CHECKLIST FOR PREPARING
BASIC MOTOR GRADER
(29,000 lbs. class)
SPECIFICATIONS

PURDUE UNIVERSITY - SCHOOL OF CIVIL ENGINEERING
in cooperation with
INDIANA DEPARTMENT OF HIGHWAYS
INDIANA ASSOCIATION OF COUNTY COMMISSIONERS
INDIANA ASSOCIATION OF CITIES AND TOWNS
FEDERAL HIGHWAY ADMINISTRATION
CHECKLIST
for
PREPARING BASIC MOTOR GRADER (29,000 lbs. Class) SPECIFICATIONS

The following pages contain various items to be considered when seeking bids for motor graders.

General description of equipment being bid. (See "A Checklist and Sample Specifications for Single and/or Tandem Axle Dump Trucks" HERPICC Publication No. H-83-1)

Statement of requirement of manufacture of equipment.

Statement of standardization of all component parts of unit.

Statement of parts availability and access.

Statement of location of manufacturer and/or assembly of unit(s).

Statement of bid submitting requirements.

Statement of indemnification of local agency concerning patent devices.

Statement concerning description of term "or equal".

Statement of terms for accepting unit(s), new and used, year hold overs, inspection of unit(s), local, state and federal requirements, disposition of trade-in unit(s), location of units.

Weight Class: Unit equipped with Roll Over Protection, Cab, Moldboard, less Wheel Weights and Scarifier.

Weight on each axle _________

Frame: Minimum Weight per foot, 100 lbs.

(Section Modulus) ____________________________________________

(Other) ____________________________________________

(Articulated) Degrees Lt. or Rt. ________________

(Non Articulated) (Crab)

Tow Hitch (Yes) (No)

Scarifier (Yes) (No)

Weight: ___________ lbs. W/O Teeth
Number of Teeth Possible: ________________.
Overall Assembled Dimensions: Height ________ Width ________ Length ________ with attachments.
Height ________ Width ________ Length ________ without attachments.
Location: (In Front of) (Behind) Front Wheels (Behind Rear Wheels)
Lift above ground ____________________ inches.
Penetration ____________________________ inches
Maximum width of cut ____________________ inches.
Ripper: (Yes) (No)
Weight ___________ lbs. W/O Teeth.
Number of shank pockets available.
Lift above ground ____________________ inches.
Penetration ____________________________ inches.
Maximum width of cut ____________________ inches.
Turning Radius: Straight Frame ____________ inches minimum.
Articulated Frame ____________ inches minimum.

Wheels and Tires:
Wheels: Type ______________ Rim Size __________ inch.
Tires: (Radial) (Tubeless) (Tube Type)
Tread Type ____________________________
Ground Clearance
Tire Size: (13:00 - 24) _________________ inches.
(14:00 - 24) _________________ inches.
(17.5 - 25) _________________ inches.

Moldboard:
Blade Length __________________________ inches.
Extensions (Yes) (No)
Height ____________________________ inches.
Thickness ____________________________ inches.
Blade Range - Lift Above Ground __________ inches.
Cutting Edge Thickness ____________________________ inches.
Blade Side Shift (Lt. or Rt.) __________ inches.
Shoulder Reach (Outside Wheels) __________ inches.
Vertical Rotation (Bank Cut) Angle __________ degrees.
Pitch at Ground Line Forward __________ degrees.
Backward __________ degrees.
Number of Pitch Positions __________
Automatic Blade Control (Yes) (No)
Hydraulic Accumulators on Blade Lift (Yes) (No)
Circle:
Type of Construction ____________________________
Diameter ____________________________ inches.
Side Shift ____________________________ inches.
Drawbar Type of Construction ____________________________
Circle Reverse Turn __________ degrees.
Vendor shall provide the following engine information:
Engine: (Gasoline) (Diesel)
Make ____________________________ Model ____________________________
Number of Cylinders __________ stroke-cycle.
Bore and Stroke __________ x __________
Displacement __________ cubic inches.
Continuous (Net) Flywheel Horse Power __________ @ __________ R.P.M. 's
Governed Speed __________ R.P.M. 's
Peak Torque __________ ft. lbs. @ __________ R.P.M. 's
Compression Ratio ____________:

Carburetion: (Carburetor) (Naturally Aspirated) (Turbo Charged)
(2 Bbl) (4 Bbl) (Other)

Cooling System Radiator Capacity _______________ quarts
Overflow recovery system (Yes) (No)
Corrosion Resistor (Yes) (No) Type _____ Location _____
Silicone Hose System (Yes) (No)
Engine Block Heater(s) (Yes) (No) Number ___ Size ___ Watts.
Type _______________ Location____________________
Weatherhead Connection (Yes) (No) Location ____________
Radiator Fan (Standard) (Reversible)
Radiator Cap - Lockable (Yes) (No)
Thermatically Controlled Radiator Shutter System (Yes) (No)
Filters Air - Type __________ Location __________________
Prefilter (Yes) (No) Type ____________________________
Oil - Number of filters __________ Location ______________
Oil - Extra Capacity (Yes) (No) Type _____ Location __________
Fuel (Yes) (No) Type _____ Location ________________
Water (Yes) (No) Type _____ Location ________________
Hydraulic External Mounted (Yes) (No)
Starter Rated Heaviest Duty for this application by manufacturer.
Alternator/Generator - amperes (Brush) (Brushless) Make & Model ____________.
Regulator (Integral) (External)
Emergency Shut Down Warning System: High Water Temperature - Low Oil
Pressure Low Hydraulic Pressure Low Air Pressure
Visual and Audible warning instruments.
Ignition - (Compression Ignited) (Spark Ignited) (Ether Starting Aid)
Batteries - Quantity _____ (Standard) (Maintenance Free) Voltage ___

Ampere Hour Capacity _____ Cold Crank Power @ 0 degree F _____

Dry weight (each) __________ Group Number __________

Exhaust System - Muffler
(S) (Standard) (Stainless Steel) (Horizontal) (Vertical)

Hydraulic System:
(Closed Center) (Open Center)

Variable Displacement Pump (Yes) (No)

Pump Capacity ______________ G.P.M.

Extra Capacity Hydraulic Oil Cooler (Yes) (No)

Valve Bank Capacity __________ Spools.

Electrical System

Headlights - Type and Location ______________________________

Tail Lights - Type and Location ______________________________

Moldboard Lights - Type and Location __________________________

Watts ___________ Candle Power _____________________________

Strobe Lights - Candle Power ___________ (Fixed) (Variable)

Separate Power Source (Yes) (No)

Mounting Location(s) ____________________________

Transmission (Manual) (Power-Shift) (Hydrostatic) (Creeper Option)

Number of (Speeds) Forward ________________ Reverse ___________

Number of Speed Ranges ________________________.

Top Speed Forward _____ Top Speed Reverse _____ in each Range.

Auxiliary Cooler (Yes) (No) Temperature Gauge (Yes) (No)

Auxiliary Filter (Yes) (No)

Extended Warranty (Yes) (No)
Rear Axle - Manufacture Model (Standard) (No Spin)
(Hydraulically) (Air) Actuated Locking Mechanism
(External) (Internal) Planitaries
Oscillating (Yes) (No)

Drive Train:
Tandem Rear Wheel Drive (Yes) (No)
Front Wheel Drive (Yes) (No)

Type of Drive Mechanism

Control Feature (Full Time) (Automatic ON) (Locked Out Off)

Brake System:
(4-Wheel Hydraulic Power Actuated/Wet) (4-Wheel Dual Air/Hydraulic)

Parking Brakes Specifications

Fuel Tank:
Size of tank ___________ gallons.
Tank Marking (Diesel #1 or #2) Gasoline-Regular, Unleaded, etc.

Sight gauge on tank (Yes) (No)

Security Package (Yes) (No)

Lockable Tank Caps (Fuel) (Hydraulic) (Yes) (No)

Engine Side Panels (Yes) (No)

Cab

Cab Ventilated and Insulated

OSHA approved for safety, sound proofing and temperature control.

Tinted Glass (Yes) (No) (Windshield Only) (All Windows)

Inside Dome Light (Manual Operated) (Door Operated)

Cigar Lighter (Yes) (No)

Seat (Standard) (Adjustable Suspension)

Horn(s) (Yes) (No) (Decibel Output) _________
Heater and Defroster (Standard) (Heavy Duty) (Front) (Rear)
Air Conditioning (Yes) (No) (Standard) (Deluxe)
Sun Visors (Yes) (No)
Radio (Yes) (No) (AM) (AM/FM)
Windshield Wipers & Washers (2 Speed) (Intermittent) (Electric)
(Air) (Front) (Rear)
Dual Mirrors - Size
Location (Inside) (Outside)
Adjustable Convex Mirror on Right Side (Yes) (No) Size
Backup Alarm (Yes) (No) Type
Exterior Grab Handles - Type
Height of Operation Platform Above Ground
Other

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Dash Mounted Gauges:
Fuel (Yes) (No)
Tachometer (Yes) (No)
Hourmeter (Yes) (No)
Ammeter (Light) (Needle Type) (Calibrated)
Oil Pressure (Light) (Needle Type) (Calibrated)
Water Temperature (Light) (Needle Type) (Calibrated)
Transmission Temperature (Light) (Needle Type) (Calibrated)
Hydraulic Oil (Pressure) (Temperature) (Yes) (No)

Warning Lights:
High Water Temperature/Low Oil Pressure Emergency Shut Down Warning System shall be dash mounted. (Yes) (No)

Optional Equipment:
Tool Box  (Yes)  (No)
Articulation Indicator  (Yes)  (No)
Engine Disconnect (Coldweather Start)  (Yes)  (No)
Sound Baffled Engine Side Shield  (Yes)  (No)
Seat Belt  (Yes)  (No)
Pusher Block  (Yes)  (No)
Bull Dozer  (Yes)  (No)
Snow Plow Hitch  (Yes)  (No)
Snow Plow  (Yes)  (No)
Snow Plow Wing  (Yes)  (No)
Windrow Eliminator  (Yes)  (No)
Other

Paint - Color

Preparation

Warranty of Unit
(Extended Warranty)  (Purchaser Designated Option)
(Manufacturers Standard)  (Repair Guarantee)
(Scheduled Maintenance Guarantee)
(Guaranteed Minimum Repurchase Price Schedule)
Description

Manuals - Operators, parts and service (Number of each required _______

Delivery Time
List of number of weeks required for delivery of Unit(s) from date of order: ________ weeks