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**CITY OF NORTH LAS VEGAS
INVITATION TO BID NO. B-1268
2007 AIRLESS TRUCK MOUNTED STRIPING MACHINE**

Bids will be received in the Office of the City Clerk, 2200 Civic Center Drive, North Las Vegas, Nevada, 89030 until 2:00 p.m. on **Tuesday, January 9, 2007** and will be publicly opened and read shortly thereafter in the Office of the Purchasing Manager at the previous address in City Hall.

Bid documents can be picked up in the Purchasing & Risk Management Office, Monday through Thursday, 8:00 a.m. - 4:00 p.m. at the address above. Bids may also be accessed at www.cityofnorthlasvegas.com under the Purchasing web page, or at www.rfpdepot.com.

The City reserves the right to reject any and all bids, waive any informality or technicality or to otherwise accept bids deemed in the best interest of the City.

Renee' Swanson
Buyer

Published Review Journal
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INSTRUCTIONS TO BIDDERS

1. PROJECT SPECIFICATIONS:

The Bidder/Contractor shall not take advantage of any apparent error or omission in the Plans or Specifications. In the event the Contractor discovers such an error or omission, he shall immediately notify the Purchasing Manager. The Purchasing Manager will then make such corrections and interpretations as may be deemed necessary for fulfilling the intent of the Specifications and Plans.

2. EXPLANATION TO BIDDERS:

Any explanations desired by Bidders regarding the meaning or interpretation of specifications must be requested in writing and with sufficient time allowed for a reply to reach them before submission of their bids. Oral explanations given before the award of the contract will not be binding. Any written interpretation made will be furnished to all BIDDERS and its receipt by the BIDDER will be acknowledged.

Interpretation of the meaning of the plans, specifications or other pre-bid documents will not be binding if presented to any BIDDER orally. Every request for such interpretation should be in writing addressed to Rick Trimble, Manager of Fleet Operations, 100 E. Brooks, North Las Vegas, NV 89030, telephone number (702) 633-2237. Any and all such interpretations and any supplemental instructions deemed necessary will be in the form of written addenda to the specifications which, if issued, will be mailed to all known perspective BIDDERS. Failure of any BIDDER to receive any such addendum or interpretation shall not relieve such BIDDER from any obligation under this bid as submitted. All addenda so issued shall become part of the Contract Documents.

3. BIDDER'S UNDERSTANDING:

At the time of the opening of bids, each Bidder will be required to have considered all pertinent licensing, laws and regulations, and to have read and to be thoroughly familiar with the Bidding Documents (including all addenda). The failure or omission of any BIDDER to examine any form, instrument or document shall in no way relieve any BIDDER from any obligation in respect of his bid.

It is further agreed that the lump sum prices may be increased to cover additional work ordered but not shown on the Bidding Documents. Similarly, they may be decreased to cover deletion of work so ordered.

4. PREPARATION OF BIDS:

Bids must be prepared on the bid forms provided herein. Bidders may request withdrawal of a posted sealed bid prior to the bid opening time provided the request is made to the City Clerk's Office. No bid may be withdrawn for a period of sixty days after the bid opening.

5. **LICENSES:**

All BIDDERS must have appropriate licenses in accordance with the laws of the State of Nevada, prior to submission of bids for this project. All bids received in violation of this law shall be rejected and returned to the BIDDER.

6. **SUBMISSION OF BIDS:**

Bid proposals may be submitted as follows:

A. When possible, each proposal must be submitted in a sealed envelope of adequate size, show the BIDDER'S name and address and be marked "Bid Proposal", with the name of the proposal, to clearly indicate its contents.

B. When sent by mail, the sealed proposal must be addressed to the City Clerk, City of North Las Vegas, 2200 Civic Center Drive, North Las Vegas, Nevada 89030 in whose Office the bids are to be received.

C. All proposals shall be filled prior to the time and at the place specified in the "Invitation to Bid". Proposals received after the time for opening of bids will be returned To the BIDDER unopened.

7. **PUBLIC OPENING:**

Proposals will be opened and read publicly at the time and place indicated in the "Invitation to Bid". The BIDDERS, their authorized agents and public are invited to be present.

No responsibility will attach to any OWNER official for the pre-opening of, or the failure to open, a bid not properly addressed or identified.

8. **PRE QUALIFICATION OF BIDDERS:**

The low BIDDER may be required to file prior to award of contract, an experience questionnaire and confidential financial statement which must be a complete report of the financial resources and liabilities, equipment, past record, personnel or organization and experience.

9. **CONSIDERATION OF BIDS:**

After the bids are opened and read, they will be compared on the basis of the summation of the products of the approximate quantities shown in the bid schedule. The results of such comparisons will be made available to the public as soon as feasible. In the event of a discrepancy between the written price and figures, the written price shall govern. The right is reserved to reject any or all proposals, to waive technicalities, to advertise for new proposals, or to proceed to do the work otherwise, if in the judgment of the OWNER the best interest of the City will be promoted.

10. **AWARD OF CONTRACT:**

The award of contract, if it be awarded, will be to the lowest responsive and responsible BIDDER whose proposal complies with all the requirements prescribed. The award, if made, will be within sixty (60) days after opening proposals. The successful BIDDER will be notified, by letter mailed to the address shown on his offer, that his bid has been accepted.

The Purchasing Manager will issue a Purchase Order which will authorize the successful BIDDER to furnish, deliver, install and invoice for items specified in this bid. Once vendor receives the Purchase Order, confirmation of such Purchase Order shall be given to the purchasing department via e-mail or fax.

The City reserves the right to award the contract as, complete or any part thereof, including any bid item, additive alternate, additive item, separate bid schedule, or reduce the unit quantity for any bid item, prior to award.

A responsive bid must conform in all respects to the conditions of the "Invitation to Bid" and to the "Instructions to BIDDERS". To be considered responsible, a BIDDER must establish, to the satisfaction of the OWNER, as a minimum, that he has (a) adequate financial resources to meet his contract obligations and will maintain same for the Contract period; (b) adequate equipment to perform the work properly and within the time prescribed in the Contract, and (c) satisfactory past performance and the necessary experience and technical qualifications in the type of work provided in the Plans and Specifications.

The LOWEST BID is the bid submitted with the lowest summation of ALL bid schedules, additive alternates, and deductions.

11. **EQUAL EMPLOYMENT OPPORTUNITY:**

Attention of BIDDERS is particularly called to the requirement for insuring that employees and applicants for employment are not discriminated against because of their race, color, creed or national origin.

12. **PROVISIONS PROVIDED BY LAW DEEMED INSERTED:**

Each and every provision and clause required by law to be inserted in the contract shall be read and enforced as though it were included herein, and if through mistake or otherwise any such provision is not inserted, or is not correctly inserted, then upon the application of either party the contract forthwith shall be physically amended to make such insertion or correction.

The BIDDER'S attention is directed to the fact that all applicable City, County, State and Federal laws, and the rules and regulations of all authorities having jurisdiction over the project shall apply to the contract throughout and they will be deemed to be included in the contract the same as though herein written out in full.

13. **CANCELLATION OF CONTRACT:**

The OWNER reserves the right to cancel the award or execution of any contract at any time before the Purchase Order has been issued without any liability or claims thereof against the OWNER.

14. **METHOD OF AWARD**

Award will be made to the lowest responsive and responsible Bidder.

15. **DELIVERY REQUIREMENTS - F.O.B. DESTINATION POINT**

All prices shall be F.O.B. 100 E. Brooks, North Las Vegas, NV 89030. All prices shall include storage, delivery and unloading.

16. **NOTICE OF AWARD**

Award of contracts will be by "Purchase Order" which together with the signed Bid Proposal will be used as the Contract document.

17. **WORKMEN'S COMPENSATION INSURANCE:**

This section not used.

18. **ASSIGNMENT:**

It is agreed that the successful bidder will not assign, transfer, convey or otherwise dispose of the contract without permission of the City.

19. **TAXES:**

The City is exempt from State retail and Federal Excise Tax. The bid price must be net, exclusive of taxes.

20. **INDEMNITY:**

The successful bidder agrees to defend, indemnify, and hold the City harmless from any and all causes of action or claims arising out of or related to the bidder's performance on this project.

21. **EXCEPTIONS:**

Each BIDDER will list on a separate sheet of paper any exceptions to specifications and attach it to their bid.

22. **WARRANTY:**

As required on page TS-22.

23. **DELIVERY REQUIREMENTS - NOTICE OF DELIVERY**

Owner shall be given monthly updates on the status of production and delivery dates via e-mail or written response. Communication must be made with the Fleet Manager five (5) calendar days prior to delivery notify Rick Trimble, Manager of Fleet Operations at telephone number (702) 633-2237.

Delivery time frame shall be within 100 days after receipt of order to 100 E. Brooks, North Las Vegas, NV 89030.

24. **NEW EQUIPMENT**

The Bidder shall guarantee that the units submitted shall be new and the latest and most improved model of current productions, and shall be of first quality as to workmanship and materials used in said units. All notifications shall be made at the factory.

New equipment is defined as equipment that is made up completely of unused genuine original parts. Equipment shall not have been operated for any purpose other than routine operational testing. Demonstrator equipment does not meet this definition and is not acceptable.

25. **MANUALS AND REPAIR PARTS LIST**

At the time of delivery it will be necessary to furnish manuals and repair parts lists as required on page TS-22.

26. **ADDITIONAL VEHICLES**

The City reserves the right to purchase additional vehicles in accordance with Nevada Revised Statute 332.

27. **TERM:**

The initial contract term will be from the date of award through the 2007 model production year. Thereafter, the supplier can provide vehicles in model year 2008 and 2009 without additional competition.

28. **ESCALATION:**

Prices may be increased by not more than 3.5% in each subsequent model production year.

BID B-1261 City of North Las Vegas
2007 AIRLESS TRUCK MOUNTED STRIPING MACHINE SPECIFICATIONS

1. GENERAL

- 1.1. The specifications submitted herewith are intended to describe and define the minimum requirements of a self-contained, self-propelled truck mounted striping machine ("The Unit"). The Unit shall be capable of applying lines of varied widths from 3" to 6" with the spaces between the lines variable from 0" to 6".
- 1.2. The Unit will be equipped with two (2) paint colors on board and shall be capable of applying all types of traffic paints (except premix) at application speeds up to 12 mph while applying a minimum of two four inch lines at a 15 wet mil thickness.
- 1.3. The Unit shall be designed such that it operates in its own lane of traffic and can apply centerline and laneline/edgeline simultaneously. Independent carriage steering systems shall allow adjustment of the striping gun carriages. The Unit shall be capable of over the road speeds up to 60 mph minimum. Overall height not to exceed 12' in both the operational and storage mode.

2. CHASSIS

- 2.1. The truck chassis shall be a diesel powered C.O.E. (cab over engine) vehicle with the following minimum specifications. (Chevy T-Series or Equal)
- 2.2. GVWR 37,600 lbs. (14,600 front and 23,000 rear) minimum
- 2.3. Wheelbase 170"
- 2.4. Frame To be capable of supporting all components specified.
- 2.5. Brakes Air brakes with anti-lock system, heated air dryer.
- 2.6. Engine Diesel powered engine w/diesel electronic fuel injection and engine management system, capable of producing 230 gross horsepower minimum.
- 2.7. Fuel Supply 50 gallon minimum capacity, driver's side.
- 2.8. Engine Air Intake Dry element, heavy duty. Dash mounted restriction indicator.
- 2.9. Alternator 130 AMP minimum
- 2.10. Battery (2) 12 volt batteries, maintenance free, 1,500 CCA minimum.

- 2.11. Transmission Automatic transmission, electronically controlled, fully compatible with engine control system. (Allison or equal)
- 2.12. Shock Absorbers Front shock absorber
- 2.13. Tires Steel belted radials sized to match GVWR and GAWR ratings
- 2.14. Cab Fully enclosed tilt type custom cab with individual driver's seat (mid-height, air-ride, adjustable lumbar), passenger seat, left and right sun visors, air horn, two-speed intermittent windshield wipers and washers, seat belts, air conditioning, heater, engine tachometer and hour meter, right and left rearview to be 7" x 16" (minimum) electric motorized mirrors, tinted safety glass windows, rear window, AM/FM stereo.
- 2.15. Electrical and Lights Headlights, emergency flasher light, complete with cab clearance lights, and all other standard lighting equipment. A low speed cruise control system shall be capable of maintaining speeds down to 5 mph.

3. PLATFORM

- 3.1. The unit shall be equipped with a heavy-duty channel steel platform to accommodate all line marking components. The construction of the equipment platform shall consist of 8" risers, 4" structural channel long sills, 3" structural channel cross members at 16" to 24" centers and 3/16" minimum non-skid steel floor plate deck with an integral formed rub rail. The platform shall measure 84" in front of the operator's cab to allow adequate visibility of the carriages from the operator's sitting position, and either 84" or 96" forward of the carriages.
- 3.2. The platform shall be secured to the truck frame by a minimum of two (2) heavy-duty grade 8 bolts per riser with four or five risers on each side of the platform. The risers are to be 8" to give proper clearance for installation of plumbing and control lines and to facilitate ease in maintenance, breakdown and cleaning.
- 3.3. The platform shall further be equipped with four recessed corner clearance lights and three recessed rear lights in the middle of the platform and all necessary reflectors as required by law.
- 3.4. A welded railing of 1½" steel tubing minimum shall be placed around open portions of the platform. All railings shall be welded to the platform for stability and shall have a mid rail.

- 3.5. A minimum of one 1½” square tube minimum, fold up type ladder shall be installed on the unit to provide convenient access to the equipment on the platform. A finger pull latch will store the ladders in a flush position with the railing when not in use. (Chain type ladder storage will not be acceptable.) Chrome handrails shall be bolted to the platform safety railing vertically on each side of ladder entrance areas for safety. These handrails shall extend at least ¾ of the height of the safety railing.
- 3.6. Removable aluminum fenders shall be installed with aluminum guard to the front, and mud flap with anti-sail bracket to the rear.
- 3.7. The rear bumper shall be constructed of heavy-duty channel steel with structural steel channel supports. Supports shall be affixed to the chassis frame. Bumper shall be installed a minimum of 18” from the road surface. Steps shall be an integral part of the rear bumper to allow staircase style access from rear of the unit to the operator’s stations.
- 3.8. The rear bumper shall be equipped with all required safety reflectors.

4. OPERATOR’S ENCLOSURE

- 4.1. The Unit shall be equipped with an operator’s enclosure on the rear of the platform measuring approximately 102” wide x 60” deep x 74” high. Support posts shall be kept to a minimum to provide maximum visibility for the operator and still allow adequate support for the enclosure. The enclosure shall be mounted directly to the chassis frame rails to maintain a low overall profile. Angled front corners with full view windows shall be provided for maximize operator visibility.
- 4.2. The enclosure corner posts and structural frame shall be constructed of heavy-duty steel tubing. The front corners of the operators cab shall be angled to provide maximum visibility of the gun carriages while seated in the operator’s seat, a minimum of 80% of these angled front panels shall be tinted safety glass. The windows behind each operator shall be slider type to allow for ventilation.
- 4.3. The operator’s enclosure shall be covered with 10 gauge minimum steel sheeting and shall be electrically welded at all joints. One-inch insulation with black perforated vinyl covering shall be installed on interior cab walls. A floor mat shall also be provided.
- 4.4. Access and egress shall be from the rear, unit shall be equipped with stairs and hand holds to facilitate a three-point stance. The access stairs shall be an integral part of the rear bumper and shall have a non-slip surface.
- 4.5. Two air-ride Bostrom seat assemblies shall be mounted, one on the left and one on the right side of the enclosure. Each seat assembly shall be equipped with seat belt, armrests, and full backrest.

- 4.6. Heat and air conditioning unit shall be installed. 45,000 BTU of heating and 25,000 BTU of cooling shall be provided with 355 cfm air flow. (Red Dot R-9757 rooftop or equal).
- 4.7. Air, electrical, and heating control panels and all controls required for operation of the guns and carriages shall be accessible by the operator while seated.

5. GUIDE ASSEMBLY

- 5.1. The Unit shall be equipped with a front mounted, laterally adjustable pointer guide assembly approximately 6' to 10' long. The guide shall be of tubular steel construction, telescoping and mounted on a 4.10 x 3.50-4 pneumatic wheel and equipped with a caster mounting and rigidly reinforced to prevent vibration.
- 5.2. The guide shall collapse into a convenient transport position and shall not obstruct the chassis driver. The guide assembly shall be so designed that it can be located outboard left side to guide from the centerline or outboard right side to guide from the edge line. The line guide shall not require any tools to 1. Change its position from side to side (edge or centerline), 2. To extend or retract its length.
- 5.3. The guide assembly shall be equipped with a pneumatic power lift to raise the guide from the pavement to transport position. The control switch shall be mounted in the chassis cab.

6. LASER GUIDANCE SYSTEM

- 6.1. A laser guidance system shall be provided. The housing shall be securely mounted to the front of the chassis cab, centered above the mechanical line guide bracket, just below the front windshield. A laser beam shall produce a visual spot (green in color) on the road edge, curb, or existing line as a reference point for the gun carriages to follow. Power shall be supplied by the 12 volt vehicle power.
- 6.2. The laser housing shall be approximately 6" in height, 12" in length, 6" wide, and shall weigh approximately 25 lbs.
- 6.3. The laser shall be adjusted using a remote control panel located in the chassis cab. Manual type lasers will not be acceptable.

7. MATERIAL CONTAINERS

- 7.1. There will be two (2) non-pressurized 10-gauge stainless steel paint holding sections supplied with the unit (240 gallon total paint capacity). The tank with divider (or tanks) shall bolt to the truck platform. The tanks will hold a minimum of 120 gallons of yellow paint, and 120 gallons of white paint.
- 7.2. Each paint section shall have a 2" sloped bottom (to outlet) and a 4" splash area.

- 7.3. Each container shall be equipped with a fully removable bolted top, pressure equalization tank vent, and a dipstick for monitoring paint levels in the tank. The removable top shall be sealed around the entire opening with silicone and bolted with 10" maximum spacing per bolt to create an airtight seal.
- 7.4. Each material container shall be equipped with a 12" square inspection port to allow inspection without removal of entire top. The lid shall be an adjustable clamp down style and will maintain an airtight seal when not in use.
- 7.5. Each material container shall be equipped with a hydraulically driven agitator assembly. The agitators shall be equipped with speed adjusting control located at the agitators and on/off control located at the operator's control console.
- 7.6. Material tanks, plumbing, valving, agitator shafts and paddles, and dipsticks shall be constructed of 304 stainless steel minimum.

8. PAINT FILTRATION

- 8.1. At the low pressure transfer/charge pumps material shall pass through a stainless steel canister type strainer with stainless steel screen and 1/8" openings. The strainers shall be equipped with removable reusable screens. Each filter shall have a minimum of 100 sq. inch surface area. Valves shall be provided to isolate each strainer assembly for cleaning. Each strainer will be equipped with a drain port and ball valve to allow for draining of the strainer into a pail or bucket at the onset of strainer cleaning. Strainers will be positioned in such a manner as to facilitate cleaning without material discharge onto any portion of the unit.
- 8.2. A 2" stainless steel Y type strainer shall be installed at the base or inlet of each hp paint pump to prevent dried paint from entering the check balls of the pump. These filter screens shall have the same mesh filtration as the canister style filters.
- 8.3. At the high-pressure outlet port of each high-pressure paint pump, there shall be a high capacity, high-pressure canister type paint filter. These filters shall have pressure ratings of not less than 5,000 PSI.
- 8.4. Each stainless steel high-pressure filter shall have a minimum filtration surface of 18 square inches and reusable stainless steel screen with 40 mesh perforations. Inlet and outlet ports shall be a minimum of 1/2".
- 8.5. The paint filter shall be positioned as close to the paint pump as possible to facilitate quick and easy cleaning.
- 8.6. All filters shall be dedicated to separate paint colors for quick color change.

9. BEAD DISPENSING EQUIPMENT

- 9.1. The Unit shall be equipped with three (3) ASME certified carbon steel pressure bead tanks, two (2) 750 pound capacity and one (1) 1500 pound capacity, carbon steel pressure bead tanks minimum.
- 9.2. The bead tank lids shall have a minimum diameter of 20" and shall be held in place by twelve (12) over the center clamp and screw assemblies with forged steel wing head bolts. The lids shall be hinged and shall have welded handles to open the tanks when needed.
- 9.3. The bead tanks shall each be equipped with a moisture trap, a 100 lb. air pressure vacuum gauge, ASME safety valve and air bleed jet. A full steel skirt shall be provided around the bottom of each tank for flush mounting to the platform. Individual tank pressure is to be regulated from the operator's control panel.
- 9.4. Pressure bead pipe, (hose is not acceptable) with a minimum diameter of 2" ID shall be provided to convey the beads from each bead tank to each bead manifold. Pressure bead hoses from the distribution manifold to the bead guns shall be 1" ID clear poly spring reinforced.
- 9.5. Sight level gauges shall be provided as an integral part of the glass bead tank. They shall be located at $\frac{1}{4}$, $\frac{1}{2}$, and $\frac{3}{4}$ levels vertically on outside of bead tank.
- 9.6. Glass beads will be loaded from a standing position on the platform. Two vacuum type systems (one per tank) with jet pump and muffler shall be permanently installed on the equipment. A 2" suction hose with tube shall be provided (approximately 10' long) to allow the operator to draw beads into the tank from a 2000 lb. Bulk container or from a drum. A bag splitter/strainer to fit in the diameter of the top of a 55 gallon drum will be provided to allow usage with 50 lb. bags.

10. PAINT AND BEAD GUNS

- 10.1. The Unit shall be equipped with Graco high volume, high pressure, automatic, airless striping guns, Model 238-377 or equal.
- 10.2. The airless paint gun fluid housing and packing assembly shall be constructed of 300-grade stainless steel. The outlet seat shall be tungsten carbide to resist abrasion.
- 10.3. The striping guns shall be equipped with reversible tips and shall be interchangeable without the use of tools for various spray patterns and flow rates.
- 10.4. The Graco model 238-338 bead guns or equal shall be capable of being operated independently of or simultaneously with the associated striping guns.

- 10.5. The bead guns shall be fully adjustable for the desired application ratio of pounds of beads per gallon of paint.
- 10.6. Each gun shall be controlled electrically by individual electro-air valves with ¼” air ports (minimum). They shall be mounted in a block/manifold style and mounted on the frame of the carriage. A manual override shall be provided for each solenoid at each gun carriage to allow activation of each individual paint and bead gun from the carriage location.

11. PAINT AND BEAD GUN CARRIAGES

- 11.1. The paint and bead gun carriages shall be mounted on each side of the vehicle in front of the rear axle of the truck. The carriages will be positioned in such a manner that the operators will have a clear view of the painted markings being duplicated from above and behind the carriages. The plumbing on the carriage must be routed so as not to obstruct the view of the operator.
- 11.2. The left side carriage shall be configured with 3 paint guns, two (2) airless yellow paint guns, one (1) airless white paint gun, and six (6) glass bead guns. The carriage must be supported through the use of road wheels to maintain its relative position from the surface being painted. This carriage gun configuration should be as follows:

Y	Y	W
Bd	Bd	Bd
Bd	Bd	Bd

- 11.3. The right side carriage shall be configured with two (2) airless paint guns and four (4) glass bead guns. This carriage must be capable of applying two white lines. This carriage gun configuration should be as follows:

W	W
Bd	Bd
Bd	Bd

- 11.4. A square tube in tube gun extension attachment will be provided to enable the City to paint a bike lane line with dual drop beads while simultaneously applying the edgeline. This gun bar extension will be equipped with a road wheel with swivel to maintain a consistent line pattern width at the outermost portion of the extension and to eliminate bouncing of the bracket. It will also include a spring coiled type high pressure paint hose extension which will coil around the square tubing and connect the gun to the high pressure paint system of the truck. The #2 white paint gun on the edgeline carriage shall be relocated to the end of this extension while painting bike lanes only. The two bead guns will also be remounted at the end of this extension bar. This feature will allow for a minimum 5’ spacing between the edgeline and the bike lane line.

- 11.5. All rods, brackets, and holders, which require paint and bead gun adjustments to change the line width and spacing shall be zinc plated for durability and overspray clean up. Each paint gun holder shall be equipped with an electric actuator to allow the operator to control the gun height remotely from the operator's station.
- 11.6. The carriages shall be electrically welded and of all-steel construction. Each carriage shall be of parallel scissors type construction and shall be equipped with a pneumatic air cylinder to lift the spray gun carriage off the road surface and to apply down pressure when striping. The lift switch on the operator's control panel or on the gun controller box shall electrically control the pneumatic cylinder.
- 11.7. The carriages shall be equipped with two pneumatic tires to maintain the guns at the same relative position above the pavement at all times. These wheels shall be mounted on separate swivel caster assemblies spaced apart approximately 22" center to center. Each tire shall be approximately 3" wide, allowing space from the inside of one wheel to the inside of the other of approximately 19", enough to avoid raised pavement markers when installed.
- 11.8. The gun carriage shall be supported by dual (two per carriage) tube in tube retractable structural steel slides. Moving portions of the slides shall be supported by UHMW PE bearing material. All bearings or pivots on the carriage slide, where relative motion occurs, shall be fitted with replacement bushings and anti-friction bearings with lubrication fittings.
- 11.9. The carriage slide assembly shall be equipped with a double action, hydraulic cylinder to move the carriage from its transport position to any point in its operating range. When in the transport position, the carriage shall be secured in place by an auto-hold bracket and shall not require chains to support or hold the carriage in place.
- 11.10. Each carriage slide shall be controlled by a power steering system including a conventional steering wheel equipped with a 4-way hydraulic valve located directly in front of the rear operator's position.
- 11.11. A pressure compensated hydraulic piston pump shall supply hydraulic power.
- 11.12. The power steering system shall provide smooth, continuous adjustment of the carriage position without any jerk or hesitation and shall maintain the carriage at any given point within the operational range without the use of a locking device.

12. PAIN T HAND GUN/HOSE REEL

12.1. A white paint hand spray gun with hose reel to include 50' of hose will be installed in a convenient location on the curbside of the platform at the rear of the unit. A hand held spray gun shall be attached to the end of the hose for spray control. (Graco flex gun or equal)

13. LOADING/CHARGE PUMP ASSEMBLY

13.1. The Unit shall be equipped with two (2) air-driven, Teflon diaphragm-operated pumps. (ARO or equal) These pumps will be used to load yellow and white paint from industry standard paint totes with cam-lock type connectors into the platform mounted tanks. They shall also be used while painting to transfer paint from the tanks, through the heat exchangers, and to the hp paint pumps. Each pump shall have a maximum flow rating of 120 GPM.

13.2. The pumps shall have a minimum of 1.5" inlet and outlet port. The pumps shall each be equipped with a 12' section of 1.5" ID loading hose.

13.3. The pumps shall be installed and the appropriate plumbing and valving provided each to allow each to simultaneously fill each paint tank. Plumbing shall be configured to fill each tank through its bottom plumbing without the use of external tank loading hoses.

13.4. The pumps shall be installed and the appropriate plumbing and valving provided to allow flushing of cleaning solution from an external source through the pumps and paint distribution manifolds. A standard water hose connector shall be installed at the inlet of each low pressure pump to introduce water from a garden hose for thorough flushing when required.

13.5. All wetted plumbing on the paint loading system shall be constructed of stainless steel, including pumps, filtration assembly, etc.

14. PAIN T HEATING EQUIPMENT

14.1. A paint heating system shall be provided capable of heating two colors (yellow and white) simultaneously at maximum paint application and striping speed.

14.2. The paint heating system shall insure constant relative viscosity of the materials and maintain temperatures up to 120 degree F.

14.3. The two-stage system shall allow separate, automatic heat control at each exchanger to insure the maintenance of desired paint temperature without overheating paint in the heat exchangers.

- 14.4. The paint heating installation shall consist of three separate four-pass heat exchangers. The water glycol to paint heat exchangers require a heat transfer area of not less than 70 square feet for maximum heat exchange. The water glycol to water glycol heat exchanger will act as a buffer between the auxiliary engine cooling system and the paint system.
- 14.5. Each heat exchanger shall be equipped with its own free flow control valve and solenoid-operated valve to allow heating of the paint only as required to supply sufficient material to the paint guns.
- 14.6. The Unit shall be complete with three thermostats, temperature indicators, hot water hoses and controls. The paint heat exchanger tubes, end bonnets, and paint plumbing shall be constructed of 304 stainless steel.
- 14.7. The heat exchangers thermostats, digital temperature readout, and control devices shall be installed in operator's control console. The control panel shall provide necessary controls for the exchangers and shall indicate when the heating system is turned on and when the paint is at the proper spraying temperature in each exchanger.
- 14.8. All paint lines from the exchangers to the guns shall be foam insulated to retain heat as the paint travels to the gun.

15. PLUMBING AND HOSE LINES

- 15.1. All plumbing lines from the material containers to the strainers shall be ASTM specification 1.5" ID size minimum with unions, crosses, tees used liberally throughout the installation to insure convenient maintenance and cleanout.
- 15.2. All fluid lines from the strainers to the striping guns on the centerline carriage shall be not less than ½" ID solvent resistant type rated at 3000 PSI.
- 15.3. All air control lines to the striping guns and electro-air valves shall be not less than ¼" ID nylon solvent resistant tubing tested to 125 psi or comparable.

16. AIRLESS PAINT PUMPS

- 16.1. The Unit shall be equipped with two (2) high capacity, high-pressure, hydraulically driven airless piston paint pumps. The airless paint pumps shall each have a minimum capacity of 12.9 GPM at discharge pressure of 1,600 psi.
- 16.2. The pumps shall be capable of spraying water-borne (latex), alkyd (conventional solvent based) and chlorinated rubber paints. The pumps shall be capable of spraying paints with standard solids content as well as low VOC, high solid paints.
- 16.3. The pumps piston and sleeve shall be stainless steel and chrome plated for maximum corrosion and abrasion resistance.

- 16.4. The pumps packings shall be Teflon. The pumps throat packings shall be easily field adjustable to compensate for normal wear.
- 16.5. Paint pressure shall be electrically controlled from the operator's station for paint pressures ranging from zero to 1,600-PSI G. The Unit shall be equipped with an electric shut-off valve for each airless paint pump that can be accessed from either rear operator position. Manual type valves not permitted.
- 16.6. An ASME certified stainless steel surge chamber and check valve shall be installed between each paint pump outlet and paint filter.
- 16.7. A paint take-off valve and quick connect fitting will be installed at each high pressure paint gun manifold to allow for connecting a hand spray gun to either the yellow or the white paint system.
- 16.8. All plumbing, piping, hoses shall be protected from chafing where applicable.
- 16.9. A hp bleeder valve and hose shall be plumbed from each high pressure paint pump and routed back to the associated paint tank to re-circulate the paint and relieve pressure in the system prior to cleaning filters.

17. HYDRAULIC SYSTEM GENERAL

- 17.1. A hydraulic reservoir shall be provided large enough to provide adequate cooling (50 gallon minimum).
- 17.2. The reservoir shall be equipped with an internal baffle, sight level/temperature gauge, and vented fill cap. The reservoir shall be situated above the inlet of the hydraulic pump to insure flooded inlet suction to the pumps.
- 17.3. The return port on the reservoir shall be equipped with a 50 gallon per minute, 6-micron absolute hydraulic return filter. The return filter shall be a spin on type with replacement indicator gauge and any necessary valving required for isolation of filter during servicing.
- 17.4. The system shall include oil after cooler with 12 V fan to prevent overheating. A thermostatic fan control shall be installed in the circuit to the hydraulic cooler so that it only runs when a preset temperature of the oil is reached.
- 17.5. All high-pressure hydraulic hose shall be rated at a minimum of 2,000-psi working pressure. A shut-off valve will be installed in the low-pressure plumbing of the hydraulic system to isolate the reservoir and limit fluid loss when maintenance is performed.

18. PRESSURE COMPENSATED PISTON PUMP

18.1. One pressure compensated piston type hydraulic pump shall be provided, along with one gear type pump of adequate size to power the air compressor motor. Both pumps shall be directly mounted to the auxiliary engine. (Belt driven systems not acceptable.)

19. COMPRESSOR / AUXILIARY ENGINE

19.1. The compressor shall be a rotary screw type with a minimum displacement of 85 CFM. (Vanair or equal)

19.2. The compressor shall be equipped with an automatic unloader device and an air receiver. The compressor shall be conveniently mounted on the unit for easy daily maintenance and access and hydraulically driven.

19.3. Compressor shall be powered by an 85 hp @ 2600 rpm engine shall be turbocharged and displace no less than 3.3 liters (Cummins B3.3 or equal). Engine cooling system shall be of sufficient capacity to prevent overheating in any working condition. Engine shall be electric start, obtaining it's battery power from the chassis batteries, and it's fuel from the chassis fuel tank. Engine shall be equipped to monitor the following: 1) Oil pressure. 2) Coolant temperature. 3) Operational hours. It must also be equipped with a high coolant temperature and low oil pressure safety shutdown system. Engine shall be equipped with a sound deadening insulated enclosure and a critical grade muffler, no exceptions. Engine controls shall be accessible from rear operator's station.

20. AIR DISTRIBUTION SYSTEM

20.1. The air system shall be equipped with a 12-gallon air receiver with moisture drain and safety relief valve.

20.2. The main airlines leading from the compressor to the air receiver shall be equipped with reusable fittings.

20.3. All compressed air shall pass through an air filter/moisture separator with auto ejector drain. The filter/moisture separator shall be a minimum 3/4" NPT inlet and equipped with replaceable filter element.

20.4. The air supply is to be conditioned by a finned tube type air cooler followed by a moisture separator and lubricators (one per carriage) prior to gun solenoids. A separate moisture separator shall be installed prior to each glass bead tank.

20.5. An air take-off with threaded plug shall be located at the rear curbside area of the striper platform to accommodate a quick connect fitting.

21. REAR CONTROL CENTER

- 21.1. The Unit shall be equipped with a metal control panel located within reach of the spray control operators. The control panel shall have removable front and hinged access doors.
- 21.2. The control panel shall be equipped with but not limited to separate regulators and gauges for the solenoid control air, bead tank, loading pumps, and carriage down pressure.
- 21.3. Regulators shall be non-corrosive and self-evacuating and equipped with Burial N diaphragms and a locking device.
- 21.4. Each air regulator shall have an associated 0-200 psi liquid filled pressure gauge.
- 21.5. Regulators and gauges shall be of panel mount type.
- 21.6. The faceplate of the operator's control panel shall be a black, anodized aluminum with etched control function labels. Sticker labels will not be acceptable.
- 21.7. An auxiliary light designed for recreational vehicles or similar mobile application shall be installed inside the operator's console to illuminate the electrical connections for servicing. This light shall be switched from inside the console and shall be UL approved and CSA compliant. The housing and clear lens shall be acrylic and the 2-wire construction will be 16 gauge. 12v bulb shall be replaceable.

22. ELECTRICAL SYSTEM

- 22.1. All electrical power circuits for the striping equipment shall originate from the Electrical Power Control Panel located in the lower section of the operator's control console.
- 22.2. Each circuit shall be color-coded wire and shall be protected by resettable type circuit breakers. The Circuit Breaker panel shall be located inside the lower door of the control console.
- 22.3. All junction blocks at the control box, and on the gun carriages shall be protected from the weather and shall follow standardized cable color-coding. Junction blocks are to be UL listed, rated at 40 amps.
- 22.4. The wiring harness between the junction blocks is to be protected by polyethylene corrugated loom wire covering. Shrink tubing shall be used as a protective covering on the wiring from the cart junction box to the air solenoids. Individual ground wires shall be supplied for all electrical components and functions. Chassis grounding is unacceptable.

- 22.5. Cable connectors for the control boxes shall be quick-disconnect plugs and receptacles designed for quick removal. The connections shall be the correct gauge rated to withstand the current needed to operate the guns and control box.
- 22.6. The unit shall be equipped with a strobe light system located toward the front and rear of the platform. Two 360° strobes shall be provided. These lights shall be mounted above the chassis cab on the front corners of the platform. Two 180° shall be mounted on the rear of the unit. Two additional compact strobes shall be installed. They shall be mounted in a visible location, one on each carriage. These strobes will have an integral top deflector to avoid flashing in the operator's eyes while striping. All strobes shall be Whelen brand or equal.
- 22.7. A total of 8 halogen work lights will be provided for night painting. Two lights per gun carriage (one facing forward at the carriage and one facing rearward at the carriage), two illuminating the platform, and two at the paint load pumps. Additionally, a light with red lens will be mounted above each of the operator's seats, and a single light with clear lens will be installed in the middle of the operator's cab ceiling to illuminate the control console.
- 22.8. A "Kill Switch" shall be provided in the chassis cab to shut off all electrical controls for the striping guns.

23. ELECTRONIC SKIPLINE CONTROLLER

- 23.1. Two solid-state electronic timers and microprocessors shall be supplied, one each for left and right side skip operation. (Skipline, Inc. Serial System or approved equal). The boxes shall be mounted off of the wall on each side of the operator's cab in a convenient, yet out of the way position, not to interfere with the operator's line of sight.
- 23.2. The controllers shall be adjustable by the operator while the machine is in motion or standing still. They should be able to time skip patterns for left and right synchronized or independent operation if striping from both sides.
- 23.3. The timers shall be adjustable so that any combination of skip and paint may be obtained from 00.1 to 99.9 feet, adjustable by 0.1 ft. increments.
- 23.4. The timers shall be equipped with an "advance" and "retard" switch, which will advance or retard the cycle in increments of 0.20 of a foot per actuation of the respective switch. This switch shall be located in the remote control operator panels.
- 23.5. A provision to start the cycle with the paint portion of the cycle or with the skip portion shall be selectable.
- 23.6. On command, the timers shall immediately reset to "ready" or "start cycle" position. The reset switch shall be located in the remote control operator panels. There shall also be an off position.

- 23.7. All adjustments must be so that these functional changes can be made readily by the operator while the machine is in motion or stopped.
- 23.8. Timing system shall operate at speeds up to 15 MPH minimum at ambient temperatures from thirty (30) to one-hundred-seventy five (175) degrees F.
- 23.9. The timers shall have a digital display with simple controls and inputs.
- 23.10. All components must be solid state and there shall be no moving parts, except the encoder, and this shall be electrically connected with no mechanical connections.
- 23.11. The system shall provide for individual bead gun time delays to fully cover the paint line with both sizes of glass beads using the dual drop (2 bead guns per line) application method (no exceptions).
- 23.12. The system shall be pulsed from a magnet wrap on the drive shaft.
- 23.13. Timer shall keep a constant cycle for 2 line striping when a skip line switches from one paint gun to the other as the gun switch goes through neutral.
- 23.14. A six (6) digit, digital reset, footage and gallon meter capable of measuring actual feet of line applied per gun and gallons per color applied. These meters shall be integral to the master control center. Footage counters shall accumulate and display upon command the total feet (or meters) painted by each striping gun to the nearest foot.
- 23.15. A handheld thumb control switch shall be provided for control of skip patterns using a manual, automatic, or semi-automatic setting when activated.

24. INTERCOM SYSTEM

- 24.1. An inter-communication system shall be furnished to provide a means of vocal communications between the driver of the vehicle and operator of the striping equipment. (David Clark U3800 or equal)
- 24.2. System shall be a three (3) headset system. Two (2) dual muff headsets shall be provided for the operators of the striping equipment. One (1) single muff headset shall be provided for chassis' driver.

25. MESSAGE BOARD

- 25.1 One single faced 2-line message board shall be provided. The panel will be 30" x 74" minimum. A compact controller will be installed in the truck cab for control of message board. The board will be mounted at the rear of the striper. It shall extend beyond the rear of the operator's station and shall be supported by the operator's cab structure.

26. FIRE EXTINGUISHER

26.1. Two (2) 20 lb. fire extinguishers shall be supplied and mounted on the front and rear positions of the platform. The fire extinguisher shall be ICC approved, ABC type.

27. TOOL BOX

27.1. One (1) toolbox shall be provided and accessible. Toolbox shall be a minimum of 36" wide, 18" deep, and 18" tall.

28. PAINTING

28.1. The Unit shall be prime coated and top coated with a high quality two component automotive system. Powder coating of components is also acceptable. Primary color of equipment and chassis shall be white.

28.2.

29. WARRANTY

29.1. The manufacturer will guarantee all parts against defective material and workmanship for a period of one year after date of delivery and acceptance subject to the terms and conditions in the Manufacturer's Standard Warranty.

29.2. The truck chassis will carry the standard truck manufacturer's warranty with parts and service available from a local dealer.

30. PARTS SERVICE AND MANUALS

30.1. The Unit shall include two complete sets of operator's manuals and repair parts lists. Blueprints, schematics, etc. shall be an integral part of each manual. Separate manuals shall be provided for the chassis and the striping equipment.

30.2. The Unit's manufacturer shall maintain a complete inventory of all replacement parts. A toll free service department telephone # shall be provided.

31. TECHNICAL SERVICE

31.1. Services of a factory technician shall be supplied to the customer for a period of four (4) consecutive days to instruct customer personnel in the operation and maintenance of the unit. Training shall begin immediately following delivery.

32. FACTORY VISITS

32.1. A pre-build meeting will be held at the City prior to construction.

32.2. A progress meeting shall be held at the vendor's facility. Costs including transportation, lodging, and meals for two (2) City employees will be included in the vendor's bid proposal. This meeting will take place at approximately the 85% completion stage.

33. GENERAL

33.1. No one of a kind or prototype machine will be considered. Bidders must list at least five (5) units similar to the above (airless) that have been in service for one (1) year or longer.

34. SHOP DRAWINGS

34.1. A complete set of professional quality blueprint drawings must be submitted with the bid. These drawings will show the deck layout and plumbing design of the striper. Any bid not including these drawings will be rejected. Manufacturer's standard literature for model bid and for major components proposed shall also be submitted.

**BID PROPOSAL:
 BID B-1268
 2007 AIRLESS TRUCK MOUNTED STRIPING MACHINE
 CITY OF NORTH LAS VEGAS**

In response to your Bid invitation and in accordance with the conditions and specifications we agree to furnish 2007 AIRLESS TRUCK MOUNTED STRIPING MACHINE

<u>Item No.</u>	<u>QTY.</u>	<u>DESCRIPTION</u>	<u>UNIT COST</u>	<u>EXTENDED COST</u>
1)	1	2007 AIRLESS TRUCK MOUNTED STRIPING MACHINE	\$ _____	\$ _____

DELIVERY DATE: _____

Signature of Bidder

Legal Name of Firm

Name of Bidder (print or type)

Address of Firm

Phone number of Bidder

City, State, and Zip Code

Fax Number of Bidder

Date

FOR INFORMATIONAL PURPOSES ONLY:

IS THIS FIRM A MINORITY, WOMAN, OR DISADVANTAGED BUSINESS ENTERPRISE?

YES ___ NO ___

IF YES, PLEASE SPECIFY: MBE ___ WBE ___ DBE ___

Has this firm been certified as a minority, women or disadvantaged business enterprise by any government agency?

Yes ___ No ___

If yes, specify governmental agency: _____

Date of certification: _____