



**CITY of NOVI CITY COUNCIL**

**Agenda Item E  
June 21, 2010**

**SUBJECT:** Approval to purchase a Falcon P2D1XI portable asphalt heating unit from Falcon Road Maintenance Equipment Inc., the low bidder, in the amount of \$16,700.

**SUBMITTING DEPARTMENT:** Department of Public Services – Field Operations Division *M.W.*

**CITY MANAGER APPROVAL:** *[Signature]* *124*

<b>EXPENDITURE REQUIRED</b>	<b>\$16,700</b>
<b>AMOUNT BUDGETED</b>	<b>\$19,000</b>
<b>APPROPRIATION REQUIRED</b>	<b>\$0</b>
<b>LINE ITEM NUMBER</b>	<b>101-442.20-982.000 (Miscellaneous Equipment)</b>

**BACKGROUND INFORMATION:** The Novi City Council appropriated \$19,000 in the FY 09-10 for the purchase of a 2-ton hot patch machine. Each year the Field Operations Division utilizes approximately 550 tons of virgin patch material (250 tons of cold patch, 300 tons of hot patch asphalt) to fill cracks, pot holes and restore utility cuts on City maintained streets. DPS has a hot patch machine; however, as part of our roadway asset management program a second machine is needed to keep up with maintenance.

In 2010 DPS investigated options for using recycled asphalt to enhance pot hole repairs and reduce material costs. Using recycled asphalt for repair can significantly reduce the amount of cold patch purchased, save labor and material associated with duplicate repairs, and is an environmentally conscience and sustainable alternative compared to current practices. Repurposing asphalt materials can save the Department up to \$11,500 in material annually (\$23,750 for cold patch currently purchased vs. \$12,250 for an equal amount of recycled asphalt).

On May 18, four bids were received following a public bidding period. Upon a thorough evaluation, the Department found Falcon Road Maintenance Equipment Inc. met specifications by providing a bid on the Falcon 2-ton hot patch machine. DPS is recommending the base bid with options 2 and 3 as summarized in the table below:

Company	Base Bid	Option #1 Dump Trailer	Option #2 Reclaiming Hopper	Option #3 Tack Tank	Option #4 Trade - In	Total
Falcon Road Maintenance Equipment	\$13,600	N/A	\$0	\$3,100	N/A	\$16,700
Bell Equipment	\$14,400	N/A	\$3,000	\$2,285	N/A	\$19,685
KM International	\$15,976	N/A	\$0	\$5,700	N/A	\$21,676
Howard T. Moriarty Co.	\$15,463	N/A	\$0	\$9,083	N/A	\$24,546

Upon award, the equipment will be delivered to DPS within 60 days.

**RECOMMENDED ACTION:** Approval to purchase a Falcon P2D1XI portable asphalt heating unit from Falcon Road Maintenance Equipment Inc., the low bidder, in the amount of \$16,700.

	1	2	Y	N
Mayor Landry				
Mayor Pro Tem Gatt				
Council Member Crawford				
Council Member Fischer				

	1	2	Y	N
Council Member Margolis				
Council Member Mutch				
Council Member Staudt				



May 12, 2010

TO: Sue Morianti, City of Novi

FROM: Gretchen Groulx, Falcon Road Maintenance Equipment, Inc.

SUBJECT: Bid FOR ASPHALT HOT PATCHER

Enclosed is Falcon's bid package for your Asphalt Hot Patcher bid opening on May 18, 2010. Falcon's price for the equipment in your specifications, without exception, is \$13,600. The price for Option #1 Dump Trailer is \$4,945. There would be no additional cost for Option #2 Reclaiming Hopper because our standard equipment meets the requirements. The price for Option #3 Trailer Mounted Heated Tack Tank and Spray System is \$3,100. Prices are FOB Novi, MI with delivery within 60 days of a purchase order.

Falcon asphalt hot patchers are used by municipalities in 25 states including Department of Transportation locations in New York, New Jersey (54 patchers), South Dakota, Pennsylvania, Maine, Michigan, Minnesota, Oregon, Vermont, Washington, Iowa and Illinois.

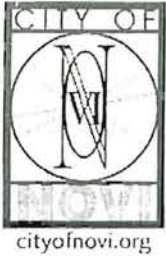
Please call if you need additional information. I can be reached at (989) 495-9332.

Thank you for the opportunity to participate in your bid opening.

Gretchen Groulx



120 Waldo Ave.  
Midland, MI 48642  
Phone (989) 495-9332  
Fax (989) 495-9342



**CITY OF NOVI**  
**TWO TON ASPHALT HOT PATCHER**  
**SPECIFICATIONS/COMPLIANCE**

**INTENT**

The City of Novi intends to purchase of a new trailer-mounted two ton asphalt hot patcher. The specifications are based on a Spaulding Manufacturing, Inc. model MN 1.31 or equivalent unit. The City of Novi's Department of Public Services has evaluated different types of trailer-mounted patchers and has determined that this product, or an equivalent, is best suited for the City's needs in terms of safety, quality and performance. This specification is not to be interpreted as restrictive, but rather as a measure of the safety, quality and performance against which all trailer-mounted asphalt hot patchers will be compared.

In evaluating bids, consideration will not be confined to price only. The successful bidder will be one whose product is judged to best serve the interests of the City in terms of price, product, safety, quality and delivery are considered. The City of Novi reserves the right to reject any or all bids or any part thereof, and to waive any minor irregularities. A contract will be awarded to the bidder submitting the lowest responsible bid meeting the requirements of this specification.

**EQUIVALENT PRODUCT**

Bids will be accepted for consideration on any make or model that is equal or superior to the specifications. Determinations of equivalency or superiority will be at the sole interpretation of the City. A bidder's blanket statement that the equipment proposed will meet all requirements will not be sufficient to establish equivalence. At a minimum, manufacturer's brochures and technical specifications of the proposed unit are to be submitted with the bid, along with completion of the compliance questionnaire below.

Any modification to the manufacturer's original equipment must be certified by the manufacturer and submitted with the bid, or the bid will be deemed non-responsive and rejected without further review. Bidder must be prepared to provide a demonstration of a unit similar to the one proposed, if requested by and at no cost to the City of Novi.

Checking "NO" in any other the specification categories below does not necessarily mean that the unit submitted in the bid will not be accepted. Provide documentation to explain how the submitted make and model meet or exceed specifications.

**GENERAL SPECIFICATIONS/COMPLIANCE QUESTIONNAIRE**

	<b>YES</b>	<b>NO</b>
Single Axle trailer mounted asphalt hauler - 2-Ton capacity	<u>✓</u>	_____
Pintle Hitch with 3 inch I.D.	<u>✓</u>	_____
LED Tail lights, directional, and stoplights recessed into hopper	<u>✓</u>	_____
7-pole flat pin (RV style) plug in connector	<u>✓</u>	_____

Electric Brakes on all wheels with battery breakaway

YES

NO

6000 lb. heavy wall axle (6000 G.V.W.R.)

**HOPPER**

2-Ton Capacity

Triple Wall Construction

1-1/2 Inch space between material and air walls

1-1/2 Inch space between air and ceramic insulation walls

Air baffles for heat circulation with a variable exhaust system with 11 portals on three sides

Insulated wall chambers to hold 2" of high heat temperature Ceramic insulation secure

10 gauge center wall connects to floor and divides inside of hopper Radiate heat from front to back and side to side

10 Gauge inner walls baffled

12 Gauge outer walls

9/16 Inch plate floor baffled heat chambers under floor

Work table – 30" off ground

Allows full hopper access from the ground

Dual 14 x 15 door opening's with quick operation to open with one hand sliding style guide

Automatic action to lock flip action to release

Door opening provides full access to 32 1/2 x 35 inches in width of 9/16 plate floor for removing asphalt with shovel from the ground with heated shoveling plate

Continuous welds the full length of the floor bottom, sides, inside and out of hopper

Top loading doors 36 1/2 inches in width and 109 inches to top of door when fully extended

	YES	NO
Peak styled doors are sealed and insulated, bushing hinged with grease insert and removable from hopper. When opened form a funnel for loading asphalt directly into hopper with no asphalt build up on hopper ledge	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Steel outer skins framed on square tubing with angle iron reinforced	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Manually operated retractable handles	<input checked="" type="checkbox"/>	<input type="checkbox"/>
7 Inch grab handles, solid round stock with no open ends	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Strobe LED light mounted on top of door for and high visibility	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Rack for four (4) shovels across front of hopper	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**TRAILER**

3" OD Axles, rated at 6000# each	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2-inch wide double eye leaf spring suspension	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Wheels – heavy duty commercial tires – 235/80/16R	<input checked="" type="checkbox"/>	<input type="checkbox"/>
8,000 lb. Park Jack with steel landing foot plate 4 x 6	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Safety chains are 70 Grade Transport chains DOT approved	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3/8 or Clevis Hooks with safety clip	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Trailer Frame is constructed of 5x2x3/16 wall rectangular tubing with 11"x 19"x 3" deep basket for vibratory roller (expanded metal bottom)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4 Cross members on the horizontal and 2 on the vertical	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Fenders fabricated of heavy steel with full steel skirt 80 inches Wide to outside of each fender	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Tail lights, LED directional, stop and turn flush to hopper to prevent asphalt build up	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Gusset construction hitch adjuster	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Holes for adjusting the height, 19.5" to 34"	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Expanded metal wire mesh across tongue	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Spare tire and rim	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**SOLVENT TANK**

YES

NO

Solvent tank for shovels located off back fender flush to top of fender with dual flip access doors spring snap latch next to access door and bolts on – holds two shovels

Square in Shape 13x13x16 inches

11.5 Gallon Capacity

12 GA Steel

Spring bolt automatic lock drop spill proof lid

**HEAT SYSTEM**

Combustion chamber 100 sq in mounted on to front of hopper

Removable bottom drop box insulated with inspection cover

In line 10 micron fuel filter connected to 20 gallon bolt on tank with spare filter and 2 nozzles

Pressure gauge shows continuous working pressure

Fuel solenoids powered by 12-volt system

Pressurized pump controls flow of fuel to burner

Spark ignition system powered by 12-volt system

Automatic shut down system safety feature

Cad cell eye monitors flame in burner

Spark ignition coil supply to electrodes to ignite fuel

Power on/off switch in NEMA 3R lockable box bolted on hopper

Digital snap in thermostat no rewiring shows set temp and actual temp

Controlled by a 1/16 Din microprocessor-based auto temp control located at rear of curbside of hopper

Deep cycle battery set in battery box ready for recharge system

Strobe light mounted on top of rear door and wired to rear control box

The entire system and burner shall operate on a single 12 volt battery.

A recharging system shall be installed to continuously recharge the battery without the aid of a plug-in charger.



YES

NO

A plug-in charger shall also be installed to assist with the overnight charging of the 12 volt battery. (10 amp taper charger)

\_\_\_\_\_

A quick release on/off switch shall disrupt all power to the system.

\_\_\_\_\_

A vented control box shall house the complete system and battery.

\_\_\_\_\_

**ELECTRIC OVERNIGHT HEAT**

Three independent 110v heaters

\_\_\_\_\_

One main power switch

\_\_\_\_\_

Automatic temperature control from 0-350 F

\_\_\_\_\_

Heaters are removable and replaceable through a service door

\_\_\_\_\_

One front hopper mount and 2 rear mount burners

\_\_\_\_\_

Metal flip lid to accept 110v plug in for service

\_\_\_\_\_

One indicator light for power and one for safety e-stop red button

\_\_\_\_\_

**PAINT**

Red

\_\_\_\_\_

All bolt on parts disassemble from chassis to paint

\_\_\_\_\_

Wiring , LP. parts, regulators etc. unpainted

\_\_\_\_\_

All parts and trailer and hopper sandblasted and ground smooth edges

\_\_\_\_\_

Auto primer on all parts and entire unit

\_\_\_\_\_

Two coats of urethane finish topcoat for 6 mil thickness

\_\_\_\_\_

**MANUALS & WARRANTY**

2 – Manuals

\_\_\_\_\_

1 – Year Warranty

\_\_\_\_\_

**OPTIONS**

**YES**

**NO**

**1. Dump Trailer**

Tandem axle trailer frame with 4 – ST235/85/16R tires. The hopper shall tilt at a maximum of a 30 degree angle by means of two 2.5 inch bore and a 14 inch cylinder's which are tied to a 10 inch sub frame.

Each cylinder collar shall have grease zerts on each end.

The hopper power up and power down controls shall be located at the rear curbside and allow the operator to control the hopper from 24 inches away.

Each cylinder shall raise at the same flow rate and only raise the hopper and not an entire sub-frame structure. This function shall have an operator at the control at the rear of the hopper for up and down movement.

When the rear doors open or close a audible alarm shall alert all operators.

The rear unloading doors shall also work by means of a hydraulic cylinder that have grease zerts at both ends and a 2 inch bore and 14 inch stroke. The single operation will allow infinite open and close positions.

The rear door shall have an audible alarm when the door moves up or down.

The rear door shall have a safety stop that alerts the operator of safety precautions.

**2. Reclaiming Hopper**

The reclaiming feature shall not add any more than the original 105,000 BTU's to the main hopper.

The unit shall heat the hopper evenly and allow the hopper to reach a 350 degree temperature from the bottom of the hopper to the top.

The unit will return the hardened hot mix back into a molten state with-in a 5 hour time period throughout the entire hopper with even consistency and no un-reclaimed chunks.

**3. Heated Tack Tank**

Tank shall be metal and have a holding capacity of not less than 20 US Gallons

Tank shall be Heated and equipped with an auxiliary drain port

Tank shall be equipped with a power spray wand and secure transport Hose and wand rack.

**SERVICE AND TRAINING**

Vendors shall have parts and service facility within a reasonable distance from the City of Novi Field Services Complex (26300 Delwal Dr., Novi, MI 48375) . State location of facility and distance.

Midland, Michigan 108 miles

A qualified technician shall provide complete training to the City personnel at the City Garage. Training shall include safety, operation, maintenance and service.

yes

**REFERENCES**

Bidder shall state length of time in service as an authorized Dealer and/or **Manufacturer** for the product being proposed. May 2004

Bidder shall state length of time Manufacturer has been building product being proposed and location of manufacturing facility. May 2004 / Midland Michigan.

Bidder shall submit name, address, responsible party and phone number of not less than three (3) Michigan-based Municipal owners of comparable models to that being offered, who have used such models over a five (5) year span. If none, state so.

Company Michigan DOT  
Address University Region  
Phone 517 622 5015 Contact name John Knoop.

Company Village of Spring Lake  
Address 102 W. Sawidge Rd Spring Lake MI 49456  
Phone 616 842 1893 Contact name John Hansan

Company City of Greenville  
Address 415 S Lafayette Greenville MI  
Phone 616 754 5645 Contact name Mike Chesser

Midland County Road Commission Dick Durtee 989 687 9060

**EXCEPTIONS AND DEVIATIONS**

Bidder shall fully describe every variance, exception, and/or deviation. If additional space is needed, please include additional sheets.

No exceptions

Company name Falcon Road Maintenance Equipment, Inc.  
Authorized signature Gretehen Grunly / corp secretary/treasurer  
Date 5/12/10



cityofnovi.org

**CITY OF NOVI**  
**TWO TON ASPHALT HOT PATCHER**

**ADDENDUM #1**

**INTENT:** This addendum has been issued to modify and/or interpret the original specifications for the bid/RFP named above. Unless otherwise instructed, the information contained within this Addendum shall take precedence over anything contrary in the original specifications, and shall hereinafter be considered as part of the package.

**RESPONSE:** The Contractor shall verify receipt of this Addendum in the Bid Proposal Form.

**CONTENTS:** Included in this Addendum are four (4) pages of written addenda description.

**CLARIFICATIONS:**

1. The City is considering a trade-in of the following machine when purchasing the hot patcher:  
One (1) Lee Boy Tack Machine (S/N 250T-46419), 250 Gallons, Hand Wand & Spray Bar, Tow-behind, includes Heating System & Agitator, Yellow. Used for 2 months.  
Revised proposal form with space for trade-in price is part of this addendum.
2. Additional specifications for Option #3 are included in this addendum.

Sue Morianti  
Purchasing Manager

Notice dated: May 7, 2010

**OPTION #3 - HEATED TACK TANK - ADDITIONAL SPECIFICATIONS/COMPLIANCE**  
**(Please submit with your proposal)**

	Yes	No
<b><u>20 Gallon Asphalt Tank</u></b>		
Diesel fired heated tack tank for heating water based emulsion to 125 F	<input checked="" type="checkbox"/>	<input type="checkbox"/>
10 gauge construction walls, lids and floor make up the inner square tank	<input checked="" type="checkbox"/>	<input type="checkbox"/>
High temperature 2 inch ceramic insulation cover all 4 walls and tank lid	<input checked="" type="checkbox"/>	<input type="checkbox"/>
air heat transfer on floor and all sidewalls	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Gravity feed valve and spray system valves (required)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
8 inch round top fill lid with flip down locking to secure lid to body of cover	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Material temperature monitor gauge	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<b><u>Spraying system</u></b>		
3 gpm pumping system	<input checked="" type="checkbox"/>	<input type="checkbox"/>
8-gallon flushback tank coupled to piping system	<input checked="" type="checkbox"/>	<input type="checkbox"/>
30 ft of hose attached to spray wand with atomizing tip	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Spray wand has quick grip safety shut off	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Piping for spray system can be taken apart without having to rethread for alignment	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Holster for wand	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<b><u>Heating system</u></b>		
Diesel fired burner	<input checked="" type="checkbox"/>	<input type="checkbox"/>
105,000 BTU	<input checked="" type="checkbox"/>	<input type="checkbox"/>
12-volt ignition system	<input checked="" type="checkbox"/>	<input type="checkbox"/>
12-volt motor	<input checked="" type="checkbox"/>	<input type="checkbox"/>
12v pump to igniters	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Photo sense safety shut down	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Automatic temperature control 1/16 din solid-state digital readout	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Reads actual temperature and temperature setting and is displayed simultaneously	<input checked="" type="checkbox"/>	<input type="checkbox"/>



CITY OF NOVI  
PROPOSAL FORM (REVISED)

TWO TON ASPHALT HOT PATCHER

We the undersigned as bidder, propose to furnish to the City of Novi, according to the conditions and instructions attached hereto and made a part thereof:

**One (1) Two Ton Asphalt Hot Patcher**

Manufacturer/Model Falcon P201XI TOTAL \$ 13,600

**Option #1 Dump Trailer**

Model P201XD Add / Delete \$ 4,945  
(please circle)

**Option #2 Reclaiming Hopper**

Model P201XI Add / Delete \$ in base price  
(please circle) *requirements included  
no additional charge*

**Option #3 Trailer Mounted Heated Tack Tank**

Model P201XI Add / Delete \$ 3,100  
(please circle)

**Option #4 Trade In**

2007 Lee Boy Tack Machine Delete \$ 0

Delivery time after receipt of order 60 days

Warranty one year parts and labor

We acknowledge receipt of the following Addendums: #1  
(please indicate numbers)

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Company (Legal Registration) Falcon Road Maintenance Equipment  
Address 120 Wabdo Ave  
City Midland State MI Zip 48642

Telephone 989 495 9332 Fax 989 495 9342  
Representative's Name (please print) Gretchen Groulx  
Representative's Title Corporate secretary/treasurer  
Representative's Signature Gretchen Groulx  
E-mail sales@falconrme.com  
Date 5/12/10

## FALCON ROAD MAINTENANCE EQUIPMENT, INC.

### 2010 FALCON PORTABLE ASPHALT HEATING UNIT

INTENT: It is the intent of the following specifications to describe a diesel fuel fired trailer mounted hot asphalt storage unit capable of heating both hot mix and cold mix asphalt. This specification is not to be interpreted as restrictive, but rather as a measure of the safety, quality and performance against which all equipment bid will be compared. The storage unit will be used by the City of Novi maintenance and repair crews to store, heat, transport, and dispense asphalt mixes as needed to repair potholes and damage to road surfaces. The storage unit offered shall be the manufacturer's latest model. The unit must have an established record of reliability in an environment comparable to that listed here. The Vendor warrants that it shall maintain a stock of spare parts. Items bid are to include all features, accessories and equipment standard for the model offered as listed in manufacturer's current brochure and further specified herein. Bidder is required to submit complete specifications and pictures of product that bidder would deliver if awarded this bid.

2-TON CAPACITY HOPPER: 2-Ton Capacity Hopper with Triple Wall construction on front, rear, and side walls, low profile design hopper height shall not exceed 66" from the ground to the peak of the hopper. 1-1/2 Inch space between material and air walls. 1-1/2 Inch space between air and insulation walls, Insulated wall chambers to hold 2" of ceramic insulation blanket. 10 Gauge inner walls. 12 gauge outer walls. Welded baffles between inner and middle walls (use of self-tapping screws to secure baffling in place will not be accepted due to potential for rust when piercing hopper walls). All walls must be of one-piece, seamless construction with wall to peak insulation. 9/16" Inch floor plate with baffled heat chambers under floor. Work table - 29" off ground allowing full hopper access from the ground. The entire length of the sidewalls and top of the hopper must be reinforced with capping channel that has a 4" over wrap. Front and rear hopper walls shall be constructed in a manner to create a 2" slope from the top center to the outer edges to direct moisture away from the inside of the hopper. This slope must be of the same triple wall construction as the hopper with air and insulation jacket included to maintain proper heat retention. The use of post construction, non-insulated tabs or additional welding to create this slope will not be accepted. Steel loading doors to be insulated and framed on square tubing with angle iron reinforced cross members. Doors to be hinged with bolted-on, greaseable 1" minimum diameter pillow block bearings for ease of maintenance. A piano hinge will not be accepted. A full 1 1/4" clearance shall be provided between bottom of loading doors and the top hopper walls to prevent asphalt build up. The top of all four walls shall be beveled, not flat, so asphalt does not collect and interfere with closing the loading doors. Doors open with manually retractable handles that are equipped with a positive safety lock to keep doors from closing during loading. Loading door handles must extend and retract through a minimum path of 12" of tubular steel -- steel eyes serving as guides will not be accepted. Grab handles to be covered with vinyl handle grips. Loading door handles to be held in position during transport with positive safety lock. A non-slip hopper access platform, constructed of 12-gauge raised diamond tread plate is to be installed enabling easy and safe access for cleaning and inspection.

SINGLE AXLE TRAILER (ELECTRIC BRAKES/8-BOLT WHEELS): Trailer to be equipped with one 7,000 pounds 8-bolt axle with double eye leaf spring suspension. Tires to be ST235/80 R16 tires. Electric brakes on both wheels with electric breakaway. Trailer



must attach to towing vehicle using a 3" I.D, adjustable lunette eye hitch. Trailer frame to be constructed of 2"x 5"x 3/16" structural rectangular tubing with a RBM of 244,200 In(lbs). Trailer must be constructed with a minimum of four cross members. Trailer shall have a center support beam manufactured of 2" x 5" x 3/16" structural rectangular tubing. All welds to be continuous. Bottom of frame is to be 19 inches off the ground. Fenders to be bolted to frame and fabricated of 12 gauge steel. Fenders welded to frame will not be accepted. Fenders must have a backing plate constructed of 12 gauge steel. 8,000 lb. bolt-on, drop-leg Parking Jack. Safety chains to be DOT approved, Grade 70 Transport chains having a 3/8" Clevis Hook with safety clip at one end. Equipment certified through the NATM (National Association of Trailer Manufacturers) to meet all US DOT Federal Motor Vehicle Standards and Regulations. Junction box to include circuit breakers -- not fuses. Expanded metal welded to underside of trailer's front section.

IF DUMP BOX OPTION THEN....

TANDEM AXLE TRAILER (ELECTRIC BRAKES/8-BOLT WHEEL): Trailer to be equipped with two 3-1/4" O.D. - 8-bolt axles rated at 7000 pounds each. 2-1/2 Inch wide slipper leaf spring suspension. Tires to be ST235/80 R16 tires. Electric brakes on all four wheels with electric breakaway. Trailer must attach to towing vehicle using a 3" I.D, lunette eye hitch. Trailer frame to be constructed of 2"x 6"x 3/16" structural rectangular tubing with a RBM of 293,040 In. Trailer must be constructed with a minimum of four cross members. Trailer shall have a center support beam manufactured of 2" x 6" x 3/16" structural rectangular tubing. All welds to be continuous. Bottom of frame is to be 20 inches off the ground. Fenders to be bolted to frame and fabricated of 12 gauge steel. Fenders welded to frame will not be accepted. Fenders must have a backing plate constructed of 12 gauge steel. Trailer hitch to be adjustable in height from 19.5" to 34". 8,000 lb. bolt-on, drop-leg Parking Jack. Safety chains to be DOT approved, Grade 70 Transport chains having a 3/8" Clevis Hook with safety clip at one end. Equipment certified through the NATM (National Association of Trailer Manufacturers) to meet all US DOT Federal Motor Vehicle Standards and Regulations. Junction box to include circuit breakers -- not fuses.

DIESEL HOPPER HEAT SYSTEM: Heating system shall perform in a temperature range suitable to maintain Hot Mixed Asphalt (HMA) at a usable temperature, heat Asphalt Cold Patch to it's optimum working temperature without damage to the material and reduce waste asphalt chunks (RAP) or surface millings to a malleable state. Diesel burner to be bolted to separate removable, bolt-on, insulated steel combustion chamber. Burner assembly to consist of one Diesel fuel burner, 105,000 BTU minimum, with burner guard. Inspection lid to be removable without the use of tools. Combustion chamber connected to 34 in. wide x 51 in. long burner box. All four hopper walls fully insulated from hopper floor to peak. Burner box to be constructed of 10 inch, 15.3# channel. Removable bottom drop box insulated with inspection cover. In-line quick disconnect diesel fuel filter with water separator connected to 20-gallon bolt on fuel tank. Fuel tank to be mounted between frame rails with top of tank FLUSH to the top of rails (unless dump box capability is required and fuel tank is positioned to move up and down with the hopper). Fuel solenoids shall be powered by 12-volt system. A pressurized pump shall control flow of fuel to burner. Spark ignition system to be powered by 12-volt battery. Patcher to be equipped with an automatic recycle on spark system and a automatic shut down system safety. Temperature controller to be mounted in a NEMA 3 rated electrical enclosure.

PAINT: To be Safety Red. Entire machine including all bolt on parts to be sand blasted or phosphate blasted prior to painting. Inspection opportunity of patcher after blasted and prior to priming/painting to be made available to the City of Novi representatives. All

accessory bolt-on parts to be painted prior to assembly to chassis. All wiring, parts, regulators, etc. not to be painted. Two coats epoxy primer on all parts and entire unit. Two coats of urethane finish on all parts and entire unit -- top coat 6 mills thick.

**MATERIAL METERING DOOR(S) (2-TON HOPPER):** Single or dual insulated door(s) allowing full access to hopper. Door to be equipped with low-friction bearings and capable of being locked in multiple open positions -- metal to metal tracking systems will not be accepted.

**CONTROLS:** To be mounted on front face of unit on the right/curb side (or rear on a dump box). Temperature control will operate the main burner. Temperature range to be 0 degrees to 350 degree Fahrenheit. Temperature control thermocouple installed in hopper wall. The burner shall automatically re-light itself after a 10 degree drop in temperature. Separate toggle switch control the main burner power, warning light and tack tank option.

**DIMENSIONS:**

Overall length - Trailers with electric brakes 13'8" (14 feet if dump box)

Overall Height 2-Ton Hopper - 68 inches (to top of loading doors)

Width of hopper - 83 inches

Width outside fender to fender - 73 inches

Weight 2-Ton Tandem Axle Trailer - 3,400 lbs. without fuel (base machine)

Weight 2-Ton Single Axle Trailer - 2,400 lbs. without fuel (base machine)

**12-VOLT BATTERY REQUIREMENTS:**

Patcher to be equipped with one 12-volt battery per diesel burner enclosed in a protective box and mounted to front of trailer frame.

**LIGHTING:**

**LED UPGRADE LIGHTING/ELECTRICAL:** Lighting to include four 4" round RED LED Stop/Tail/Turn Lights, one ID Bar, six LED Marker Lights. Stop/tail/turn lighting to be placed no higher than 60" from the ground. Conspicuity tape to be applied per NATM(National Association of Trailer Manufacturers) requirements. 7-pin RV plug in connector. All wiring to be THHN. Wiring connections to be sealed in shrink-wrap, covered with corrugated loom and protected by steel conduit. Volt meter to be installed in common NEMA3 rated electrical enclosure.

**WARNING LIGHT / STROBE:** Strobe warning beacon to be mounted on top of loading door. A toggle switch inside the patcher's common electrical enclosure controls the warning light.

**SOLVENT TANK:** Bolted-on solvent tank for shovels to be located next to work table. Tank to be large enough to hold two shovels. Constructed of steel with splash-resistant curtain, 1 1/2" drain plug for easy clean out.

**TACK TANK:**

**20 GALLON HEATED TACK TANK (OPTION):** An insulated steel reservoir for storing tack material to be 20-Gallon capacity, 10-gauge inner wall and a steel outer wall. Tank shall have an 8" diameter fill opening. Material to be gravity fed with 1 1/2" molasses valve mounted at based of tank and extend beyond frame. Tack tank to have lockable fill lid. Separate temperature control will operate a separate tack tank

diesel burner with a dedicated 12-volt battery. A 90 degree 50/550 thermometer to be mounted on top of the main tack tank cylinder that reads temperature of tack material. Temperature range to be 0 degrees to 250 degree Fahrenheit. The burner shall automatically re-light itself after a 10 degree drop in temperature. A separate toggle switch will control the tack tank burner.

**SPRAY SYSTEM FOR HEATED TACK TANK (OPTION):**

Spray system shall be capable of spraying water based tack material (that has been diluted based on manufacturer's recommendations) through a spray wand. Wand handle to have a heat-resistant, ergonomic housing and internal stainless and brass materials to prevent rust. Spray system to include pressure relief capability. Flush tank capacity to be 8 gallons. Spray system, including flush tank, must be plumbed with high-pressure, hydraulic tubing and hydraulic fittings. Black iron pipe will not be acceptable. Spray system hose to be 30 feet.

**BASKET FOR MOUNTING PLATE COMPACTOR:** Storage capability for mounting plate compactor to be constructed on front of patcher frame.

**BATTERY CHARGING:**

A 12-volt marine battery charger, to be mounted on patcher. Battery charger to be hard-wired to patcher's 12-volt battery. Battery connected to solar charging system.

**EMERGENCY STOP BUTTON:**

Red Button mounted outside of electrical enclosure that, when pressed, cuts out all power to asphalt hot patcher.

**SPARE TIRE / ST235/80R16 :**

Matching spare tire mounted on 8-bolt 16" x 6" wheel to be included. Spare tire to be shipped loose.

**TOOL HOLDER / 5 POSITION:**

Tool holder capability of storing five tools to be mounted on patcher frame.

**ELECTRIC OVERNIGHT HEAT:**

110 volt electric heating system with three independent heating elements. Male receptacle with flip-cover accepts 110volt plug. Temperature controlled automatically enabling a temperature range of 0-350 degrees.

**DUMP BOX (ELECTRIC OVER HYDRAULIC): (OPTION):**

Hopper shall tilt to approximately 45 degree angle by means of two 3" bore 24" tie-rod style, hydraulic cylinders with grease zerts at each end. Each cylinder to rise at same flow rate and only raise the hopper and not the entire frame structure. Power-source for cylinders controlling the movement of the hopper to be a 12-volt self-contained hydraulic pump. Hopper movement to be activated by push-button control box connected to a 15 foot power cord. Safety rod to secure hopper in up position to be incorporated into the trailer frame. Pump and hopper adjustment controller to be stored in lockable toolbox mounted on front of patcher frame. As hopper moves up and down sub-frame remains stationary. Each cylinder raises at the same flow rate. Trailer shall have adjustable outriggers at both rear corners of machine to achieve a minimum of 10% tongue weight at all times and in all positions. 16 gallon fuel tank shall be mounted on the side of hopper, not on the frame rail, if Dump Body option is selected. Fuel tank shall be round

extending from the front to rear of hopper, bolted on to reinforced 4" overwrap of the hopper. Fuel lines shall connect to front side of the fuel tank, closer to the burner, with internal fuel leads extended to the rear side of tank so fuel can be accessed when the body is raised position

Dump Body designs that employ fuel tanks on the front frame rail will not be accepted due to the distance of fuel lines that extend to the rear hinge of the Dump Body and forward to the burner. Electrical enclosure installed on the rear wall of a dump box. Dump box to be hinged on a 1 3/4" diameter TG&P steel shaft with grease grooves and grease zerks. Spacers to include two 3" diameter bronze washers. Dump box hinges to be guarded by hinged steel plates.

**HYDRAULIC MATERIAL DOORS (12-VOLT PUMP ON PATCHER PROVIDES SOURCE OF HYDRAULIC POWER) (OPTION):**

Material door(s) function via an on-board 12-volt hydraulic pump mounted in a lockable steel enclosure on the front of the trailer frame. Up and down push-button controls regulate the opening and closing of the material doors.

**MANUALS:** Two operator/parts/repair manual to be provided.

**SPARE PARTS:** Replacement fuel filter and two nozzles to be delivered with patcher.

**FREIGHT TERMS:** Quoted price to be FOB Novi, MI.

Unit to have a one-year Warranty on all parts and labor.