FEDERAL ID (TAX ID) NO: _____

AUTHORIZED SIGNATURE (WRITTEN): _____

AUTHORIZED SIGNATURE TYPED): _____

I certify that this bid is made without prior understanding, agreement, or connection with any corporation, firm, or person submitting a bid for the same materials, supplies, or equipment, and is in all respects fair and without collusion or fraud. I agree to abide by all conditions of this bid and verify that I am authorized to sign this bid for the offerer. I further state that the company affiliated with this bid currently complies with all applicable federal and state laws and directives relative to non-discriminatory practices in employment.

YEAR _____ **MAKE** _____ **MODEL** _____

BID AMOUNT: \$ _____

TAX: \$ _____

DELIVERY TO FLORENCE, SC: \$ _____

TOTAL BID AMOUNT: \$ _____

TOTAL BID AMOUNT IN WORDS: _____

MINIMUM SPECIFICATIONS
32,000 LBS. CLASS MOTOR GRADER
MODEL: 2012

CONDITIONS

Units offered under this advertisement shall be new standard production models of the latest design in current production.

Materials shall be of good commercial quality for the intended service, and shall be produced by use of current manufacturing processes. Material shall be treated to resist rust, corrosion and wear as needed.

The design of the mechanical members shall be such that the stress imposed through normal shock loads at maximum engine torque shall not cause rupture or permanent deformation or undue wear on any member.

The bidder shall satisfy the purchasing official that he maintains a store or branch within 25 miles of the Florence County Maintenance Shop. This facility must be staffed with qualified servicemen and have provisions for storing a representative supply of parts for the machine offered, as well as provisions for securing parts from the manufacturer within a reasonable length of time.

Bidders must submit with their bid the latest printed specifications and advertising literature on the units they propose to furnish. Bidder shall supply one (1) parts book, one (1) service and repair manual and one (1) operator's manual with each unit.

Bidder shall be prepared to give a complete demonstration of the merits of the machines offered as directed by the purchaser. The machines so demonstrated shall be complete as offered by the bidder for this bid.

The bidder shall list on a separate sheet of paper any variations from, or exceptions to, the conditions and specifications of this bid. This sheet shall be labeled "Exception(s) to Bid Conditions and Specifications," and shall be attached to the bid. **The County will determine whether specifications submitted are equivalent in the sole opinion of the County.**

The bidder shall supply a list of customers that have purchased this size machine in the state of South Carolina. The price or prices quoted shall include all transportation charges fully prepaid to (address of destination).

Purchaser desires delivery to be completed within 90 days of award. Bidder certifies delivery will be completed 90 days from date of award.

Awards will be made based on the best value offered. Clauses requiring specific guarantees to cover parts delivery, total repairs and resale value may be included. The quality of the articles to be supplied, their conformity with the specifications, their suitability to requirements, delivery terms and guarantee shall be taken into consideration.

The purchaser reserves the right to reject any or all bids, to waive any informality in bids, to accept in whole or part such bid, or bids, as may be deemed in the best interest of the purchaser.

GENERAL

1. The machine shall be a new, currently advertised standard production motor grader.

WEIGHT AND DIMENSIONS

1. Basic operating weight shall not be less than 32,000 Lbs. Weight includes base machine, lubricants, coolants, full fuel tank, and operator.
2. The machine wheelbase, the distance from the front wheels to the mid tandem, shall not be less than 232.8 in (5,915 mm).

ENGINE

1. Engine shall be designed and built by the machine manufacturer.
2. Engine shall be a six-cylinder, four-stroke diesel.
3. Engine displacement shall not be less than 6.6L (403 in³).
4. Engine shall develop a rated net flywheel power of at least 158 HP (118kw).
5. Rated engine power shall be at an engine speed of no more than 2000 rpm.
6. Engine shall meet EPA Tier 3 emission regulations.
7. Fuel tank capacity shall be at least 90 US gallons (284 L).
8. Engine enclosures with side doors for engine access shall be provided.
9. Ether starting aid must be metered automatically to prevent damage to the engine.
10. Engine fan shall be hydraulically driven.

TRANSMISSION

1. Transmission shall be designed and built by the machine manufacturer.
2. Transmission shall be a direct drive power shift.
3. Transmission shall provide at least eight forward and six reverse speeds.
4. There shall be five working gears between 0-10 mph (0-16 km/h).
5. Transmission shall have electronic over speed protection.
6. Transmission shall be electronic shift control.

DIFFERENTIAL/FINAL DRIVES/TANDEMS

1. Operator controlled, multi-disc differential lock/unlock shall be provided.
2. Final drive shall be of planetary design.
3. Tandem chain pitch shall not be less than 1.8 in (44.5 mm).
4. Distance between centers of tandem wheels shall be no less than 59.5 in (1511 mm).

BRAKES

1. Service brakes located at each of four tandem wheels.
2. Service brakes shall be multi-disc, oil cooled and sealed.
3. Service brakes shall be hydraulically actuated.
4. Entire braking system meets all requirements of ISO 3450-1986 and SAE J1473 OCT 90.
5. Service brakes shall provide a minimum of 3565 in² (22,996 cm²) braking surface.

6. There shall be a provision to check the service brake wear without removing or disassembling the brake assembly.
7. Parking brake shall be multi-disc, oil cooled, spring-applied, sealed, and adjustment-free.
8. Engaged parking brake shall neutralize the transmission.
9. Parking brake shall be serviceable without removing the transmission.

AXLES / TIRES / RIMS

1. All tires shall be new Michelin or Bridgestone Radial 14.00 R-24, 10 PR (G-2) tubeless grader type with traction tread.
2. 10” (254 mm) multi-piece rims to accommodate 14.00-24 tires shall be available.
3. Wheel spindle shall rotate inside sealed compartment with light-weight oil for lubrication of the bearings.
4. Front axle oscillation shall be no less than 32 degrees.

STEERING

1. Front wheels steering angle shall be no less than 47.5 degrees left or right.
2. Machine, Drawbar, Circle, and Moldboard shall be controlled with a maximum of two multifunction, 3-axis, joysticks, as standard.
3. Machine turning radii shall not exceed 24.6 (7.5 M) using front steering, full articulation and unlocked differential.
4. Primary steering shall be 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.
5. Maximum front wheel lean shall be no less than 18 degrees left or right.
6. Secondary steering shall be a standard feature.
7. 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.

FRAME AND ARTICULATION JOINT

1. Front frame shall be a formed structural carbon steel tube, with a single resistant welded seam.
2. The rear frame shall have two-box section channels.
3. The articulation joint shall have a remote mounted lube point for easy access.
4. Articulation joint shall have a mechanical locking device to prevent frame articulation while servicing or transporting machine
5. Articulation joint shall be located behind the cab.

MOLDBOARD

1. The moldboard shall be at least 12’ (3658 mm) long, 24” (610 mm) high and no less than 7/8” (22mm) thick.
2. Moldboard Slide Rails shall be constructed of wear-resistant, high carbon steel.

3. Moldboard shall be reinforced by two heavy box sections, continuously welded.
4. Slide rails shall be hardened, continuously welded and have replaceable bronze-alloy wear inserts top and bottom.
5. Moldboard shall have a maximum bank slope angle of 90 degrees to both sides.
6. Moldboard shall have a hydraulic tip control through a range of 40 degrees forward and 5 degrees aft.
7. Throat clearance with standard moldboard shall be at least 4.9" (124 mm) with the blade of 0 degrees tip.

CIRCLE AND DRAWBAR

1. The circle shall be supported by the drawbar with at least six support shoes providing vertical and horizontal adjustment.
2. The circle and drawbar wear strips shall be replaceable drop-in inserts made from a nylon composite material.
3. Circle diameter shall be no less than 60.2" (1530 mm).
4. The circle shall be a rolled-ring forging for toughness, with raised wear surfaces on the top and bottom.
5. Circle shall be rotated by a hydraulically driven motor.
6. The teeth surfaces shall be hardened on the front 240 degrees of the circle.
7. Blade lift and center shift cylinders shall have replaceable wear inserts in the ball sockets.

HYDRAULICS

1. Hydraulic system shall be a closed center, load sensing type with a variable displacement piston-type pump.
2. The hydraulic pump shall produce at least 51 gpm (193 L/m) of oil flow at rated engine speed.
3. Implement valves shall be proportional priority pressure compensating type for consistent response.
4. Lock valves shall be integrated into all implement circuits to prevent drift.
5. Blade lift cylinders shall have independent float capability.
6. There shall be a provision to install up to 15 modulating hydraulic valves controlled by two, three-axis, multi function joystick controls inside the cab.
7. Hydraulic system shall have a separate oil tank (i.e. not combined with the power train oil system).
8. All implement hydraulic connections shall have O-ring face seals for leak prevention.

ELECTRICAL

1. Electrical system must have a master disconnect switch with a removable key (in addition to the ignition switch).
2. Machine shall be equipped with 70 Amp- hour, 880 CCA maintenance free batteries.

OPERATOR STATION

1. An enclosed cab with ROPS (Rollover Protective Structure) shall be provided.

2. FOPS (Falling Object Protective Structure) shall be provided.
3. Instrument cluster shall include coolant temperature, voltmeter, fuel level, frame articulation, and hour meter.
4. A speedometer and tachometer group.
5. Seat shall be vinyl or cloth covered suspension seat with adjustable fore and aft position and a retractable seat belt.
6. Cab doors shall have a hold open clasp with a ground-level release in addition to a release in the cab.
7. Cab shall have wipers with washers on front window, rear windows and door and side windows..
8. Air Conditioner with R-134a refrigerant – Controls and ducts shall be integrated into the heater unit.

OTHER EQUIPMENT

1. A toolbox shall be provided.
2. A rear hitch shall be provided
3. Scarifier shall mount behind the front axle. Best working location for scarifier.
4. Scarifier shall have a provision for eleven teeth.
5. Side Mirrors