

# ROAD COMMISSION FOR IONIA COUNTY

170 E. Riverside Drive • P.O. Box 76 • Ionia, Michigan 48846 • Phone (616) 527-1700 • Fax (616) 527-8848

---

---

CHARLES G. MINKLEY  
Commissioner

WILLIAM E. WEISGERBER  
Commissioner

KENNETH L. GASPER  
Commissioner

ALBERT A. ALMY  
Commissioner

KAREN D. BOTA  
Commissioner

DOROTHY G. POHL, CPA  
Managing Director

PAUL A. SPITZLEY, P.E.  
County Highway Engineer

---

---

## NOTICE TO BIDDERS

Sealed proposals will be received by the Board of Ionia County Road Commissioners until **1:00 p.m. on Monday, July 27, 2015** at which time they will be publicly opened and read in the Commission offices for the following:

### **Tandem Axle Dump Truck 12 Yard Capacity**

Further information upon which bids shall be based is available at the road commission office, phone (616) 527-1700 or [www.ioniacountyroads.org](http://www.ioniacountyroads.org) on the "Doing Business" page. **All proposals are to be in sealed envelopes and plainly marked "Sealed Bid for Tandem Axle Dump Truck" and shall include the name and address of the bidder.**

The Ionia County Road Commission reserves the right to reject any and all proposals or to waive irregularities therein, and to accept any proposals which, in their opinion, may be most advantageous and in the best interest of Ionia County.

#### BOARD OF COUNTY ROAD COMMISSIONERS OF IONIA COUNTY

Kenneth L. Gasper - Chairman  
Albert A. Almy - Vice Chairman  
Karen D. Bota - Member  
Charles G. Minkley - Member  
William E. Weisgerber - Member

**BOARD OF COUNTY ROAD COMMISSIONERS  
Of the County of Ionia**

**INSTRUCTIONS TO BIDDERS**

Sealed bids will be publicly opened at the offices of the Board of County Road Commissioners of the County of Ionia, State of Michigan, located at 170 E. Riverside Drive, Ionia, MI 48846.

Refer to the **NOTICE TO BIDDERS** for the exact timing and for the identification of the bids as related to furnishing materials, services, equipment, work and/or supplies with the terms, conditions, specifications, drawings, plans and special provisions as stated herein and hereto attached.

The Board's practice is to open and read the bids at the designated time and then refer the file to staff for tabulation and analysis. During this period, bid files are closed until presented to the Board of County Road Commissioners at their next regular meeting. Notifications of award, pending award, or other outcome, will be made in writing. The bid tabulation will accompany award, as is customary for item bid, or may be requested by phone at (616) 527-1700.

1. Bids must be submitted on the Board's blank form when provided. The bid shall be legibly prepared in ink or typewriter. The bidder must initial any erasures or alterations.
2. Specifications and plans should not be returned unless otherwise stated herein.
3. Bids shall be mailed or delivered. **Bids shall be in a sealed envelope and identified on the outside as to the bid concerned.** Bids will NOT be accepted by fax or email.
4. Bids will not be accepted after the time designated for the opening of the bids. The bidder shall assume full responsibility for delivery of bids prior to the appointed hour and shall assume the risk of late delivery or non-delivery regardless of the manner used for the transmission thereof. **Bids will be accepted at the Road Commission office** on behalf of the Board at any time during normal business hours only, said hours being 7:00 a.m. to 4:00 p.m., Monday through Thursday, with the exception of legal holidays.
5. It is understood that the Board of County Road Commissioners is a governmental unit and as such, is exempt from the payment of all State and Federal taxes, except as allowed by the regulatory agencies to be included in the cost of materials and services.
6. The bidder, as evidenced by the execution of the bid form, thereby declares that the bid is made without collusion with any other person, firm, or corporation and agrees to furnish all bid items in strict adherence with all Federal regulatory measures.
7. The Board reserves the right to reject any and all bids, to waive any irregularities therein, and to accept any bid which, in the opinion of the Board, may be most advantageous and in the best interest of the County. In case of error in the extension of prices in the bid or other arithmetical error, the unit prices will govern.

TECHNICAL SPECIFICATIONS  
TANDEM AXLE DUMP TRUCK, 12-YARD CAPACITY

The vehicle below is meant to describe an International Paystar, Western Star 4964S, Freightliner M2-114, or other manufacturer's equivalent to these trucks.

1. GROSS VEHICLE WEIGHT
  - A. 64,000 pounds
  
2. WHEELBASE
  - A. WB/207, CA/134, AF/59, DA/307
  - B. Set back front axle
  
3. FRAME
  - A. Minimum 31.1 SM/120,000 PSI single or double C channel to run from front to rear with no breaks in frame rails. 3,421,000 RBM.
  - B. Frame to be uniform the entire length.
  - C. Continuous integral front extension (no bolt-ons).
  - D. Ground clearance adequate to mount underbody scraper.
  
4. ENGINE
  - A. Detroit Diesel DD-13 435 H.P. 1550 ft. lbs. of torque. @ 1100 RPM.
  - B. 12.8 liter, 781 cu. inch displacement.
  - C. All standard safety features, low oil shut down, etc.
  
5. ENGINE EQUIPMENT
  - A. Tachometer
  - B. Ammeter
  - C. All gauges to be electronic.
  - D. All standard engine accessories fuel filters and water filters.
  - E. One full-flow oil filter plus one by-pass oil filter. (Combination filter)
  - F. Clutch fan - on/off Horton type.
  
6. TRANSMISSION
  - A. Eaton RLTO 16913A - includes cooler and pump.
  - B. Transmission temperature gauge mounted in dash.
  - C. 15 ½" heavy-duty clutch with clutch brake.
  - D. Cast iron pressurized bell housing.
  
7. REAR AXLE
  - A. 46,000 Rockwell RT460-160, with cab controlled traction lock.
  - B. 4.30 rear axle ratio, synthetic 75w-90 rear end lube.
  - C. 54" axle spacing.
  
8. FRONT AXLE
  - A. Heavy duty 20,000 lb. taper leaf suspension.
  - B. Gear-driven power steering pump with full hydraulic power steering.
  - C. Front shock absorbers.

9. REAR SUSPENSION
  - A. Nu-way AD-246, 46,000# air ride suspension.
  - B. Duel air, rear suspension leveling valves.
  - C. Manual dump valve for rear suspension.
  
10. BRAKES (WEDGE BRAKES NOT ACCEPTED)
  - A. Air brakes, S-cam type both front and rear.
  - B. 16.5 x 7 single anchor Rockwell Q +, new style with premium lining.
  - C. 13.2 cubic inch air compressor (minimum).
  - D. 30" brake chambers on rear axle with double diaphragm brake chambers, rear chambers for emergency and parking brake.
  - E. All brakes will have Meritor automatic slack adjusters.
  - F. Air dryer Bendix Model AD-9 mounted away from underbody scraper/heated.
  - G. Dust shields for all wheels.
  
11. WHEELS AND RIMS
  - A. Front 315-80R-22.5 Goodyear on 22.5 x 8.25 heavy-duty hub piloted rims, on-off road tread steel radial 16 ply.
  - B. Rear Goodyear 12-R-22.5
  - C. Hub piloted wheels rear 8.25 x 2
  - D. Powder coated white rims.
  
12. DRIVE LINE
  - A. 1810HD Dana Spicer main driveline with half round yokes.
  - B. 1710 Dana Spicer inter-axle driveline with half round yokes.
  - C. (1) Inter-axle lock valve, (1) Driver controlled differential lock forward rear and rear-rear axle valve with indicator lights.
  
13. FRONT POWER TAKE OFF
  - A. For live power, no shafts through radiator, no PTO on transmission.
  - B. Front pump plate bracket to be mounted between frame rails and pump. End yoke u-joints are to have metal shield to prevent grease from radiator-grille.
  - C. Pump is to be mounted in-line with crankshaft ahead of radiator.
  - D. Pump shaft must be greasable and be able to remove pump shaft ahead of radiator.
  
14. RADIATOR
  - A. Heavy duty with no cut-away, all metal, copper and brass.
  
15. ELECTRICAL
  - A. 12 volt system, Flaming River disconnect switch with 3 minute time delay.
  - B. 135 AMP Delco 39 Si or equivalent. Battery box on driver's side.
  - C. 3 93 AMP HR 1950CCA
  - D. All switches independent and labeled, See section 17-S for switches.
  
16. EXHAUST SYSTEM
  - A. Muffler right rear of cab vertically mounted with shields.
  - B. Exhaust pipes shielded where necessary.

17. CAB ACCESSORIES
  - A. Conventional cab with tilting fiberglass hood and service access hatches.
  - B. Deluxe driver's air ride seat with high back and air control valve to control pressure in seat and dual armrests.
  - C. Individual driver and passenger seats.
  - D. Seats at least 20" wide made of highly durable fabric material.
  - E. Standard interior trim.
  - F. Dual west coast heated mirrors 6" x 16", motorized right-hand mirror.
  - G. Dual arm rests.
  - H. Dual visors.
  - I. Air horn mounted under hood.
  - J. Intermittent wiper/washers electric (only). Self-canceling turn signals.
  - K. Tinted windshield.
  - L. AM/FM CD radio.
  - M. Integral air conditioning.
  - N. Factory installed running board with clearance for underbody scraper.
  - O. Dual grip handles right and left.
  - P. All required lights and safety items.
  - Q. Electric passenger window.
  - R. Snow plow under hood air intake, cab controlled inside/outside air intake.
  - S. Auxiliary switches in cab to run lights installed by equipment supplier. Switches shall include: Switch 1. Blade lights; Switch 2. Box warning light; Switch 3. Cab warning light; Switch 4. Sander lights; Switch 5. Rear alternating amber lights; Switch 6. Three position plow light switch (off, low beam, high beam); Switch 7. Tailgate switch; Switch 8. Wing light; Switch 9. Low oil override; Switch 10. Three-way cross conveyor switch, three position, left, right and center. Truck shall be equipped with box up indicator light and low hyd. oil light.
  - T. Location of all relays, ABS controllers, wiring relay boxes etc. shall be located in the cab unless clearly noted on bid sheet. Note the location of any electrical control box mounted outside of cab.
  - U. Trailer tow package to include: trailer brake in cab, wiring and air lines run to the rear of truck and capped off for later use.
  
18. OTHER SPECIFICATIONS
  - A. Purchase without front bumper.
  - B. Fan must not interfere with front pump shaft or hydraulic pump.
  - C. Bid shall include parts and shop service manuals for cab and chassis (or CD's).
  
19. SAFETY
  - A. Equipped to comply with all federal and motor vehicle safety standards.
  
20. PAINT
  - A. Cab: School bus yellow.
  - B. Frame: Centari 99A Black or equivalent.
  - C. May be shipped with temporary tank but must meet requirements in paragraph 26A.
  
21. Scraper/Pump/ground speed controller
  - A. A scraper mounting clearance between rear edge of front bumper and 40" rear of cab

minimum of 24" of ground clearance. All air tanks, batteries, drive line and exhaust shall meet the 24" minimum. Underbody shall be altered so that down cylinders shall push on lowest portion of moldboard per ICRC instructions. Moldboard shall be heat treated with off-set for scraper blade.

- B. Rexroth A10V085 load sensing pump driven by Spicer 1310 series drive line. Pump plate bracket is to be bolted between frame rails and pump. End yoke u-joint is to have metal guard over it. Pump to be mounted in-line with crankshaft ahead of radiator. Driveline collar to slide back and forth far enough to change u-joint without removing pump. Pump shall include a low oil, solenoid operated low oil shutdown block. Controls for the low oil system shall include a hydraulic tank level sensor for automatic shutdown when the oil level is below the tank float switch. A cab mounted switch shall allow the operator to override the shutdown system in order to momentarily operate equipment, and also allow the operator to manually shut down the system without use of the tank mounted sensor.
- C. A one (1) inch pressure hose from pump shall supply a Rexroth M4-12 hydraulic valve assembly of mobile design to withstand exposure to de-icing chemicals and severe weather conditions without the use of a watertight enclosure, but installed in a stainless steel box. Valve shall be of ductile steel construction - horizontally stackable and serviceable without disassembly. Each section shall have built-in flow and pressure compensator to allow simultaneous operation regardless of any other system function. Sections for hoist, blade up and down, plow up and down, and blade swing left and right shall be operated via remote air controls from inside cab. Levers in the cab shall be Morse air control levers. Hoist and scraper up/down shall include adjustable pressure limiting for both hoist down and scraper down functions. Spinner, prewet, and auger/conveyor sections shall be incorporated into main valve assembly. Both spinner and auger sections shall be pilot operated and have manual overrides.

Automatic controller spreader control system shall be ground speed oriented to maintain pre-determined application rates regardless of vehicle speed. Control shall be by microprocessor for high control accuracy, automatic calibration and flexibility of programming. Upon delivery, the system shall be fully operational and calibrated to road commission specifications (including furnishing completed, accurate calibration cards matched to each truck, by truck number).

Controller shall be a Dickey-John control point model and shall be capable of the following: application of salt, salt/sand mix and sand, pre-wetting of granular material, liquid anti-icing, zero velocity ground speed oriented spinner. Controller shall be capable of seasonal and storm data retrieval. Controller shall include the following: control console and remote switch controller, driver for liquid pre-wet, driver for granular and spinner, calibration keyboard, all necessary cables for feedback granular application rate sensor, liquid flow meter, cables to the PWM valves, and ground speed input sensors. Vendor shall set up all the variables in the programming of the controller and provide four (4) hours training on ground speed control usage and repair of system.

- D. Installation is to include black painting of pump control box valves, mounting plates, hose clamps, fuel and oil tanks, and underside of box. All electrical connectors shall be soldered and wrapped with heat-shrink tubing.
- E. Front and rear remote grease fittings for body, hoist, and tailgate latches, and underbody blade. An automatic Flaming River electrical disconnect switch with three minute time delay shall be installed in a weather tight enclosed box as close to battery

box as possible, with two indicator lights on outside so operator can tell if switch is on from a distance. Shut down switch shall be mounted on dash and clearly marked.

22. BODY

- A. 304 stainless steel body with cab shield shall be versatile with the ability to be used as a dump body or as a spreader to allow material to discharge through the tailgate onto a spinner assembly by the way of an integral center conveyor assembly. The body shall be 14 feet in length, top inside width shall be 87 inches, with the total outside width being 96 inches. Side height of body shall be 44 inches, with a tailgate height of 50 inches. Box shall be complete with fold down ladder for ease of checking load. Total capacity shall be 10.4 cubic yards. Unit shall be continuously welded 100 percent throughout. The sides, front and tailgate shall be manufactured of 3/16" 304 stainless steel. Body longitudinals shall be constructed of 1/4 inch 304 stainless steel. Top rail is box type. Body will include integral fenders to cover tandem axles. Fenders shall be made to accept 100 gallon pre-wet tank on each side. The front shall be sloped to accommodate a headlift cylinder with a partial doghouse and conform with the radius of the body and shall be 100 percent welded on the inside and outside. The rear of the body shall be supported by two pieces of 3/16" plate contoured to the radius of the dump body and welded 100 percent on both sides. Additional reinforcement will be provided by a 3/16" formed box section, placed at rear of the spreader body and tied to two rear posts formed from 3/16" 304 stainless steel. Side supports shall have 3/16"x4x4 tube extending through long members with 3/16" boxed section welded 100 percent from top rail of the body to cross tube. Tailgate shall be a minimum of 6" higher than sides. Tailgate shall be double acting with a squared perimeter, having two horizontal braces of 10 gauge material full width of the tailgate. The material door shall extend 16" into the interior of the body to prevent material from escaping through a partially open door over the conveyor. The opening shall be 21" in width by 8 1/2" in height and shall be manufactured of 1/4" material. Tailgate shall be operated with switch in dash. The tailgate shall have 1" x 4" bar stock tailgate hardware with 1 1/4" hardened pins. Tailgate latches shall be 1" flame cut, with each latch being adjustable with threaded 3/4" clevis and keeper pins. Latches shall be over center type. Body conveyor shall be 34" in width and shall have 28,000-pound tensile strength per strand pintle chain, with 1 1/2 x 1/2 bar flights on 2 1/4" centers. Two 6:1 spur gear boxes and high torque/low speed hydraulic motors (18 C.I.D.) shall drive conveyor with built in sensors for salting. There shall be 8 tooth sprockets with 2" idler shafts. Conveyor shall have heavy duty; dust sealed self-aligning four bolt flange bearings. Conveyor motors shall be plumbed to an air operated series/parallel valve. Bid with optional swing up ladder, air close tailgate with a 3 1/2" air cylinder kit. The trunion collar shall be oscillating. Provided with the body shall be the following light kit: Two oval red stop, turn and tail lights with protective rubber grommets and ample wire to do repairs when necessary. Two oval clear back up lights with protective rubber grommets. Four 2" round red markers with rubber grommets and wire harness. One three light bar with three 2" round red markers. Manufacturer shall provide all caution labels, decals, and any warnings deemed necessary. Manufacturer shall attach their standard warranty statement. Mud flaps and back up alarm will be installed. Components herein shall have a one-year minimum warranty.
- B. A hydraulic driven pre-wet system shall be installed and operational and shall include a 7 GPM gear type liquid pump with bronze gears. The pump assembly shall be installed in a fiberglass enclosure along with the Dickey-John flow meter. All necessary wiring shall

be included and installed for a closed loop system wired to the Dickey-John controller. The pre-wet system shall include two 100 gal. rotationally molded poly liquid tanks with type 304 stainless steel mounting brackets for the tanks. The system shall include a Bulk fill kit and flusher kit, a cross over hose kit, and the appropriate stainless spray bar mounted in the either in the auger trough or rear conveyor assembly.

- C. Cross conveyor/spinner assembly shall be bi-directional and shall be controlled by an air operated directional valve mounted at the rear of the combination body and switch in cab. Rear conveyor shall be equipped with hoses and quick connectors. Rear cross conveyor shall be mounted on two Reese type hitch tubes. The mounting of brackets shall swivel to allow a full angle dumping of the combination body without the removal of cross conveyor. The cross conveyor shall include a center mounted spinner. Conveyor shall be made of 10 gauge 304 stainless steel. The cross conveyor shall include an air operated switch mounted in cab to control the direction of flow. Conveyor shall include drop chutes and doors on each end. Conveyor shall be 12-inch width minimum and have removable doors on each end. Conveyor shall include a 3/8" x 12" conveyor belt rated for 350 degrees. Spinner disc shall be 24" 304 stainless steel. **Bid also with optional rear 9" cross auger with spinner and chute assembly.**
23. UNDERBODY SCRAPER
- A. Scraper shall be extra heavy duty for year round blading, 12' scraper with hydraulic double reverse cylinders, one inch by 20 inch mold board and circle, or equivalent. Blade shall swing 45 degrees left and right with infinite positions in-between to blade at. Blade shall be rolled forward and cut out so that blade cylinders push on edge of blade. Scraper shall include heavy duty springs. Scraper shall include a remote grease line manifold kit that allows grease to be applied to centralized locations outside of the frame chassis. Grease line kit shall incorporate all 15 grease points on the scraper. Cylinders shall have nitrated rods  
The moldboard shall have a pressed in offset. The 5" center pin is to be piloted into the hanger board and has a hardened bushing. Blade pressure shall be set at 850 psi.
24. FRONT PLOW HITCH
- A. One Husting type quick hitch complete or equivalent. Hitch to be made so hood can be tilted most of the way open. Front hitch shall include a 3" x 10" double acting lift cylinder with a nitrated piston rod.
25. FUEL AND HYDRAULIC TANKS
- A. A 120 gallon fuel tank and 30 gallon oil tank with shutoff valves to permit changing of filters. Hydraulic tank shall have a screen in line between tank and pump. Both tanks are to be pressure tested and be UL approved. Both tanks are to be vented. The fuel tank needs sender for gauge and oil tank needs sight glass mounted vertically 8" in length mounted as flush as possible to detect level of oil in tank. Tanks are to be mounted behind cab and above frame. Tanks are to be painted black.
26. FRONT BUMPER AND TOW HOOKS
- A. To be made from 12 inch channel, 8 feet long, to be installed on front frame extension. Bent on ends so the truck can be hooked up to a V-Plow. Two rear and two front tow hooks to be installed on each side of front and rear frame; sized to fit GVW of truck.



27. TARP SYSTEM

- A. One Roll Rite 5306 electric tarp system with aluminum wind deflector, aluminum tarp and tension bows, rotary switch control in cab with breaker and mesh style tarp, or equivalent to fit 14' box.

28. LIGHTS

- A. Two (2) LED type amber lights to be mounted on rear sides of box and hooked up so they will alternate from one side to the other when on, with its own fuse and switch. Two (2) LED sander lights mounted under side of box behind rear mud flaps aimed towards spinner with its own switch and fuse. Two amber LED flood type lights mounted on left frame behind cab, pointing toward end of scraper blade with its own fuse and switch. Taillights shall be LED type, enclosed in sealed box, on rear of dump body. All connections shall be of 14-gauge 2-strand wire; one wire is ground. Front plow lights shall be wired on separate switch in cab with plow lights mounted on front corners of hood. Rear tail lights shall be installed in 3 hole light cutouts on the rear outside corners of the body.
- B. One Star 2464 LED light bar shall be mounted on cab of truck with an independent fuse and switch. One Star 24" LED light bar shall be mounted on left front of cab protector of dump body on a swiveling mount, with an independent switch and fuse.

29. SIDE MOUNTED WING

- A. Wing shall be designed to mount behind the underbody blade and shall have a moldboard length of 113 inches at the top and 108 inches at the bottom. Moldboard height shall measure 33" inboard and 33" outboard with cutting edge.

Moldboard shall be 3/16" A36 steel minimum. Top of moldboard shall be formed into a 2 3/4" x 1" channel for additional strength. Bottom shall be 4"x 4" x 3/4" and reinforced between the cutting edge holes ten 3" x 3" x 1/2" gussets. There shall be six moldboard reinforcement ribs tapered from 4" at the bottom to 2 1/2" at top. There shall be two horizontal reinforcement angles between the discharge end and last two ribs, bottom 4"x 3"x 1/2" reinforcement angle shall have seven evenly spaced 5/8" holes for push arm adjustment. Pivot pin shall be constructed of 1 1/2" steel. Front attachment pivot plate will be 1/2" steel, completely boxed and supported with 1/2" and 3/16" plate.

Pivot tube for the 1 1/2" pivot bolt shall have a minimum of .625" wall and be welded 100% to the inside of the 1/2" plate and outside of the moldboard. A 1/2" safety stop eyelet shall be on the front of the moldboard and a 1/2" centered lift loop. All seams shall be 100% continuous welded. Cutting edge shall be 8" x 5/8" and shall be reverse curved and punched to fit the 9 ft. standard US Highway pattern.

A 1/2" x 4" x 6" cross tube passing through two mounting plates of 36" tall x 12" wide x 1/3" for mounting the wing to the frame of the truck. Cross tube shall pass behind the underbody blade circle. Outboard of the cross tube a fabricated 7" I-beam 25" high, vertically attached, shall be the foundation of the front wing post assembly.

I-beam shall be interlaced design, made of 3/8" EX-Ten material. I-beam shall be designed so there are no welds that restrict the 3/4" slide plate movement. I-beam shall

have an integral return and a diagonal bracing. Diagonal bracing shall be reinforced with  $\frac{1}{2}$ " x 1" bar.

The  $\frac{3}{4}$ " slide plate shall have 6  $\frac{1}{4}$ " slot for the float and two  $\frac{3}{4}$ " attaching ears reinforced with two  $\frac{3}{8}$ " x 2  $\frac{1}{2}$ " bar. Outboard portion of I-beam shall have two  $\frac{3}{4}$ " x  $\frac{3}{4}$ " steel bars welded to the outermost edges so as to provide a slide wherein a 25" x 6" x  $\frac{3}{4}$ " slide plate shall be mounted. Two grease zerks shall be on each side of the post to lubricate the slide plate. Slide shall have an integral 6  $\frac{1}{4}$ " mechanical float whose purpose is to allow vertical action to the toe of the wing moldboard. Slide shall allow for the mounting of the moldboard banjo plate. Pin for banjo plate shall be 1  $\frac{1}{2}$ " diameter.

Banjo plate/hinge for moldboard shall be fabricated of  $\frac{3}{4}$ " material, reinforced with  $\frac{1}{2}$ " bar and have two reinforced ears for the hinge pin.

The bolt for retaining the moldboard shall be 1  $\frac{1}{2}$ " -6 x7 G8 HHCS zinc plated with castle nut and cotter pin. Bolt shall be drilled for cotter pin.

Front slide assembly shall be actuated by a single 4" ID x 12" stroke, 2" rod, double acting cylinder. Slide cylinder shall have a 1" pin at the base and a 1  $\frac{1}{4}$ " bolt at rod end. The rod end shall have an offset cross tube mount to eliminate side load on the cylinder. Slide cylinder shall have  $\frac{3}{4}$ -16 ORB ports and polypak seals.

Lifting action for the heel end of the wing shall be accomplished via a single 3" x 15" stroke, 2" rod,  $\frac{3}{4}$ -16 ORB ports, polypak seals, double acting hydraulic cylinder. Heel cylinder shall be attached to the upper rear push arm slide assembly. Wing shall be operated by hydraulic lift, no cables or chains will be accepted.

Rear wing mount shall be fabricated from 5" x 7" x  $\frac{3}{8}$ " mild steel tubing, and shall include two 28" x 18" x  $\frac{1}{2}$ " frame attachment plates with 5" x 7" openings. Rear channel push arm/cylinder mounting plate shall include two  $\frac{1}{2}$ " plates, flame cut with three offset mounting holes to mount the rear push arms and the heel lift cylinder.

Upper push arm shall be equipped with an external slide assembly to allow for mechanical float and attachment of the heel lift cylinder. Rear push arms and heel lift cylinder shall be attached with 1  $\frac{1}{4}$ " stress proof pins for quick attach and detach.

A sequencing valve shall be supplied with the wing. Sequencing valve shall be adjustable for both the up sequencing of the wing and the down sequencing of the wing. Lock valves shall be built into the sequencing valve to prevent both the toe and heel cylinder from drifting when in the stored position. The sequencing valve shall allow wing to hydraulically drift up when in the plowing position. Sequencing valve shall be equipped with an adjustable metering valve to control the speed at which the blade drops when going from the stored position to the plow position.

There shall be two rear-wing heavy-duty, 2  $\frac{1}{2}$ " schedule 80, adjustable, spring cushioned lift arms including safety shear pins, 6' long fully extended.

All fabricated components shall be shot blasted and washed prior to powder coating. All

mounting components shall be powder-coated black, wing shall be chrome orange.

All welding on moldboard shall be 100% continuous.

Mounting hardware shall include schedule 80 pipe bracing.

Rear frame cross member shall be suitable for wing support as well as installation of future trailer pintle hitch.

30. MISCELLANEOUS

- A. Installation to include black painting of pump, control box, bumper, and circle mounting plates, hose clamps, etc.
- B. Steel mesh to be dealer-installed in front of radiator. Install electric back-up alarm. Conviscuity tape shall be installed around upper and lower portions of dump body including tailgate. Dump body shall include both front and rear grease remotes for ease of greasing latches, trunions, and other out-of-the-way zerks.
- C. A cross member shall be mounted at the very end of frame rails. It shall be of sufficient size and shape for the mounting of a Holland pintle hitch, Model CP 730. It shall be as deep as the frame rails and shall be continuously seam welded along vertical ends of frame rails. It shall also have a single bolted connection using ½" x 2" bar stock each end.
- D. Owner's manual, parts book, warranty papers, and service manual for both the equipment portions and the cab and chassis portions shall be provided.
- E. Bid with available lease purchase plans for lease purchase.

31. Options:

Bidder shall include an option on the body for 201 type stainless steel construction in lieu of the specified type 304 stainless steel construction. All gauges and design shall remain the same.

Bidder shall include an option for a paraglide wing post in lieu of the sliding wing post. The wing moldboard and rear pusharms and lift cylinder shall remain the same as well as the banjo plate and the pin for the banjo plate. The paraglide wing post shall include the following: The wing post shall allow the toe of the wing moldboard to float freely over rough roads and road shoulders, thus reducing potential damage to the wing and cab/chassis. Wing post shall be of a trailing link style with twelve inches of lift and designed to allow the moldboard to float up a minimum of eight to twelve inches when in the plowing position. The post front structure shall be no more than 24" high and 14" wide. Post weldment shall be manufactured with a .750" inside mounting plate and a matching .500" outer plate. A .375" Ex-Ten 50 front base plate will set the width of the post, support the .500" inner lower hinge brackets and the .750" bottom cylinder mounts. Internal reinforcement with a .500 HSLA radius plate shall be welded to both side plates and the front base plate. The post weldment will serve as the anchor for three trailing link assemblies. The upper and lower link arms shall be .750" radius bar with a 1.750" machined hole on each end. The upper arm assembly will be reinforced with a 2.500" schedule 80 pipe at the front anchor. The lower arm assembly will be reinforced with a 2.500" schedule 80 pipe at the front anchor and .500 HSLA x 5.000 plate to the rear. The lift/float link will be .500" bar with a radius at the anchor end,

reinforced with a 2.500" schedule 80 pipe. The rear of the lift link will be 1.000" plate reinforced with .625" bar and will include two .625" upper cylinder mounts. The rear lift weldment shall have an outer 1.000" and inner .500" bar with radius ends and machined 1.750" holes. Bars shall be spaced and supported with two 2.500" schedule pipes and two .500" x 4.000" triangular gussets. The hinge shall consist of three 1.000" thick radius ears that have 1.438" machined holes, spaced evenly and reinforced with two .250" x 2.000" x 2.000" angles. All 1.750" machined holes will have Rc 50 hardened bushings. Hinge pins shall be 1.500" OD, case hardened to Rc 55-60. Hinge pins shall be retained with machine bushings and .250" roll pins. All pivots shall be greasable. Lift cylinder shall be a 3.000" ID x 5.000" stroke with a 1.500" nitrated rod. Hydraulic port(s) shall be .562-18 ORB. Cylinder shall be attached within the post with 1.000" stress proof pins, machine washers and roll pins. Prior to assembly, the post will be shot blasted, washed and prepped prior to powder coating black.

Desired Delivery Date: On or before August 1, 2016. The Ionia County Road Commission will consider payment of the cab and chassis on April 1, 2016 provided the cab and chassis meet all the requirements of the equipment installer. The balance will be paid upon delivery.

Bidder shall include all financing options including 5 year lease purchase.

The Ionia County Road Commission reserves the right to award the bid to the vendor which provides the greatest value to the citizens of Ionia County.

Questions regarding specifications may be directed to Don Chubb, Fleet Manager at 616-527-1700 x 118 or email [don@ioniacountyroads.org](mailto:don@ioniacountyroads.org)