NOTICE OF AWARD OF CONTRACT

TO:
K. NEAL INTERNATIONAL TRUCKS INC.
10025 RICHMOND HWY
LORTON VA 22079

DATE ISSUED: SEPTEMBER 13, 2010
CURRENT REFERENCE NO: 412-10
CONTRACT TITLE: TANDEM AXLE DUMP TRUCK
PRIOR REFERENCE NO: N/A

THIS IS A NOTICE OF AWARD OF CONTRACT AND NOT AN ORDER. NO WORK IS AUTHORIZED UNTIL THE VENDOR RECEIVES A VALID COUNTY PURCHASE ORDER ENCUMBERING CONTRACT FUNDS.

Your firm is awarded the above referenced contract in accordance with the response submitted by you on SEPTEMBER 9, 2010. The contract term covered by this Notice of Award is effective IMMEDIATELY and expires on SEPTEMBER 30, 2011.

This is the FIRST year award notice of a possible FIVE year contract.

The contract documents consist of the terms, conditions, and specifications of Invitation to Bid No. 412-10 and the bid of the Contractor, incorporated herein by reference.

CONTRACT PRICING:

1) REFER TO BID FORM (ATTACHED)

2) PRICING FIRM FOR CONTRACT TERM OR PRICE ADJUSTMENTS FOR EXTENSION OPTIONS BASED ON JANUARY.

ATTACHMENTS:

SPECIFICATION EXCERPT
COG RIDER CLAUSE

EMPLOYEES NOT TO BENEFIT:

NO COUNTY EMPLOYEE SHALL RECEIVE ANY SHARE OR BENEFIT OF THIS CONTRACT NOT AVAILABLE TO THE GENERAL PUBLIC.

VENDOR CONTACT: EVON BLUNK
VENDOR TEL. NO.: 703-550-3613
VENDOR PAYMENT TERMS: NET 30 DAYS
VENDOR FAX. NO.: 703-550-1805
TAX IDENTIFICATION NUMBER (EIN/SSN):
EMAIL ADDRESS: eblunk@knealinternational

COUNTY CONTACT: ADAM LEHMAN
COUNTY TEL. NO.: 703-228-6466

CONTRACT AUTHORIZATION

Vette Gonzalez
Procurement Officer
9/13/10

DISTRIBUTION

VENDOR: 1
BID FOLDER: 1
ARLINGTON COUNTY, VIRGINIA
OFFICE OF THE PURCHASING AGENT

INVITATION TO BID NO. 412-10

BID FORM

PAGE 1 OF 5

SUBMIT TWO (2) SIGNED BID FORMS TO THE OFFICE OF THE BID CLERK, SUITE 511,
2100 CLARENDON BLVD., ARLINGTON, VIRGINIA, 22201 (ONE FORM SHALL CONTAIN AN
ORIGINAL LONGHAND SIGNATURE; THE OTHER MAY BE A PHOTOCOPY OF THE SIGNED
ORIGINAL)

BIDS WILL BE OPENED AT 3:00 P.M. ON SEPTEMBER 9, 2010

FOR PROVIDING TANDEM AXLE DUMP TRUCK PER THE TERMS, CONDITIONS AND
SPECIFICATIONS OF THIS SOLICITATION:

<table>
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<tr>
<th>CURRENT MODEL YEAR</th>
<th>QUANTITY</th>
<th>UNIT PRICE</th>
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<tr>
<td>TANDEM AXLE DUMP</td>
<td>8</td>
<td>$147,660.00</td>
<td>$1,181,280.00</td>
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DELIVERY TIME

\[ \text{45-150 DAYS AFTER RECEIPT OF ORDER} \]

The undersigned understands and acknowledges the following:

The official, true, and complete copy of the solicitation documents, WHICH
SHALL INCLUDE ALL AMENDMENTS THERETO, is the hard copy of the documents
available from the Office of the Purchasing Agent.

An electronic copy of the solicitation documents provided at the County
Purchasing Agent’s website (http://www.arlingtonva.us/purchasing) is subject
to an important disclaimer which must be acknowledged online before the
documents can be downloaded.

Each bidder is responsible for determining the accuracy and completeness of
ALL solicitation documents they receive, including documents obtained from
the County by either of the methods described above, and documents obtained
from all other sources.

BIDDER NAME: K. Neal International Trucks, Inc.

BID FORM, PAGE 2 OF 5
TRADE SECRETS OR PROPRIETARY INFORMATION:
Trade secrets or proprietary information submitted by a bidder in connection
with a procurement transaction shall not be subject to public disclosure
under the Virginia Freedom of Information Act. However, Section 4-111 of the
Arlington County Purchasing Resolution states that the bidder must invoke the
protection of this section prior to or upon submission of the data or other
materials, and must identify the data or other materials to be protected and
state the reasons why protection is necessary.

Please mark one:

(✓) No, the bid I have submitted does not contain any trade secrets
and/or proprietary information.

( ) Yes, the bid I have submitted does contain trade secrets and/or
proprietary information.

If Yes, you must clearly identify below the exact data or other
materials to be protected and list all applicable page numbers of
the bid containing such data or materials:


State the specific reason(s) why protection is necessary:


If you fail to identify the data or other materials to be protected and state
the reasons why protection is necessary in the space provided above, you will
not have invoked the protection of Section 4-111 of the Purchasing
Resolution. Accordingly, effective upon the award of contract, the bid will
be open for public inspection consistent with applicable law.

CERTIFICATION OF NON-COLLUSION: The undersigned certifies that this bid is
not the result of, or affected by, any act of collusion with another
person (as defined in the Code of Virginia § 59.1-68.6 et seq.), engaged in
the same line of business or commerce; or any act of fraud punishable under
the Virginia Governmental Frauds Act (Code of Virginia § 18.2-498.1 et seq.).

BIDDER NAME: K. Neal International Trucks, Inc.

BID FORM, PAGE 3 OF 5
CONTACT PERSON AND MAILING ADDRESS FOR DELIVERY OF NOTICES
Provide the name and address of the person designated by the Bidder to receive notices and other communications (Refer to section headed Notices in the Contract Terms and Conditions of this solicitation for further details):

Even Blunk
10025 Richmond Hwy
Lorton, VA 22079

THE PROPER LEGAL NAME OF THE FIRM OR ENTITY SUBMITTING THIS BID MUST BE WRITTEN IN THE SPACE PROVIDED BELOW. THIS BID FORM, AND ALL OTHER DOCUMENTS REQUIRED BY THE INVITATION TO BID TO BE SUBMITTED WITH THIS BID FORM, INCLUDING, BUT NOT LIMITED TO ALL ISSUED AMENDMENTS, MUST BE FULLY AND ACCURATELY COMPLETED AND SIGNED BELOW BY A PERSON AUTHORIZED TO LEGALLY BIND THE BIDDER, OR THE BID MAY BE REJECTED:

AUTHORIZED SIGNATURE

PRINT NAME AND TITLE

INDICATE THE NAME AND CONTACT INFORMATION OF THE PERSON WHO CAN RESPOND AUTHORITATIVELY TO ANY QUESTIONS REGARDING THIS BID (I.E. PROJECT MANAGER):

NAME (PRINTED): Even Blunk
E-MAIL ADDRESS: eblunk@kaalinternational.com
TITLE: Municipal Sales
TEL. NO.: 703-550-3613 ext 4115

SUBMITTED BY: (LEGAL NAME OF FIRM) K. Neal International Trucks Inc.

ADDRESS: 10025 Richmond Hwy

CITY/STATE/ZIP: Lorton, VA 22079

TELEPHONE NO: 703-550-3613

FACSIMILE NO.: 703-550-1805

TAX ID NUMBER (EIN/SSN): 52.1259153

THIS FIRM IS A:  • INSERT NAME OF STATE CORPORATION,  • GENERAL PARTNERSHIP,  • LIMITED PARTNERSHIP,  • UNINCORPORATED ASSOCIATION,  • LIMITED LIABILITY COMPANY,  • SOLE PROPRIETORSHIP

IS FIRM AUTHORIZED TO TRANSACT BUSINESS IN THE COMMONWEALTH OF VA?  • YES

IDENTIFICATION NO. ISSUED TO THE FIRM BY THE SCC: F05278997

ANY BIDDER EXEMPT FROM SCC AUTHORIZATION REQUIREMENT SHALL INCLUDE A STATEMENT WITH ITS BID WHY THEY ARE NOT REQUIRED TO BE SO AUTHORIZED

IS YOUR FIRM CURRENTLY DEBARRED FROM SUBMITTING BIDS TO ARLINGTON COUNTY, VIRGINIA, OR ANY OTHER STATE OR POLITICAL SUBDIVISION?

BIDDER STATUS:  • MINORITY OWNED:  • WOMAN OWNED:  • NEITHER:

BID FORM, PAGE 4 OF 5
Solicitation #412-10
Metropolitan Washington Council of Governments Rider Clause

USE OF CONTRACT(S) BY MEMBERS COMPRISING THE METROPOLITAN WASHINGTON COUNCIL OF
GOVERNMENTS PURCHASING OFFICERS' COMMITTEE.

A. If authorized by the bidder(s), resultant contract(s) will be extended to any or
all of the listed members as designated by the bidder to purchase at contract
prices, in accordance with contract terms.

B. Any member utilizing such contract(s) will place its own order(s) directly with
the successful contractor. There shall be no obligation on the part of any
participating member to utilize the contract(s).

C. A negative reply will not adversely affect consideration of your bid/proposal.

D. It is the awarded vendor's responsibility to notify the members shown below of
the availability of the Contract(s).

E. Each participating jurisdiction has the option of executing a separate contract
with the awardee. Contracts entered into with a participating jurisdiction may
contain general terms and conditions unique to that jurisdiction including, by
way of illustration and not limitation, clauses covering minority participation,
non-discrimination, indemnification, naming the jurisdiction as an additional
insured under any required comprehensive General Liability policies, and venue.
If, when preparing such a contract, the general terms and conditions of a
jurisdiction are unacceptable to the awardee, the awardee may withdraw its
extension of the award to that jurisdiction.

F. The issuing jurisdiction shall not be held liable for any costs or damages
incurred by another jurisdiction as a result of any award extended to that
jurisdiction by the awardee.

**BIDDER'S AUTHORIZATION TO EXTEND CONTRACT:**

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**VENDOR NAME:**

**BID FORM, PAGE 5 OF 5**
THE PROVISION OF EIGHT (8) CURRENT MODEL YEAR INTERNATIONAL, MODEL 7600 SFA, 6X4, TANDEM AXLE DUMP, NO SUBSTITUTION, FOR UP TO A FIVE-YEAR (5) PERIOD.

GENERAL SPECIFICATIONS:
1. This specification describe a current model year International, model 7600 SFA, 6X4; tandem axle dump - No substitution for manufacturer chassis. Equipped with all of the standard features for this model along with the items in the "Detailed Specifications Section".
2. Registered Owner: County of Arlington, Board, 2701 S. Taylor St., Arlington, VA 22206
3. Delivery; FOB: ARLINGTON COUNTY, Equipment Bureau

DETAILED SPECIFICATIONS:
1. Year - Make & Model: current model year International, model 7600 SFA, 6X4 - No substitution
2. Minimum Engine: 390 HP Min. 1450 Ft. Lb. Torque The engine also needs to be equipped with the following items: automatic shutdown for low oil pressure and high engine temperature, magnetic drain plug, tachometer, block heater, and be a "Wet Sleeve Engine" REQUIRED.
3. Transmission: Allison 4500 RDS P 6 speed with auxiliary transmission cooler. TransSynd oil and Allison's (5) five year extended warranty.
4. Minimum GVWR: Unit(s) shall have a minimum GWR of 64,000 lbs.
5. Frame: Approximate WB 213" Approximate CA 126"; WB & CA shall be comparable with body and equipment to provide proper weight distribution. Front frame extension for hydraulic system, frame shall be extended a minimum of 12. This extension shall be full frame extension with reinforcement (The main frame and frame reinforcement shall be continuous from front extension to rear of truck). 2,900,000 In./Lbs. RBM Minimum If reinforced frame is required to meet RBM, reinforcement must include frame extension and extend to end of the frame.
6. Minimum Radiator: 1550 Square Inch
7. Starter: Lesce-Neville M-125 with thermal over crank protection
8. Minimum Alternator: 140 Amp; brushless type
9. Batteries: Three (3) batteries 2250 CCA minimum. Jump start stud to be mounted on battery box exterior.
10. Fuel Filter: in addition to the standard filter; a fuel water separator shall be DAVCO FUEL PRO 382 with pre-heater and fuel heater(thermostatically controlled) with "Water-In-Fuel" light
11. PTO: Front engine mounted with integral frame extension 12 to 20 inches
12. Front Axle: 18,000 lb. capacity w/sealed king pins, lubricated wheel bearings w/visible face cap equipped oil seals.
13. Front Springs: 18,000 lb. front springs and shock absorbers.
14. Steering: power steering REQUIRED.
15. Rear Axle: 46,000 lb. capacity Tandem, with lubricated wheel bearings. Driver controlled main locking differential front rear and rear rear with switch on dash. Note the driver controlled main locking differential shall automatically disengage at speed above 35 MPH.
16. Rear Spring: 46,000 lb. suspension; Hendrickson HMX-460-54 with transfer torque rods or equal.
17. Brakes: dual air brake system
   a. Front: 16-1/2 x 6 Shoes
   b. Rear: 16-1/2 x 7 Shoes
Compressor 15 CFM (Min), Bendix AD-9 air dryer or equal (Alcohol Evaporator not acceptable). four (4) rear brake chamber 30-30 type, low air pressure buzzer, and aluminum air tanks. Both air and electric trailer brakes REQUIRED.
All chambers shall be equipped with "BrakeSentry" visual brake stroke indicator. http://www.brakesentry.com/
18. Tires:
   a. Front: Highway Tread. (Radial) 315/80R22.5 20 Ply
   b. Rear: Mud & Snow Tread 11R22.5 16 Ply
19. Wheels:
20. Fuel Tank: 70 gallon aluminum safety step tank must be mounted left side.

21. Exhaust: vertical tailpipe with horizontal after-treatment device; exhaust system with turn out pipe guard REQUIRED.

22. Cab: conventional cab set forward front axle design ONLY

23. Lights: All marker, brake/turn signal, clearance/marker, and backup lights shall be LED; test exterior lights switch mounted on dash. Pre-trip inspection will cycle all exterior lights except back-up lights.


25. Seats & Belts: air ride bucket drivers with over the shoulder belt and fixed one (1) passenger seat. Seats vinyl covered and orange seat belts.

26. Glass: tinted

27. Mirrors: two (2) (Lang Mekra) style, rectangular 7 x 15 breakaway and integral convex both sides, heated thermostatically controlled and motorized, bright finish. And two (2) fender mirrors for optional plow lights.


29. Tow Hooks: tow hooks front two (2) frame mounted.

30. Horns: one (1) electric & one (1) air horn.

31. Back-up Alarm: horn or buzzer required.

32. Exterior Paint: Cab Bright White (NAV #9219, SIKKINS), wheels and frame Black

33. Electrical: Circuit breakers required in lieu of fuses.

34. Warranty: Standard warranty.

35. Extended Warranty: 60 months, 5400 engine hours, 150,000 miles.

Components covered:

a. 2010 Emission’s System
b. Cam Follower Assembly
c. Camshaft and Bushings
d. Connecting Rod Assembly
e. Cylinder Block Assembly
f. ECM
g. Lube Oil Cooler Assembly
h. Lube Pump Assembly
i. Oil Pan Assembly
j. Pistons, Rings, Liners
k. Rocker Lever Assembly
l. Manufacturer’s Hardware and Gaskets
m. Water Pump
n. Electronic Fuel Injectors and Pump
o. Turbocharger

Warranty coverage periods shall commence when the unit is actually put into service as evidenced by owner’s records, rather than commencing upon delivery.

36. Operation/Maintenance/Parts Manuals on CD (compact disk). Software and software updates will be furnished at no charge for the entire warranty period for the engine, transmission and any chassis/body multiplexing, so that diagnostic tests can be performed by maintenance staff.

Should the County order multiple units from a vendor at one time then only one complete set of manuals/software is required, so long as all units are identical.

37. Training for Equipment Bureau staff on operational and technical training for the software and system; a minimum of 8 hours and up to 16 hours provided at the Equipment Bureau facility is required.

15' FOOT GODWIN DUMP BODY AND HOIST SPECIFICATIONS

1. GENERAL
a) Commercial type contractor’s body with running boards and side braces
b) All welded construction
c) Water level capacity, 9 cu. Yd. (28" x 84" x 180")
d) Overall length, 180"
e) Inside width, 84"
f) Height of sides, approximately 28"
g) Height of headboard and tailgate, approximately 34", minimum 6" above sides
h) Height from top of chassis frame to dump body floor, not to exceed 17"
i) All side braces, running board to body sides, and tailgate braces shall be continuous welded - not skip welded
2. Structural
   a) Sides, headboard, tailgate, steel, 45,000 PSI yield strength, 10 gauge, high-tensile
   b) Floor, steel, 45,000 PSI yield strength, 8 gauge, high-tensile
   c) Side wall braces, five (5) on each side, manufacturer's standard design, full height
      with bottom drain hole, may be vertical or near vertical
   d) Rear corner posts, 14" wide, full depth
   e) Side wall top rails, full length, triple bend or boxed, 4" wide
   f) Double gussets, atop each top rail, form sideboard pockets
   g) Headboard, double V-braced for additional strength and stiffness
   h) Floor to side radius (or 45 degree chamfer) 3", compatible with tailgate spreaders
      currently in use by the County
   i) Top of running board shall be angled at least 30 degrees, to prevent material
      falling over sides and lodging on running boards
   j) Full width rear apron, formed steel, serves as or supplements the rear-most cross
      sill. In combination with corner posts, creates rear body rigidity
   k) Rear apron has three (3) holes cut for installation of identification lamps
   l) Keyhole tabs, upper and lower, 5/16" steel, welded to corner posts, provide anchor
      and adjustment for tailgate chains
   m) Spreader Pan
   n) Removable, extends full width of body, bolts to corner posts and rear apron
   o) Approximately 8" wide, angled at 15° from horizontal, deflects hot asphalt away
      from lights
3. Tailgate
   a) Double-acting, controlled by an air-operated tailgate latch cylinder, reference: Air
      Power Systems Company Model C6063 or equal
   b) Non-protruding upper hardware at each rear corner post to prevent snagging of load
      cover
   c) Upper and lower pins, 1 3/8" diameter
   d) Top has integral inverted "V" to prevent material accumulation
   e) Chains, 4' of 5/16", Grades 70 transport chain, attached at the top corner area, one
      on each side
   f) Chain retainer, slide through, one near each lower corner, for use with chains to
      limit tailgate opening
   g) Inner surface is even with bed floor when lowered to level position
4. Body under structure
   a) Long sill, 7" structural channel, 14.75 lb. per foot
   b) Cross members, 4" structural channel, 4.5 Lb. per foot, positioned 12" on center
   c) Cross members and long sill may be stacked or interlaced
   d) Unsupported floor area, 1,000 square inches or less
   e) Brackets for hoist upper arm pin interface, structural steel with adequate strength
      to withstand maximum cylinder thrust
   f) Pivot point, approximately 12" from rear of body
   g) Hinges, may be bolted or welded to body long sills
   h) Entire under structure, adequately reinforced and gusseted to resist distortion
5. Hoist
   a) Double acting, single cylinder, arm type with its own subframe, rated NTEA Class 80
      for body length specified
   b) Subframe, distributes body weight evenly to chassis frame rails through at least
      four (4) contact points and is bolted, not welded, to chassis frame
   c) Subframe has adequate strength to withstand maximum cylinder thrust and other
      operational stresses
   d) Cylinder, 8" diameter with chrome plated, 2 1/2" diameter rod
   e) Hinges, may be bolted or welded to subframe
   f) Hinge pins, 2" in diameter
   g) Dumping angle, 50 degrees
   h) Body safety props, one on each side
   i) Cycle time for raising and lowering body shall be less than one (1) minute
6. Electrical, all dump bodies
   a) Furnish and install all lights and reflectors necessary to meet FMVSS 108, CMVSS
      108, and USDOT lighting requirements
   b) All lights; sealed, shock resistant, grommet mounted, LED
   c) Relocate chassis supplied remote 7-pole electrical connector to a rear plate common
      with hydraulic disconnects and other electrical connectors, convenient to hitch but
      not interfering with other functions (hydraulic connectors, safety chains, etc.)
   d) Furnish and install a trailing wiring harness and 4-pole connector with spring loaded
      cover, Cole-Hersee #1235 or mating equal, mounted on a rear plate common with
      hydraulic disconnects and other electrical connectors, convenient to hitch but not
      interfering with other functions (hydraulic connectors, safety chains, etc.)
e) All connection(s) to chassis shall utilize and mate to the weatherproof connector(s) provided with the chassis
f) Back-up alarm K-D 621, or equal
g) Refer to attached drawing for light positions. For four wheel drive chassis only, Stop/Turn/Tail lights and Back-up lights are to be in body apron with maker lights in top corners of corner posts, due to increased height of body

SNOW FIGHTING PACKAGE FOR USE WITH GODWIN DUMP BODY SPECIFICATIONS

1. Central Hydraulic System
   Functional Description
   Functions include; plow lift, plow reverse, spreader and dump body operations. System design shall include capability for all functions to operate simultaneously, without affecting the action of any one or more functions.
   a) Plow Lift
      i) Raise and lower plow with double acting cylinder to be provided by the Contractor.
      ii) Flow push frames will be furnished and installed by the County at a later time
   b) Plow Reverse
      i) Reverse plow angle with two (2), single-acting, 3" cylinders
      ii) Valve center, A & B to T type
      iii) Flow control, adjustable control of plow reversing speed
   c) Spreader Circuits
      i) Pulse width modulated hydraulic source for a slip-in style conveyor/spinner type body unit with independent speed control for conveyor and spinner motors
      ii) Spreader circuit has variable flow set by the in-cab spinner control, with circuit capacity of 2,000 psi at 0-8 GPM
      iii) Conveyor circuit has variable flow set by the in-cab conveyor control, with circuit capacity of 2,000 psi at 1-15 GPM
   d) Dump Body Circuit
      i) Dump body cylinder, double acting
      ii) Furnish hydraulic braking on rod end port of hoist counter balance valve

2. Power Supply Components
   a) Front Mounting for Hydraulics and Plow
      i) Front bumper reinforcement with integral mounting brackets, ¼" steel plate, conforms around chassis bumper face
      ii) Mounting brackets protrude through chassis bumper and bolt to chassis frame ends, cut holes in chassis bumper as required
      iii) Tow hooks or eyes, two (2), welded to bumper reinforcement
      iv) Flow push frame ears, two pairs (4) total, ¾" steel plate, welded to bumper reinforcement
      v) Ear location, on 23" centerline to centerline between pairs with 1.5" gap between ears in a pair
      vi) Holes for push frame mounting, 13/16" diameter hole drilled through each pair of ears with the center 3 ½" from face of bumper reinforcement
      vii) Hitch pins, tow (2), ¾" diameter, one chain tethered to each pair of ears, hold push frame and protective bumper in place
      viii) Protective bumper, pin mount, used on all trucks, ¾" x 5" mild steel, formed as required, mounts to ears when push frame is removed. Extends downward to protect hoses and quick disconnects
      ix) Protective bumper, bolt on, used only with front mount pump and standard length truck frame, ¾" x 5" mild steel, formed as required, mounts to face of bumper reinforcement with two (2), ¾" grade 8 bolts. Extends forward to protect pump
      x) Complete assembly shall be structurally adequate for plowing operations
   b) Pump
      i) Gear type, all cast iron housing, SAE "B", 2 bolt mounting
      ii) Bi-rotational with side and rear ports, can be used in from mount
      iii) Shaft, 7/8", splined to mate with drive and with groove for set screw
      iv) Sized to produce 30 to 35 GPM at maximum engine RPM, pump is the sole source of hydraulic power. An accumulator or second pump is not acceptable
      v) Maximum noise level, 90 dBA in regard to published OSHA specifications
      vi) Bearings, roller, lubricated by the hydraulic fluid being pumped
   c) Pump Drive and mount for crank driven hydraulics
      i) Pump mounting flange, SAE "B", 2 bolt type
ii) Engine connection. SAE flange U-joint, compatible with engine Pulley
iii) Slip-yoke and shaft assembly, SAE 13 tooth spline, 16/32 pitch, with 2" of
tavel to facilitate engine fan belt replacement, Spicer 1310 series or
equal
iv) Universals and slip shaft, greasable, align and clearly mark zerk fittings
to facilitate lubrication
v) Pump mount, with standard length truck frame, fabricate integral with
bumper reinforcement
vi) Pump mount, with extended truck frame, fabricate and install an additional
crossmember, full width, mounted just ahead of chassis crossmember. Attach
crossmember to frame with four (4), ¾" grade 8 bolts.
d) Unloader Valve
i) Load sensing flow control valve with a low pressure bypass
ii) Remote mounted between the pump and hydraulic system manifold, or manifold
mounted
iii) Sends a pressure signal through the load sense line to determine the amount
of flow requirement by the system
iv) Bypasses excess flow to the reservoir through the bypass port
v) Bypasses all flow at low pressure to the reservoir when the system is at
idle and requires no flow
vi) Built-in adjustable relief limits maximum pressure to 1,900 to 2,100 psi
e) Reservoir
i) Capacity, 30 gallons
ii) Constructed of 10 gauge steel with baffles
iii) Mounted outboard of truck frame rail, rear of cab, accessible for service.
Specific location to be determined per truck model and space available
iv) Prefer curb side location. Include a heat shield from truck exhaust
system if required
v) Clearly marked "Hydraulic Fluid Only"
vi) Clean out cover, 10" diameter cast aluminum, top mounted, with silicon
sealing ring and four (4) bolt mounting
vii) Filter/breather cap with 300 mesh screen and a combination oil
level/temperature gauge
viii) Suction port, 2" NPT, with full flow shutoff ball valve in the line at the
port
ix) Return port, 1¼" NPT, at top of reservoir and plumbed internally to
discharge within 2" of bottom
x) Drain port, ¾" NPT with magnetic drain plug
xi) Supply and return piping arrangement placed for minimum oil loss when
replacing filter or no flow
f) Filtration
i) Suction strainer, 2", 125 micron with 3 psi bypass when screen is clogged
ii) Return line filter, cartridge type, in reservoir clean out cover, 45 GPM
capacity with 10 micron filter element, includes 25 psi bypass when
 cartridge is clogged
iii) Electric pressure sensor, activates a warning light mounted in the cab
control console when the element is clogged.

3. Control Components
a) Valve Enclosure
i) Weather resistant enclosure for manifold and valves. Consists of steel
main base and cover pieces, with formed and welded steel channels, baffles
and gussets as required for proper sealing
ii) Mounted outboard of truck frame rail, rear of cab, accessible for service.
Specific location to be determined per truck model and space available
iii) Main base and back mounting portion, ten 10 gauge steel plate
iv) Cover, ten 10 gauge formed steel with two (2) steel handles
v) Cover is secured to main enclosure base with two (2) heavy duty rubber
latch straps
vi) All wiring harness cable entries are made through a weather tight
compression restraint
vii) All hydraulic lines shall enter and exit from the bottom of the enclosure
to facilitate ease of mounting in confined spaces
viii) Hose port connections, accessible through a silicone sealed aperture.
Provide for direct exterior hydraulic port adapter entry into manifold
assembly without use of extension tubing and/or piping within the valve
cabinet
ix) Road clearance, not lower than any truck chassis component
b) Manifold
i) Aluminum, bottom ported, mounted in valve enclosure
ii) All solenoid, flow control, static pressure intensification and pressure compensated proportional type valves mount to this manifold

c) **Direction Control (solenoid) Valves**
i) Parker Hannifin with 3 pin man plug option and/or Hirschman type
ii) Designed for "stacking"
iii) System logic valves shall be included within the manifold, not externally mounted
iv) Solenoids, 12 volt DC, closed center, wet armature type, capable of manual operation

d) **Flow Control Valve**
i) Reverse free flow type
ii) Knurled, adjustable control to field adjusts the speed of the hydraulic functions such as plow lift, plow angle, etc.

e) **Static Pressure Intensification Valves**
i) Adjustable, cartridge type for bed and plow raise and lower functions. Protect the plow cylinder from high shock loading
ii) Speed controlled emergency release capable of lowering the bed and plows in an emergency situation with the vehicle engine "off", operated from the valve enclosure to protect the operator. Opening of hydraulic lines to accomplish lowering is not acceptable

f) **Pressure Relief Valves**
i) Dump body raise and lower circuit includes built-in port relief protection to limit maximum pressure in both sides of the double acting cylinder
ii) Each work port is independently adjustable from 100 to 3,000 psi
iii) Cartridge design, pilot operated for accuracy, and screw lock adjustable
iv) Mounted relief protection is not acceptable

g) **Spinner and Conveyor Valves**
i) Pressure compensated proportional type, motor driven valves are not acceptable
ii) Conveyor valve will be capable of a variable forward speed via ground speed sensing and by way of in-cab, manually operated, electric variable controls

4. **Emergency Shut Down**
a) System must totally shut down, including PTO disengagement, in the event of the hose failure, high temperature or low oil level
b) Fluid level switch, 100 watt side mounted in the reservoir
c) Temperature switch, in the reservoir, plumbed into the return line from the unloader valve
d) Both switches have Packard Weatherpack connectors
e) Both switches activate a relay, which cuts power to the spreader and master switch, and illuminates a low oil light in the control console, as well as disengaging the PTO
f) Manual override switch, momentary type, located in the valve enclosure, includes a low oil indicator light and push to test switch located beside it.

5. **Plumbing and Connections**

a) **All Circuits**
i) Suction line from reservoir to pump, SAE 100 R4, 2" diameter
ii) Return line from valve cabinet to filter, SAE 100 R1
iii) All other hoses, SAE 100 R2 Type AT
iv) All piping connections to and from the valve cabinet, JIC swivel type
v) Hose routing along chassis provides maximum available clearance from exhaust system, wear points, etc. Clamp in position with rubber line steel hangers
vi) All quick disconnects, valved, drip-proof style, with NPT threads, Parker FF Series with connect under pressure feature (Parker FC Series)

b) **Flow Lift Circuit**
i) Quick disconnects, 3/8" with NPT threads
ii) Truck mounted "FLOW UP" disconnect, coupler half
iii) Truck mounted "FLOW DOWN" disconnect, nipple half
iv) Locate truck mounted disconnects below the front bumper, center of the truck, in a vertical position to each other
v) Mating halves are furnished with lift cylinder

c) **Flow Reverse Circuit**
i) Quick disconnects, 1/2" with NPT threads
ii) Truck mounted "FLOW RIGHT" disconnect, coupler half
iii) Truck mounted "FLOW LEFT" disconnect, nipple half
iv) Locate truck mounted disconnects below the front bumper, center of the truck, in a horizontal position to each other
v) Mating halves, furnished loose

d) Spreader circuits
i) Supply line quick disconnects, ¾” with NPT threads, coupler to conveyor, nipple to spinner
ii) Return line quick disconnect, 1” with NPT threads, coupler
iii) Plump circuits with disconnects at rear of truck
iv) Mating halves, furnish loose

6. Electrical System

Functional Description

Functions include: manual controls through chassis switches and the cab control console, automated ground speed control for application of granular materials, and lighting specific to snow plowing needs. System design shall include a distinct split between power sourced and controlled through chassis circuits vs. power sourced and controlled through accessory circuits. This separation will aid in troubleshooting and in determination of warranty responsibility.

a) Power/signal supply and connections
i) Utilize wiring, circuit breakers, and connectors, per the following: ideally, these will be factory installed by the chassis manufacturer if not factory installed, precede with installation of these connection points as if doing a "dealer installation". The purpose is to facilitate consistent chassis/up-fitter electrical interface and to provide clearly defined separation points between chassis circuits and up-fitter circuits.

ii) This will aid in troubleshooting and in determination of warranty responsibility. All manufacturer names and numbers listed are provided for reference only. The Contractor is not required to use these products. However, all substitutions must be approved by the County and a pilot mode must be reviewed and approved by the County for quality of materials and installation.

iii) Power Supplies: One twenty (20) amp source direct from the battery and one twenty (20) amp source through a relay energized by the ignition switch. Each source terminates with a heavy duty connector stud and each is clearly marked. Both are located adjacent to each other, in a location that is both protected from damage and convenient to service. Factory installed power supplies can be in the standard factory location (inside or outside the cab). Dealer installed power supplies shall be located inside the cab. Each source is protected by its own circuit breaker which may be located at the chassis manufacturer’s breaker panel or adjacent to the terminal studs.

iv) Snow plow light circuit: A dedicated and clearly marked harness that terminates at a convenient location under the hood with a weatherproof connector, such as Packard Weatherpack or Packard Metripack. Harness includes a dash mounted selector switch to choose between chassis headlights and up-fitter mounted plow lights. High/low beam and parking lamp/turn signal functions must remain integrated in the original factory harness and will be operated by the standard factory control at all times.

v) Trailer connector circuit: A dedicated and clearly marked 6-pin trailer connector harness, in addition to the previously specified 7-pin harness. The 6-pin harness will support trailer with combination turn signal/stop lights. Harness to be protected with circuit breakers, located either at the chassis manufacturer’s breaker panel or adjacent to the circuit breakers in the 7-pin harness. Harness terminates with a weatherproof connector, such as Packard Weatherpack or Packard Metripack, which can be located either behind the cab or at the end of the frame rails.

vi) Auxiliary Vehicle Speed Signal (VSS): A dedicated and clearly marked speedometer tape point with minimum 25,000 pulses per mile shall be provided. Tape point may be inside the cab, outside the cab, or at the Engine Control Unit (ECU). Tap points outside the cab must terminate in a weatherproof connector. Tap points at the ECU must have a designated lead wire, three feet long, that terminates in a weatherproof connector.

b) Cab Control Console
i) All power to the Console must be supplied through the two 20 amp sources
ii) All relays, sub-base mounted for each of replacement without tools
c) Wiring and Connectors
i) Tamperproof sealed distribution junction boxes and sealed wiring harness. Reference: Truck-Lite “88” series or equal
ii) Wires in circuitry to be of different color, colors with stripes, or labeled in 1” increments if same color
iii) Harnesses, for wiring from under dash to hydraulic valve area and rear of truck
iv) All harnesses interior of cab, “PVC” or “SO” molded jacket type
v) All control harness or auxiliary cables outside the cab, “SO” or “NVN” type
vi) Wiring hangers, of appropriate design and quantity
vii) Wiring harness protectors, as appropriate where harness runs through frame, metal or other abrasion causing obstructions
viii) All external connectors, weatherproof, such as Packard Weatherpack or Packard Metripack unless otherwise specified

d) Spreader Connector
i) Four-pole Cole-Hersee #1206 connector with spring loaded cover
ii) Mounting, on a plate common with hydraulic hose quick disconnects for spreader
iii) Wiring, post - GD goes to ground, post - LT goes to the emergency light switch on the cab console, and post - BK goes to body up disable function
iv) Connector wiring, single piece “SO” type molded jacket cable

7. Control Components
a) Cab Control Console
i) One console approximately 14” long by 4.5” wide, appropriate size for all controls, switches, and interior circuity
ii) Mounted on brackets attached to floor beside operator’s seat near the bottom seat cushion level for ease of operation
iii) Directional orientation, straight forward with automatic transmission, angled as required to clear manual gear shift lever
iv) Gasketed for oil tight and dustproof environment
v) Design, similar to consoles currently in use by County, but incorporated the following components
vi) See drawing “Control Console” for general layout
vii) Connector at cab control console, placed for easy replacement of console

b) Joystick control
i) Positioned on the console, at front edge
ii) Four-way pistol grip type joystick actuator controls all hydraulic functions, in two modes, as follows:
iii) Plow Mode:
   - Forward = Plow Down
   - Back = Plow Up
   - Lift = Plow Left
   - Right = Plow Right
   iv) Dump Mode:
   - Forward = Body Down
   - Back = Body Up
   - Left = Tarp Cover
   - Right = Tarp Uncover
v) Thumb button near the top controls conveyor blast
vi) Trigger switch must be depressed for any function to activate

c) Dial controls and indicators
i) Positioned on the console, immediately behind the joystick, in two rows
ii) Spinner and conveyor control dials, eleven position (0 through 10), detented, modular units, defective parts can easily be replaced as needed with standard mechanics tools
iii) First row, spinner control dial on street side, conveyor control dial on curb side, Spreader On (green) indicator light between the two dials
iv) Second row, Body Elevated (red) indicator light on street side, Replace Filter (amber) indicator light in center, Low Oil (red) indicator light on curb side

d) Rocker switch, five (5)
i) Positioned on the console, immediately behind the second row indicator light
ii) Back lit to denote function when parking lights are on, get brighter to denote function is on
iii) Spreader - Auto/Off/Manual selector switch with LED indicator between control dials. Switch is a modular unit, defective parts can easily be replaced as needed with standard mechanics tools
iv) Dump Mode/Plow Mode
v) Master switch - Off/On, energizes PTO and hydraulic system
vi) Emergency Lights switch - Off/On
vii) Spreader Light switch - Off/On
e) Circuit breakers
i) Positioned on the console, along curb side of rocker switches
ii) Four Circuit Breakers from front to back - 5, 20, 20, and 20 amp.

8. Electronic ground speed spreader control
   a) Electronics, micro-processor based with nonvolatile memory to allow for unanticipated changes in input speed signals and to allow output software changes to be made
   b) Capable of manual or ground speed oriented control
   c) Designed for flow control regulation at truck speeds from one MPH to 35 MPH in the ground speed controlled mode
   d) Independent speed control of the spinner and conveyor motors
   e) Speed pulse signals to the spreader control must be supplied through the dedicated VSS tap point described in this section
   f) Connection to the VSS tap point must utilize and mate to a weatherproof connector if located outside the cab

9. Lights
   a) Powered and controlled through chassis circuits
      Snow plow Lights
      (a) The number 9 position on attached drawing is auxiliary snow removal headlights with park/turn lamps
      (b) Clear halogen head lamps only
      (c) Mounting, shock mount adjustable sockets attached to heavy steel support brackets
      (d) Support brackets, securely mounted in the grill or fender area, minimum height to center of sealed beam is 66" above road surface
      (e) If fender mounted, lights must be mounted far enough forward to allow aiming with mechanical headlight aimer
      (f) Final location subject to the County approval
      (g) Headlights must be controlled from the dash mounted selector switch described in this section
   b) Power and controlled through Cab control Console
      Spreader Light
      (a) Sealed, shock resistant, grommet mounted, incandescent with clear lens, Truck-lite 40204 or equal
      (b) Location, under the street side rear corner of the body, facing down
      (c) Controlled from a control console mounted switch with On/Off, maintained action, includes light to indicate function on
      Strobe light
      (a) Reference: Target Tech 851 or equal
      (b) Strobe light (number 8 position on attached drawing) mounted on a self-leveling bracket
      (c) Bracket, attached to body with two, grade five, non-rusting bolts and self-locking nylon nuts
      (d) Bottom light mounted plate, must be as large in dimension as the diameter of the light
      (e) Location of mounting, center on top or front leading edge of cab shield
      (f) Light to be wired to emergency light switch in control console

10. Start-Up and Testing
    The Contractor shall be responsible for initial pre-testing of hydraulic system to include the following:
    a) Initial fill of hydraulic system complete
    b) Hydraulic system of each truck is to be operated for a period of not less than 15 minutes to purge system of foreign matter. At end of period, a new filter element is to be installed
    c) Any leaks or defective components shall be corrected prior to delivery to the County
    d) Vendor will be responsible for initial test operation of spreader, Plow or auxiliary tools on completed truck units to determine if all systems are functioning properly. Additionally, the hydraulic system should be road or dyno tested in the automatic mode with the spinner console control a "0" position and
7 GPM with control at position 10. The conveyor circuit should produce 0 GPM with conveyor console control at "0" position and 15 GPM with control at position 10.

11. Accessory Components
   a) Forward mud shields, both side
      i) Constructed of 10 gauge steel with adequate bracing
      ii) Located ahead of the forward rear axle
      iii) Mounted to chassis in near vertical position
      iv) Approximate size, 24" wide and 30" long, similar to mud shield in current use by County
      v) Shields not to extend beyond outside edge of body
   b) Rear mud flaps, both sides:
      i) Plain black rubber with no logos
      ii) Mounting bracket, 10 gauge steel, includes one hook per flap to hold flap off the tire
      iii) Approximate size 24" wide and 36" long, equivalent to mud flap in current use by the County. Mount with 10" road clearance
   c) Tailgate Operation:
      i) Latch cylinder, air operated, retract to latch type, 2.5" bore diameter, 6" stroke
      ii) Valve exhaust vents outside cab
      iii) Approximate size, 36" wide, 18" high, 18" deep
      iv) Constructed of 14 gauge steel
      v) Continuous hinge on door and "T" handle latch
      vi) Specific location, size and mounting arrangement to be determined per truck model and space available
   d) Tow Hitch:
      i) Mounting bracket includes a structurally adequate mounting plate with diagonal bracing, welded to chassis frame rails to form a rear crossmember. All components and welding comply with hitch rating and SAE J849B
      ii) Pintle hook, Wallace Forge R-45-4 or equal, without air and plunger, bolted to mounting plate
      iii) Pintle hook location, height at center approximately 27" from ground, position so dump body apron will not strike it when body is raised
      iv) Safety chain hooks, one on each side of pintle hook, U shaped, ¼" rod with 2 ½" throat
      v) Hitch to accommodate paving machine hopper
   e) Cab shield:
      i) Full body width, similar to cab shield in current use by the County
      ii) Steel, 45,000 PSI yield strength, 10 gauge, high tensile
      iii) Extension, 18" forward of bulkhead
      iv) Cab clearance, approximately 3"
      v) Exhaust clearance, 2"
   f) Load Cover System
      Reference: Godwin Manufacturing HYDRA-TARP. All components are to be easily replaced or repaired with common mechanics tools
   g) Arms
      i) Dual side arms and crossbar constructed of 1 ¼" schedule 40 pipe
      ii) Side arm crossbar connector, constructed of 1" schedule 80 pipe and attached to crossbar by cotter pins
      iii) Side mount arms, crossbar, and connector are mandrel bent and arched to provide more clearance for loading of body
      iv) Mounted system does not extend more than 3" on either side of body
      v) All pivot points have 1" diameter pins and with 1 ¼" long bearing area and zerk type grease fittings
   h) Hydraulic
      i) Arms are operated by a single or dual hydraulic cylinder(s) mounted in such a manner that they cannot be damaged by loading operations
      ii) Load cover operates as an independent function, capable of being locked at any position in the range of movement
      iii) Tarp cylinder(s) have pilot operated check valve(s) and adjustable flow control valve to adjust speed and lock tarp when covered
      iv) Hydraulic power is taken from the central hydraulic system (no electric pump)
   i) Drum Cover
      i) Drum assembly, no less than 4" diameter with enclosed spring to maintain constant tension on tarp cover
      ii) Drum bearings, sealed, permanently lubricated type
(iii) Cover material, black, 18 oz. asphalt rated vinyl, with finished width of 84”
(iv) All edges doubled, 2”, complete length and width of cover
(v) All seams, double stitched (sewn twice)
(vi) Front of cover has 4, #2 spur eyelets equally spaced for attaching to roller bar.
(vii) Sides of cover have a #4 pocket for installation of crossbar.
(viii) Cover is long enough to fully cover body with two rounds of cover material remaining on the roller bar and/or 3’ longer than length of body.

12. Sideboards
a) Red oak, 6” high, thickness adequate to fill cuff at each end of body.
b) Secured with lag bolts at cuff.

13. Body Safety Steps
a) Full length of body, both sides.
b) Minimum 1” clearance from side of body, allows loose material to fall through.
c) Step material, similar to Bustin Part Number 624.

14. Access Ladders
a) One on curb side and one on street side of the body, forward of the rear wheels. 
   Exact location to be determined during construction.
b) Retractable type, two rung, approximate width 14.5” and length 28”
c) Constructed of heavy gauge steel with slip proof treads.
d) Reference brands, Automatic Truck Door, Inc., E-Z Step, or approved equal.

15. Grab Handles
a) Tow on each side of body, mounted vertically, one on each side of access ladder.
   Exact size and placement to be determined during construction.
b) Constructed of 5/8” cold rolled steel rod.
c) Extend from middle of dump body top rail to just above the safety step, 2” from body at closest point.

**PAINT SPECIFICATIONS**

The following specification requirements are meant to describe performance characteristics for metal preparation and finish paint of the dump body and all ancillary parts to include front bumper attachment, hoist frame, reservoir, rear hitch plate, splash guards, mud flap brackets, and any other part that is manufactured and installed by the final stage manufacturer.

Although there are two primary forms of application (liquid and powder) the intent is to have a durable long lasting finish for a snow removal/salt air environment.

1. All oil grease, dirt, etc. to be removed chemically or by whatever means necessary to offer a clean surface for blast preparation.
2. All dump body surfaces (top, underneath, and outside perimeter) to be abraded by sandblasting or shot blasting to remove all surface rust and mill scale/slag so an SP-10 finish is obtained.
3. Any blast media residue shall be removed before painting.
4. A zinc rich epoxy primer shall be used that is certified for a minimum of 3000 hours in a 5% salt spray test.
5. A black top coat gloss shall be applied and have a gloss rating of 80% or higher.
6. The finish paint shall be certified for 1000 hours in a 5% salt spray test.
7. The underneath of the dump bed shall have paintable rubberized undercoating applied that is certified for 800 hours in a 5% salt spray test.

**SNOWPLOW SPECIFICATIONS**

1. Flow: Good Roads model 120M Snowplow 10’ X 36”
2. Moldboard: The moldboard shall be formed using 10 gauge hot rolled stall and shall have a minimum of eight (8) vertical, ½” X 3” ribs with two (2) ribs at the center hinge point and two (2) rows of 3/8” X 2” horizontal ribs, running the entire length of the moldboard. The top of the moldboard shall be channel formed and the bottom shall have a back up angle of not less than 3 ½” X 3 ½” X ½” gusset angle. The sheet shall extend downward, below the holes for the cutting edge. The moldboard shall be equipped with build-in snowshied of 10 gauge steel. The height of the moldboard shall be 36” with approximately 10” of overhang.
3. Cutting Edge:
   a. Blades:
i. The blade shall be flat, hot-rolled finished stall; with the range of SAE 1020 to SAE 1040

ii. The holes shall be 11/16" square, counter bored to receive 5/8" diameter plow bolts.

iii. The groove for the carbide inserts shall be milled in the center of the blade edge.

iv. The center of the holes shall be in line within 1/32" of the established centerline.

b. Tungsten Carbide Inserts:
   i. The inserts shall be a high shock WC grade of tungsten carbide with a 12.5 to 10 percent cobalt content.
      - Density: 14.1 minimum to 14.6 maximum grams per cubic centimeter.
      - Hardness: 87.5 minimum to 89.0 maximum Rockwell "A" Scale.
      - Transverse Rupture Strength: 250,000 minimum per square inch.
      - Porosity: (Base on testing in accordance with ASTM designation B-276-79) A06 / B00 / C00
   ii. The inserts shall be trapezoid design of the following dimension:
      - Height: 0.685" (Long Side)
      - Width: 0.365" +/- .0010"

4. Semi-circle: The semi-circle angle shall be rolled from 3 1/2" X 1/2" angle, with a front angle of 3 3/4" X 3 1/2" X 1/2", running a minimum length of 116", long the rear of the moldboard. The semi-circle shall be attached to the moldboard at five (5) points with the outside hinge points measuring a minimum of 116".

5. Trip Spring: A fully automatic trip device shall be mounted on the semi circle assembly with heavy duty trunion plates, with eight (8) 5/8" hardened bolts, (grade 5). Trunion support sockets shall be equipped with Alemite grease fittings. The trip device shall consist of two (2) full enclosed trip springs, with a minimum of 5/8" diameter, contained in a 6" OD, minimum 10 gauge tubular housing and shall be connected to the moldboard by a 7/8" diameter, grade 5 bolt. Recoil springs shall also be provided on the spring rod to cushion the return action of the moldboard. The trip of the moldboard, when encountering a solid object in the plow path, shall tilt forward and return automatically to the plow position after passing over the object.

6. Pushframe: Pushframe side drive members shall be constructed of 3/8" formed steel channels and connected by means of an equalizer bar at the end. Drive bar cars shall be a minimum of 1 1/4" thick, 21" apart (on centers), with holes drilled to accommodate 1 1/4" drive pins. Drive Pins shall be 1 1/4" with pointed ends, and fabricated of heat treated, hardened steel. Drive pins shall be 6" long to the front of the rivet head and will have a hole provide, at 4 1/2" from the flat side of the rivet head, for a 1/4" cotter pin. The pin locking mechanism shall be provided to hold the snowplow in the set position with a 3/8" lock pin. The length of the pushframe, from the moldboard attaching point shall be 36" and shall allow sufficient bumper clearance, at 35 degrees, left or right. Plowing widths shall consist of the following:
   
   | Degree | 10'0" | 11'0" | 12'0"
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7. Power Reversing Mechanism/Locking Tooth: the hydraulic mechanism shall consist of two (2) single acting cylinders with a rod diameter of minimum 2 3/4" and connected with the pushframe and semi-circle for plowing either to the right, or left hand side. The horizontal leg of the semi-circle shall be equipped with 11 teeth to allow the snowplow to be locked in the plowing position from 0 degrees to 35 degrees, (at 7 degree increments), in either direction, with no strain on the hydraulic cylinders. This shall be accomplished with the use of a self-locking block on the pushframe of the plow. Power reversing shall be accomplished by actuating either the right or left hand hydraulic cylinder, which, after the pressure is released from the cylinder, will automatically lock in the locking teeth and release pressure from the reversing cylinders.

8. Adjustable Swivel Caster Wheels: The semi-circle shall be equipped with two (2) heavy-duty, full-swiveling, spring loaded, adjustable self-locking caster assemblies, having steel housing with grease fitting. There shall be one (1) fitting for the caster stem. Wheel assemblies shall be mounted inside the semi-
circle assembly. The wheels shall be 8" in diameter, 2 ¼" wide, with hardened crown face, and will ride on roller bearings. These wheels shall be mounted on heavy-duty steel axles of not less than 1 3/16" diameter.

9. **Curb Bumpers:** These protect the plow from damage when coming in contact with curbs. The curb bumpers shall be of high-wearing carbon steel bolted to the front of the plow with 5/8" hardened, grade 5 bolts.

10. **Moldboard End Markers:** These shall be heavy-duty flexible markers. They shall extend 28" and shall be of high visibility orange. They are to remain flexible at low temperatures.

11. **Carbide Edge:** ¼" x 6" carbide edge in 3ft, 4ft, or 5ft sections mounted beneath a ½" x 6" high carbon standard highway cover blade

12. **Rubber Snow Shield:** ½" x 12" rubbers snow shield mounted with 9 ¼" x 2" cover strip (metal)

**GENERAL REQUIREMENTS**
The equipment bid must be a vehicle in current production available for inspection by the County.

Vehicles shall be delivered with temporary tags and Virginia state safety inspection at no additional cost to the County.

**DOCUMENTATION TO BE PROVIDED**
The Vendor shall provide a certificate of origin, Virginia Department of Motor Vehicles Form VSA 17a, a mileage statement, and other pertinent documents at time of delivery of the unit. The documents shall list the owner as:

County Board of Arlington County, Virginia
2701 South Taylor Street
Arlington, VA 22206

Delivered unit shall be complete in all aspects and ready for immediate use. Any discrepancies noted at the time of delivery will be repaired by the contractor at no cost to the county.

**REORDERS**
The County may require additional unit(s) within twelve months of the purchase of the first unit. The bid form of this solicitation includes a space for the bidder to insert the number of months after the date of award for which the original bid price(s) will remain firm for reorders. The County reserves the right to exercise the reorder option or issue a new bid, whichever it deems in its best interest at the time of need. The reorder information offered by a bidder will not be considered in the award evaluation; however, if a firm price period for reorders is offered, the firm price provision will become a part of the award. If a firm price period is not specified by a bidder, the firm price period shall be ninety (90) days from the bid opening or until the date of placing the original order, whichever event occurs first.

Delivery shall be FOB at the Arlington County Equipment Division, 2701 S. Taylor Street, Arlington, Virginia, 22206.

**PRICING ON ADDITIONAL BUY-ON**
Initial purchase(s) will be made at the Base Unit Price provided on the Bid Form for the duration of the initial current year or the expiration of the initial Contract Term, whichever occurs first.

The Contract unit price(s) for each ensuing Contract year, if the County elects to extend the Contract, shall be negotiated by the County and the Contractor. Increases in the price(s) for ensuing years shall not exceed the percentage of change in the U.S. Department of Labor, Consumer Price Index, All Items, Unadjusted, Urban Areas (CPI-U) for the twelve (12) month period ending in JANUARY of each Contract Year.
If the Contractor and the County do not agree on a price using the procedure set forth above by the thirtieth (30th) day prior to the end of the initial Contract Term or the end of ensuing renewal term or terms, the County will terminate the Contract whether or not the County has previously elected to extend the term.

In addition, if there are cost increases due to EPA or DOT mandated changes, such costs may be added to the Base Unit Price. The Contractor shall provide documentation justifying any such increases.

The Contract unit price(s) changed as a result of the above procedures shall become effective on the anniversary date of the Contract and shall be binding on the Contractor for the ensuing renewal term or terms.

Any subsequent years will be priced in this same manner.

**County's Option To Reject All Bids**

Bidders are advised that the County may reject all bids received if, after the bid opening, an award of another governmental entity for the same or similar equipment has more favorable pricing and is available for use by the County.