

DETAILED MINIMUM SPECIFICATIONS

GENERAL REQUIREMENTS-20' BOOM MOWER W/ 50" ROTARY MOWER

1) <u>GENERAL</u>	<u>YES</u>	<u>NO</u>
<ul style="list-style-type: none">• It is the purpose of the following specifications to describe a self-propelled, hydraulically driven, boom type, rotary mower, which shall mow forward and right of the right rear tire, and extend by means of an articulated, two-section boom. This unit shall be constructed to receive, in lieu of the 50" rotary boom mower, a 60" rotary boom mower, 50" or 63" flail boom mower, a 60" or 72" side-mounted rotary mower, a 60", 75" or 90" side-mounted flail cutter, a 22" rotary ditcher, a 22" rotary boom ditcher, a 48" saw blade, or a triple saw head. The unit shall be of the manufacturer's current production model, meeting or exceeding the terms of these specifications. Unit shall be the manufacturer's most heavy-duty model available. The manufacturer shall furnish parts and operation manuals for the unit bid. The manufacturer shall also guarantee equipment against defects in workmanship and materials for a period of (1) year, of date put into service. For any offer to be considered all items must be standard production model, and not modified for bid purposes.	_____	_____
<ul style="list-style-type: none">• Manufacturer shall guarantee service parts will ship within 72 hours of order being placed or parts and shipping are free.	_____	_____
2) <u>SAFETY SPECIFICATIONS</u>	<u>YES</u>	<u>NO</u>
<ul style="list-style-type: none">• Unit shall meet or exceed the following industry standards: SAE J232, J115, J517, J920, J1150, J1170. ANSI/ASAE S441.1, EP363.1, S390.1, S203.13, S217.11, S278.6, S318.14, S483. ASTM A370. A compliance report shall be available upon request.	_____	_____
3) <u>CUTTING HEAD</u>	<u>YES</u>	<u>NO</u>
<ul style="list-style-type: none">• Cutting width shall be 50" of actual cut.	_____	_____
<ul style="list-style-type: none">• Cutting head deck shall have 100,000 lb rated steel housing, with full length replaceable skid shoes on inner and outer ends.	_____	_____
<ul style="list-style-type: none">• Cutting head shall have 435 degrees of combined rotation.	_____	_____
<ul style="list-style-type: none">• Cutting head shall weigh not less than 785 lbs.	_____	_____
<ul style="list-style-type: none">• Cutting head shall have a spring loaded, retractable shield for deflecting debris as well as protection from knife blades.	_____	_____
<ul style="list-style-type: none">• Cutting assembly shall be rotary, and hydraulically driven.	_____	_____
<ul style="list-style-type: none">• Cutting head shall be attached to the spindle by (6), 5/8" grade-8 bolts with tapered bolt protector.	_____	_____
<ul style="list-style-type: none">• Cutting assembly shall be a 23.25" solid 1" thick steel disk with (3) radial cutouts and (3) case hardened, threaded inserts welded into place.	_____	_____
<ul style="list-style-type: none">• Cutting assembly shall accommodate (3) 5/8"x5"x17-3/16" 360 degree swinging, single edged, brush or grass suction knives, attached to the dish with hexagonal blade bolts, castle nuts, and roll pins.	_____	_____

DETAILED MINIMUM SPECIFICATIONS

GENERAL REQUIREMENTS - 20' BOOM MOWER... CONTINUED

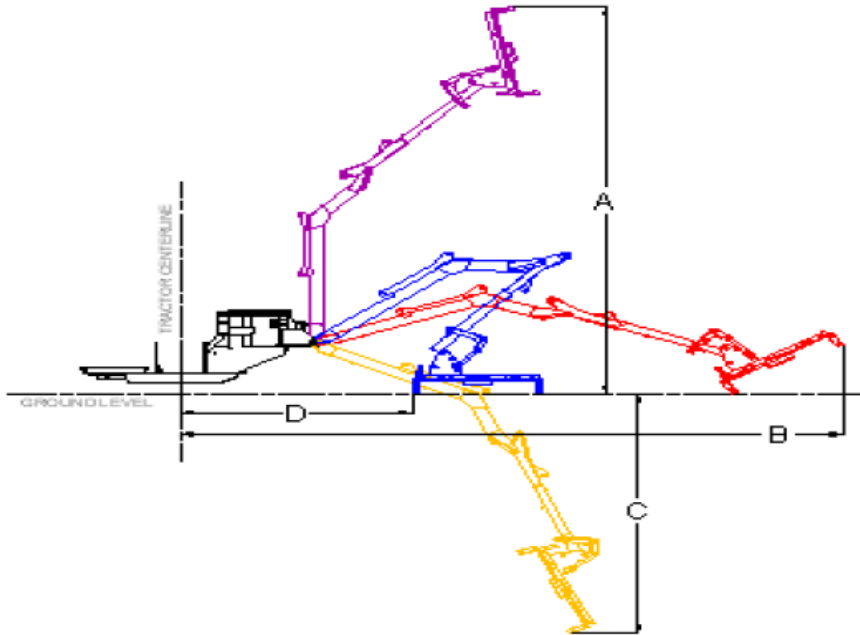
4) <u>SPINDLE</u>	<u>YES</u>	<u>NO</u>
<ul style="list-style-type: none">• Spindle shall be one piece 8630 steel, mounted in straight FAG roller bearings.	_____	_____
<ul style="list-style-type: none">• Spindle for power to cutting assembly shall be 6.5" in diameter at its largest area x 13" long, with bearing diameter of 2.755" with a minimum of 4.5" between bearing centers.	_____	_____
<ul style="list-style-type: none">• Spindle shall be direct coupled with a splined end.	_____	_____
<ul style="list-style-type: none">• Spindle housing shall be attached to the cutting head so as to absorb 240,000 lbs of shear strength, and distribute this load over an area of 169 inches squared.	_____	_____
<ul style="list-style-type: none">• Minimum spindle speed is 1,500 rpm.	_____	_____
5) <u>BOOM SPECIFICATIONS</u>	<u>YES</u>	<u>NO</u>
<ul style="list-style-type: none">• Mainframe of mower is properly braced to rear axle and front axle housing to absorb side torque and impact of severe applications.	_____	_____
<ul style="list-style-type: none">• A hardened plain bearing having not less than 37 inches squared of bearing surface shall support the boom. The base plate shall have an integral swing cylinder attachment point and be constructed of not less than 1" thick and 100,000 psi (T1) steel.	_____	_____
<ul style="list-style-type: none">• Boom swivel shall be triple anchored with 1" thick T-1 steel. All (3) anchors shall have 360 degree grease groove hardened spring steel replaceable split bushings. All (3) anchors shall each be equipped with a grease zerk.	_____	_____
<ul style="list-style-type: none">• Wheel weight shall weigh not less than 1,400 lbs, mounted on the left rear wheel (specifically excluding frame mounted weight.)	_____	_____
<ul style="list-style-type: none">● Inner boom structural tube shall not have less than the following sectional properties: Torsional $74.9''^4$ Bending (Horizontal) $60.1''^4$ Bending (Vertical) $23.8''^4$. Inner boom shall be constructed of not less than 70,000 psi, 8"x6"x1/4" tube, and reinforced with not less than 3/8", 100,000 psi T1 steel	_____	_____
<ul style="list-style-type: none">● Outer boom structural tube shall not have less than the following sectional properties: Torsional $25.0''^4$ Bending (Horizontal) $22.1''^4$ Bending (Vertical) $11.7''^4$. The outer boom shall constructed of not less than 70,000 psi, 6"x4"x1/4" tube and reinforced with not less than 3/8", 100,000 psi T1 steel	_____	_____

DETAILED MINIMUM SPECIFICATIONS

GENERAL REQUIREMENTS - 20' BOOM MOWER... CONTINUED

5) BOOM SPECIFICATIONS... CONTINUED

YES NO



- Boom dimensions are measured from ground level and the tractor's centerline. Boom reachout (B) is 20' 1", boom reach-in (D) is 7' 2", boom height (A) is 16' 10", boom Depth (C) is 11' 7". Boom reach, height and depth may vary depending upon tractor and/or tire configuration.
- A Polycarbonate lexan window shall be installed to provide safety protection for the operator. It can be installed in place of, or over the glass, or attached to a frame on the right side of the cab windows.

6) HYDRAULIC CYLINDERS

YES NO

- Boom shall have a hydraulically operated maneuvering cylinder for horizontal movement of the cutter head. Cutter head shall have the capability of moving 26 degrees forward and 97 degrees rearward with limited relief protection.
- All cylinder mountings shall have replaceable, hardened bushings, of the grease-able type.
- All cylinder s are heavy duty industrial type, nitro steel rod welded.
- Secondary boom cylinder shall have a spherical bearing on the rod end.
- Hydraulic lift cylinders shall be mounted on the top of the boom arms.
- Boom shall have (2) double acting hydraulic cylinders, and (1) single acting hydraulic cylinder with accumulator.

DETAILED MINIMUM SPECIFICATIONS

GENERAL REQUIREMENTS - 20' BOOM MOWER... CONTINUED

7) <u>HYDRAULIC SYSTEM</u>	<u>YES</u>	<u>NO</u>
• Lift control valves shall be an electronic joystick with a (4) bank electro-hydraulic proportional, load sensing, and manual override at operators position.	_____	_____
• Hydraulic oil reservoir shall have a minimum capacity of 65 gallons.	_____	_____
• Hydraulic oil reservoir shall be filled to a maximum of 52 gallons.	_____	_____
• Hydraulic oil reservoir shall have a minimum of one fill sight glass.	_____	_____
• Hydraulic oil reservoir system shall be used as the power source for rotary cutting head.	_____	_____
• Hydraulic oil reservoir shall have a filter with 10 micron element, 75 gpm rated.	_____	_____
• Hydraulic oil reservoir shall have a restriction gauge visible to the operator.	_____	_____
• Hydraulic oil suction shall be an unrestricted 1.5" ID (specifically excluded shall be the suction filter and screens.)	_____	_____
• Hydraulic oil pressure and return system hoses shall be 1" ID high pressure unrestricted. Hoses shall have a burst pressure 4x working pressure.	_____	_____
• Hydraulic oil pressure, return, and lift system steel hydraulic lines shall be mounted at the rear of the boom arms.	_____	_____
• Wire braid reinforced hydraulic lines shall be used at all flexible positions on the boom arm (hydraulic hoses/tubing shall not be allowed inside boom arms.)	_____	_____
• Pump drive shaft attached to the tractor crankshaft shall have a rating of not less than 180hp.	_____	_____
• Pump drive shaft powers hydraulic pump for power to the hydraulic motor.	_____	_____
• Hydraulic pump and motor shall be gear type with cast steel housing and steel gears (specifically excluded shall be aluminum pumps, motors and aluminum gears.)	_____	_____
• Hydraulic pump shall have a rating of 98 hp (input)	_____	_____
• Hydraulic motor shall have a rating of 99 hp.	_____	_____
• Hydraulic oil to the power center head shall not pass through a restriction causing valve while operating the cutting head.	_____	_____
• Main hydraulic control valve shall be non-restrictive, electric solenoid type, with starter lockout switch.	_____	_____
• Hydraulic valve shall not cause restriction to generate drift while in the off position.	_____	_____
• Tractor's hydraulic system shall supply oil for the mower's lift system.	_____	_____

DETAILED MINIMUM SPECIFICATIONS

GENERAL REQUIREMENTS - 20' BOOM MOWER... CONTINUED

8) <u>REAR CRADLE TRAVEL REST</u>	<u>YES</u>	<u>NO</u>
<ul style="list-style-type: none">• The rear cradle (travel rest) shall be axle mounted, specifically excluding 3-point hitch cradle mounts.	_____	_____
<ul style="list-style-type: none">• The rear cradle (travel rest) will be constructed of 4"x4" and 4"x6" tubing of 3/8" wall thickness.	_____	_____

DETAILED MINIMUM SPECIFICATIONS

GENERAL REQUIREMENTS - 50" FLAIL MOWER HEAD

1) <u>GENERAL</u>	<u>YES</u>	<u>NO</u>
<ul style="list-style-type: none">• It is the purpose of the following specifications to describe a self-propelled, hydraulically driven, boom type, flail mower, which shall mow forward and right of the right rear tire, and extend by means of an articulated, two-section boom. The unit shall be of the manufacturer's current production model, meeting or exceeding the terms of these specifications. Unit shall be the manufacturer's most heavy-duty model available. The manufacturer shall furnish parts and operation manuals for the unit bid. The manufacturer shall also guarantee equipment against defects in workmanship and materials for a period of (1) year.	_____	_____
2) <u>SAFETY SPECIFICATIONS</u>	<u>YES</u>	<u>NO</u>
<ul style="list-style-type: none">• Unit shall meet or exceed the following industry standards: SAE J1001, J115, J208, J715, J898, J909, J920, J1150, J1500. ANSI/ASAE S441, S318.7, S217.10, S278.6, EP363. ASTM A370. A compliance report shall be available upon request.	_____	_____
3) <u>CUTTING HEAD</u>	<u>YES</u>	<u>NO</u>
<ul style="list-style-type: none">• Cutting width shall be 50" of actual cut.	_____	_____
<ul style="list-style-type: none">• Cutting assembly shall be flail type, and hydraulically powered.	_____	_____
<ul style="list-style-type: none">• Cutting head shall have 435 degrees of combined rotation.	_____	_____
<ul style="list-style-type: none">• Cutting shaft shall have a minimum of (48) dual purpose, 2lb, 8" in length, brush and grass knives. Knives will be 10 mm thick, and be capable of cutting brush 6" in diameter. Knives will be mounted with 1" grade 8 bolts to the cutting shaft. Knives shall be reversible.	_____	_____
	_____	_____

DETAILED MINIMUM SPECIFICATIONS

GENERAL REQUIREMENTS - 50" FLAIL MOWER HEAD...CONTINUED

3) <u>CUTTING HEAD...CONTINUED</u>	<u>YES</u>	<u>NO</u>
• Cutting shaft shall be a minimum of 6" in diameter, with 2-3/16" diameter stub shafts and bearings. Cutting shaft bearings will be the grip tight double shielded type.	_____	_____
• Cutting heads shall have 6-5/8" diameter rollers, 1-3/8" grip tight shielded bearings, and replaceable 1-3/8" stub shafts with external bearing hub caps and cap retainers.	_____	_____
• Blade cutting diameter shall be 23".	_____	_____
• Cutting head weight shall be a minimum of 1060 lbs.	_____	_____
• Hydraulic motor assemblies shall have automatic belt self-tensioners	_____	_____
• Cutting head shall have a minimum of 1/4"x25" solid steel sidewalls.	_____	_____
• Cutting bonnet thickness shall be a minimum of 1/8" gauge.	_____	_____
• Cutting shaft rpm shall be a minimum of 1700 (tip speed of 10224 fpm.)	_____	_____
• Cutting head shall have removable skid shoes.	_____	_____
4) <u>MISCELLANEOUS</u>	<u>YES</u>	<u>NO</u>
• Alamo boom mower must be removed from Town of Richmonds TS115A prior to installing new mower.	_____	_____
• Hydraulic pump mounted on front of tractor shall be protected by a pump guard.	_____	_____

**DEVIATIONS MUST BE LISTED AND FULLY EXPLAINED TO BE
CONSIDERED. THE BIDDER AFFIRMS THAT THE ANSWERS TO THE ABOVE
SPECIFICATION QUESTIONS ARE CORRECT AS THESE ANSWERS APPLY
TO THE BID UNIT:**

Date: _____

Name of Dealer:

Distance of Dealer to Town of Richmond in miles: _____

By: _____ Title: _____
(Please Sign)

By: _____ Telephone: _____
(Please Print)

Pricing Worksheet

Year: _____ Manufacturer: _____ Model: _____

Delivered Price as Described in Specs: _____

Bidder can supply parts for & is a factory authorized warranty repair facility of all
equipment bid? Y N

(circle one)