

Town of Hardwick
HWY IFB - FY2020 Road Materials

Materials to Be Used in State Aid Road Construction Work and
General Town Road Maintenance Work for Fiscal Year 2020

BID DEADLINE

Monday, June 17, 2019 @ 4:00 PM

Town of Hardwick

Invitation to Bid

The Town of Hardwick Board of Selectmen request sealed bids on the following materials to be used in State Aid Road Construction work and general town road maintenance work for Fiscal Year 2020.

1. Stone Seal in Place
2. Double Stone Seal in Place
3. Type 1 Bituminous Concrete (Picked Up at Plant and In Place)
4. Fog Seal Rejuvenator
5. PCR/M Crack Seal
6. HIMA Micro-surface
7. Polyethylene Pipe
8. Track Type Excavator and Operator
9. Full Depth Pavement Reclamation (Calcium Chloride)
10. Cold Patch
11. Washed Sand
12. Crushed Gravel
13. Processed Gravel
14. Screened Stone
15. Bituminous Concrete Berm
16. Bituminous Concrete Hand Applied
17. Bituminous Concrete in Place
18. Rip Rap
19. 9' Paver and Operator

Selectmen reserve the right to waive any and all informalities, to reject any or all bids and to make awards in a manner deemed in the best interest of the Town.

These items are based on projected work and seasonal requirements.

The Town reserves the right to increase or decrease quantities required.

All prices shall conform to the requirements of the Massachusetts Bridges latest edition including all addenda.

Wage rates shall be in accordance with Labor and Industries of M.G.L. Ch. 149 Section 26-27H, inclusive.

Sealed bids to be marked "HWY IFB - FY2020 Road Materials"

A bid bond of 5% of the value of the bid shall accompany all bids.

A 50% Payment Bond is required if submitting a bid on the entirety of this IFB.

All bidders are subject to prequalification by the Massachusetts Department of Transportation.

Bids will be accepted until **4:00 PM** on Monday **June 17, 2019** at the Hardwick Municipal Office Building, 307 Main Street, Gilbertville and the bids will be publicly opened and read at **5:30 PM** on Wednesday **June 19, 2019** at the Hardwick Elementary School, 76 Schoolhouse Lane, Gilbertville, MA

Specifications and bid forms are available at the Municipal Office Building, 307 Main Street Gilbertville, MA and the Town's website www.townofhardwick.com

Kenan P. Young

Chairman, Board of Selectmen

TOWN OF HARDWICK
Stone Seal (Treated) Specifications

1. DEFINITIONS:

The term "Director" shall mean the "Board of Selectmen" of the Town of Hardwick.

The term "Designee" shall mean the "Highway Superintendent" of the Town of Hardwick.

The term "Contractor" shall mean a "professional company" contracted by the Town of Hardwick to perform work under this agreement.

2. DESCRIPTION:

Work under this contract shall consist of the Contractor furnishing the applying liquid asphalt and treated stone on the properly prepared bituminous streets. Bid quantities are approximate only; payment shall be for actual quantities applied to streets. Streets to be stone sealed shall be selected by the Contractor and the Director or Designee.

3. MATERIALS:

a. Emulsified asphalt

Emulsified asphalt grades shall be: CRS-2 (3% Latex), CMS-2 (3% Latex), HFRS-2 (3% Latex), or HFMS-2 (3% Latex), (MC 3000).

b. Latex Additive

The latex additive shall be Ultrapave 70 (anionic) or Ultrapave 1156 (Cationic) or equivalent conforming to the following specifications. It is required that the latex be co-milled at the bulk emulsion facility, to ensure complete and balances blending. The emulsion manufacturing plant must be opened to inspection by the awarding authority.

	Anionic	Cationic
Monomer Ration	(76+/-2	(76+/-2
(Butadiene/Styrene)	24+/-2)	24+/-2)

	Anionic	Cationic
Solids, min. % lbs. /gal.	67	59

Coagulum (80 mesh screen) max.	0.1 %	0.1%
PH of Latex	9.5-10.5	4.0-5.5
Brookfield Visc. (Model)		
RVT, #3 Spindle @20 RPM)	800-2,000	5,000 MAX
Mechanic Stability	Excellent	Excellent

c. Treated Stone

Stone shall be crushed quarry stone, free from dust, soft stone or other contaminants, with a minimum of 70% of the stones having a fractured face. All stone shall satisfy a 35% maximum for the L.A. Abrasion Test and a 35% maximum for the Flakiness Index Test. Stone shall be treated prior to application with Bituminous Material at the rate of 0.1 % to 0.5% residual asphalt to ensure uniform treatment of all stones. Proper pre-treatment shall be obtained by a twin shafted pugmill with a Digital Readout Belt Scale.

REQUIRED STONE DEGRADATION

3/8" Stone

SIEVE SIZE	% PASSING
1/2"	100
3/8	85 - 100
1/4"	10 - 60
#4	0 - 25
#8	0 - 5

Maximum passing #200 sieve shall not exceed 2.0 %, wet washed, for all sized aggregates used in surface treatments.

4. MATERIAL QUANTITIES:

The quantity of asphalt material to be used shall be in range of 0.35 to 0.50 gallons per square yard. Cover aggregate shall be spread in the range of 20 – 30 pounds per square yard. The Contractor will use lab tests to design specific material quantities will be made without adjustment to contract unit price. The Contractor must maintain a laboratory open to the inspection of the awarding agency.

5. EQUIPMENT:

The equipment used by the contractor shall include but not be limited to, one or more of the following:

- a. Asphalt Distributor

The asphalt distributor shall contain suitable mechanical circulating and heating mechanisms to provide uniform approved temperature of the entire mass of material. The distributor shall be equipped with a radar type sensor used to measure ground speed and feed a Digital Volumetric Accumulator capable of measuring gallons applied and distance traveled. It shall be capable of applying asphalt material in accurately measured quantities at any rate between 0.1 to 2.0 gallons per square yard of roadway surface, at any length of spray bar up to sixteen (16) feet. The distributor shall be capable of maintaining a uniform rate of distribution of asphalt pump discharge rate and on/off switching of spray for nozzles in one (1) foot increments which shall be located in the truck cab. The spray nozzles and pressure system shall provide a sufficient and uniform fan shaped spray of asphalt material throughout the entire length of the spray bar at all times while operating. The spray shall completely cover the roadway surface receiving treatment.

b. Aggregate Spreader

The aggregate spreader shall be hydrostatically driven and self-propelled. It shall be equipped with a hydraulically controlled variable adjusted head that is capable of spreading stone in widths from four (4) feet to sixteen (16) feet. The spreader shall be mounted on pneumatic tires and shall apply the treated stone on the road surface in a manner that ensures that the tires do not contact the road surface until after the stone has been applied. The unit shall be equipped with an electronic radar sensor used to measure good ground speed and will automatically adjust the stone application rate depending on width of application and the speed of the chip spreader. It shall have the ability to apply stone on any grade from 0 – 6% of 5 tons of treated stone which shall be filled by trucks in a manner which ensures that the truck tires never come in contact with asphalt-treated road surfaces until the stone has been properly applied. To maintain constant stone application, a self-locking truck hitch will permit towing of aggregate trucks without stopping the chip spreader. It will be capable of maintaining positive engagement over irregular terrain.

3. Rollers

At least one rubber tire and one steel-wheeled roller shall be used on each treated surface immediately after the stone has been applied. Each roller shall have a compacting width of not less than five (5) feet. Each roller shall have a gross weight of not less than ten (10) tons, and a contact pressure adjustable from 200 to 300 psi.

4. Trucks

The rear discharge conveyor-fed trucks in sufficient number and size shall be used to deliver treated stone to the spreader. Conventional dump trucks that require bodies to be raised to distribute aggregate will not be allowed.

6. CONSTRUCTION METHODS:

a. Streets to be Treated

The Contractor and the Director shall mutually determine the streets in Hardwick that shall receive treated stone seal treatment. Measurements of street to be treated shall be made by the Contractor and the Director or Designee, and the Contractor shall prepare a cost estimate for each street prior to beginning work.

b. Surface Preparation

Surface preparation, which may include pothole patching, truing and leveling, adjusting of street irons (valve covers, manhole covers, and drop inlet gratings), etc., will be the responsibility of the Town of Hardwick and will be completed before the contractor moves on to the job.

Immediately prior to the application of asphalt materials, the Town of Hardwick Highway Department personnel shall remove small branches and other debris, and use a mechanical street sweeper to clean any loose material from the pavement surface.

The Town of Hardwick Highway Department shall protect manhole covers, drop inlets, catch basins, curbs and any other structures within the shoulder areas against the application of the surface treatment materials.

c. Weather Limitations

Work will not be done unless the road surface is dry. No work shall be done during rain or foggy periods, or if the local forecast calls for rain or fog on that day. No work shall be done if the ambient temperature is below fifty (50) degrees Fahrenheit.

WORK UNDER THIS CONTRACT SHALL BE PERFORMED IN FISCAL YEAR 2019 AS AUTHORIZED BY THE DIRECTOR. ALL STREETS SELECTED FOR TREATMENT SHALL BE TREATED ON OR BEFORE JUNE 30, 2019.

d. Spreading Asphalt and Treated Stone

Prior to application of asphalt material on any street, sufficient quantities of materials to cover the entire street at any specific rates shall be on the site and ready for application. The Town of Hardwick shall be responsible for providing the Contractor with an aggregate storage area near the job site. The asphalt material shall not be applied more than 300 feet in advance of the self-propelled aggregate spreader.

AT NO TIME SHALL ANY ASPHALT MATERIALS BE ON ANY ROAD SURFACE FOR MORE THAT FIFTEEN MINUTES BEFORE IT IS COVERED WITH TREATED STONE.

e. Rolling

Initial rolling shall be done immediately following the application of treated stone. Rollers shall be operated at a speed that will not displace aggregate.

f. Traffic Control

Traffic control is the sole responsibility of the Town of Hardwick. Unless otherwise specified, the roadway shall be kept open to traffic at all times, with traffic discontinued on the lane being surface treated. Controlled traffic may be permitted as soon as the final layer is applied and rolled. A recommended maximum speed of 20 mph should be maintained for a period of two hours.

g. Surplus Aggregate

Surplus aggregate shall be swept off of the road surfaces by the Town of Hardwick Highway Department and shall be property of the Town of Hardwick. Sweeping will be done after stone seal has properly cured and care will be taken not to dislodge imbedded aggregate or damage the surface.

7. PERFORMANCE:

The Town of Hardwick will not award this contract unless the Contractor furnished satisfactory evidence of his/her ability and experience to perform this work and that he/she has sufficient capital and equipment to enable him/her to prosecute the work successfully and to complete it within the time named in the contract. The Contractor shall not sublet any portion of this contract and will own all equipment used to complete such contract. As part of the bid, the Contractor must submit a list of six similar and successfully completed jobs whose relevance to the proposed job shall be deemed by the Town of Hardwick. The name, number and contact information of a contact person involved with each of these projects must be included so they can be investigated prior to the award of the contract. It will be the responsibility of each bidder to visit the job site with the Highway Superintendent. The Board of Selectmen

can reject any bid of a contractor who has not visited the work site. Each bidder must supply a bid bond which is 5% of the estimated total cost of the job.

8. METHOD OF PAYMENT

Payment for work under this agreement shall be made at the contract unit price per square yard times the number of square yards, measured by the Contractor and the Director or Designee, of road surface treated. Price per square yard shall be for complete in place quantities. Upon completion of work, and acceptance by the Director, the Contractor shall submit a payment request to the Director. Payment shall be net thirty (30) days.

9. GUARANTEE

Any material or workmanship found to be defective for up to one (1) year from the date of acceptance by the Director shall be replaced by the Contractor at no cost to the Town of Hardwick. Upon notification of defective material or workmanship, the Contractor shall immediately replace such defective areas.

Town of Hardwick
Bid Form for Stone Seal

Note: Asphalt and aggregate types, quantities, application rates, application procedures and the responsibilities of the bidder and the Town of Hardwick shall conform to the specifications.

<u>BID ITEM</u>	<u>ESTIMATED QUANTITY</u>	<u>UNIT PRICE</u>	<u>ITEM TOTAL</u>
3/8" Stone Seal	\$_____ SY	\$_____ SY	\$_____ SY
3/8" Double Stone Seal	\$_____ SY	\$_____ SY	\$_____ SY
3/8" Stone Seal with Latex	\$_____ SY	\$_____ SY	\$_____ SY
3/8" Double Stone Seal with Latex	\$_____ SY	\$_____ SY	\$_____ SY

The undersigned certifies under penalties of perjury that this bid is in all respects bonafide, fair and made without collusion or fraud with any other person.

INSURANCE: The Successful Bidder must have public liability insurance of adequate amount, at least \$500,000 per incident and \$1,000,000 aggregate.

Date: _____

Signature: _____

TOWN OF HARDWICK
Full Depth Pavement Reclamation
(Calcium Chloride) Specifications

1. Definitions:

The term "Director" shall mean "Highway Superintendent" of the Awarding Authority.

The term "Designee" shall mean an "employee" of the Awarding Authority, designated by the Director.

The term "Contractor" shall mean a "professional company" contracted by the Awarding Authority to perform work under this agreement.

2. Description:

Work under this contract shall consist of the contractor furnishing equipment and materials to pulverize the in-place asphalt pavement and underlying material, spray liquid calcium chloride on the pulverized mass, mix and/or blend the material, spread and compact the resultant mixture to the lines and grades shown on the plans or established by the Director or his/her Designee, cap payment shall be for actual square yards reclaimed.

3. Materials:

a. Liquid Calcium Chloride (Optional)

The calcium chloride solution shall be provided by the manufacturer as a true solution and shall not be reconstituted from flake calcium chloride. The calcium shall meet the following material specifications (see ASTM Designation D98; AASHTO-M144).

Calcium Chloride	35% +/- 1%
Alkali Chloride as NaCl	2% Max.
Magnesium as MgCl	0.1% Typical (in lbs. per gallon)
Calcium Chloride	5.05%
Sodium Chloride	0.200
Magnesium Chloride	0.004
Calcium Sulfate	0.004
Water	<u>6.002</u>
	11.26

* The Contractor will have the ability to substitute E-N-One Soil Stabilizer if soil conditions warrant.

b. Reclaimed Base

All pulverized material shall pass the 76.2 mm, (3-inch), sieve. The processed sub-base shall meet the following gradation:

REQUIRED RECLAIMED BASE GRADATION

<u>SIEVE SIZE</u>	<u>%Passing</u>
76.2 MM, (3")	98-100
38.1 MM, (1-1/2")	70-100

*Gradation may vary due to local aggregate conditions.

4. Equipment:

All equipment must be owned by the Contractor (grading may be optionally supplied) equipment shall include, but not be limited to, one or more of the following:

a. Laboratory

Contractor must maintain a working laboratory capable of sampling and testing reclaimed soils and must be open for inspection by the awarding agency.

b. Reclaimer

Reclamation will be by means of a traveling rotary reclaimer or equivalent machine capable of cutting through existing asphalt at depths up to 30.5 centimeters, (12inches), with one pass. The machine shall be self-propelled and equipped with an adjustable grading blade thus leaving its path generally smooth for traffic. Equipment such as road planners or cold milling machines that are designed to mill or shred the existing bituminous concrete rather than to crush or fracture it, are not considered capable of achieving specification of gradation. The required and necessary action of the reclaimer will increase percentages of fine aggregate. This machine is not intended for use on sub-bases with large boulders or ledge. Existing bituminous concrete and gravel base must be pulverized and mixed so as to form a homogenous mass of uniformly processed base material, which will bond together when compacted.

c. Pressure Distributor

The distributor for calcium shall be capable of applying liquid calcium chloride in accurately measured quantities at any rate between 0.5 to 9.1 liters per square meter, (0.1 to 2.0 gallons per square yard), of roadway surface, at any length of spray bar up to 6.1 meters, (20 feet). The distributor shall be capable of maintaining a uniform rate of distribution of material regardless of change made in grade, width or direction of the road. The distributor shall be equipped with a Digital Volumetric Accumulator capable of measuring liters applied and distance traveled. The volume and measuring device shall be equipped with a power unit for the pump so that application is by pressure, not gravity. The spray nozzles and pressure system shall provide a sufficient and uniform fan-shaped spray of material throughout the entire length of the spray bar at all time while operating and shall be adjustable laterally and vertically. The spray shall completely cover the roadway surface receiving the treatment.

d. Rollers

At least one vibratory roller shall be used on each reclaimed surface and shall have a compacting width of not less than 1.5 meters, (5 feet). Each roller shall have a gross weight of not less than 13.6 metric tons, (15 tons).

e. Grader

A motor grader shall be used for shaping and finishing the surface of the reclaimed base, in accordance with the lines, grades and typical cross sections shown on the plans or established by the Director or his/her Designee.

5. Construction Methods:

a. Street to be Reclaimed

The Contractor and the Director shall mutually determine the streets which shall receive reclamation. Measurements of streets to be reclaimed shall be made by the Contractor and Director or his/her Designee. The Contractor shall prepare a cost estimate for each street prior to beginning work. Lines and grades shall be furnished by the awarding authority to all bidders at the time of job negotiation.

b. Surface Preparation

Surface preparation, which may include cleaning and grubbing; removal of visible cobbles; drainage; adjusting of street irons-valve-covers, manhole covers, drop inlet gratings, catch basins; signs, mail boxes and guard rail resetting; etc. will be the responsibility of the awarding authority and will be completed before the contractor moves onto the job.

c. Pulverization Process

The existing road pavement shall be pulverized and mixed with equal amounts of gravel base existing in the roadway foundation. The pulverization shall blend the asphalt and base material into a homogenous mass, utilizing the asphalt acquired from the existing pavement as a stabilizer to bond material together when compacted. After the first pulverization, two (2) applications of calcium chloride totaling 3.4 to 4.5. liters per square meter, (.75 gallons per square yard), shall be applied. The aggregate mass shall then be pulverized again to ensure proper asphalt, gravel, and calcium chloride blending to the desired depth. Following base compaction, shaping and fine grading, then re-compaction, a final capping of 0.5 to 1.1 liters per square meter, (.25 gallons per square yard), of calcium chloride shall be applied.

d. Rolling

Initial rolling shall be don immediately following the second reclaimer pass, and again following fine grading.

e. Grading

Sub-grade changes may be necessary to meet proposed grade lines and cross sections. In areas where the proposed roadway grade to above the present grade, additional material will be provided by the awarding authority on the site, incorporated during regrading and compaction of the pulverized material, then brought to line and grade. Any excavation of sub-base material shall be placed in windrows or stockpiled so as not to impede the work of the Contractor, for later removal by municipal forces. After the material has been thoroughly worked by the reclaimer, the mass will be shaped and fine graded.

f. Traffic Control:

Traffic control including police details, warning lights, barricades, and warning signs, is the sole responsibility of the awarding authority. Unless otherwise specified, the roadway shall be kept open to traffic at all times, with traffic discontinued on the lane being reclaimed. Controlled traffic may be permitted as soon as the base has been rolled.

6. Performance:

The awarding authority will not award this contract unless the Contractor furnishes satisfactory evidence of his/her ability and experience to perform this work and that he/she has sufficient capital and equipment to enable him/her to prosecute the work successfully and to complete it within the time named in the contract. The Contractor shall not sublet any portion of this contract and will own all equipment used to complete such contract. As part of the bid, the Contractor must submit a list of six similar and successfully completed jobs whose relevance to the proposed job shall be deemed by the Town of Hardwick. The name, number and contact information of a contact person involved with each of these projects must be included so they can be investigated prior to the award of the contract. It will be the responsibility of each bidder to visit the job site with the Highway Superintendent. The Board of Selectmen can reject any bid of a contractor who has not visited the work site. As part of the bid, the Contractor must submit a list of six similar and successfully completed jobs, whose relevance to the proposed job shall be deemed by the awarding authority. The name, address, and telephone number of a contact person involved with each of these projects must be included so they can be investigated prior to the award of the contract.

7. Methods of Payment:

Payment for work under this agreement shall be made at the contract unit price per square yards times the number of yards, measured by the Contractor and the Director or his/her designee, of road surface reclaimed and retreated. Prior to the bid, the awarding authority must elect to have the grading done by other or with its own machining and forces. Price per square yard shall be for complete in place quantities. Upon completion of work, and acceptance by the Director, the Contractor shall submit a payment request to the director. Payment shall be net thirty (30) days.

Town of Hardwick

Bid Form

**BID ITEM: FULL DEPTH PAVEMENT RECLAMATION WITH VIBRATORY COMPACTION,
GRADING AND LIQUID CALCIUM CHLORIDE AS PER ATTACHED SPECIFICATIONS.**

Price per Square Yard _____

Bidder: _____

Phone: _____

Address: _____

Fax: _____

Signature _____

Printed Name and Title _____

Town of Hardwick
Reference List

Owner: _____
Address: _____
City, State, Zip: _____
Contact: _____
Phone: _____
Contract Amount: _____

Owner: _____
Address: _____
City, State, Zip: _____
Contact: _____
Phone: _____
Contract Amount: _____

Owner: _____
Address: _____
City, State, Zip: _____
Contact: _____
Phone: _____
Contract Amount: _____

Owner: _____
Address: _____
City, State, Zip: _____
Contact: _____
Phone: _____
Contract Amount: _____

Owner: _____
Address: _____
City, State, Zip: _____
Contact: _____
Phone: _____
Contract Amount: _____

Owner: _____
Address: _____
City, State, Zip: _____
Contact: _____
Phone: _____
Contract Amount: _____

Town of Hardwick

Certificate of Non-Collusion

To the Town of Hardwick Bid Awarding Authority

(Board of Selectmen):

The undersigned certifies under penalties of perjury that this bid proposal has been made and submitted in good faith and without collusion or fraud with any other person.

As used in this certification the word "person" shall mean any natural person, business, partnership, corporation, union, committee, club, or other organization, entity, or group of individuals.

(Name of person signing bid or proposal)

(Name of Business)

(Date)

Town of Hardwick

Estimated Quantity

Bid Items			Bid	
1.	Stone Seal in place	11,000 Sq. yds.	_____	/S.Y.
2.	Double Stone Seal In Place	10,000 Sq. Yds.	_____	/S.Y.
3.	Type 1 Bituminous Concrete	Tons (In Place)	_____	/T.
	Type 1 Bituminous Concrete	500 Tons (Picked Up)	_____	/T.
4.	Fog Seal Rejuvenator	20,000	_____	/S.Y.
5.	PCRM Crackseal	20,000 Sq. Yds.	_____	/S.Y.
6.	HiMA Micro-surface	6,000 Sq. Yds.	_____	/S.Y.
7.	Polyethylene Pipe (Smooth Walled N-12)			
	c) 12 Inch	1,000 Linear Feet	_____	/L.F.
	d) 18 Inch	500 Linear Feet	_____	/L.F.
	e) 24 Inch	100 Linear Feet	_____	/L.F.
	f) 36 Inch	100 Linear Feet	_____	/L.F.
8.	Track Type Excavator	100 Hours	_____	/Hr.
a)	10,000-15,000 lb with Operator	8-40 Hrs. _____	40+ Hrs. _____	
b)	15,000-30,000 lb with Operator	8-40 Hrs. _____	40+ Hrs. _____	
c)	30,000-40,000 lb with Operator	8-40 Hrs. _____	40+Hrs. _____	
d)	40,000-60,000 lb with Operator	8-40 Hrs. _____	40+ Hrs. _____	
e)	60,000 lb + with Operator	8-40 Hrs. _____	40+ Hrs. _____	
9.	Full Depth Pavement Reclamation	14,500 sq. yds.	_____	/S.Y.
			<u>Picked Up</u>	<u>Delivered</u>
10.	Cold Patch	60 Tons	_____	/T.
11.	Washed Sand	4,000 Tons	_____	/T.
12.	Crushed Gravel	800 Tons	_____	/T.
13.	Processed Gravel	800 Tons	_____	/T.
14.	Screened Stone			
	b) ½"	100 Tons	_____	/T.
	c) ¾"	100 Tons	_____	/T.
	d) 1 ½"	200 Tons	_____	/T.
15.	Bituminous Concrete Berm	50 Tons	_____	/T.
16.	Bituminous Concrete Hand Applied	50 Tons	_____	/T.
17.	Bituminous Concrete In Place	50 Tons	_____	/T.
18.	Rip Rap	200 Tons	_____	/T.

Town of Hardwick
Wage Rate Certification

This is to certify that,

(Company Name)

(Company Address)

Will pay prevailing wage rates as determined by the Massachusetts Department of Labor and Industries as required by M.G.L. Chapter 149 Section 26 and 27D.

(Signature)

(Date)