

**ATTACHMENT A  
EQUIPMENT SPECIFICATION  
HYDRAULIC SYSTEM #9-02  
FRONT MOUNTED P.T.O.**

**GENERAL:** THE FOLLOWING SPECIFICATIONS ARE FOR A HYDRAULIC CONTROL SYSTEM DESIGNED TO HAVE A CAB LOCATED ELECTRICAL PANEL ALLOWING TOTAL CONTROL OF ALL HYDRAULIC FUNCTIONS. A RESERVOIR TANK, CONTROL VALVES, AND A FRONT CRANKSHAFT DRIVEN CONTINUOUS DRIVE PUMP. THIS SYSTEM TO BE COMPATIBLE WITH DUMP BODIES, 86-B-4 AND 86-B-10 DESCRIBED ON THE FOLLOWING PAGES OF THIS SPECIFICATIONS.

**NOTE:** THIS HYDRAULIC SYSTEM MUST BE A CURRENT MANUFACTURED SYSTEM. PROTOTYPES ARE NOT ACCEPTABLE. A DEMONSTRATION MAY BE REQUIRED PRIOR TO THE AWARD OF THIS CONTRACT.

FILL IN ALL SPACES SHOWING SPECIFIC INFORMATION, FAILURE TO COMPLY COULD RESULT IN BID REJECTION.

**VENDOR'S PROPOSED:**

**MAKE:** Muncie Power Products  
**MODEL:** MP2 Advantage  
**PRICE EACH:** \$12190.00

**MINIMUM REQUIREMENTS**

**SPECIAL HYDRAULIC SYSTEM:** THE SUPPLIER IS RESPONSIBLE FOR COMPATIBILITY OF ALL COMPONENTS. THE DESIGN OF THE CIRCUIT OR CIRCUITS SHALL BE SUCH THAT TEMPERATURES SHALL NOT EXCEED 160 DEGREES F. DURING CONDITIONS DEEMED AS NORMAL OPERATIONS AND SPEEDS FOR THE CONTROL OF ICE AND SNOW REMOVAL BY THE OKLAHOMA DEPARTMENT OF TRANSPORTATION. HOSES SHALL HAVE SWIVEL CONNECTIONS ON BOTH ENDS, UNLESS A QUICK DISCONNECT FITTING IS SUPPLIED AND SHALL HAVE ALL JIC FITTING AND FITTING AND ADAPTERS.

PROPOSAL BID: Comply

BIDDER SHALL UTILIZE HYDRAULIC VALVES (SOLENOID OPERATED) INSTALLED AND PRE-PLUMBED BY THE MANUFACTURER WITHIN A WEATHER TIGHT COMPARTMENT OF THE RESERVOIR.

PROPOSAL BID: Comply

SYSTEM WILL PROVIDE, IF NECESSARY, MAXIMUM PRESSURE PROTECTION TO ALL FUNCTION REGARDLESS OF TYPE OR NUMBER USED. THESE PRESSURE CONTROL VALVES SHALL PROVIDE THE RECOMMENDED PRESSURE AS MINIMUM REQUIREMENTS AS FORTH BY THE OEM EQUIPMENT MANUFACTURE.

PROPOSAL BID: Comply

ELECTRONIC COMMUNICATION BETWEEN THE IN-CAB CONTROLS AND THE VALVE/TANK ENCLOSURE SHALL BE CARRIED VIA THE TRUCKS EXISTING 12 VOLT SYSTEM. NO HARNESS OF ANY KIND SHALL BE REQUIRED FOR COMMUNICATING SYSTEM COMMANDS. SENDING COMMANDS OVER THE TRUCKS' ECU OR CAN-BUS COMMUNICATION CHANNEL, J1939, IS NOT ACCEPTABLE

PROPOSAL BID: Comply

**HYDRAULIC RESERVOIR:** THE HYDRAULIC RESERVOIR SHALL HAVE A CAPACITY OF NO LESS THAN 35 GALLONS AND SHALL BE FABRICATED OUT OF 10 GAUGE STEEL WITH HEAVY DUTY MOUNTING BRACKETS. IT SHALL BE POWDER COATED. TANK/VALVE ENCLOSURE SHALL BE UNITIZED TO SAVE SPACE. THE LID SHALL BE REMOVABLE WITHOUT THE USE OF TOOLS WHILE THE DUMP BODY IS IN THE LOWERED POSITION FOR EASE OF MAINTENANCE. THE RESERVOIR SHALL BE EQUIPPED WITH MAGNETIC DRAIN PLUG; NATURALLY ASPIRATED FILLER/BREATHER CAP RATED TO 40 MICRON AND A LOW OIL/HOT OIL SENSOR.

PROPOSAL BID: Comply

RESERVOIR TANK WILL BE PROVIDED WITH A SIGHT GAUGE MOUNTED IN THE BEST POSITION FOR VIEW AND PROTECTION OF SIGHT GAUGE ASSEMBLY.

PROPOSAL BID: Comply

**HYDRAULIC OIL FILTER:** HYDRAULIC OIL FILTER SHALL BE TOP MOUNTED IN THE RESERVOIR AND SHALL HAVE A 10 MICRON ABSOLUTE RATING AND BE CAPABLE OF 60 GPM. THE FILTER SHALL INCLUDE A VISUAL AND ELECTRICAL BY-PASS INDICATOR. A WARNING LIGHT WITH WEATHER-PAK CONNECTION SHALL BE MOUNTED IN THE CAB ON THE CONTROL PEDESTAL IN VIEW OF DRIVER. ALL RETURN HYDRAULIC FLOW SHALL PASS THROUGH THE FILTER.

PROPOSAL BID: Comply

**HYDRAULIC OIL:** RESERVOIR AND ENTIRE SYSTEM SHALL BE FILLED WITH PHILLIPS OR EQUAL. RATED AW32 FOR ANY ANTI-WEAR HYDRAULIC OIL REQUIREMENTS, NEEDING ANTI-FOAM, ANTI-RUST, ANTI-LEAK AND MOTOR OR PUMP WEAR INHIBITORS.

NOTE: EACH UNIT SHALL BE ON FULL MARK AT THE TIME OF DELIVERY.

PROPOSAL BID: Comply

**HYDRAULIC VALVE ASSEMBLY:** THE HYDRAULIC VALVE ASSEMBLY SHALL BE RATED TO 35 GPM AND 3000 PSI. IT SHALL PROVIDE PRESSURE COMPENSATED, LOAD SENSING PERFORMANCE REGARDLESS OF PUMP DESIGN. ALL PORTS SHALL BE SAE O-RING TYPE. ALL SOLENOIDS ARE TO BE CURRENT-COMPENSATING TO ASSURE CONSISTENT PERFORMANCE AND REDUCE SOLENOID FATIGUE. CHANGING FROM SINGLE ACTING TO DOUBLE ACTING DOES NOT REQUIRE CHANGING ANY CARTRIDGES (ONLY CHANGES IN PROGRAMMING). ALL FUNCTIONS SHALL BE ELECTRICALLY SHIFTED. SOLENOIDS SHALL HAVE MANUAL OVERRIDES AS REQUIRED (HOIST UP, HOIST DOWN, PLOW UP AND SPREADER FUNCTIONS FOR DIAGNOSTIC PURPOSES). BASIC VALVE CONTAINING UNLOADER, HOIST, PLOW AND SPREADER FUNCTIONS SHOULD BE MADE UP OF ONLY 2 BLOCKS TO REDUCE LEAK POINTS (NO "SPOOLS-IN-A-BORE" ARE ACCEPTABLE). REPAIR TO ANY OPERATION MUST BE MADE BY SIMPLY REPLACING A CARTRIDGE (LIKE A SOLENOID OR A RELIEF).

THE MANIFOLD VALVE SHALL OPERATE THE FOLLOWING EQUIPMENT: SINGLE ACTING TELESCOPIC OR UNDERBODY HOIST; 3 POSITION, 3 WAY HIGH CAPACITY FRONT PLOW W/SA OR DA RAISE, DA ANGLE AUGER/CONVEYOR WITH GROUND SPEED ORIENTATION SPINNER WITH VARIABLE OPERATOR CONTROL FOR BROADCAST WIDTH

PROPOSAL BID: Comply

**CONTROL CONSOLE:** A SEAT MOUNTED CONSOLE SHALL BE PROVIDED THAT MOVES WITH THE SEAT AND IS TO BE ADJUSTABLE FOR GREATER OPERATOR

GRADE 50 HI-TENSILE. PROPOSAL BID: Knee Braced

SIDE VERTICAL BRACES: 6, 3 EACH SIDE CONTINUOUS WELD.  
PROPOSAL BID: Comply

CORNER POST REAR: 2 W/2 SPREADER CHAINS  
PROPOSAL BID: Comply

RUB RAILS: FULL LENGTH SLOPING. PROPOSAL BID: Comply

GATE HANDLES: 2, 1 ON EACH SIDE OF GATE:  
PROPOSAL BID: Comply

LIGHTS: TWO LED STOP, TURN, OVAL TYPE INSTALLED IN REAR VERTICAL BOLSTERS.  
PROPOSAL BID: Comply

CLEARANCE LIGHTS: 4 LED, 1 EACH CORNER ICC APPROVED TO BE INSTALLED  
UNDER CORNER OF BED, FRONT AND REAR.  
PROPOSAL BID: Comply

6 METAL BASE REFLECTORS: 2 EACH SIDE, 2 REAR MOUNTED ON END GATE, LCC  
APPROVED. NOTE: THESE REFLECTORS MUST BE HOUSED TYPE WITH SCREW OR  
BOLT TYPE MOUNTING, STICK-ON TYPE IS NOT ACCEPTABLE.  
PROPOSAL BID: Comply

BANJO EYES: 4, 2 EACH SIDE 3/8" STEEL 4-3/8" X 5" EXTEND BEYOND REAR POST.  
PROPOSAL BID: Comply

SIDEBOARD GUSSETS: 4-6" DEEP 3" WIDE.  
PROPOSAL BID: Comply

SIDEBOARD EXTENSIONS: 2-5/8" X 6" - 10 GA. GRADE 50 HI-TENSILE CHANNEL STEEL,  
BOXED FULL LENGTH. PROPOSAL BID: Comply

NOTE: THE FLAT SIDE OF THE CHANNEL TO BE TO THE OUTSIDE OF THE BED. THIS  
IS TO ELIMINATE EDGES, WHICH MIGHT COLLECT MATERIALS ON THE OUTSIDE OF  
THE BED. PROPOSAL BID: Comply

TAILGATE: DOUBLE ACTING 2/2 VERTICAL BRACES.  
PROPOSAL BID: Comply

TAILGATE HARDWARE: UPPER OFFSET TAILGATE HINGES.  
PROPOSAL BID: Comply

TWO TAILGATE CHAIN BRACKETS ARE TO BE WELDED ON EACH SIDE OF THE BED,  
ONE NEAR THE TOP AND THE OTHER NEAR THE BOTTOM. THESE DOUBLE BRACKETS  
(4 PER BED) ARE TO PROVIDE CHAIN SUPPORTS FOR THE TAILGATE WHEN IT IS  
HINGED FROM THE TOP OR THE BOTTOM.  
PROPOSAL BID: Comply

CAB COVER: CAB COVER APPROXIMATELY 1/2 OVER TRUCK CAB MOUNTED ON FRONT  
OF DUMP BED. PROPOSAL BID: Comply

FOR USE WITH DIESEL ENGINE:  
MODEL PL1-13-09BSBB

PROPOSAL BID: Comply

ELECTRICAL WIRING: WIRING TO BE IN LOOM AND PROPERLY SECURED TO FRAME TO PREVENT SAGGING. ALL WIRE CONNECTIONS SHALL BE MADE WITH HEAT SHRINK CONNECTORS OR WEATHER PACKS. A FUSE BLOCK IS TO BE USED FOR ALL FUSES FOR HYDRAULICS AND BODY. MATERIAL TO BE OF SUFFICIENT QUALITY TO INSURE A LIFE OF FIVE (5) YEARS.

PROPOSAL BID: Comply

**PILOT DEMONSTRATION UNIT:**

THIS WILL BE THE FIRST TRUCK TO RECEIVE THE COMPLETE INSTALLATION OF THIS HYDRAULIC POWER SYSTEM. AFTER THIS INSTALLATION HAS BEEN COMPLETED, THE INSTALLER MUST CALL THE DEPARTMENT OF TRANSPORTION FOR AN INSPECTION. NO OTHER INSTALLATIONS SHOULD BE STARTED UNTIL THE PILOT UNIT HAS BEEN INSPECTED AND APPROVED. THIS INSPECTION AND TESTING COULD TAKE TEN (10) WORKING DAYS.

PROPOSAL BID: Comply

NOTE: THE INSTALLATION AND DELIVERY (IF SPECIFIED) WILL BE THE SOLE RESPONSIBILITY OF THE BIDDING VENDOR, WHO MUST ESTABLISH A PRIORITY SCHEDULE BASED ON THE DATE OF THE PURCHASE ORDER. INSTALLATIONS WILL BE MADE THE RATE OF 2 UNIT PER 15, STARTING 60 DAYS AFTER THE NEW TRUCKS ARE DELIVERED TO THE INSTALLATION POINT.

COMPLETE THE FOLLOWING: GIVE NAME, ADDRESS AND TELEPHONE NUMBER OF PERSON RESPONSIBLE FOR INSTALLATION AND DELIVERY:

NAME: Kurt Olson or Kurt Schroeder / Southwest Trailers & Equipment L.L.C.  
ADDRESS: 10400 West Reno Oklahoma City, OK 73127  
PHONE: (800) 375-6307 (405) 943-9851 DATE: 6/18/2012

NOTE: INSTALLATION, SERVICE AND WARRANTY MUST BE PROVIDED WITHIN THE STATE OF OKLAHOMA.

COMPLIANCE: BIDDER SHALL FILL IN ALL SPACES SHOWING SPECIFIC INFORMATION. BIDDER SHALL FURNISH A STATEMENT IN WRITING IF EQUIPMENT PROPOSAL STRICTLY MEETS OR EXCEEDS THESE MINIMUM SPECIFICATIONS, IF IT DOES NOT, HE SHALL LIST EACH VARIATION THEREFROM, FAILURE TO COMPLY COULD RESULT IN BID REJECTION.

THE STATE OF OKLAHOMA RESERVES THE RIGHT TO WAIVE MINOR TECHNICALITIES UNDER THESE SPECIFICATIONS.

VENDOR'S STATEMENT: (EQUIPMENT PROPOSED COMPLIES) YES X NO     

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DEALER: Southwest Trailers & Equipment L.L.C.  
SIGNATURE:   
ADDRESS: 10400 West Reno Oklahoma City, OK 73127  
PHONE: (800) 375-6307 (405) 943-9851 DATE: 6/18/2012

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