COUNTY OF ERIE

CHRIS COLLINS
COUNTY EXECUTIVE
DIVISION OF PURCHASE
INVITATION TO BID

Bids, as stated below, will be received and publicly opened by the Division of Purchase in accordance with the attached specifications. FAX bids are unacceptable. Bids must be submitted in a sealed envelope to:

County of Erie
Division of Purchase
Attention: D. INSALACO-WEATHERBEE., BUYER (716) 858-6337
95 Franklin Street, Room 1254
Buffalo, New York 14202-3967

NOTE: Lower left hand corner of envelope MUST indicate the following:

BID NUMBER: 211064-004

OPENING DATE: March 1, 2011 TIME: 10:00 AM

FOR: HIGHWAY MAINTENANCE MATERIALS PART I

NAME OF BIDDER: _____

If you are submitting other Invitations to Bid, each bid must be enclosed in a separate envelope.

Following EXHIBITS are attached to and made a part of the bid specifications, and part of any agreement entered into pursuant to this Invitation to Bid:

X EXHIBIT "A" - Assignment of Public Contracts
X EXHIBIT "B" - Purchases by Other Local Governments or Special Districts
___ EXHIBIT "C" - Construction/Reconstruction Contracts
___ EXHIBIT "D" - Bid Bond (Formal Bid)
N/A EXHIBIT "E" - Bid Bond (Informal Bid)
___ EXHIBIT "F" - Standard Agreement
X EXHIBIT "G" - Non-Collusive Bidding Certification
X EXHIBIT "H" - MBE/ WBE Commitment
X EXHIBIT "IC" - Insurance –**CLASSIFICATION "A"**
___ EXHIBIT "P" & EXHIBIT "PBI" - Performance Bond
___ EXHIBIT "Q" - Confined Space Program Certification

EXHIBIT "G"

County of Erie

DIVISION OF PURCHASE

NON-COLLUSIVE BIDDING CERTIFICATION

By submission of this bid, each bidder and each person signing on behalf of any bidder certifies, and in the case of a joint bid each party thereto certifies as to its own organization, under penalty of perjury, that to the best of his knowledge and belief:

(1) the prices in this bid have been arrived at independently without collusion, consultation, communication, or agreement, for the purpose of restricting competition, as to any matter relating to such prices with any other bidder or any competitor;

(2) unless otherwise required by law, the prices which have been quoted in this bid have not been knowingly disclosed by the bidder and will not knowingly be disclosed by the bidder prior to opening, directly or indirectly, to any other bidder or to any competitor; and

(3) no attempt has been made or will be made by the bidder to induce any other person, partnership or corporation to submit or not to submit a bid for the purpose of restricting competition.

NOTICE

(Penal Law, Section 210.45)

IT IS A CRIME, PUNISHABLE AS A CLASS A MISDEMEANOR UNDER THE LAWS OF THE STATE OF NEW YORK, FOR A PERSON, IN AND BY A WRITTEN INSTRUMENT, TO KNOWINGLY MAKE A FALSE STATEMENT, OR TO MAKE A FALSE STATEMENT, OR TO MAKE A STATEMENT WHICH SUCH PERSON DOES NOT BELIEVE TO BE TRUE.

BID NOT ACCEPTABLE WITHOUT FOLLOWING CERTIFICATION:

Affirmed under penalty of perjury this _____ day of _____, 20 _____

TERMS _____ DELIVERY DATE AT DESTINATION _____

FIRM NAME _____

ADDRESS _____

_____ ZIP _____

AUTHORIZED SIGNATURE _____

TYPED NAME OF AUTHORIZED SIGNATURE

TITLE _____ TELEPHONE NO.

(Rev.1/2000)
ERIE COUNTY OFFICE BUILDING, 95 FRANKLIN STREET, BUFFALO, NEW YORK 14202 (716) 858-6395

County of Erie

DIVISION OF PURCHASE
BID SPECIFICATIONS

BID NO: 211064-004

Ship to: County of Erie
Attention: DPW HIGHWAYS &
Address: VARIOUS LOCATIONS

Ship Via: Most Economical
Date Required at Destination: AS REQUIRED

ITEM NO.	QUAN-TITY	UM	CATALOG NO./DESCRIPTION	UNIT PRICE	TOTAL PRICE
			Please furnish pricing for Highway Maintenance Materials as per		
			The following specifications for the period April 1, 2011 through		
			March 31, 2012. Any Questions can be directed to: **Linda King**		
			at 716-858-2073. Note: See Exhibit "H".		
			Submit with bid response:		
			(1) List of WBE/MBE as requested **OR**		
			(2) Complete the Waiver Form		
			One or the other must be completed and returned with Bid Package		
			In order for your bid to be considered.		
			*New York State Prevailing Wage Rates Apply.		
			www.labor.state.ny.us		
			***IMPORTANT PLEASE NOTE* ALL BIDDERS MUST SUBMIT**		
			(10) EXTRA COPIES OF ONLY THE PRICING PAGES, CLEARLY		
			"EXTRA COPIES" AND PIT LOCATION INDICATED, WITH		
			COMPANY'S NAME.		

NOTE: Bid results cannot be given over the phone. All requests for bid results should be submitted in writing or faxed to:

ERIE COUNTY DIVISION OF PURCHASE
Freedom of Information Officer
95 Franklin Street, Rm. 1254
Buffalo, NY 14202
FAX #: **716/858-6465**

TOTAL NET BID DELIVERED INSIDE _____

NAME OF BIDDER _____

(Rev. 9/95)
ERIE COUNTY OFFICE BUILDING, 95 FRANKLIN STREET, BUFFALO, NEW YORK 14202 (716) 858-6395

County of Erie

DIVISION OF PURCHASE

INSTRUCTIONS TO BIDDERS (FORMAL)

1. BID SHALL BE SUBMITTED ON THESE COUNTY OF ERIE BID FORMS or bid will not be considered. Bid must be typed or printed in ink. Original autograph signatures in ink are required. Facsimile or rubber stamp signatures will not be accepted. ALL PAGES OF THIS BID DOCUMENT MUST BE RETURNED INTACT.

2. LATE PROPOSALS. Any bids received in the Erie County Division of Purchase after the date and time prescribed will not be considered for contract award.

3. EMERGENCY CLOSINGS. In the event the closing of certain County facilities and/or operations and/or services due to any flood, fire, fire drill, power failure, uncontrolled weather conditions or other cause beyond the Division of Purchase control, only bids received in the Division of Purchase prior to the date and time or postmarked as of the date prescribed will be considered for contract award.

4. ANY CHANGE IN WORDING OR INTERLINEATION BY A BIDDER OF THE INQUIRY AS PUBLISHED BY THE COUNTY OF ERIE shall be reason to reject the proposal of such bidder, or in the event that such change in the Invitation to Bid is not discovered prior to entering into a contract, to void any contract entered into pursuant to such bid.

5. THE COUNTY RESERVES THE RIGHT TO REJECT any and all bids, to accept either in whole or in part any one bid or combination of bids, as may be provided in the bid specifications, or to waive any informalities in bids. The County does not obligate itself to accept the lowest or any other proposal.

6. AWARD TO THE LOWEST RESPONSIBLE BIDDER. For the purpose of determining which bidder is the lowest qualified responsible bidder, it shall be the lowest three bidders' responsibility, within FIVE DAYS of being so notified by the Division of Purchase, to present information and documentation to the Division of Purchase, to satisfy the County that the bidder possesses sufficient capital resources, skill, judgment and experience to perform the work or deliver the material, as per bid specifications.

7. CONTRACT(S) OR PURCHASE ORDER(S) WILL BE AWARDED after due consideration of the suitability of goods and/or services bid to satisfy these specifications, the total cost of such goods and/or services including all cost elements, and the timeliness of the agreed upon delivery date.

8. This EXECUTORY CLAUSE shall be a part of any agreement entered into pursuant to this bid:

IT IS UNDERSTOOD BY THE PARTIES THAT THIS AGREEMENT SHALL BE EXECUTORY ONLY TO THE EXTENT OF THE MONIES AVAILABLE TO THE COUNTY OF ERIE AND APPROPRIATED THEREFOR, AND NO LIABILITY ON ACCOUNT THEREOF SHALL BE INCURRED BY THE COUNTY BEYOND THE MONIES AVAILABLE AND APPROPRIATED FOR THE PURPOSE THEREOF.

9. FAILURE TO MEET DELIVERY SCHEDULE as per accepted bid may result in legal action by the County of Erie to recover damages.

10. PRICES SHALL BE QUOTED F.O.B. DESTINATION AND DELIVERED INSIDE. "Tailgate delivery" will not be accepted unless specified by the County.

11. COLLECT TRANSPORTATION CHARGES WILL NOT BE PAID BY THE COUNTY. All freight, cartage, rigging, postage or other transportation charges shall be prepaid and included in the bid. There will be no additional charges for delivery.

12. NO TAXES ARE TO BE BILLED TO THE COUNTY. Bids shall not include any Federal, State, or local excise, sales, transportation, or other tax, unless Federal or State law specifically levies such tax on purchases made by a political subdivision. The County of Erie Purchase Order is an exemption certificate. Any applicable taxes from which the County is <u>not</u> exempt shall be listed separately as cost elements, and added into the total net bid.

13. THE SUCCESSFUL BIDDER shall comply with all laws, rules, regulations and ordinances of the Federal Government, the State of New York and any other political subdivision of regulatory body which may apply to its performance under this contract.

County of Erie
DIVISION OF PURCHASE

14. GRATUITIES, ILLEGAL OR IMPROPER SCHEMES. The County may terminate this agreement if it is determined that gratuities in the form of entertainment, gifts or otherwise were offered or given by a vendor, his agent or representative to any County official or employee with a view towards securing favorable treatment with respect to the awarding of this bid or the performance of this agreement. The County may also terminate this agreement if it is determined that the successful bidder engaged in any other illegal or improper scheme promotive of favoritism or unfairness incidental to the bidding process or the performance of this agreement. In the event that it is determined that said improper or illegal acts occurred, the County shall be entitled to terminate this agreement and/or exercise any other remedy available to it under existing law.

15. INSURANCE shall be procured by the Successful Bidder before commencing work, no later than 14 days after notice of award and maintained without interruption for the duration of the Contract, in the kinds and amounts specified in Exhibit IC, unless otherwise stipulated in these Bid Specifications. IF THE INSURANCE IS NOT PROVIDED IN ACCEPTABLE FORM WITHIN THIS PERIOD OF TIME, THEN THE DIRECTOR OF PURCHASE MAY DECLARE THE VENDOR NONRESPONSIVE AND AWARD THE CONTRACT TO THE NEXT LOW RESPONSIBLE BIDDER.

CERTIFICATES OF INSURANCE shall be furnished by the successful bidder on Erie County Standard Insurance Certificate, Exhibit IC.

16. ANY CASH DISCOUNT which is part of bid will be considered as a reduction in the bid prices in determining the award of the bid. Date of invoice must not precede date of delivery. The County policy is to pay all claims in a timely manner within the specified time. However, if for some reason payment is delayed, the County will take the discount when payment is made. The County will not pay any interest charges, nor refund discount amounts taken after the discount period. If this is unsatisfactory, please quote net.

17. CHANGES IN THE WORK. The County may, as the need arises, through the Director of Purchase, order changes in the work through additions, deletions, or modifications without invalidating the contract. Compensation, as it may be affected by any change, shall be adjusted by agreement between the contractor and County through the Director of Purchase.

18. BID OFFERING MATERIAL OTHER THAN THAT OF SPECIFIED MANUFACTURER OR TRADE NAME will be considered unless stated otherwise. The use of the name of a particular manufacturer, trade name, or brand in describing an item does not restrict a bidder to that manufacturer or specific article. However, the substituted article on which a proposal is submitted must be of such character or quality that it would serve the purpose for which it is to be used equally well as the manufacturer or brand specified. Proposals will be accepted in accordance with specifications on file or approved equal.

19. IF MATERIAL OR SERVICES OTHER THAN THOSE SPECIFIED IN THIS BID DOCUMENT ARE OFFERED, the bidder must so state and furnish at the time of bid opening, if so requested, and as part of his bid the following information in duplicate:
(a) Complete description of the item offered, and detailed explanation of the differences between the item specified and the item offered. If, in the opinion of the Division of Purchase, sufficient detail is not presented as a part of the sealed bid to permit definitive evaluation of any substitute item, the bid will not be considered.
(b) Descriptive literature of item offered, for evaluation.
(c) List of installations in Erie County of the item offered.
(d) List of other installations.

20. ANY ADDITIONAL INFORMATION for which bidder desires to add to the bid shall be written on a separate sheet of paper, attached to and submitted with the formal sealed bid, to be read at the formal opening.

21. WORKMANSHIP MUST MEET WITH THE APPROVAL OF THE DEPARTMENT HEAD(S) INVOLVED, AND SHALL BE FIRST CLASS in every respect without exception and shall be equal to the best modern practices. Materials furnished are to be new and unused. All materials furnished or work performed are to be guaranteed free from defects. Anything found defective or not meeting specifications, no matter in what stage of completion, may be rejected and shall be made good by the contractor at his own expense.

22. CONTRACTOR SHALL CLEAN UP and remove all debris and rubbish resulting from the work and leave the premises broom clean to the approval of the department head.

County of Erie
DIVISION OF PURCHASE

23. THIS BID IS FIRM AND IRREVOCABLE for a period of 45 days from the date and time of the bid opening. If a contract is not awarded within the 45 day period, a bidder to whom the bid has not been awarded, may withdraw his bid by serving written notice of his intention to do so upon the Division of Purchase. Upon withdrawal of the bid pursuant to this paragraph, the Division of Purchase will forthwith return the bidder's security deposit.

24. PRICES CHARGED TO THE COUNTY OF ERIE are to be no higher than those offered to any other governmental or commercial consumer. If a bidder has a New York State or a Federal GSA contract for any of the items covered in this bid or any similar items, he shall so indicate that he has said contract on these bid papers and automatically supply a copy of this contract within five days after notification of award.

25. PRICE IS FIRM. The unit prices bid shall remain firm, and any other charges bid shall also remain firm, for delivery of the equipment, material, work, or services described in this bid. No cost increase shall be charged for any reason whatsoever.

26. EXTENSION OF PRICE PROTECTION. Any contract entered into pursuant to this bid to supply the County's requirements of goods and/or services for a definite period of time as stated in the attached specifications may be extended for not more than two successive periods of equal length at the same bid price upon the mutual agreement of the successful bidder and the County. All extensions shall be submitted in writing and shall have prior approval by the County of Erie, Director of Purchase.

27. IN EXECUTING THIS BID, THE BIDDER AFFIRMS that all of the requirements of the specifications are understood and accepted by the bidder, and that the prices quoted include all required materials and services. The undersigned has checked all of the bid figures, and understands that the County will not be responsible for any errors or omissions on the part of the undersigned in preparing this bid. Mistakes or errors in the estimates, calculations or preparation of the bid shall not be grounds for the withdrawal or correction of the bid or bid security. In case of error in extension of prices in the bid, the unit price will govern.

28. ACCOUNTABILITY. The undersigned shall be fully accountable for his or its performance under this bid, or any contract entered into pursuant to this bid, and agrees that he, or its officers, will answer under oath all questions relevant to the performance thereof and to any transaction, act or omission had, done or omitted in connection therewith if called before any Judicial, County or State officer or agency empowered to investigate the contract or his performance.

29. TERMINATION OF CONTRACT:

a. At its option, the County may at any time for any reason terminate this agreement and the Contractor shall immediately cease all work under the agreement upon receipt of written notice of such termination from the County.

b. In the event of termination for any reason other than the fault of the Contractor, or the nonavailability of funds as provided in the above Executory Clause, the Contractor shall be paid the amount due to date of termination, and all reasonable expenses caused by such termination.

30.THE SUCCESSFUL BIDDER TO WHOM THE BID IS AWARDED SHALL INDEMNIFY AND HOLD HARMLESS the County of Erie and its agents and employees from and against all claims, damages, losses or causes of action arising out of or resulting from such vendor's performance pursuant to this bid.

31. STATUS AS AN INDEPENDENT CONTRACTOR: The successful Bidder to whom the bid is awarded and the County agree that the Bidder and its officers, employees, agents, contractors, subcontractors and/or consultants are independent contractors and not employees of the County or any department, agency or unit thereof. In accordance with their status as independent contractors, the Bidder covenants and agrees that neither the Bidder nor any of its officers, employees, agents, contractors, subcontractors and/or consultants will hold themselves out as, or claim to be, officers or employees of the County or any department, agency or unit thereof.

32. GOVERNED BY NEW YORK LAW: This Agreement shall be construed and enforced in accordance with the laws of the State of New York. In addition, the parties hereby agree that for any cause of action arising out of this Agreement shall be brought in the County of Erie.

County of Erie

DIVISION OF PURCHASE

To facilitate correct drawing and execution of contract, bidder shall supply full information concerning legal status:

FIRM NAME _____

ADDRESS OF PRINCIPAL OFFICE STREET _____

CITY _____

AREA CODE _____ PHONE _____ STATE _____ ZIP _____

Check one: CORPORATION_____ PARTNERSHIP_____ INDIVIDUAL_____

INCORPORATED UNDER THE LAWS OF THE STATE OF _____

If foreign corporation, state if authorized to do business in the State of New York:

YES _____ NO _____

TRADE NAMES: _____

ADDRESS OF LOCAL OFFICE STREET _____

CITY _____

AREA CODE _____ PHONE _____ STATE _____ ZIP _____

NAMES AND ADDRESSES OF PARTNERS:

_____ _____

_____ _____

_____ _____

_____ _____

EXHIBIT "A"

County of Erie

CHRIS COLLINS
COUNTY EXECUTIVE
DIVISION OF PURCHASE

ASSIGNMENT OF PUBLIC CONTRACTS

GENERAL MUNICIPAL LAW - Section 109:

1. A clause shall be inserted in all specifications of contracts hereafter made or awarded by an officer, board or agency of a political subdivision, or any district therein, prohibiting any contractor, to whom any contract shall be let, granted or awarded, as required by law, from assigning, transferring, conveying, subletting or otherwise disposing of the same, or of his right, title or interest therein, or his power to execute such contract, to any other person or corporation without the previous consent in writing of the officer, board or agency awarding the contract.

2. If any contractor, to whom any contract is let, granted, or awarded, as required by law, by any officer, board or agency of a political subdivision, or of any district therein, without the previous written consent specified in subdivision one (1) of this section, assign, transfer, convey, sublet or otherwise dispose of such contract, or his right, title or interest therein, or his power to execute such contract to any other person or corporation, the officer, board or agency which let, made, granted or awarded such contract shall revoke and annul such contract, and the political subdivision or district therein, as the case may be, and such officer, board or agency shall be relieved and discharged from all liability and obligations growing out of such contract to such contractor, and to the person or corporation to which such contract shall have been assigned, transferred, conveyed, sublet or otherwise disposed of, and such contractor, and his assignee, transferee or sublessee shall forfeit and lose all monies, theretofore earned under such contract, except so much as may be required to pay his employees. The provisions of this section shall not hinder, prevent or affect any assignment by any such contractor for the benefit of his creditors made pursuant to the laws of the State.

NO ASSIGNMENT OF ANY AGREEMENT pursuant to this bid shall be made without specific prior approval, in writing, by the Erie County Director of Purchase.

(Rev. 12/01/93)

"EXHIBIT B"

COUNTY OF ERIE

CHRIS COLLINS
COUNTY EXECUTIVE
DIVISION OF PURCHASE

PURCHASES BY OTHER LOCAL GOVERNMENTS OR SPECIAL DISTRICTS

The Erie County Legislature has adopted the following resolution for the purpose of allowing the following-named local governmental or school districts to make purchases through the County bidding procedures.

Under the following conditions, the Director of Purchase may make purchasing services available to the following 88 participants:

1. When in the opinion of the Director of Purchase it will not create any burden or hardship upon the County and the anticipated prices will not be adversely affected thereby, the Director is authorized when he deems appropriate and as may be requested by the participants to provide in any particular County bid specification that the participants in Erie County shall have the right to make purchases based upon the bids received by the County.

2. The County Purchase Director, within the limits of his time and manpower, shall disseminate relevant contract information to the participants.

3. The participants in County contracts will issue purchase orders directly to vendors within the specified contract period referencing the County contract involved and be liable for any payments due on such purchase orders.

Bidders shall take notice that as a condition of the award of a County contract pursuant to these specifications, the successful bidder agrees to accept the award of a similar contract with any of the participants in Erie County if called upon to do so. The County, however, will not be responsible for any debts incurred by participants pursuant to this or any other agreement.

Necessary deviations from the County's specifications in the award of a participant's contract, particularly as such deviations may relate to quantities or delivery point, shall be a matter to be resolved between the successful bidder and participants. All inquiries regarding prospective contracts shall be directed to the attention of:

AKRON CENTRAL SCHOOL DISTRICT, District Clerk, 47 Bloomingdale Ave., Akron, NY 14001
AKRON VILLAGE OF, Clerk-Treasurer, 21 Main St., Akron, NY 14001
ALDEN CENTRAL SCHOOL DISTRICT, District Clerk, 13190 Park St., Alden, NY 14004
ALDEN TOWN OF, Town Clerk, Town Hall, 11901 Broadway, Alden, NY 14004
ALDEN VILLAGE OF, Village Clerk, 13336 Broadway, Alden, NY 14004
AMHERST CENTRAL SCHOOL DISTRICT, Business Manager , 4301 Main St., Amherst, NY 14226
AMHERST TOWN OF, Highway Superintendent, Town Hall, 5583 Main St., Williamsville, NY 14221
AMHERST TOWN OF, Town Supervisor, Town Hall, 5583 Main St., Williamsville, NY 14221
ANGOLA VILLAGE OF, Clerk-Treasurer, 41 Commercial St., Angola, NY 14006
AURORA TOWN OF, Town Clerk, Town Hall, 5 S. Grove St., E. Aurora, NY 14052
BLASDELL VILLAGE OF, Clerk-Treasurer, 121 Miriam St., Blasdell, NY 14219
BOCES, ERIE #1, Clifford N Crooks Svc. Ctr., 355 Harlem Rd. West Seneca NY 14224-1892
BOCES, ERIE CATTARAUGUS #2, Assistant Superintendent, 3340 Baker Rd., Orchard Park, NY 14127
BOSTON TOWN OF, Town Clerk, Town Hall, 8500 Boston State Rd., Boston, NY 14025
BRANT TOWN OF, Town Clerk, Town Hall, Brant North Collins Rd., Brant, NY 14027
BUFFALO BOARD OF EDUCATION, Purchasing Agent, 408 City Hall, Buffalo, NY 14202
BUFFALO CITY OF, Division of Purchasing, 1901 City Hall, Buffalo, NY 14202
BUFFALO SEWER AUTHORITY, General Manager, 1038 City Hall, Buffalo, NY 14202-3378
CHEEKTOWAGA CENTRAL SCHOOL DISTRICT, 3600 Union Rd., Cheektowaga, NY 14225
CHEEKTOWAGA-MARYVALE UNION FREE SCHOOL DISTRICT, District Clerk, 1050 Maryvale Dr., Cheektowaga, NY 14225-2386
CHEEKTOWAGA-SLOAN UNION FREE SCHOOL DISTRICT, District Clerk, 166 Halstead Ave., Sloan, NY 14212-2295
CHEEKTOWAGA TOWN OF, Town Hall, Broadway & Union Rds., Cheektowaga, NY 14227
CLARENCE CENTRAL SCHOOL DISTRICT, Business Administrator, 9625 Main St., Clarence, NY 14031-2083
CLARENCE TOWN OF, Town Clerk, 1 Town Place, Clarence, NY 14031
CLEVELAND HILL FIRE DISTRICT NO. 6, Secretary, 440 Cleveland Dr., Cheektowaga, NY 14225
CLEVELAND HILL U.F.S.D. @ CHEEKTOWAGA, Business Manager,105 Mapleview Dr., Cheektowaga, NY 14225

COLDEN TOWN OF, Deputy Town Clerk, Town Hall, S-8812 State Rd., Colden, NY 14033
COLLINS TOWN OF, Supervisor, Town Hall, P.O. Box 420, Collins, NY 14035
CONCORD TOWN OF, Town Clerk, Town Hall, Springville, NY 14141-0187
DEPEW UNION FREE SCHOOL DISTRICT, District Clerk, 591 Terrace Blvd., Depew, NY 14043
DEPEW VILLAGE OF, Village Clerk, Municipal Building, 85 Manitou St., Depew, NY 14043
EAST AURORA VILLAGE OF, Village Clerk, Village Hall, 571 Main St., East Aurora, NY 14052
EDEN TOWN OF, Town Clerk, 2795 East Church St., Eden, NY 14057
EGGERTSVILLE FIRE DISTRICT, Secretary/Treasurer, 1880 Eggert Rd., Eggertsville, NY 14226-2233
ELLWOOD FIRE DISTRICT #1, Secretary, Town of Tonawanda, 1000 Englewood Ave., Kenmore, NY 14223
ELMA TOWN OF, Town Clerk, Town Hall, 1600 Bowen Rd., Elma, NY 14059
ERIE COUNTY WATER AUTHORITY, Central Processing, 3030 Union Rd., Buffalo, NY 14227
EVANS TOWN OF, Town Clerk, 42 N. Main St., Angola, NY 14006
FARNHAM VILLAGE OF, Village Clerk-Treasurer, 526 Commercial St., Farnham, NY 14061
FORKS FIRE DISTRICT #3, Commissioner, Town Cheektowaga, 3330 Broadway, Cheektowaga, NY 14227
GOWANDA VILLAGE OF, Clerk/Treasurer, 27 East Main St., Gowanda, NY 14070
GRAND ISLAND CENTRAL SCHOOL DISTRICT, District Clerk, 1100 Ransom Rd., Grand Island, NY 14072
GRAND ISLAND TOWN OF, Town Clerk, 2255 Baseline Rd., Grand Island, NY 14072
HAMBURG TOWN OF, Town Clerk, S-6100 S. Park Ave., Hamburg, NY 14075
HAMBURG VILLAGE OF, Village Clerk/Treasurer, 100 Main St., Hamburg, NY 14075
HOLLAND FIRE DISTRICT #1, Town of Holland, Holland, NY 14080
HOLLAND TOWN OF, Town Clerk, 47 Pearl St., Holland, NY 14080
HOPEVALE UNION FREE SCHOOL DISTRICT, District Clerk, 3780 Howard Rd., Hamburg, NY 14075
IROQUOIS CENTRAL SCHOOL DISTRICT, Girdle Rd., Elma, NY 14059
KENILWORTH FIRE DISTRICT #2, Commissioner, Tn. Tonawanda, 84 Hawthorne Ave., Buffalo, NY 14223
KENMORE-TN OF TONAWANDA UNION FREE SCHOOL DISTRICT, District Clerk, 1500 Colvin Blvd., Buffalo NY 14223
KENMORE VILLAGE OF, Village Clerk-Treasurer, Municipal Building, Kenmore, NY 14217
LACKAWANNA CITY OF, City Clerk, Lackawanna City Hall, 714 Ridge Rd., Lackawanna, NY 14218
LAKE VIEW FIRE DISTRICT, Fire Commissioner, Lakeview & Burke Roads, Lake View, NY 14085
LANCASTER TOWN OF, Town Clerk, 21 Central Avenue, Lancaster, NY 14086
LANCASTER VILLAGE OF, Clerk-Treasurer, Municipal Building, 5423 Broadway, Lancaster, NY 14086
MARILLA TOWN OF, Marilla Town Hall, 1740 Two Rod Rd., Marilla, NY 14102
NEWSTEAD TOWN OF, Town Clerk, Town Hall, P.O. Box 227, Akron, NY 14001
NIAGARA FRONTIER TRANSPORTATION AUTHORITY, 181 Ellicott St., Buffalo, NY 14205
NORTH COLLINS TOWN OF, Town Clerk 2015 Spruce St., North Collins, NY 14111
NORTH COLLINS VILLAGE OF, Village Clerk, 10543 Main St., North Collins, NY 14111
ORCHARD PARK CENTRAL SCHOOL DISTRICT, Asst. Supt. Bus. & Support Svcs. 3330 Baker Rd., Orchard Park, NY 14127
ORCHARD PARK TOWN OF, Town Clerk, Municipal Bldg., 4295 S. Buffalo St., Orchard Park, NY 14127
ORCHARD PARK VILLAGE OF, Clerk, Municipal Bldg., 4295 S. Buffalo St., Orchard Park, NY 14127
SARDINIA TOWN OF, Town Clerk, Town Hall, Savage Rd., Sardinia, NY 14134
SHERIDAN PARK FIRE DISTRICT NO. 4, Secretary, 738 Sheridan Dr., Tonawanda, NY 14150
SLOAN VILLAGE OF, Clerk Treasurer, 425 Reiman St., Sloan, NY 14212
SNYDER VOL. FIRE DEPT., Fire Commissioner, 4531 Main Street, Snyder, NY 14226
SOUTH LINE FIRE DISTRICT #10, Fire Commissioner, 1049 S. French Rd., S. Cheektowaga, NY 14227
SOUTH WALES FIRE DISTRICT #1, Secretary/Treasurer, P.O.Box 94, South Wales, NY 14139
SPRING BROOK FIRE DISTRICT #1, Secretary, P.O. Box 97, Spring Brook, NY 14140
SPRINGVILLE VILLAGE OF, Clerk Treasurer, Village Office, 5 W. Main St., Springville, NY 14141
SWEET HOME CENTRAL SCHOOL DISTRICT, Director Finance & Plant Svcs., 1901 Sweet Home Rd., Amherst, NY 14228
TONAWANDA CITY OF, Mayor, 200 Niagara St., Tonawanda, NY 14150
TONAWANDA CITY OF, Superintendent, 150 Fillmore Avenue,Tonawanda, NY 14150
TONAWANDA CITY SCHOOL DISTRICT, District Clerk, 100 Hinds St., Tonawanda, NY 14150-1815
TONAWANDA TOWN OF, Town Clerk, Municipal Building, Kenmore, NY 14217
U-CREST FIRE DISTRICT #4, Fire Commissioner, 255 Clover Place, Cheektowaga, NY 14225
UNION FREE SCHOOL DISTRICT, Dist. Clerk, Tn. Tonawanda, 1500 Colvin Blvd., Kenmore, NY 14223
WALDEN FIRE DISTRICT #2, Fire Commissioner, 20 Pine Ridge Road, Cheektowaga, NY 14211
WALES TOWN OF, Town Clerk, Big Tree Rd., Wales Center, NY 14169
WEST SENECA CENTRAL SCHOOL DISTRICT, District Treasurer, 1397 Orchard Park Rd., West Seneca, NY 14224-4098
WEST SENECA FIRE DISTRICT #4, Fire Commissioner, 100 Lein Rd., West Seneca, NY 14224
WEST SENECA FIRE DISTRICT #5, Fire Commissioner, 2801 Seneca St., West Seneca, NY 14224
WEST SENECA TOWN OF, Town Clerk, 1250 Union Road, West Seneca, NY 14224
WILLIAMSVILLE CENTRAL SCHOOL DISTRICT, District Clerk, 105 Casey Rd, PO Box 5000, East Amherst NY 14051
WILLIAMSVILLE VILLAGE OF, 5565 Main St., Williamsville, NY 14231-1557
WYOMING, COUNTY OF, Office of the Board of Supervisors, 143 N Main St., Warsaw, NY 14569

REV. 7/09

EXHIBIT "H"

COUNTY OF ERIE
CHRIS COLLINS
COUNTY EXECUTIVE
DIVISION OF PURCHASE

MBE/WBE COMMITMENT

The Erie County Legislature enacted Local Law No. 5 requiring a minority and women-owned business utilization commitment by persons or firms contracting with the County of Erie for supplies, materials, equipment, and insurance.

SECTION 1.

A. The supplier of all purchase contracts involving an expenditure of more than $15,000.00 shall take affirmative action to utilize bona fide minority business enterprises (MBE) and women business enterprises (WBE) on all contracts with the County. Affirmative action shall include, but not limited to:

1. Utilizing a source list of MBEs and WBEs; and

2. Solicitation of bids from MBEs and WBEs; and

3. Providing MBEs and WBEs sufficient time to submit proposals in response to solicitations; and

4. Maintaining records showing utilization of MBEs and/or WBEs specific efforts to identify and utilize these companies; and

5. A goal of awarding at least ten percent (10%) of the total dollar value of the contract to MBEs and at least two percent (2%) of the total dollar value of the contract to WBEs or, for those contracts governed by federal or state regulations with respect to MBE and/or WBE hiring the prevailing percentage set forth therein, whichever is higher, subject to waiver as provided below.

B. All bidders must submit, with a bid, a list of all MBEs and WBEs from whom the supplier has solicited bids, or with whom the supplier has signed a binding contractual agreement, or with whom the contractor is presently negotiating an agreement, for the purpose of meeting the MBE and WBE utilization goals provided in subdivision (A) (5) above. A supplier's bid shall not be considered where the supplier fails to submit a list as provided for herein. A supplier's bid shall not be considered where examination of said list of MBEs and WBEs evidences failure by the supplier to comply with the affirmative action requirements provided herein, except that the County may, upon written request by the supplier, grant a complete or partial waiver of the provisions of subdivision (A) (5) where the availability of MBEs and/or WBEs in the market area of the contract is less than the ten percent (10%) MBE goal and two percent (2%) WBE goal.

C. As evidence of compliance with the goals set forth in subdivision (A) (5) above, the supplier shall submit to the Director or Purchasing, at the bid opening, a schedule for MBE and WBE participation listing the MBEs and WBEs with whom the supplier intends to utilize; specifying the agreed upon price to be paid for such goods and identifying in detail the contract item or items to be supplied by each MBE and WBE. A copy of the participating schedule will be forwarded to the Division of E.E.O. from the Division of Purchasing. Contingent upon a contract award, a letter of intent to enter into a purchase agreement, signed by both the supplier and the MBE and WBE (unless a waiver is requested in one of those categories), indicating the agreed upon price and scope of work, shall be provided.

D. As evidence of compliance with the goals set forth in subdivision (A) (5) above, the supplier shall provide to the County Division of E.E.O., copies of all the subcontracts and/or purchase agreements with the MBEs and WBEs within fifteen (15) days of contract award.

E. For the purpose of this section, the term "minority business enterprise" shall mean a business which performs a commercially useful function, at least fifty-one percent (51%) of which is owned by minority group members or, in the case of a publicly-owned business, at least fifty-one percent (51%) of all stock is owned by minority group members. Such ownership shall be certified by the County Division of E.E.O.

For the purposes of this paragraph, "minority group members" are citizens of the United States who are African-American, Hispanic, Asian-American and American-Indian.

F. For the purposes of this section, the term "women-owned business enterprise" shall mean a business which performs a commercially useful function, at least fifty-one percent (51%) of which is owned by a woman or women or, in the case of publicly-owned business, at lest fifty-one percent (51%) of all stock is owned by a woman or women. Such ownership shall be certified by the County Division of E.E.O.

NOTE:

It is the prime vendor's responsibility to obtain MBE/WBE vendors and NOT the County of Erie. However, some vendors may be obtained from:

Director
Erie County Division of E.E.O.
95 Franklin Street
6TH Floor
Buffalo, NY 14202
(716) 858-7542

BID WILL NOT BE CONSIDERED IF THIS FORM IS NOT SUBMITTED WITH BID AS REQUIRED, REGARDLESS OF THE BID AMOUNT.

BID NO.: _____
BID DATE: _____

ERIE COUNTY MINORITY/ WOMEN BUSINESS ENTERPRISE UTILIZATION REPORT - PART A

COMPANY:
AUTHORIZED REPRESENTATIVE:
ADDRESS: _____
TELEPHONE NUMBER: (___)_
BID NAME:

I. List actions taken to identify, solicit, and contact Minority Business Enterprises (MBE)/Women Business Enterprises (WBE) to bid on subcontracts for this project.

1.
2.
3.
4.
5.
6.

II. List all bona fide Minority/Women Business Enterprise subcontractors and suppliers solicited, contracted, or presently negotiating a contract in accordance with the minority business utilization goal set forth by the County of Erie. (Attach additional sheets if necessary.)

MBE/WBE OWNED FIRMS	SUPPLY/SERVICE	AMOUNT OF PROPOSAL	PRIOR CERTIFICATION	CONTRACT EXECUTED	REASON IF CONTRACT NOT AWARDED
Name: _____ Address: _____ _____ Telephone No. _____ IRS # _____				YES _____ NO _____	
Name: _____ Address: _____ _____ Telephone No. _____ IRS # _____				YES _____ NO _____	

MBE/WBE OWNED FIRMS	SUPPLY/SERVICE	AMOUNT OF PROPOSAL	PRIOR CERTIFICATION	CONTRACT EXECUTED	REASON IF CONTRACT NOT AWARDED
Name: _____ Address: _____ _____ Telephone No. _____ IRS # _____				YES _____ NO _____	
Name: _____ Address: _____ _____ Telephone No. _____ IRS # _____				YES _____ NO _____	
Name: _____ Address: _____ _____ Telephone No. _____ IRS # _____				YES _____ NO _____	

III. Total Dollar Amount to be subcontracted to
Minority Business Enterprise(s). $
Women Business Enterprise(s). $

IV. Total Amount of Bid $

V. MBE Percent (%) of project bid %
WBE Percent (%) of project bid %

VI. YOU MUST ATTACH COPIES OF RELEVANT CORRESPONDENCE AND DOCUMENTS, INCLUDING RETURN RECEIPTS.

_____
SIGNATURE OF AUTHORIZED REPRESENTATIVE DATE

(01/09)

MBE/WBE UTILIZATION REPORT - PART B

FINAL CERTIFICATION OF EXPENDITURES TO MBEs/WBEs

(To be completed by the prime vendor and submitted to the
Erie County Division of E.E.O. when contract is complete)

Erie County reserves the right to require documentation, including, but not limited to, cancelled checks to verify these amounts.

VENDOR: _____ BID NO. _____

MBE	TOTAL AMOUNT EXPENDED

WBE	

TOTAL OF ALL MBE SUBCONTRACTS $_____

TOTAL OF ALL WOMEN SUBCONTRACTS $_____

AMOUNT OF CONTRACT (PRIME) $_____

FINAL MBE PERCENTAGE $_____

FINAL WBE PERCENTAGE $_____

I _____, as an official representative of _____, do hereby certify that the information listed above is correct and complete.

SIGNATURE TITLE DATE

MAIL TO: Erie County Division of E.E.O.
95 Franklin Street
6th Floor
Buffalo, NY 14202

(01/09)

WAIVER RECOMMENDATION

COMPANY: _____

ADDRESS: _____

TELEPHONE NUMBER: (_____) _____ BID NO.: 211064-004

1. Vendor has made a good faith effort to subcontract on this bid for which minority/women's business enterprises bids could be solicited; and

2. The total percentage of the bid which could be subcontracted for which minority business enterprises bids could be solicited is less than 10% for MBEs and/or 2% WBEs.

A waiver as provided for by Erie County Local Law, is hereby requested on the grounds that there are no/insufficient (circle the appropriate term) minority/women's business enterprises in the market area of this bid.

1. _____ 6. _____

2. _____ 7. _____

3. _____ 8. _____

4. _____ 9. _____

5. _____ 10. _____

(Use additional sheets if necessary.)

If a partial waiver is granted, the Vendor will make a good faith effort to meet the reduced goal.

_____

DATE SIGNATURE OF AUTHORIZED COMPANY REPRESENTATIVE

Granted in Whole: _____

Granted in Part: _____

Comments:

_____

_____

_____

DIRECTOR OF E.E.O. DATE

(01/09)

COUNTY OF ERIE
STANDARD INSURANCE REQUIREMENTS

Vendor Insurance Classification A:
Contracts Involving Construction or Maintenance

1. The contractor shall obtain, at his own cost and expense, the following insurance coverages with insurance companies licensed in the State of New York and shall provide a certificate of insurance as evidence of such coverages on the County of Erie Standard Insurance Certificate.

A. Comprehensive General Liability

- with a minimum combined single limit of liability for Bodily Injury and Property Damage of $1,000,000 per occurrence and annual aggregate. The coverage shall include:
- Premises and Operations
- Products and Completed Operations
- Independent Contractors
- Contractual Liability (sufficient to cover all liability assumed under contracts with the County of Erie)
- Broad Form Property Damage
- Explosion, Collapse and Underground Hazards (x, c, u)

B. Automobile Liability

- with a minimum combined single limit of liability for Bodily Injury and Property Damage of $1,000,000 each occurrence. The coverage shall include Owned, Hired, and Non-Owned Autos (Symbol "1" should be designated for Liability coverage on the Business Auto Policy).

C. Excess "Umbrella" Liability

- with a minimum limit of $1,000,000

D. Worker's Compensation and Employer's Liability

- providing statutory coverage in compliance with the Worker's Compensation Law of the State of New York.

E. Disability Benefits

- providing statutory coverage in compliance with the New York State Disability Benefits Law.

2. Comprehensive General Liability, Automobile Liability and Excess "Umbrella" Liability shall name the County of Erie and any Board, Bureau, Commission or Agency thereof as additional insureds.

3. All policies in which the County of Erie is named as an additional insured shall provide that:

A. The insurance company or companies issuing the policies shall have no recourse against the County of Erie for payment of any premiums or for assessments under any form of policy.

B. The insurance shall apply separately to each insured (except with respect to the limit of the liability).

4. Prior to cancellation, non-renewal or material change of the above policies, at least forty-five (45) days advance written notice shall be given to the County of Erie, Department of Law, 69 Delaware Avenue, Buffalo, N.Y. 14202, and the Agency requesting the certificate.

5. All certificates of insurance shall be approved by the Erie County Department of Law prior to the inception of any work.

REV. 12/02

County of Erie Standard Insurance Certificate

LAW-1 INS (Rev. 12/02) This certificate does not amend. extend or alter the coverage afforded by the standard form policies listed below.

I Insured: Name Address Zip Phone No.	III Companies Affording Coverages
	A
	B
II Issuing Agency: Name Address Zip Phone No.	C
	D

IV. This is to certify that the policies listed below have been issued to the insured named above and are in force at this time.

Indicate Type of Insurance by Checking the Box		Policy Number	Expiration Date	Limits of Liability in Thousands		
				Check the Box	Each Occurrence	Aggregate
COMPANY LETTER from III above	**1. General Liability** __ Comprehensive Form __ Premises and Operations __ Products/Completed Operations __ Independent Contractors __ Contractual __ Personal Injury __ Broad Form Property Damage __ Explosion, Collapse __ Underground Hazard			__ Bodily Injury Property Damage OR __ Combined Single Limit		
	2. Automotive Liability Comprehensive Form OR __ Schedule Form __ owned __ hired __ non-owned			__ Bodily Injury Property Damage OR __ Combined Single Limit		
	3. Excess Liability __ Umbrella Form OR __ other than umbrella __ auto __ general __ both			Bodily Injury & Property Damage Combined $ _____ Self Insured Retention $ _____		
	4. Worker's Compensation & Employer's Liability Disability Benefits			Statutory Statutory		
	5. Other					

V. County of Erie is included as an additional insured under the following Policy numbers: _____

VI. Description of Operations: It is understood that this coverage on behalf of the insured is for all locations in the County of Erie, State of New York

VII. ACKNOWLEDGMENT: Insurance companies providing these coverages acknowledge that the named insured is entering into a contract with the County of Erie, in which the named insured agrees to defend, hold harmless and indemnify the County, its officials, employees and volunteers against all claims resulting from work performed, material handled and services rendered. The Contractual Liability coverage evidenced above covers the liability assumed under the County - Contractor agreement.

VIII. Prior to non-renewal or cancellation of these policies, at least forty-five (45) days advance written notice shall be given to the County of Erie Dept. of Law and the County Department requesting this Certificate, before such change shall be effective.

IX. Name and Address of Certificate Holder & Recipient of Notice County of Erie Department of Law 69 Delaware Ave. - Suite 300 Buffalo, New York 14202 (716) 858-2200	Date Issued _____ Auth. Representative _____ Firm Name & Address _____

FOR COUNTY USE ONLY: Name of County Dept. Requesting Certificate — **PURCHASING DEPARTMENT**

Purchase Order or Contract Number — **211064-004**

EXHIBIT IC Vendor Insurance Classification — **"A"**

INSTRUCTIONS FOR COUNTY OF ERIE STANDARD INSURANCE CERTIFICATE

I. Insurance shall be procured and certificates delivered before commencement of work or delivery of merchandise or equipment.

II. CERTIFICATES OF INSURANCE
A. Shall be made to the "County of Erie, Dept. of Law, Suite 300, 69 Delaware Avenue, Buffalo, N.Y. 14202,"
B. Coverage must comply with all specifications of the contract.
C. Executed by an insurance company and/or agency or broker, which is licensed by the Insurance Department of the State of New York. If executed by a broker, notarized copy of authorization to bind or certify coverage must be attached.

III. Forward the completed certificate to: County of Erie (Department or Division) responsible for entering into the agreement for construction, purchase, lease or service.

IV. Minimum coverage with limits are as follows:

Vendor Classification	A Construction and Maintenance	B Purchase or Lease of Merchandise or Equipment	C Professional Services	D Property Leased To Others or Use of Facilities Or Grounds	E Concession-Aires Services	F Livery Services	G All Purposes Public Entity Contracts
Comp. Gen. Liab.	$1,000,000	$500,000 CSL	$500,000 CSL	$1,000,000	$500,000 CSL	$1,000,000	$500,000 CSL
-Prem. & OPS	INCLUDE		INCLUDE	INCLUDE	INCLUDE	INCLUDE	INCLUDE
-Prods. & Compl. OPS	INCLUDE	INCLUDE	INCLUDE	INCLUDE	INCLUDE	INCLUDE	INCLUDE
-Independ. Contract	INCLUDE	INCLUDE	INCLUDE	INCLUDE	INCLUDE	INCLUDE	INCLUDE
-Contractual	INCLUDE		INCLUDE	INCLUDE	INCLUDE	INCLUDE	INCLUDE
-Broad Form P.D.	INCLUDE	Note: Comprehensive Form Not Required					See note below
-X.C.U.							
-Personal Injury			INCLUDE	INCLUDE	INCLUDE	INCLUDE	INCLUDE
-Liquor Law				INCLUDE	See note below		
-Host Liquor							INCLUDE
Auto. Liab.	$1,000,000CSL		$1,000,000CSL	$1,000,000CSL	$1,000,000CSL	$1,000,000CSL	$1,000,000CSL
-Owned	INCLUDE		INCLUDE	INCLUDE	INCLUDE	INCLUDE	INCLUDE
-Hired	INCLUDE		INCLUDE	INCLUDE	INCLUDE	INCLUDE	INCLUDE
-Non-Owned	INCLUDE		INCLUDE	INCLUDE	INCLUDE	INCLUDE	INCLUDE
Excess Umbrella Liab.	$1,000,000	$1,000,000	$1,000,000	$1,000,000	$1,000,000	$1,000,000	$1,000,000
	See note below						See note below
Worker's	STATUTORY	STATUTORY	STATUTORY	STATUTORY	STATUTORY	STATUTORY	
& Employer's Liability							
Disability Benefits	STATUTORY	STATUTORY	STATUTORY	STATUTORY	STATUTORY	STATUTORY	
Professional Liab.			$1,000..000				
Erie County To Be Named Add'l Insd. On	Gen.Liab., Auto Liab., & Excess	Broad Form Vendors May Be Required	Gen.Liab., Auto Liab., & Excess	Gen.Liab., Auto Liab., & Excess	Gen.Liab., Auto Liab., & Excess	Gen.Liab., Auto Liab., & Excess	Gen.Liab.. Auto Liab., & Excess

* Construction contracts require excess Umbrella Liability limits of $3,000,000.
** Snow removal contracts require evidence of broad form property damage.
*** In the event the concessionaire is required to have a N.Y.S. license to dispense alcoholic beverages an endorsement for liquor liability is required.
**** Transportation of people in buses, vans or station wagons requires $3,000,000 excess liability.

NOTE: Workers' Compensation & Employer's Liability plus NYS Disability Benefits does not apply to self-employed individuals.
V. In some circumstances it will be necessary to require alternate coverage and limits which will be defined in the bid specifications, contract, lease or agreement. The alternative specifications should be evidenced on the certificate in lieu of the standards printed above.
VI. The "ACORD" form certificate may be used in place of the County of Erie Standard Insurance Certificate, provided that all of the above referenced requirements are incorporated into the "ACORD" form certificate.

SPECIFICATIONS AND PROPOSAL FORM COVERING
CONSTRUCTION AND MAINTENANCE MATERIALS
REQUIRED BY THE
ERIE COUNTY DEPARTMENT OF PUBLIC WORKS
FOR THE YEAR
BEGINNING APRIL 1, 2011
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NOTICE TO BIDDERS
SPECIFICATIONS AND PROPOSAL FORM COVERING
CONSTRUCTION AND MAINTENANCE MATERIALS
REQUIRED BY THE
ERIE COUNTY DEPARTMENT OF PUBLIC WORKS
FOR THE YEAR

BEGINNING APRIL 1, 2011

1. The purpose of the attached specifications is to describe the above mentioned materials by physical and chemical requirements.

2. Bids are solicited on construction and maintenance materials as shown by attached specifications and proposal form. Where noted New York State Department of Transportation Standard Specifications, Construction and Materials, dated May 1, 2008, and all addenda shall apply.

3. Purchase Orders will be issued to the lowest responsible bidder after due consideration has been given to the point of delivery, the location of the job site to which the material used will be hauled, and the cost of hauling.

4. The Purchaser reserves the right to reject any or all bids, or to accept, either in whole or in part, any one bid or combination of bids.

5. No quantities are given. Quotations on all items shall be for requirements to **MARCH 31, 2012.**
6. All references to New York State Specifications refer to the New York State Department of Transportation Standard Specifications, Construction and Materials, dated May 1, 2008 and all addenda.

7. The bid shall be signed by bidder in proper place on the last page of this proposal.

8. When a substitute material is submitted for bid, the bidder must provide, at the time of bid, a NYSDOT certification to the effect that the material is a suitable substitute or obtain pre-approval of the substitute material from Erie County Department of Public Works.

9. In submitting this bid the bidder declares that he is, or they are, the only person or persons interested in the said bid, that it is made without any connection with any person making another bid for the same materials; that the bid is in all respects fair and without collusion, fraud or mental reservation; and that no officer or employee of the County is directly or indirectly interested in said bid or in the supplies, or in any portion of the profits thereof.

   a. Each Vendor shall also furnish the County of Erie with a Certificate of Insurance indicating he is covered by Workmen's Compensation.

   b. All policies of insurance, together with endorsements thereon, must contain autograph countersignatures.

   c. No bid for materials, or supplies may be accepted from or contract awarded to any vendor who is in arrears to Erie County or who has defaulted on a contract or any other obligation to Erie County.

10. The Bidder hereby agrees to the provisions of Section 103-a, 103-b and 103-d, being part of Chapter 605 of the Laws of 1959 of the General Municipal Law which requires that upon the refusal of a person, when called before a grand jury to testify concerning any transaction or contract with the state, any political sub-division, thereof, a public authority or with any public department, agency or official of the state or of any political subdivision thereof or of a public authority, to sign a waiver of

immunity against subsequent criminal prosecution or to answer any relevant question concerning such transaction or contracts

a. Such person, and any firm, partnership or corporation of which he is a member, partner, director or officer shall be disqualified from thereafter selling to or submitting bids to, or receiving awards from, or entering into any contracts with any municipal corporation or any public department, agency or official thereof, for goods, work or services, for a period of five years after such refusal, and

b. Any and all contracts made with any municipal corporation or any public department, agency or official thereof, since the effective date of this law, by such person, and by any firm, partnership, or corporation of which he is a member, partner, director or officer may be canceled or terminated by the municipal corporation without incurring any penalty or damages on account of such cancellation or termination, but any monies owed by the municipal corporation for goods delivered or work done prior to the cancellation or termination shall be paid, and

c. Every contract hereafter made or awarded by a municipal corporation or any public department, agency or official thereof or by a fire district or any agency or official thereof, pursuant to bid, for work or services performed or to be performed or goods sold or to be sold, shall contain the following statement by the bidder, under penalty of perjury: Non-collusive bidding certification. The bidder certifies that:

    1). The bid has been arrived at by the bidder independently and has been submitted without collusion with any other vendor of materials, supplies, or equipment of the type described in the invitation or bids, and

    2). The content of the bid has not been communicated by the bidder, nor, to its best knowledge and belief, by any of its employees or agent of the bidder or its surety on any bond furnished herewith prior to the official opening of the bid."

11. The usage of F.O. B. trucks means the product will be picked up by the Purchasers truck at the vendors plant or pit.

12. All facilities selling by weight over scales must be tested and inspected according to New York State Agriculture & Markets Law, article 16, and article 1.0 of the NYCRR and provide proof of this testing and Inspection to the County when bid is submitted, or within five (5) days thereafter, in order for bid to be accepted. If the County does not receive such verification, it will presume the scales have not been tested and inspected.

SECTION 203 EXCAVATION AND EMBANKMENT

CLEANING CULVERTS AND CLOSED DRAINAGE SYSTEMS

1.0 DESCRIPTION:

The Contractor shall clean existing culverts and/or closed drainage systems as indicated on the plans and/or as directed by the Engineer.

2.0 MATERIALS: *(Not Specified.)*

3.0 CONSTRUCTION DETAILS:

Facilities shall be cleaned in a workman-like manner.

Material removed from the culverts shall be disposed of in accordance with the provisions of Subsection 203-3.08, Disposal of Surplus Excavated Materials.

The Contractor shall execute care and protect all trees, fences, culverts and underground structures within the site or adjacent to the work.

The Contractor shall replace in kind any culverts or other facilities damaged by his operations at his own expense.

4.0 METHOD OF MEASUREMENT:

The quantity to be measured shall be the number of linear feet of the facility cleaned. Measurement shall be the total length (end to end) of the culvert. Where a closed system is involved, the measured length shall be between manholes (or drop inlets).

A multiple barrel culvert shall be measured along each individual barrel.

5.0 BASIS OF PAYMENT:

The unit price bid per linear foot for this work shall include the cost of furnishing all labor, materials and equipment necessary to satisfactorily complete the work. Payment will be made for only those facilities designated by the Engineer to be cleaned. Only one payment for each culvert will be made regardless of the number of times it is cleaned.

ITEM E203.17 PAYMENTS FOR CLEANING CULVERTS

Price per linear foot-1L.F. to 100 L.F.	$ _____	per L.F.
Price per linear foot-101 L.F. to 1000 L.F.	$ _____	per L.F.
Price per linear foot-1001 L.F. to 5000 L.F.	$ _____	per L.F.
Price per linear foot-over 5001 L.F.	$ _____	per L.F.

ITEM E203.18 PAYMENTS FOR CLOSED DRAINAGE SYSTEMS

Price per linear foot-1L.F. to 100 L.F.	$ _____	per L.F.
Price per linear foot-101 L.F. to 1000 L.F.	$ _____	per L.F.
Price per linear foot-1001 L.F. to 5000 L.F.	$ _____	per L.F.
Price per linear foot-over 5001 L.F.	$ _____	per L.F.

SECTION 203

CLEANING OF ROADWAY AND ADJACENT AREAS

1.0 DESCRIPTION

The work to be done under this item shall consist of cleaning any type of surface of that portion of the highway that includes the existing roadway and adjacent areas defined below.

2.0 MATERIALS

None specific

3.0 CONSTRUCTION DETAILS

The existing roadway, including bridge decks, parking lanes, turn lanes, bicycle lanes, ramps and adjacent areas including, but not limited to curbs, gutters, sidewalks or walk areas, snow storage areas, mowing strips and medians shall be cleaned by the use of mechanical sweepers, hand brooms, rakes, or other effective means until the surfaces are free of all foreign materials.

Operations shall continue and be repeated, if necessary until results are acceptable to the Engineer. All equipment and methods to be used shall be approved by the Engineer prior to the start of work.

The Contractor is required to provide the Engineer with a schedule of locations to be cleaned.

The surface areas of the following features are to be cleaned under this item:

1. The entire pavement of divided and undivided travel ways, including bridge decks, ramps, gutters and any adjoining auxiliary lanes.
2. Cement or asphalt concrete, stabilized, gravel, or stone shoulders.
3. Areas adjacent to (or offset from) the edge of shoulder in "2" above consisting of cement or asphalt concrete gravel or stone, medians, pedestrian and bicyclist accommodations, snow storage areas and mowing strips. Undefined areas between the edge of shoulder and offset feature shall also be included in this work.
4. On divided highways, all remaining areas in the median consisting of cement or asphalt concrete, gravel or stone, not covered above.
5. The limit of work at intersections shall be projected line, through the intersection, between the work limits defined by condition 2 or 3 above.

The Contractor shall perform all work, including disposal of all materials that have been picked up in accordance with Section 107 of the *New York State Department of Transportation Standard Specifications*

Work under this item shall include removal and disposal of items that are too large to be swept.

All materials collected shall become the property of the contractor and shall be immediately removed from the work site. The Contractor shall not dump or store materials or debris within the right-of-way. The Contractor shall not flush nor sweep materials or debris into a drainage system.

Mechanical sweepers used by the Contractor shall be a late model (2000 *or newer*) four (4) wheel vehicles. The sweepers shall be equipped with at least two (2) gutter brooms (one each side), dual steering, dual control, and single pickup broom with a minimum length of 4.5 feet. The sweepers must be able to off-load directly into a dump vehicle (top dump vehicles). The sweeping path of each sweeper shall be a minimum of 7 feet with one gutter broom extended and 9.5 feet with two gutter brooms extended. All sweepers shall be equipped with an efficient water spray

system for dust control. Vacuum sweepers and regenerative air sweepers will not be accepted unless equipped with gutter brooms. The sweepers must be kept in good repair.

All equipment on all sweepers and shadow vehicles shall be in full compliance with the latest edition of the New York State Vehicle and Traffic Law, Article 9, Sections 375 and 376, and shall be equipped with all necessary warning lights, a combination of rotary lights and strobes with eight (8) flashing amber lights mounted front and rear of the machine, and the standard "slow-moving vehicle" sign mounted on the rear of each machine. All warning lights shall be visible from both the front and rear of each machine.

The Contractor must provide adequate support equipment which shall include a two-way radio or mobile phone equipped supervisory and service vehicle. Sweeper cabs shall also be equipped with two-way radios or mobile phones.

Dusty conditions resulting from the contractor's operations shall be corrected by the use of water. Water used as a dust palliative shall be distributed uniformly over a width of 8 feet by the use of suitable spray heads or a spray bar.

4.0 METHOD OF MEASUREMENT

The quantity to be measured shall be the number of miles of roadway, including adjacent area that is swept and cleaned. Measurement shall be made along each edge of pavement.

The cleaning of median crossover areas shall be included in the price bid.

No deductions will be made for the overlapping of work limits, intersections, driveways, gore areas or other interruptions. Measurement for entrance or exit ramps shall begin at the intersection of the main travel way work limit line and the longer of the two ramp edges of pavement.

5.0 BASIS OF PAYMENT

The unit price bid shall include the cost of all labor, materials, and equipment necessary to complete the work, including the removal and disposal of all accumulated material and debris.

Item E203.50 Cleaning Roadway $_____

SECTION 203

SEWER LINE CHEMICAL ROOT CONTROL

A. Definitions of terms used in these specifications:

CONTRACTOR: Any individual, partnership, firm or corporation submitting a bid or proposal in accordance with these specifications.

OWNER: Erie County, New York or any other person or persons appointed by the Owner to act on behalf of the Owner with respect to the execution of the contract.

PESTICIDE: From the Code of Federal Regulations, Title 40; **"any substance or mixture of substances intended for preventing, destroying, or mitigating any pest and any substance or mixture of substances intended for use as a plant regulator, defoliant, ordesiccant (162.3ff)"** including **"root control herbicides intended to prevent the growth of, or kill roots in certain sites such as sewer lines and drainage tiles (162.3ff.iv)".**

STATE PESTICIDE REGULATORY AGENCY: New York Department of Environmental Conservation.

USDOT: United States Department of Transportation.

USEPA: The United States Environmental Protection Agency.

WASTEWATER TREATMENT PLANT: Any facility or facilities used to treat flows from any sewer in which the Contractor performs any work or introduces any material.

WASTEWATER TREATMENT PLANT OPERATORS: The supervisor responsible for daily operations at any wastewater treatment plant as defined above, and/or the owner of any wastewater treatment plant as defined above.

B. GENERAL

A chemical root control agent designed specifically to control sewer line tree root intrusions shall be applied to sanitary sewers, according to the following specifications. The purpose of the application is to kill the root growth present in the lines and to inhibit root re-growth, without permanently damaging the vegetation producing the roots, and without disrupting wastewater treatment plant processes. The chemical agent shall be *RazoRooter II, or equivalent* products, approved by the Owner prior to the bid date.

The chemical product shall contain a herbicide to destroy root tissue, a herbicide to deter re-growth, and a foaming surfactant to deliver the herbicides to the target root growths. It shall be currently registered with the USEPA and the State Pesticide Regulatory Agency. It shall be labeled for use in sewers to control tree roots. The Contractor shall submit, with his bid, specimen product label(s) and Material Safety Data Sheets for any chemical root control agents that the Contractor proposes to use on the contract. The chemical shall be applied as a foam to sewers in strict accordance with manner of application set forth in these specifications. The foam shall be pumped under sufficient pressure to assure that the entire sewer section is completely filled with foam, and to assure that the foam passes through lateral pipe connections to a distance of 10 to 15 feet up service lateral. The Contractor shall be responsible for insuring that the chemical root control treatments shall not have any adverse effects on wastewater treatment plants and/or receiving waters downstream from the applications. The contractor shall be required to take all necessary steps to prevent said adverse effects, at the Contractor's expense. The Contractor shall provide, in addition to other insurance's, ***Pollution and Chemical Liability Insurance,*** of the type specified herein.

Only licensed, experienced contractors who meet the standards set fourth in CONTRACTORS'S & CONTRACTOR'S FOREMEN QUALIFICATIONS (SEC. 15.0) BELOW, shall be considered for award of the contract. The Job shall be supervised by a licensed Applicator, certified by the State Pesticide Regulatory Agency, and must meet the experience requirements set fourth herein.

The Contractor shall guarantee all treatments in accordance with the terms of the guarantee as set forth herein.

The Contractor shall comply with all terms and conditions of these specifications. The submission of the Bid shall be considered as prima facie evidence that the Bidder has familiarized himself with and understands the conditions under which the Contract is to be awarded, performed, and administered. Bidders must satisfy themselves by personal examination of the location of the proposed work and by other such means as they desire as to actual conditions and requirements of the work. No letter, stipulation, or exception submitted with a bid shall modify the terms of the Contract. Bidders are cautioned not to attach any conditions, limitations, or provisions to the proposal as such conditions, limitations, or provisions will render their bid informal and cause its rejection.

The use of subcontractors shall not be permitted.

C. REQUIREMENTS CONTRACT:

The contract shall be a requirements contract. The Owner is not obligated to any minimum or maximum quantities under the Contract. The Owner intends to issue a purchase order or orders to the Contractor to whom the Contract is awarded for services on an as-needed basis, although nothing in this document or elsewhere in the contract documents shall be construed as obligating the Owner to do so.

D. CONTRACT PERIOD

The initial term of the contract shall be for the period of one year. The contract may be extended for additional one year periods up to a total of three additional years, at the sole option and discretion of the Owner.

E. AUTHORITY OF THE OWNER:

The owner shall decide all questions in relation to the contract documents or the execution of the contract and the Contractor's obligations and performance thereunder. The Owner shall decide every question which may arise relative to the fulfillment of the contract on the part of the Contractor. Nothing contained in this section or elsewhere in the contract documents shall be construed as limiting he extend of the Contractor's responsibility for payment of damages resulting from his operations under the contract. By submitting a bid, the Contractor agrees to hold harmless and indemnify the Owner, its officers, agents, servants, and employees, against any claims, losses, or damages of any expenses related thereto.

F. STOP WORK ORDERS AND CONTRACT TERMINATION BY THE OWNER:

The Owner may order the Contractor to stop work at any time, without cause. Verbal instruction to the Contractor's crew foreman by an authorized representative of the Owner shall be deemed sufficient notice of cancellation.

The Owner may terminate the contract at any time without cause, at the sole discretion of the Owner.

In the event a stop work order is issued or the contract is terminated, the Owner shall only be obligated to pay for that portion of the work completed by the Contractor to the satisfaction of the Owner, prior to the issuance of the stop work order or contract termination.

G. PAYMENTS

Payments to the contractor shall be made only after all work specified by the Contract has been completed to the Owner's satisfaction, and all reports and submittals requested by the specifications or the Owner have been received by the Owner. No partial or progress payments will be made.

The Owner may retain part or all of any moneys due to the Contractor to insure performance of the Contractor with respect to the Contractor's obligations, including those specified under the guarantee, or to insure that the Contractor makes good on any and all claims made against the Contractor or the Owner arising out of the Contractor's performance on the contract.

H. WORK SCHEDULE AND TIME FOR COMPLETION

In the event that the Owner desires to have work performed by the Contractor during the contract period the Owner shall issue a purchase order to the Contractor. The Owner may issue more than one purchase order per contract period.

Upon receipt of a purchase order, the Contractor shall start work within thirty calendar days, and complete all work in a timely fashion to the satisfaction of the Owner. Failure of the Contractor to respond to purchase orders and complete work in a timely fashion to the satisfaction of the Owner will result in cancellation of the contract.

The Contractor shall provide 48-hour notice to the Owner prior to starting work on any portion of the contract. All work shall be performed during normal business hours on any portion of the contract. All work shall be performed during normal business hours observed by the Owner. Work during other hours, weekends, or holidays observed by the Owner, may only be performed with permission from the Owner. The Owner reserves the right to inspect all work as it is performed and to reject any work that in the opinion of the Owner is defective in workmanship and materials. In the event that the work schedule proposed by the Contractor places the Owner at an inconvenience with respect to the inspection of the work, the Owner may require the Contractor to halt or delay the work, reduce the number of crews on the job, or take any other steps deemed necessary by the Owner to enable the Owner to exercise the right to inspect.

I. PROPERTY DAMAGES CAUSED BY THE CONTRACTOR

Should any damage be caused to public or private property by the Contractor or his employees or agents, the Contractor will be required to make repairs immediately. The Owner may, however, elect to make repairs or replacement of damaged property and deduct the cost of such from moneys due or to become due the Contractor under this or any other contract with the Owner. All repair and/or replacement must be performed to the satisfaction of the Owner.

J. PROTECTION OF WASTEWATER TREATMENT PLANT FACILITIES AND RECEIVING WATERS

The Contractor shall take all steps necessary and appropriate to prevent adverse effects on wastewater treatment plant processes.

The Contractor attests, through submittal of a bid or proposal, or through agreeing to the contract, that the Contractor is expert in this type of work, and recognizes and understands the risks posed by this type of work on wastewater treatment plant processes. The Contractor shall not rely on the Owner for guidance in this regard.

Introduction of any materials in any wastewater treatment plant must be with the approval of the wastewater treatment plant operator for that plant.

The contractor shall notify the Wastewater Treatment Plant Operator of any wastewater treatment plant that may be effected by the Contractor's performance of the Contract, of the date and time of all intended work, and provide the Operator with data or other information requested by the Operator, including specimen product labels and Material Safety Data Sheets, for any materials introduced to the collection.

The Contractor shall provide the Wastewater Treatment Plant Operator with names and phone numbers of individuals in a position to notify the Contractor's crew of the need to immediately stop work, including the names and phone numbers of the Owner, the Contractor, and the hotel or other local phone number of the Contractor's on-site supervisor. The Contractor shall maintain daily communications with the Wastewater Treatment Plant Operator to assure that the chemical root control treatments are not having any adverse effects on wastewater treatment plant processes. In the event that a wastewater treatment plant experiences any reduction in operating efficiency during the execution of the contract, whether the result of the chemical treatments or not, the Contractor shall immediately suspend all applications, and notify the Owner. The contractor shall continue operations only after problems at the wastewater treatment plant have been corrected, and the contractor has taken appropriate steps, satisfactory to the Owner and the wastewater plant operator, to prevent recurrence of any problems at the wastewater treatment plant that may be the result of chemical applications.

The Contractor shall be financially responsible for any adverse effects on wastewater treatment plant processes which are, directly or indirectly, caused by the chemical application, including but not limited to the following: damages to plant processes or equipment, clean-up and restoration costs, fines imposed on the Owner or on the Operator of the wastewater treatment plant by State or Federal agencies, pollution of receiving waters, and civil suits. The contractor shall further indemnify and hold harmless the Owner, and the Operator of the wastewater treatment plant, against all costs, including legal expenses, relating to treatment plant failure or other damages or pollution caused, directly or indirectly, by the applications of chemicals by the Contractor.

K. COMPOSITION OF THE CHEMICAL ROOT CONTROL MATERIAL

The chemical root control agent shall be Razorooter™ II or equivalent product that is approved by the Owner in writing prior to the Bid Opening. The chemical root control agent shall be registered with the EPA and the New York State Department of Environmental Conservation, prior to the bid opening, and shall be labeled for use in sewers to control tree roots. The chemical Root control agent shall contain an active ingredient for controlling sewer roots and deterring their re-growth. There shall also be a surfactant system to deliver the active ingredient (herbicide) to the target root tissue.

A. Active ingredient:

1. Shall be a Category "E" compound, the most favorable rating attainable on the U.S. EPA's chronic exposure toxicological rating scale.
2. Shall **not** be considered a carcinogen, teratogen, mutagen, or oncogene, based on laboratory testing.
3. Shall carry a "signal word" assigned by the U.S. EPA of either "Warning" or "Caution," on the product label. **Pesticides carrying the signal word "Danger" shall not be accepted**.
4. Shall be non-volatile in order to minimize exposure to workers and other individuals by inhalation.
5. Shall not be readily absorbed through the skin.

6. Products containing the active ingredient(s) metam-sodium or copper sulfate are not allowed.

Surfactant system:

1. Shall produce a dense, small bubble, clinging foam, which sustains its shape for a minimum of one hour.
2. Shall enhance the penetration of herbicide into root masses.
3. Shall contain an Alkylpolyglucoside (formulations of vegetable oil and carbohydrate from agricultural products).

Surfactants designed to foam chemically, upon contact with water, shall not be accepted

The chemical root control agent shall be registered with the EPA and the State pesticide regulatory Agency, and shall be labeled for use in sewers to control tree roots. Only materials whose label instructions conform to these specifications shall be accepted. All applications must be in strict conformance with these specifications and label instructions. Use of any root control herbicide in a manner inconsistent with labeled instructions is a violation of Federal Law.

The active ingredient shall not adversely affect the performance of the wastewater treatment plant when applied properly in accordance with manufacturer's recommendations.

Compounds containing copper and/or other known priority pollutants, as defined by the Federal EPA (Environmental Protection Agency), shall be disallowed.

L. SUBSTITUTES AND PROVEN EQUIVALENTS

Use of any substitute *or equivalent* procedures, methods, or materials shall be approved by the Owner, in writing, prior to the bid date.

Should the Contractor wish to use any brand of material other than as specified herein, he shall submit to the Owner for review, complete descriptive literature naming the proposed substitution and manufacturer. The chemical formulation must have been in use as a sewer root control product that the proposed material has a proven record of performance when used for the intended application as confirmed by successful installations in place for a minimum of five (5) years.

M. COMPLIANCE WITH TRANSPORTATION LAWS:

The Contractor is directed to ensure compliance with all USDOT regulations relative to commercial vehicle numbering, placarding and registration; driver licensing, driver drug testing, and record keeping; and all other pertinent requirements contained in Federal Motor Carrier Safety Regulations. The Contractor's Federal DOT number must be submitted with carrier Safety Regulations. The Contractor's Federal DOT number must be submitted with the bid.

N. POLLUTION AND LIABILITY INSURANCE:

The Pollution and Liability Insurance described herein is ***in addition to*** all other insurance required of the Contractor by the Owner, including any insurance described in the general conditions, any insurance required by law, or any other insurance requested by the Owner.

At the time of the bid opening, the Contractor shall submit written evidence that he and all his subcontractors have obtained pollution liability coverage. This coverage shall protect the Contractor, The Owner, and the owner's officers, agents and employees from claims for damages to property and/or the environment, which may arise directly out of the use of chemicals and/or

pollution. The minimum amount of such insurance shall be **$500,000.00 total loss**. This insurance shall be provided to the contractor by an insurance company that holds at least an "A" rating by A.M. Best rating service.

In addition, The contractor's commercial general liability limits must be not less than $1,000,000.00 total occurrence limit, and include pesticide or herbicide applicator coverage. Furthermore, contractor shall have excess umbrella liability coverage in an amount not less than $1,000,000.00.

Contractor's Automobile liability insurance limits must be not less than $1,000,000.00.

The contractor shall provide the County with certificates evidencing the above-referenced insurance coverages. The insurance certificate(s) shall name the County as an additional insured on the general, automobile and excess liability insurance coverages.

Nothing contained in this section shall be construed as limiting the extent of the Contractor's responsibility for payment of damages resulting from his operations under the contract.

O. CONTRACTOR'S AND CONTRACTOR'S FOREMAN QUALIFICATIONS:

The contractor must demonstrate a minimum level of five (5) years direct experience in applying chemical sewer root control of the type specified herein. Such work experience must be direct, and the work must have been performed by the Contractor's own crews. The Contractor must have performed at least ten (10) other jobs of similar size and scope to the work specified herein, and have treated in excess of 500,000 linear feet of sanitary sewer. Any work performed by subcontractors for the Contract will not be considered direct contractor experience.

CONTRACTOR RESPONSIBILITIES

The contractor shall be liable to the Owner for all expenses, losses or damages, as determined by the Owner, incurred in consequence and any defect, omission or mistake of the Contractor, his subcontractors, agent, or employees, or for the making good thereof.

Should any chemical root agent spill on the ground, the chemical and affected soil shall be removed and safely disposed of. The area shall be restored to a condition equal to or better than before the spill. Any damage to vegetation resulting from misuse of the chemical root control agent shall be the responsibility of the Contractor.

The Contractor shall be responsible for any and all damages to structures inside and out caused by chemical root control chemicals.

The Contractor shall be responsible for insuring that there are no adverse effects on wastewater treatment plant processes, or adverse effects on the quality of wastewater treatment plant effluent, as a result of chemical application.

The Contractor shall respect the rights of property owners, and not enter upon private property without obtaining permission from the owner of the property. Some line sections will be located in easements that may be difficult to access, and that requires the Contractor to enter private property. Special note to the Contractor: Some lines may be located in easements that are difficult to access.

The Contractor shall place proper traffic warning devices to protect the specific job site, and to prevent accidents or personal injury to the public. Police protection and/or flagmen for safe traffic control shall be provided by the Contractor as conditions dictate or when so directed by the Owner. Some line sections will be located in heavy traffic areas.

Filling of a chemical mixing tank shall be done with an air gap or reduced-pressure-zone backflow prevention device, approved by the Owner. The Contractor may only draw water from public water supplies at locations and using procedures approved by the Owner.

The Contractor shall keep complete, accurate records of each day's operation.

Records shall show date of treatment, sections of line treated, pipe size and distance, and other pertinent information. Logsheets shall be submitted with the invoice.

The Contractor shall return within 4 - 8 months after the work is completed and periodically throughout the life of the guarantee, in order to evaluate the success of the project, and to arrange any free guarantee work that may arise.

The Contractor shall be responsible for insuring that handling, transportation, and use of any hazardous materials, and disposal of all pesticides containers, is according to the State and Federal regulations pertaining thereto.

Contractors must be licensed as pesticide application businesses with the State pesticide Regulatory Agency ***prior to the bid opening***. Bids from contractors who intend to obtain the necessary pesticide application licenses after the bid opening shall be considered unresponsive. contractors who do not meet the experience and other qualifications specified herein shall not be considered for award of the contract. Each bidder is required to submit with his bid the contractor qualification form attached to these specifications.

All work must be supervised by someone who is licensed as a Certified Pesticide Applicator with the State Pesticide Regulatory Agency. Certified Pesticide Applicators, shall have a minimum three years experience in performing the type of work specified, and shall each have personally performed a minimum of 300,000 linear feet of treatments as a Certified Pesticide Applicator and/or under the direct supervision of a Certified Pesticide Applicator.

P. MANNER OF APPLICATION:

Where sewer cleaning, grouting, or relining is specified, or required, the foaming root control shall be performed a minimum of 60 days in advance of those operations, to maximize the biological decay of the root masses.

Application of the chemical root control agent shall be foaming in accordance with the best recommended practice for conditions present in the line under treatment. All foaming shall be in strict accordance with the instructions on the container label.

A foam discharge hose shall be in inserted throughout the entire length of the sewer section to be treated. The equipment used shall discharge foam at approximately 30 PSI, so as to force foam up connecting lateral sewers approximately 10-15 feet. Hose retrieval rates must be timed to evenly distribute the full quantity of foam throughout the entire area of treatment. The quantity of foam -- see chart below as guide on smaller diameter pipe -- shall be sufficient to completely fill the entire volume of the main sewer treated, plus an additional 10% to allow for the penetration of material up lateral sewers, and for loss in manholes. Sewer service to homeowners shall not be interrupted. The Contractor must beware that excessive discharge pressure and/or excessive quantities of material may cause foam to enter houses, or travel up forward clean-outs onto lawns.

Gals. Concentrate	Gals. Solution	Gals. Foam	4"	6"	8"	10"	12"	15"
5	100	2000	2750'	1250'	750'	500'	350'	200'
10	200	4000	5500'	2500'	1500'	1000'	700'	450'
15	300	6000	8250'	3750'	2250'	1500'	1050'	650'

Materials that are labeled to be poured down manholes or sprayed on to roots shall not be accepted.

ITEM E203.99xx BID SHEET FOR SEWER LINE CHEMICAL ROOT CONTROL

Pipe Diameter	8"	10"	12"	15"	18"	21"	24"	
Price Per Linear Foot								
Item E203.9901 Quote & Identify any minimum charges which may apply: $								

Where xx = pipe diameter in inches

SECTION 204 CONTROLLED LOW STRENGTH MATERIAL

Description:

The work shall consist of furnishing a flowable fly ash material in accordance with this specification. The backfill grout material shall have a twenty-eight (28) day comprehensive strength not to exceed 150 psi.

Materials:

The materials used for backfill grout material shall meet the requirements of the following subsections.

Portland Cement, Type 1 or Type 2	701-01
Water	712-01
Fly Ash	711-10

1) The fly ash shall be tested for toxicity pursuant to testing protocol approved by New York State Department of Environmental Conservation and certified to be non-toxic.

2) The loss on ignition shall be waived.

Chemical Admixtures	711-08

Basis of Payment:

Price per cubic yard of Flowable Fly Ash Materials as specified above shall include delivery within eight (8) miles of the supplier's plant. Payment will be made for mileage in excess of eight (8) miles per delivery regardless of Flowable Fly Ash quantity.

204.01M – Controlled Low Strength Materials	**$_____**	**Per Cubic Yd.**
Extra Mileage	**$_____**	**Per Mile**
Waiting time in excess of Five (5) minutes / cubic yard with a fifteen (15) minute minimum	**$_____**	**Per Minute**
Heating Materials (Calcium Chloride is not acceptable)	**$_____**	**Per Cubic Yard**
Minimum Load	**_____**	**Cubic Yards**
Specify single charge for loads less than the minimum load	**$_____**	**Per Load**

SECTION 211

MISCELLANEOUS NYSDOT SECTION 200 ITEMS

Section 200 of the NYSDOT Standard Specifications dated May 1, 2008 and all addenda shall apply:

	Item	Price	
202.19M	Removal of Substructures	$ _____	per cubic yard
203.02M	Unclassified Excavation and Disposal	$ _____	per cubic yard
203.03M	Embankment in Place	$ _____	per cubic yard
203.07M	Select Granular Fill	$ _____	per cubic yard
203.0801M	Select Granular Fill, Slope Protection Type A	$ _____	per cubic yard
203.0802M	Select Granular Fill, Slope Protection—Type B	$ _____	per cubic yard
206.01M	Structure Excavation	$ _____	per cubic yard
206.02M	Trench and Culvert Excavation	$ _____	per cubic yard
207.10M	Geotextile Bedding	$ _____	per square yard
207.11M	Geotextile Separation	$ _____	per square yard
207.12M	Geotextile Drainage	$ _____	per square yard
207.13M	Geotextile Slope Protection	$ _____	per square yard
207.14M	Geotextile Stabilization	$ _____	per square yard

SECTION 302 BITUMINOUS STABILIZED COURSE

The general specifications for Section 302 shall apply except as follows:

The bituminous material mixed with the granular material shall conform to the specifications of Item 618.22M (Medium Curing Asphalt Grade MC-250); or Item 618.3201M (Asphalt Emulsion Grade MS2). The bituminous material used in the mixing shall be increased approximately (25%) twenty-five percent if slag aggregate is used.

In accordance with New York State Dept. of Transportation specifications, all liquid bituminous materials furnished and applied will be paid for on the basis of gallonage at 60°F regardless of application temperature.

Price adjustments will be based on the New York State Office of General Services Formula. The average F.O.B. terminal price per ton for **October 1, 2010 is $489.00 English Ton.**

E302.1001 - Bituminous Stabilized Course $_____Per Ton using 618.22M F.O.B. TRUCKS
E302.1002 - Bituminous Stabilized Course $_____Per Ton using 618.3201M F.O.B. TRUCKS

Price for furnishing bituminous material, pugmill, all labor and equipment necessary to incorporate the bituminous material in the work and to stockpile the finished product. Aggregate supplied by County.

E302.1003 Price per gallon $_____

Price for furnishing bituminous material, pugmill and labor necessary to incorporate the bituminous material in the work. Aggregate & equipment for charging mixer and stockpiling finished product to be furnished by Erie County.

E302.1004 Price per gallon $_____

Minimum quantity of liquid asphalt to be mixed at one location without additional charge for moving.

_____Gal.

SECTION 304 SUBBASE COURSE

MISCELLANEOUS ITEMS

Section 304 of the NYSDOT Standard Specifications dated May 1, 2008, and all addenda shall apply except as modified herein.

Mobilization shall be included in the unit price bid

	Item	Price	
304.12M	Subbase Course, Type 2	$ _____	per cu. yd.

ITEM 402.06710118 6.3 mm F1 POLYMER-MODIFIED HMA, 70 SERIES COMPACTION
ITEM 402.06711118 PLANT PRODUCTION QUALITY ADJUSTMENT TO 402.06710118
ITEM 402.06720118 6.3 mm F2 POLYMER-MODIFIED HMA, 70 SERIES COMPACTION
ITEM 402.06721118 PLANT PRODUCTION QUALITY ADJUSTMENT TO 402.06720118
ITEM 402.06730118 6.3 mm F3 POLYMER-MODIFIED HMA, 70 SERIES COMPACTION
ITEM 402.06731118 PLANT PRODUCTION QUALITY ADJUSTMENT TO 402.06730118
ITEM 407.02 18 TACK COAT FOR 6.3 MM POLYMER-MODIFIED HMA

The requirements of Section 401 - Plant Production and Section 402 - Hot mix Asphalt (HMA) Pavements shall apply except as modified below.

1.0 DESCRIPTION

This work shall consist of developing Polymer-Modified HMA mixture using the Superpave Mix Design procedure detailed in Materials Method 5.16, "Superpave Hot Mix Asphalt Mixture Design and Mixture Verification Procedures," except as modified in these specifications. Polymer-Modified HMA is a mixture of Performance-Graded Binder (PG Binder), mineral aggregate, and mineral filler, if required. Polymer-Modified HMA pavement course shall be constructed in accordance with these specifications and in reasonably close conformity with the required lines, grades, thicknesses, and typical sections shown on the plans or established by the Engineer. This is a performance-based specification in which the Contractor is responsible for compacting the pavement to a specified density requirement. Written instructions for determining pavement density are available from the Regional Materials Engineer or the Director, Materials Bureau. All necessary pavement repairs, crack sealing, joint sealing, pavement marking removal, utility grade adjustments, and milling of rebates will be paid under appropriate items.

2.0 MATERIALS

A. Polymer-Modified Mixture

The materials and composition for Polymer-Modified mixtures shall meet the requirements specified in §401-2 Materials, except as noted herein.

Produce Polymer-Modified HMA in accordance with the procedures outlined in this specification and NYSDOT's Material Method 5.16, Superpave Hot Mix Asphalt Mixture Design and Mixture Verification Procedures except as modified below:

Formulate and submit to the Regional Materials Engineer a Polymer-Modified HMA design, which satisfies design criteria outlined in this specification. The minimum PG Binder content shall not be less than 6.0%.

Table 1 – 6.3 mm Polymer-Modified HMA Design Control Points

Standard Sieves (mm)	Percent Passing Criteria	
	Maximum	Minimum
9.5		100
6.30	100	90
4.75	90	
2.36	70	37
0.075	10	2

Table 2 – 6.3 mm Polymer-Modified HMA Mixture Additional Aggregate Criteria

Coarse Aggregate Angularity (Percent), minimum	Uncompacted Void Content of Fine Aggregate (Percent), minimum	Flat-and-elongated Particles (Percent), maximum	Sand Equivalent (Percent), minimum
95/90	43	10	45

Table 3 – 6.3 mm Polymer-Modified HMA Volumetric Design Criteria

% Gmm @ Ninitial	% Voids Filled with Binder		% Voids in the Mineral Aggregate, minimum
	Minimum	Maximum	
< 90.5	70	78	16

Table 4 – 6.3 mm Polymer-Modified HMA Design Number of Gyrations

Compactive Effort	Ninitial	Ndesign	Nmaximum
Number of Gyrations	7	75	115

Table 5 – 6.3 mm Polymer-Modified HMA Production Gradation Tolerances

Sieve Size (mm)	9.5	6.3	4.75	2.36	1.18	0.600	0.300	0.150	0.075
Tolerance	± 4	± 4	± 3	± 3	± 3	± 2	± 2	± 2	± 2

1. Coarse Aggregate Type F1 Conditions

1. Limestone, dolomite, or a blend of the two having an acid insoluble residue content of not less than 20%.

2. Sandstone, granite, chert, traprock, ore tailings, slag, or other similar noncarbonate materials.

3. Use gravel or blend two or more of: gravel, limestone, dolomite, sandstone, granite, chert, traprock, ore tailings, or other similar materials to produce a final blend of which the noncarbonate plus 2.36 mm material comprises at least 30% of the total aggregate. In addition, at least 95% of the plus 4.75 material must be noncarbonate.

2. Coarse Aggregate Type F2 Conditions

1. Limestone, dolomite, or a blend of the two having an acid insoluble residue content of not less than 20%.

2. Sandstone, granite, chert, traprock, ore tailings, slag, or other similar noncarbonate materials.

3. Use gravel or blend two or more of: gravel, limestone, dolomite, sandstone, granite, chert, traprock, ore tailings, or other similar materials to produce a final blend of which the noncarbonate plus 2.36 mm material comprises at least 10% of the total aggregate. In addition, at least 20% of the plus 4.75 material must be noncarbonate.

3. Coarse Aggregate Type F3 Conditions

1. Limestone or a blend of limestone and dolomite having an acid insoluble residue content of not less than 20%.
2. Dolomite.
3. Sandstone, granite, chert, traprock, ore tailings, slag, or other similar noncarbonate materials.
4. Use gravel or blend two or more of: gravel, limestone, dolomite, sandstone, granite, chert, traprock, ore tailings, or other similar materials to produce a final blend of which the noncarbonate plus 2.36 mm material comprises at least 10% of the total aggregate. In addition, at least 20% of the plus 4.75 material must be noncarbonated.

PG Binder. Use the appropriate Performance-Graded Binder (PG Binder), as listed in Table 6 below, in the production of these mixtures that meets the AASHTO M 320 – Standard Specification for Performance-Graded Asphalt Binder.

Table 6 - PG Binder

Location	PG Binder[1]
Downstate[2]	Polymer-Modified PG 76-22
Upstate[3]	PG 64-28 with an minimum of 60% Elastic Recovery[4]

NOTES:

1. Use of all other PG Binder grades allowed only by approval of the Director of the Materials Bureau. If allowed, use Table 401-7, Delivery Ticket Mix Coding, of the Standard Specifications to properly identify the PG Binder grade on the delivery ticket.
2. "Downstate" is defined as the counties of Orange, Rockland, Putnam, Westchester, Nassau, Suffolk, and the City of New York.
3. "Upstate" is defined as all other counties except as noted in Note 1.
4. Elastic Recovery, AASHTO T301-95, 100 mm elongation and cut immediately at 25°C.

B. Tack Coat

Use an asphalt emulsion as tack coat meeting the requirements of §702 - Bituminous Materials, RS-1, Item 702-3001 or CRS-1, Item 702-4001, or other asphalt emulsion as approved by the Engineer with the following modifications:

Table 7 - Tests on Asphalt Base for Emulsion

Test on Base Asphalt	Min.	Max
Penetration, 25°C, 100 g, 5 s	60	100
Ductility, 25°C, 5 cm/min, cm	50	-

Table 8 - Tests on Residue from Distillation Test

Test on Residue	Min.	Max.
Penetration, 25°C, 100 g, 5 s	40	90

3.0 CONSTRUCTION DETAILS

The provisions of §401-3 and §402-3, Construction Details, shall apply.

4.0 METHOD OF MEASUREMENT

A. Polymer-Modified Mixture

The provisions of §401-4 and §402-4, Method of Measurement, shall apply except as modified herein.

Table 9
Delivery Ticket Mix Coding[2]

Mix Type	Code	Code[1]	Design ESAL	Code	Consensus Properties	Code	PG Binder Type	Code
6.3 mm	06	F1	**<3.0 million**	2	**<100 mm**	Y	**PG 64-28**	C
----	----	F2	----	----	----	----	**PG 76-22**	E
----	----	F3	----	----	----	----	----	----

Notes:
1. Friction Aggregate Classification Codes
2. Delivery Ticket Mix Coding Example: 6.3 mm, Type F2 friction requirements, PG 64-28 with a minimum of 60% Elastic Recovery - Mix Coding on Delivery Ticket: ***06F22YC***.

B. Tack Coat

The quantity to be paid for will be the number of liters of asphalt emulsion for tack coat measured at 15°C incorporated into the work.

5.0 BASIS OF PAYMENT

A. Polymer-Modified Mixture

The provisions of subsection 402-5 Basis of Payment shall apply.

B. Tack Coat

The unit price bid per liter for tack coat shall include the cost of furnishing materials and all equipment and labor necessary to complete the work.

Payment will be made under:

ITEM NO.	ITEM PAY	UNIT
402.06710118	6.3 mm F1 Polymer-Modified HMA, 70 Series Compaction	Metric Ton
402.06711118	Plant Production Quality Adjustment to 402.06710118	Quality Unit
402.06720118	6.3 mm F2 Polymer-Modified HMA, 70 Series Compaction	Metric Ton
402.06721118	Plant Production Quality Adjustment to 402.06720118	Quality Unit
402.06730118	6.3 mm F3 Polymer-Modified HMA, 70 Series Compaction	Metric Ton
402.06731118	Plant Production Quality Adjustment to 402.06730118	Liter
407.02----18	Tack Coat	

SECTION 402 HOT MIX ASPHALT PAVEMENTS

Bid Sheet

The NYSDOT Special Specification for this item contains Metric pay items; however, payment will be in English units as shown below.

Item No.	Item	Pay Unit	
402.06710118	6.3 mm F1 Polymer-Modified HMA, 70 Series Compaction	_____	per ton
402.06720118	6.3 mm F2 Polymer-Modified HMA, 70 Series Compaction	_____	per ton
402.06730118	6.3 mm F3 Polymer-Modified HMA, 70 Series Compaction	_____	per ton
407.02----18	Tack Coat	_____	per gallon
		_____	

SECTION 403 HOT MIX ASPHALT PAVEMENT FOR MUNICIPALITIES

Section 403 of the NYSDOT Standard Specifications dated May 1, 2008, and all addenda shall apply except as modified herein.

PRICE ADJUSTMENT - BITUMINOUS CONCRETE

Price adjustments will be based on the New York State Office of General Services Formula as follows:

PRICE ADJUSTMENTS

1. Price adjustments allowed will be based on the **October 1, 2010** average of the F.O.B. terminal price per ton of AC-l0 or AC-20 asphalt cement (base average F.O.B. terminal price), at the following locations:

Chevron, Perth Amboy, New Jersey	United Refinery, Tonawanda, NY
United Refinery, Warren, PA	NOCO, Tonawanda, NY
CITGO, Bayonne, New Jersey	Suit-Kote, Cortland, NY
CITGO, Albany, New York	Gorman Brothers, Rensselaer, NY
Marathon, Tonawanda, New York	Bitumari, Montreal, CANADA

The average F.O.B. terminal price per ton for **October 1, 2010 is $489.00 English Ton**

NOTE: The same grade of asphalt cement used in establishing the base average F.O.B. terminal price shall be used in establishing the new average F.O.B. terminal price.

In the event that one or more of the above named sources discontinue posting a price for asphalt cement, the base average F.O.B. terminal price shall be recalculated by removing that location from the original base average F.O.B. terminal price. All new average F.O.B. terminal prices calculated from that date shall reflect the reduction in the number of reporting locations.

2. The new average F.O.B. terminal price will be determined based on the above F.O.B. terminal prices posted on the 20th of each month, hereafter known as the "Adjustment Date", during the contract period starting with **March 20, 2011**. However, price adjustments, in accordance with the formula below, will be effective for deliveries made on and after the first of the month i.e., **April 1, 2011** following the adjustment date.

3. The unit prices per ton of bituminous concrete material purchased from any award based on this specification will be subject to adjustment based on the following formula:

   "Price Adjustment (per ton) EQUALS New Average F.O.B. Terminal Price MINUS Base Average F.O.B. Terminal Price TIMES Total % Asphalt plus Fuel Allowance."

NEW AVERAGE F.O.B. TERMINAL PRICE

The average F.O.B. terminal price for AC-10 or AC-20 asphalt cement at the above mentioned ten (10) locations as determined by the New York State Office of General Services on the 20th of the month.

TOTAL % ASPHALT PLUS FUEL

The percentage of total allowable asphalt and fuel for each item is as follows:

Item	Product Description	% Asphalt	Fuel Allowance	Total % Asphalt Plus Fuel Allowance
302.01 M	Bit Stab Course	3.75	-	3.75%
403.118902 M	Type 1 BASE	5.00	1	6.00%
403.128902 M	Type 2 Base	3.50	1	4.50%
403.138902 M	Type 3 Binder	5.50	1	6.50%
403.158902 M	Type 5 Shim Course	8.25	1	9.25%
403.178902 M	Type 6 TOP	6.40	1	7.40%
403.178202 M	Type 6F2 TOP	6.40	1	7.40%
403.198902 M	Type 7 TOP	7.00	1	8.00%
403.198202 M	Type 7F2 TOP	7.00	1	8.00%
403.218902 M	Truing & Leveling	7.0	1	8.00%
E403.9911	Recycled 1 Base	3.10	1	4.10%
E403.9912	Recycled 3 Bind	3.60	1	4.60%
E403.9913	Recycled 6 Top	4.50	1	5.50%

EXAMPLE

Item 403.16
Base Ave. price = $150.00
New Ave. price = $160.00
TOTAL % Asphalt plus Fuel = 7.4%
$160.00 - $150.00 X .074 = +0.74 per ton.

Positive Price Adjustment number shall be added to original per ton Bid price.

Negative Price Adjustment number shall be subtracted from original per ton Bid Price.

4. Price adjustments allowed by this contract shall be calculated and applied to the original bid prices. There will not be price adjustments unless the change amounts to more that $.10 per ton from the original bid prices. In these instances, a purchasing memorandum will not be issued and prices will revert back to the original quoted prices.

5. If at any time after **March 20, 2011** the average posted price of asphalt cement at the aforementioned terminals increases or decreases by $4.00 per ton or more over or under the last average F.O.B. posted price utilized by the State for adjustment purposes, the State shall publish a special price adjustment which shall be effective eight (8) days subsequent to the date on which the change in the average F.O.B. posted price became effective.

6. All price adjustments will be computed by calculator to three decimal places.

7. Regardless of price adjustments allowed, at no time shall prices charged a County contract participant be higher than those offered commercial or governmental accounts for similar or lower quantities.

8. Should these provisions result in a price structure which becomes unworkable, detrimental or injurious to the County or in prices which are not truly reflective of market conditions or which are deemed by the County to be unreasonable or excessive, and no adjustment in price is mutually agreeable, the County reserves the sole right upon ten (I0) days written notice mailed to the contractor to terminate any contract resulting from this bid opening.

Any introduction or withdrawal of a temporary voluntary allowance, terminal operator's allowance, or other discount offered to the trade in general, from the posted price of asphalt cement at any of the above terminals will be considered, for purposes of price adjustment, as a change in the F.O.B. terminal price.

SECTION 403

ITEM E403.118902WMA – WARM MIX ASPHALT CONCRETE TYPE 1 BASE COURSE

The job mix formula must be submitted at the time of the bid.

1.0 DESCRIPTION:

This work will consist of constructing a base course of aggregate and asphalt cement mixed in a central plant prepared in reasonable close conformity with guidelines established by the Purchasing Agency. New York State Standard Materials Specifications, Sections 401 and 403 shall apply; with the following deviations:

A. COMPOSITION:

The aggregate proportions and requirements will be in accordance with 403.118902 Asphalt Concrete Type 1 Base Course.

B. CHEMICAL ADDITIVE:

An adhesion, coating, and workability-enhancing additive blended with the asphalt binder is required for this process to meet performance specifications. The additive shall contain a blend of methyl soyate, tall oil, alkoxylated aliphatic polyamines, polyalkylene glycol, and sodium hydroxide.

C. ADDITIONAL REQUIREMENTS:

WMA production (mixing) shall occur in the temperature range of 190-220°F.
WMA compaction (placing) shall occur in the temperature range of 170-205°F.
Moisture content shall be controlled using the moisture contained in unheated wet sand or unheated wet sand and RAP. Additional water may be required.

ITEM E403.138902WMA – WARM MIX ASPHALT CONCRETE TYPE 3 BINDER COURSE

The job mix formula must be submitted at the time of the bid.

1.0 DESCRIPTION:

This work will consist of constructing a base course of aggregate and asphalt cement mixed in a central plant prepared in reasonable close conformity with guidelines established by the Purchasing Agency. New York State Standard Materials Specifications, Sections 401 and 403 shall apply; with the following deviations:

A. COMPOSITION:

The aggregate proportions and requirements will be in accordance with 403.138902 Asphalt Concrete Type 3 Binder Course.

B. CHEMICAL ADDITIVE:

An adhesion, coating, and workability-enhancing additive blended with the asphalt binder is required for this process to meet performance specifications. The additive shall contain a blend of methyl soyate, tall oil, alkoxylated aliphatic polyamines, polyalkylene glycol, and sodium hydroxide.

C. ADDITIONAL REQUIREMENTS:

WMA production (mixing) shall occur in the temperature range of 190-220°F.
WMA compaction (placing) shall occur in the temperature range of 170-205°F.
Moisture content shall be controlled using the moisture contained in unheated wet sand or unheated wet sand and RAP. Additional water may be required.

ITEM E403.178902WMA – WARM MIX ASPHALT CONCRETE TYPE 6 TOP COURSE

The job mix formula must be submitted at the time of the bid.

1.0 DESCRIPTION:

This work will consist of constructing a base course of aggregate and asphalt cement mixed in a central plant prepared in reasonable close conformity with guidelines established by the Purchasing Agency. New York State Standard Materials Specifications, Sections 401 and 403 shall apply; with the following deviations:

A. COMPOSITION:

The aggregate proportions and requirements will be in accordance with 403.178902 Asphalt Concrete Type 6 Top Course.

B. CHEMICAL ADDITIVE:

An adhesion, coating, and workability-enhancing additive blended with the asphalt binder is required for this process to meet performance specifications. The additive shall contain a blend of methyl soyate, tall oil, alkoxylated aliphatic polyamines, polyalkylene glycol, and sodium hydroxide.

C. ADDITIONAL REQUIREMENTS:

WMA production (mixing) shall occur in the temperature range of 190-220°F.
WMA compaction (placing) shall occur in the temperature range of 170-205°F.
Moisture content shall be controlled using the moisture contained in unheated wet sand or unheated wet sand and RAP. Additional water may be required.

ITEM E403.198902WMA – WARM MIX ASPHALT CONCRETE TYPE 7 TOP COURSE

The job mix formula must be submitted at the time of the bid.

2.0 DESCRIPTION:

This work will consist of constructing a base course of aggregate and asphalt cement mixed in a central plant prepared in reasonable close conformity with guidelines established by the Purchasing Agency. New York State Standard Materials Specifications, Sections 401 and 403 shall apply; with the following deviations:

A. COMPOSITION:

The aggregate proportions and requirements will be in accordance with 403.198902 Asphalt Concrete Type 7 Top Course.

B. CHEMICAL ADDITIVE:

An adhesion, coating, and workability-enhancing additive blended with the asphalt binder is required for this process to meet performance specifications. The additive shall contain a blend of methyl soyate, tall oil, alkoxylated aliphatic polyamines, polyalkylene glycol, and sodium hydroxide.

C. ADDITIONAL REQUIREMENTS:

WMA production (mixing) shall occur in the temperature range of 190-220°F.
WMA compaction (placing) shall occur in the temperature range of 170-205°F.
Moisture content shall be controlled using the moisture contained in unheated wet sand or unheated wet sand and RAP. Additional water may be required.

ITEM E403.198202WMA – WARM MIX ASPHALT CONCRETE TYPE 7F2 TOP COURSE

The job mix formula must be submitted at the time of the bid.

3.0 DESCRIPTION:

This work will consist of constructing a base course of aggregate and asphalt cement mixed in a central plant prepared in reasonable close conformity with guidelines established by the Purchasing Agency. New York State Standard Materials Specifications, Sections 401 and 403 shall apply; with the following deviations:

A. COMPOSITION:

The aggregate proportions and requirements will be in accordance with 403.198202 Asphalt Concrete Type 7F2 Top Course.

B. CHEMICAL ADDITIVE:

An adhesion, coating, and workability-enhancing additive blended with the asphalt binder is required for this process to meet performance specifications. The additive shall contain a blend of methyl soyate, tall oil, alkoxylated aliphatic polyamines, polyalkylene glycol, and sodium hydroxide.

C. ADDITIONAL REQUIREMENTS:

WMA production (mixing) shall occur in the temperature range of 190-220°F.
WMA compaction (placing) shall occur in the temperature range of 170-205°F.
Moisture content shall be controlled using the moisture contained in unheated wet sand or unheated wet sand and RAP. Additional water may be required.

SECTION 403 HOT MIX ASPHALT PAVEMENTS FOR MUNICIPALITIES

ALL ITEMS TO BE BID F.O.B. TRUCKS

Item No.	Item	Pay Unit
403.118902	Asphalt Concrete Type 1 Base Course (Stone/Gravel/Steel Slag Aggregates)	_____ per ton
E403.118902WMA	Warm Mix Asphalt Concrete Type 1 Base Course (Stone/Gravel/Steel Slag Aggregates)	_____ per ton
403.138902	Asphalt Concrete Type 3 Binder Course (Stone/Gravel/Steel Slag Aggregates)	_____ per ton
E403.138902WMA	Warm Mix Asphalt Concrete Type 3 Binder Course (Stone/Gravel/Steel Slag Aggregates)	_____ per ton
403.158902	Asphalt Concrete Type 5 Shim Course	_____ per ton
403.178902	Asphalt Concrete Type 6 Top Course (Stone/Gravel/Steel Slag Aggregates)	_____ per ton
E403.178902WMA	Warm Mix Asphalt Concrete Type 6 Top Course (Stone/Gravel/Steel Slag Aggregates)	_____ per ton
403.198902	Asphalt Concrete Type 7 Top Course (Stone/Gravel/Steel Slag Aggregates)	_____ per ton
E403.198902WMA	Warm Mix Asphalt Concrete Type 7 Top Course (Stone/Gravel/Steel Slag Aggregates)	_____ per ton
403.198202	Asphalt Concrete Type 7F2 Top Course (Stone/Gravel/Steel Slag Aggregates)	_____ per ton
E403.198202WMA	Warm Mix Asphalt Concrete Type 7F2 Top Course (Stone/Gravel/Steel Slag Aggregates)	_____ per ton
403.118902	Asphalt Concrete, Type 1 Base, **Placement Only**	_____ per ton
E403.118902WMA	Warm Mix Asphalt Concrete, Type 1 Base, **Placement Only**	_____ per ton
403.138902	Asphalt Concrete, Type 3 Binder, **Placement Only**	_____ per ton
E403.138902WMA	Warm Mix Asphalt Concrete, Type 3 Binder, **Placement Only**	_____ per ton
	Asphalt Concrete, Type 7F2 Top,	

403.198202	**Placement Only**	_____ per ton
E403.198202WMA	Warm Mix Asphalt Concrete, Type 7F2 Top, **Placement Only**	_____ per ton
403.218902	Asphalt Concrete, Truing and Leveling, **Placement Only**	_____ per ton

SECTION 403

ITEM E403.1101 - MODIFIED ASPHALT PAVEMENT BASE MIX

The job mix formula must be submitted at the time of the bid.

1.0 DESCRIPTION:

This work will consist of constructing a base course of aggregate and asphalt cement mixed in a central plant prepared in reasonable close conformity with guidelines established by the Purchasing Agency. New York State Standard Materials Specifications, Sections 401 and 403 shall apply; with the following deviations:

A. COMPOSITION:

Coarse aggregates and fine aggregates shall be combined in such proportions that the resulting blend shall be directed by the Laboratory, but within the following limits.

TABLE 1

Screen Size	Total % Passing
2"	100
1½	95-100
1"	75-95
½"	40-70
¼"	20-40
1/8"	12-28
#20	5-22
#200	0-4

The aggregate is to be 100% Crushed (May be modified with the mutual consent of the Laboratory and the Purchasing Agency).

B. BITUMEN CONTENT:

Shall be established by the Laboratory at optimum asphalt content within the following limits:
Bitumen (Percent of Total Mix) 3.5%-5.0%

C. ADDITIONAL REQUIREMENTS:

The job mix formula shall be determined from a laboratory mix design, in accordance with the SHRP Gyratory Compaction, level I procedure developed for this mixture.

SHRP Gyratory Compaction Gyrations: To be determined by Laboratory and based upon the aggregate sample.

TABLE 2

Air Voids %	4.0-8.0
Moisture Content %, Max.	0.5
VMA %	13+

A job mix formula (JMF) shall be established by the laboratory. This includes the bitumen content and gradation. The JMF tolerance for the bitumen content and gradation in production samples are listed below.

TABLE 3
Job Mix Formula Tolerances
Based On Single Test

Screen Size	% Passing
l/2"and larger	+/- 7
l/4"	+/- 7
l/8"	+/- 7
#20	+/- 5
#200	+/- 2
AC	+/- 0.5

D. MATERIALS:

Materials shall be:
Coarse Aggregate: 703-02
Fine Aggregate: 703-01
Modified Asphalt Cement: To meet the attached "**Modified Asphalt Cement**" criteria.

E. MIXING:

Mixing shall be done in accordance with 401.3.12.
The mixing temperature shall be 260-320 degrees F.

F. PRICE ADJUSTMENTS:

Will be based on the New York State Office Of General Services Formulas, but shall exceed by 1% (one percent) the job mix formula.

MODIFIED ASPHALT PAVEMENT BASE MIX

TABLE 4

SCREEN SIZES

Mixture Requirements (2)	Maximum Size Aggregate Designation		
	Modified Base Mix	Modified Binder Mix	Modified Surface Mix
Screen Size: 2"	100		
l- l/2"	95-100	100	
1"	75-95	95-100	
¾""			100
½""	40-70	55-80	95-100
¼"	20-40	25-50	53-75
1/8"	12-28	12-32	25-48
#20	5-22	5-22	10-28
#200	0-4	0-4	0-5
****Modified Asphalt Content	3.5-5.0	4.0-5.5	5.5-7.0
Mix Temperature, Degrees F.	260-320	260-320	260-320
SHRP Gryratory Compactive Effort	**See Note #1**	Not Applicable	Not Applicable
Marshall Hammer Compactive effort 75 blows per side @ 275 degrees F.	NOT APPLICABLE	75	75
Stability, lb., min. @ 140 degrees F.	Not Applicable	1200+	1200+
Flow, 0.01/in., Minimum	Not Applicable	6-16	6-16
Air Voids, %	4.0-8.0	4.0-6.0	4.0-6.0
VMA	13+	14+	15+
Moisture %, Maximum	0.5	0.5	0.5
Suggested Lift Thickness	3" Minimum	2" Minimum	1.5" Minimum

(1) Compactive effort based on aggregate

(2) Aggregate to be 100% crushed (may be modified by mutual consent Laboratory and Purchasing Agency

MODIFIED ASPHALT PAVEMENT BASE MIX

TABLE 5

CHARACTERISTIC (1)	MG 10-30 Minimum	METHOD
Viscosity (2) @ 140 degrees F., P., 1 sec	1000	D-4957
Viscosity (3) @ 275 degrees F., P., 10 sec.-1	7	D-4957
Penetration @ 77 degrees F., dmm.	55	D-5
Penetration @ 39 degrees F., 200 g. 60 sec, dmm.	20	D-5
Flash Point, degrees F.	475+	D-92
Solubility, %	99+	D-2042
Softening Point, degrees F (1)	130+	D-36
Test After Thin Film Oven Test (TFOT) Viscosity (2) @ 140 degrees F., P., 1 sec-1	1000	D-4957
Vis. ATFOT/Vis. BTFOT, Maximum	Maximum 2.5	

(1) Handling of all samples for testing shall be in accordance with ASTM D-4957 Section 7.2, which requires heating the sample in an oven maintained at 383 +/-4 degrees F. Stir the sample occasionally until homogenous and pour in suitable container for testing. Pouring temperatures should be 356 +/-4 degrees F. (180 +/-2 degrees Celsius) on all tests.

(2) Normally run using a #200 Modified Koppers Viscometer tube at 300 mm of vacuum.

(3) Normally run using a #50 Modified Koppers Viscometer tube at 30 mm of vacuum.

Item E403.1101 Price Bid Per Ton Base Mix
F.O.B. Suppliers Facility: $_____

ITEM E403.1301 - MODIFIED ASPHALT PAVEMENT BINDER MIX

The job mix formula must be submitted at the time of the bid.

1.0 DESCRIPTION:

This work will consist of constructing a binder course of aggregate and asphalt cement mixed in a central plant prepared in reasonable close conformity with guidelines established by the Purchasing Agency. New York State Standard Materials Specifications, Section 401 and 403 shall apply; with the following deviations:

A. Composition:

Coarse aggregates and fine aggregates shall be combined in such proportions that the resulting blend shall be directed by the Laboratory, but within the following limits.

TABLE 1

Screen Size	Total % Passing
2"	100
1½	95-100
1"	75-95
½"	40-70
¼"	20-40
1/8"	12-28
#20	5-22
#200	0-4

The aggregate is to be 100% Crushed.
(May be modified with the mutual consent of the Laboratory and the Purchasing Agency).

B. Bitumen Content:

Shall be established by the Laboratory at Optimum asphalt content within the following limits:
Bitumen (Percent of Total Mix) 4.0%-5.5%

C. Additional Requirements:

The job mix formula shall be determined From a laboratory mix design, in accordance with the latest edition of the Asphalt Institute's publication: *Mix Design Methods for Asphalt Concrete (MS-2)* (Available at http://www.asphaltinstitute.org) except the mixture shall be held at compaction temperatures for 30 minutes upon completion of mixing.

MODIFIED ASPHALT PAVEMENT BINDER MIX

TABLE 2

Marshall Compaction @ 275 degrees F.	75 blows per side
Marshall Stability, lb., Min. @ 140 degrees F.	1200+
Marshall Flow, 0.01/in. min	6-12
Air Voids %	4.0-6.0
Moisture Content %, Max.	0.5
VMA %	14+ for 1 inch nominal

A job mix formula (JMF) shall be established by the laboratory. This includes the bitumen content and gradation. The JMF tolerances for the bitumen content and gradation in production samples are listed below.

TABLE 3

Job Mix Formula Tolerances
Based on Single Test

Screen Size	% Passing
½" and larger	+/- 7
¼"	+/- 7
1/8"	+/- 7
#20	+/- 2
#200	+/- 0.5

Production samples will also be checked in accordance with Asphalt Institute's MS-2 procedures for air voids and VMA on a once per 4,000 ton lot. The air voids and VMA must comply with the original mix design criteria. If samples fail to meet air voids and VMA, then production shall be stopped until corrective action can be taken.

D. Materials:

Materials shall be:

Coarse Aggregate: 703-02
Fine Aggregate: 703-01

(Aggregate to be 100% crushed unless specified by mutual agreement of the Laboratory and the Purchasing Agency).

Modified Asphalt Cement: To meet the attached "Modified Asphalt Cement" criteria.

E. Mixing:

Mixing shall be done in accordance with 401.3.12. The mixing temperature shall be 260-320 degrees F.

MODIFIED ASPHALT PAVEMENT BINDER MIX

F. Price Adjustments:

Will be based on the New York State Office of General Services Formulas, but shall exceed by 1% (one percent) the job mix formula.

TABLE 4

SCREEN SIZE

Mixture Requirements (2)	Maximum Size Aggregate Designation		
	Modified Base Mix	Modified Binder Mix	Modified Surface Mix
Screen Size: 2"	100		
I l/2"	95-100	100	
1"	75-95	95-100	
¾""			100
½""	40-70	55-80	95-100
¼"	20-40	25-50	53-75
1/8"	12-28	12-32	25-48
#20	5-22	5-22	10-28
#200	0-4	0-4	0-5
****Modified Asphalt Content (%)	3.5-5.0	4.0-5.5	5.5-7.0
Mix Temperature, Degrees F.	260-320	260-320	260-320
SHRP Gryratory Compactive Effort	**See Note #1**	Not Applicable	Not Applicable
Marshall Hammer Compactive effort 75 blows per side @ 275 degrees F.	Not Applicable	75	75
Stability, lb., min. @ 140 degrees F.	Not Applicable	1200+	1200+
Flow, 0.01/in., Minimum	Not Applicable	6-16	6-16
Air Voids, %	4.0-8.0	4.0-6.0	4.0-6.0
VMA	13+	14+	15+
Moisture %, Maximum	0.5	0.5	0.5
Suggested Lift Thickness	3" Minimum	2" Minimum	1.5" Minimum

(1) Compactive effort based on aggregate

(2) Aggregate to be 100% crushed (may be modified by mutual consent Laboratory and Purchasing Agency

MODIFIED ASPHALT PAVEMENT BINDER MIX

TABLE 5

CHARACTERISTIC (1)	MG 10-30 Minimum	METHOD
Viscosity **(2)** @ 140 degrees F., P., 1 sec	1000	D-4957
Viscosity **(3)** @ 275 degrees F., P., 10 sec.-1	7	D-4957
Penetration @ 77 degrees F., dmm.	55	D-5
Penetration @ 39 degrees F., 200 g. 60 sec, dmm.	20	D-5
Flash Point, degrees F.	475+	D-92
Solubility, %	99+	D-2042
Softening Point, degrees F (1)	130+	D-36
Test After Thin Film Oven Test (TFOT) Viscosity (2) @ 140 degrees F., P., 1 sec-1	1000	D-4957
Vis. ATFOT/Vis. BTFOT, Maximum	**Maximum** 2.5	

(4) Handling of all samples for testing shall be in accordance with ASTM D-4957 Section 7.2, which requires heating the sample in an oven maintained at 383 +/-4 degrees F. Stir the sample occasionally until homogenous and pour in suitable container for testing. Pouring temperatures should be 356 +/-4 degrees F. (180 +/-2 degrees Celsius) on all tests.

(5) Normally run using a #200 Modified Koppers Viscometer tube at 300 mm of vacuum.

(6) Normally run using a #50 Modified Koppers Viscometer tube at 30 mm of vacuum.

E403.1301 Price Bid Per Ton Binder Mix F.O.B. Suppliers Facility: $_____

SECTION 403

ITEM E403.1701 - MODIFIED ASPHALT PAVEMENT SURFACE MIX

The job mix formula must be submitted at the time of the bid.

1.0 DESCRIPTION:

This work will consist of constructing a surface course of aggregate and asphalt cement mixed in a central plant prepared in reasonable close conformity with guidelines established by the Purchasing Agency. New York State Standard Materials Specifications, Section 401 and 403 shall apply; with the following deviations:

A. Composition:

Coarse aggregates and fine aggregates shall be combined in such proportions that the resulting blend shall be directed by the Laboratory, but within the following limits.

TABLE 1

Screen Size	Total % Passing
2"	100
1½	95-100
1"	75-95
½"	40-70
¼"	20-40
1/8"	12-28
#20	5-22
#200	0-4

The aggregate is to be 100% Crushed. (May be modified with the mutual consent of the Laboratory and the Purchasing Agency).

B. Bitumen Content:

Shall be established by the laboratory at optimum asphalt content within the following limits:
Bitumen (Percent of Total Mix) 5.5%-7.0%

C. Additional Requirements:

The job mix formula shall be determined from a laboratory mix design, in accordance with the latest edition of the Asphalt Institute's publication: *Mix Design Methods for Asphalt Concrete (MS-2)*, (Available at http://www.asphaltinstitute.org) except the Mixture shall be held at compaction temperature for 30 minutes Upon completion of mixing.

MODIFIED ASPHALT PAVEMENT SURFACE MIX

TABLE 2

Marshall Compaction @ 275 degrees F.	75 blows per side
Marshall Stability, lb., Min. @ 140 degrees F.	1200+
Marshall Flow, 0.01/in. min	6-12
Air Voids %	4.0-6.0
Moisture Content %, Max.	0.5
VMA %	14+ for 1 inch nominal

A job mix formula (JMF) shall be established by the laboratory. This includes the bitumen content and gradation. The JMF tolerances for the bitumen content and gradation in production samples are listed below.

TABLE 3

Job Mix Formula Tolerances
Based on Single Test

Screen Size	% Passing
½" and larger	+/- 7
¼"	+/- 7
1/8"	+/- 7
#20	+/- 2
#200	+/- 0.5

Production samples will also be checked in accordance with Asphalt Institute's MS-2 procedures for air voids and VMA on a once per 4,000 ton lot. The air voids and VMA must comply with the original mix design criteria. If samples fail to meet air voids and VMA, then production shall be stopped until corrective action can be taken.

D. Materials:

Materials shall be:

Coarse Aggregate: 703-02
Fine Aggregate: 703-01

(Aggregate to be 100% crushed unless specified by mutual agreement of the Laboratory and the Purchasing Agency).

Modified Asphalt Cement: To meet the attached "Modified Asphalt Cement" criteria.

E. Mixing:

Mixing shall be done in accordance with 401.3.12. The mixing temperature shall be 260-320 degrees F.

MODIFIED ASPHALT PAVEMENT SURFACE MIX

F. Price Adjustments:

Will be based on the New York State Office Of General Services Formulas, but shall exceed by 1% (one percent) the job mix formula.

TABLE 4

SCREEN SIZES

Mixture Requirements (2)	Maximum Size Aggregate Designation		
	Modified Base Mix	Modified Binder Mix	Modified Surface Mix
Screen Size: 2"	100		
I I/2"	95-100	100	
1"	75-95	95-100	
¾""			100
½""	40-70	55-80	95-100
¼"	20-40	25-50	53-75
1/8"	12-28	12-32	25-48
#20	5-22	5-22	10-28
#200	0-4	0-4	0-5
****Modified Asphalt Content (%)	3.5-5.0	4.0-5.5	5.5-7.0
Mix Temperature, Degrees F.	260-320	260-320	260-320
SHRP Gyratory Compactive Effort	**See Note #1**	Not Applicable	Not Applicable
Marshall Hammer Compactive effort 75 blows per side @ 275 degrees F.	Not Applicable	75	75
Stability, lb., min. @ 140 degrees F.	Not Applicable	1200+	1200+
Flow, 0.01/in., Minimum	Not Applicable	6-16	6-16
Air Voids, %	4.0-8.0	4.0-6.0	4.0-6.0
VMA	13+	14+	15+
Moisture %, Maximum	0.5	0.5	0.5
Suggested Lift Thickness	3" Minimum	2" Minimum	1.5" Minimum

(1) Compactive effort based on aggregate

(2) Aggregate to be 100% crushed (may be modified by mutual consent Laboratory and Purchasing Agency

MODIFIED ASPHALT PAVEMENT SURFACE MIX

TABLE 5

CHARACTERISTIC (1)	MG 10-30 Minimum	METHOD
Viscosity **(2)** @ 140 degrees F., P., 1 sec	1000	D-4957
Viscosity **(3)** @ 275 degrees F., P., 10 sec.-1	7	D-4957
Penetration @ 77 degrees F., dmm.	55	D-5
Penetration @ 39 degrees F., 200 g. 60 sec, dmm.	20	D-5
Flash Point, degrees F.	475+	D-92
Solubility, %	99+	D-2042
Softening Point, degrees F (1)	130+	D-36
Test After Thin Film Oven Test (TFOT) Viscosity (2) @ 140 degrees F., P., 1 sec-1	1000	D-4957
Vis. ATFOT/Vis. BTFOT, Maximum	**Maximum** 2.5	

(7) Handling of all samples for testing shall be in accordance with ASTM D-4957 Section 7.2, which equires heating the sample in an oven maintained at 383 +/-4 degrees F. Stir the sample occasionally until homogenous and pour in suitable container for testing. Pouring temperatures should be 356 +/-4 degrees F. (180 +/-2 degrees Celsius) on all tests.

(8) Normally run using a #200 Modified Koppers Viscometer tube at 300 mm of vacuum.

(9) Normally run using a #50 Modified Koppers Viscometer tube at 30 mm of vacuum.

E403.1701 Price Bid Per Ton Surface Mix F.O.B. Suppliers Facility: $_____

ITEM E403.9901 – PAVER PLACED SURFACE TREATMENT

Description:

The **Paver Placed Surface Treatment** system shall consist of a warm polymer modified emulsion sprayed immediately preceding the application of a hot mix asphalt wearing course which forms a homogeneous well-textured and wearing surface that can be opened to traffic immediately on cooling. The nominal thickness of the layer shall be 5/8 inch; the maximum thickness of the mat shall not exceed 1-½ inches.

Polymer Modified Asphalt Emulsion Material:

The liquid material shall be a cationic, rapid setting, asphalt emulsion, NYS item 702-4001 except as modified in **Data Table I – Polymer Modified Asphalt Emulsion**. The emulsion shall be obtained from a storage facility that has been approved by the Director of the Materials Bureau, New York State Department of Transportation, within the current calendar year, prior to the start of work.

Hot Mix Asphalt Material for Wearing Course:

The wearing course shall be a mixture of single size coarse aggregate, fine aggregate, mineral filler and asphalt cement. The single size course aggregate shall be nominal ¼ inch for Type-A mix nominal 3/8 inch for Type B or nominal ½ inch for Type C mix, according to the gradation specifications in **Data Table II.** The hot mix asphalt concrete shall be obtained from a facility that has been approved by Director of Materials Bureau, New York State Department of Transportation, within the current calendar year, prior to the start of work. The asphalt content of the mix shall be 4.8-5.3% by weight of the total mix and must be computed based on the actual job mix.

Surface Preparation:

The following items will be performed by the contracting agency, unless otherwise directed.

A) Manhole covers, water valves, catch basins, and other such drawings shall be clearly referenced for location and adjustment after the surfacing operation.

B) Thermoplastic traffic markings shall be removed. All vegetation at the edge of the pavement shall be removed.

C) Pavement cracks and joints, greater than ¼ inch wide shall be cleaned and filled with an approved material prior to surfacing operation.

D) Before applying **Paver Placed Surface Treatment,** serious surface irregularities shall be corrected. Wheel ruts greater than 1 inch in depth shall be filled prior to the resurfacing operation.

E) The pavement surface area to be overlaid shall be cleaned and made free of any debris that may hinder bonding of the overlay.

Application: Paver Placed Surface Treatment shall be placed on a dry or damp, but not on a wet pavement surface. The pavement temperature shall be not less than 45° F and rising.

The polymer modified asphalt emulsion shall be applied by the asphalt emulsion spray system mounted on the self-priming paver. The spray system shall accurately uniformly and continuously monitor the rate of application across the entire width to be overlaid.

The rate of spray shall be 0.2 ± 0.05 gallons per square yard. The asphalt emulsion shall be applied at a temperature of 140° F - 180° F. No wheel or other part of the paving machine shall come into contact with the polymer modified asphalt emulsion before the hot mix asphalt-wearing course is applied.

The hot asphalt concrete wearing course shall be delivered to the self-priming paver at a temperature of 315° F + 15° F. The application rate of the hot asphalt aggregate mixture shall be:

Type A (nominal ¼ inch) 50 ± 10 pounds per square yard
Type B (nominal ⅜ inch) 55 ± 10 pounds per square yard
Type C (nominal ½ inch) 60 ± 10 pounds per square yard

The hot mix asphalt-wearing course shall be spread over the polymer modified asphalt emulsion within seconds of the spray application. Where shape correction is necessary or the old surface is porous, the application rate of the emulsion and hot mix asphalt wearing course may need to be increased.

Compaction of the **Paver Placed Surface Treatment** shall be accomplished with a minimum of a, steel wheeled, double drum roller of a minimum dead weight of ten (10) tons before the material temperature has fallen below 180° F at mid-layer. Because of this speed of the paving machine, and if production is over 15,000 square yards per day, two-wheeled double drum rollers may be required.

Traffic: Maintenance and protection of traffic will be provided by the contracting agency.

The new pavement surface may be opened to traffic when rolling is completed and proper cooling has taken place. In general traffic can use the new surface at a distance of 300 feet behind the last roller.

Verification of Quantities and Testing: At the end of each working day or completed job site, a check shall be made to determine the quantities of polymer modified asphalt emulsion used. The check shall be made by means of the gauge on the self-priming paver or the unit used to transport the material. The total gallons of material sprayed shall be divided by the total square yards sprayed to determine yield per square yard.

The hot mix asphalt concrete spread rate shall be calculated by dividing the tonnage placed by the square yards covered to determine yield per square yard.

Samples of the hot mix asphalt shall be taken at a rate of 1 per 250 tons and tested for aggregate gradation and asphalt cement content. Samples of the polymer modified asphalt emulsion shall be taken once per tanker load or once per day.

At the conclusion of each day's production, delivery ticket or invoice shall be completed by the contractor and signed by a representative of the Contracting Agency.

DATA TABLE I

Polymer Modified Asphalt Emulsion: This material shall be cationic asphalt emulsion modified with an approved polymer, using either natural or synthetic latex. It shall be smooth and homogeneous and shall conform to the following requirements and be available on site at a temperature of not less than 140° F.

Test	Method	Minimum	Maximum
Polymer Content (% mass of Total residue		3.0	---
Demulsibility, % by wt. Residue	ASTM	40	---

DATA TABLE II
Single Size Coarse Aggregate Component Gradation

AASHTO Standard Sieves		Total Percent Passing By Weight		
US	mm	Type A (¼ inch)	Type B (⅜ inch)	Type C (½ inch)
¾	19	-	-	100
½	12.5	-	100	85 – 100
⅜	9.5	100	85 - 100	25 – 50
¼	6.3	85 – 100	0 - 15	0 – 15
4	4.75	25 – 50	0 - 3	0 – 3
8	2.36	0 - 3	0	0

DATA TABLE III
Coarse Aggregate

Tests	Method	Light Medium Traffic <200 Heavy Vehicle/Day	Heavy Traffic >200 Heavy Vehicle/Day
Los Angeles Abrasion Value, %	ASTM C131	<25	<20
Water Absorption %	ASTM C127	<2	<2
Flatness Index %	NFP 18-561	<20	<15
Flatness Coefficient (G/E) [1]	NFP 19-561	<1.58	<1.58
Crushing Ratio, %	Observation	100	100
Overall Cleanliness (% Pas #30)	ASTM C142	<2	<2
Resistance to Stripping[2]	ASTM D3625	>95	>95

[1] Where "G" is the smallest square opening through which the particles can pass and "E" is the slot through which the particles can pass.
[2] Anti-stripping agents may be required to provide acceptable values.

DATA TABLE IV
Fine Aggregate Component Gradation

AASHTO Standard Sieves		Percent Passing by Weight
US	Metric	Type A, B or C
#4	4.75	100
#8	2.36	90 - 100
#16	1.18	60 – 80
#30	0.60	45 – 60
#50	0.30	30 – 40
#100	0.15	20 – 30
#200	0.075	15 – 25
Crushing ratio, percent minimum (Observation)		100
Sand Equivalency, percent minimum (ASTM D2419)		

Mineral Filler, if requested, may be Hydrated lime, Fly Ash or Bag-house Fines 100% passing #100, 80 passing #200

DATA TABLE V
Combined Aggregate Gradations-Design Target Envelopes

AASHTO Standard Sieve Sizes		Total Percent Passing By Weight		
US	Metric	Type A (1/4 inch)	Type B (3/8 inch)	Type C (1/2 inch)
¾	19	-----	-----	100
½	12.5	-----	100	85 – 100
⅜	9.5	100	85 – 100	70 – 90
¼	6.3	85 – 100	30 – 50	30 – 50
#4	4.75	40 – 60	24 – 40	24 – 40
#8	2.36	21 – 32	21 – 32	21 – 32
#16	1.18	16 – 26	16 – 26	16 – 26
#30	0.60	12 – 20	12 – 20	12 – 20
#50	0.30	8 – 16	8 – 16	8 – 16
#100	0.15	5 – 10	5 – 10	5 – 10
#200	0.075	5 – 7	5 – 7	5 – 7
%PGB		4.9 – 5.3	4.8 – 5.2	4.8 – 5.2

Note: All aggregate percentages are based on the total weight of aggregate.

Asphalt Binder: Use the appropriate Performance Graded asphalt binder for the project geographical location and design traffic level.

ITEM E403.9901 – Paver Placed Surface Treatment

Square Yard Range	Type A ¼ inch	Type B ⅜ inch	Type C ½ inch
5,000 to 15,000 sq. yd.	$_____	$_____	$_____
15,000 to 30,000 sq. yd.	$_____	$_____	$_____
30,000 to Sq. Yd. Plus	$_____	$_____	$_____

Allowable **Deductions** per square yard if contracting Agency elects to supplement operation with their equipment and labor.

Deduct $_____per square yard if Contracting Agency furnishes and operates compaction equipment.

Deduct $_____per square yard if Contracting Agency furnishes hauling of Hot Mix from Plant to lay down machine

ITEM E403.9903 – PLASTIC JOINT MATERIAL (ASTM D3405)

General:

This joint material is a hot poured material conforming to the requirements of ASTM D3405. In addition, equipment requirements are specified when the material is to be supplied in a containerized heated tow able unit.

Material Requirements:

Plastic Joint Material shall meet the requirements of ASTM D3405; Joint Sealants, Hot-Poured for concrete and asphalt pavements. The material will be accepted on the basis of the manufacturer's certification that it conforms to the requirements of ASTM D3405; and that the name of the Primary Source (Manufacturer) and Trade name of the sealant are approved by the NYSDOT. The bidder, upon request, shall submit a copy of the certification with typical test results for the material.

The supplier shall provide the purchaser with the trade name of the sealant, the manufacturer's batch number, recommended pouring temperature, safe heating temperature, and a copy of the manufacturer's recommendations pertaining to heating and application. The recommended pouring temperature shall be 10° F below the manufacturers designated safe heating temperature, with an allowable variation of +/- 10° F. Filler material that has exceeded the safe heating temperature, been heated at the pouring temperature in excess of six hours, or reheated shall not be used. All the above information shall be provided to the purchaser by the supplier with each delivery.

The Department reserves the right to conduct sampling and testing to verify specification Compliance.

Equipment Requirements:

The material is required to be supplied in heated containerized, towable units. The equipment shall consist of a double wall type melter, with space between the inner and outer shells filled with a heat transfer medium. Direct heating will not be allowed. Other methods of indirect heating satisfactory to the NYSDOT may be used. Positive temperature control and mechanical agitation shall be used. The unit shall be supplied with a thermometer to indicate the temperature of the sealant material in the container.

Units shall be equipped with an accessible spigot and a discharge hose with applicator wand. Discharge valves, hose and applicator wand shall be insulated to maintain proper sealant temperature. The units shall include recirculation pumps so the material can be recirculated through the wand to machine.

The applicator wand shall incorporate a shutoff valve, preferably located near the end of the wand tip. The spigot shall be designed to be used in conjunction with pour pots.

Minimum capacity of the unit shall be **250** gallons.

Delivery:

The unit is to be supplied with operator and small tools for the unit (squeegees, spark plugs, small parts, etc.) to insure the equipment operates properly and to introduce material as required.

The operator and unit, with material heated and ready for use, shall be at the yard of the requesting highway district facility by work shift start time.

The vehicle for transporting the operator, additional material and towing the unit to the job site will be provided by the purchasing agency.

The purchasing agency will supply supervision and maintain traffic control at the work site.

Payment:

OPTION 1: 2 MAN CREW w/ ASTM D6690 TYPE II. Contractor shall supply operator and laborer to apply sealer. Agency shall supply laborer to clean crack with air wand. $_____ gallon

OPTION 2: 3 MAN CREW w/ ASTM D6690 TYPE II. Contractor shall supply operator and laborers to apply sealer and clean cracks with air wand. $_____ gallon

OPTION 3: 2 MAN CREW w/ NYS 702-0700. Contractor shall supply operator and laborer to apply sealer. Agency shall supply laborer to clean crack with air wand. $_____ gallon

OPTION 4: 3 MAN CREW w/ NYS 702-0700. Contractor shall supply operator and laborers to apply sealer and clean cracks with air wand. $_____ gallon

ALTERNATE 1: Contractor shall provide Maintenance and Protection of Traffic $_____ gallon

ITEM E403.991x – HOT MIX ASPHALT CONCRETE PAVEMENT (RECYCLE OPTION)

Description:

The provisions of Section 403 – Hot Mix Asphalt Concrete Pavement shall apply except that the Contractor has the option of recycling reclaimed asphalt pavement (RAP). RAP may be recycled in any of the following mixes or applications:

Asphalt Concrete – Type 1R Base
Asphalt Concrete – Type 3R Binder
Asphalt Concrete – Type 6R Top (for shoulders)

If the Contractor chooses the recycling option, the following modifications to the specification requirements shall apply:

Materials:

RAP shall consist of asphalt pavement, recovered by cold milling or other removal techniques approved by the Deputy Commissioner of Highways, as noted in attached specification E703-09 Reclaimed Asphalt Pavement.

Composition of Mixtures:

The blend percentage of RAP shall be selected within the limits shown in Table 1:

Table 1

Plant Type	Percent Reclaimed Material, Maximum
Drum Mixer	70
Batch	50

The recycled mixture of RAP, new aggregate and added asphalt cement shall meet the requirements specified in Table 401-1, Composition of Bituminous Plant Mixtures for aggregate gradation, asphalt cement content and temperature range. The added asphalt cement grade shall be selected as described herein.

For any bituminous mixture containing RAP, the Contractor shall formulate and submit to the Deputy Commissioner of Highways a Job Mix Formula (JMF) which shall include:

- Gradation and asphalt content of the RAP.
- Gradation of recycled mixture.
- Percentage of RAP added.
- New aggregate source(s)
- Total asphalt cement content (based on total mixture weight).
- Added asphalt cement content (based on total mixture weight).
- Grade of added asphalt cement.

SPECIAL SPECIFICATION FOR USE WITH E403.991x
E703-9 RECLAIMED ASPHALT PAVEMENT (RAP)

Scope:

This specification covers the material requirements for reclaimed asphalt pavement (RAP) for use in asphalt pavement recycling.

Material Requirements:

The aggregate component of the RAP shall meet the requirements of Section 703, Aggregates. The bitumen component of the RAP shall be asphalt cement and shall be free of significant contents of solvents, tars or other contaminating substances that will make the RAP unacceptable for recycling as determined by the Department. The RAP shall be separated according to specific pavement source by the Contractor unless otherwise permitted by the Deputy Commissioner of Highways or his representative.

The Department will use one of the following procedures to approve the RAP quality:

1) RAP obtained from which was constructed with asphalt cement, and aggregate that meet the current requirements of Section 703, Aggregates, will be approved by the Deputy Commissioner of Highways or his representative.

2) If the source of the RAP or its quality is not known, the Contractor shall submit to the department at least thirty (30) calendar days prior to the start of paving the following:

   a. Designated use of the RAP and approximate proportions.

   b. A five (5) pound (minimum) sample representing the RAP to be incorporated into the recycled mixture.

   c. A five (5) pound (minimum) sample of the aggregate extracted from the RAP for petrographic examination.

   d. The penetration test result (77° F, 100g, 5s) of the bituminous material recovered from the RAP.

   The Department will determine the acceptability of the RAP for the designated use. Details for sampling and testing the RAP are available from the Materials Bureau.

Basis of Acceptance:

The RAP will be accepted on the basis of one of the following:

1) Certification from the Contractor that the RAP is from a specific pavement, which was constructed with aggregates that meet current specification requirements and asphalt Cement.

2) Analysis of RAP and its components by the Department.

Bituminous Materials:

The added asphalt cement may be AC-20, AC-15, AC-10, AC-5, AC-2.5 or other asphalt cement grades approved by the Deputy Commissioner of Highways. The resultant penetration of the combined asphalt cement (reclaimed bitumen and added asphalt cement) prior to plant mixing

shall be between sixty, (60) and one hundred (100). The grade of asphalt cement selected by the Contractor shall be in accordance with Department written instructions.

Construction Details:

RAP from each pavement source shall be stockpiled on free draining bases separately from other aggregates or RAP sources and shall be reclaimed from the stockpiles without contamination by foreign materials.

Prior to entry into the mixer the RAP shall have a reasonable uniform gradation from coarse to fine with a minimum of ninety-five (95%) percent passing the two (2") inch sieve.

Plant Equipment:

RAP shall be fed into the plant by equipment specifically designed for recycling and shall be approved by the Deputy Commissioner of Highways. In addition, all requirements pertaining to aggregates shall apply to RAP including that the equipment for proportioning the RAP shall meet the requirements for automatic proportioning and recordation stipulated for aggregates in subsection 401-3.08.

If a batch type plant is used scalping, screens, grizzlies or similar devices shall be installed on the RAP feed bin(s) to remove any debris or other foreign material in excess of four (4") inches. RAP shall be last in the aggregate weighing sequence. RAP draw weight (s) shall be increased to compensate for moisture content. Total mix time shall be sixty, (60) seconds minimum.

If a drum mix type plant is used, the RAP shall be fed into the drum so that it will not come in direct contact with the burner flame. Mixing of RAP with the new aggregate shall occur before the bituminous material introduction point.

Retained Moisture in Mixture:

The moisture content of the mixture upon discharge from the mixer shall not exceed one point zero (1.0%) percent when tested in accordance with Department written instructions.

Basis for Payment:

The accepted quantities of hot reclaimed asphalt concrete pavement will be paid for at the contract price per ton for the bituminous materials:

E403.9911	Asphalt Concrete Type 1R Base	$_____	per ton F.O.B. truck
E403.9912	Asphalt Concrete Type 3R Binder	$_____	per ton F.O.B. truck
E403.9913	Asphalt Concrete Type 6R Top	$_____	per ton F.O.B. truck

ITEM E403.9920 – COLD IN-PLACE RECYCLING OF BITUMINOUS PAVEMENT TYPE 1 CLOSED CIRCUIT RAP SIZING METHOD

Description:

This work, performed by the Contractor, shall consist of recycling of existing bituminous pavement to a specified depth and width in a single pass per lane width. The single pass recycling system shall have the capability to incorporate additional aggregate (if required), excavate existing pavement by cold milling, screen and crush milled pavement to the required gradation, proportion and mix the Reclaimed Asphalt Pavement (RAP) with Asphalt Emulsion and place in accordance with the lines, grades and depth established by the Contracting Agency. After the existing pavement has been removed, it shall not be returned to grade until it has been completely processed for final placement. The equipment for recycling pavements shall be approved by the Contracting agency prior to commencement of the work. It shall meet the requirements for Type 1 as described below and all the general provisions of this specification.

The equipment shall consist of a self-propelled machine capable of milling in-place bituminous material to the depth required by the Contracting agency. This machine shall have a minimum rotor cutting width to or greater than the lane width, standard automatic depth controls and be able to maintain a constant cutting depth. The bituminous meter shall be a positive displacement system capable of totalizing the quantity of bituminous material applied to the mixing chamber. A by pass valve shall be placed on the Bituminous line between the positive displacement meter and the spray bar in the mixing chamber to permit calibration of the bitumen meter. The method of delivering the mixed material to the paver screened shall be such that segregation is minimized.

Type 1 – Recycling Train (Closed Circuit RAP Sizing Method):

The train shall incorporate screening and crushing capabilities to reduce or remove oversized particles prior to mixing with emulsion. The emulsified asphalt shall be applied through a separate mixing machine capable of mixing the pulverized bituminous material, aggregate (if required) and the emulsified asphalt to a homogeneous mixture. The positive displacement pump shall be equipped with a positive interlock system that will permit addition of the emulsified binder agent only when the reclaimed material is present in the mixing chamber and will automatically shut off when material is not in the mixing chamber.

Materials:

Materials shall meet the New York State Department of Transportation Standard Specifications, Construction and Materials, dated May 1, 2008, and all revisions.

Liquid bituminous material required for mixing with the recycled pavement material shall be a medium setting asphalt emulsion, Item 702-3301, grade HFMS-2 meeting the requirements of Section 702, Bituminous Materials of the Standard Specifications. Additives mat be used to improve the quality of the resulting recycled pavement. HFMS-2 with polymer modification may be substituted for unmodified HFMS-2 asphalt emulsion and payment shall be made at the bid price per blended gallon of liquid bituminous material.

Water shall meet the requirements of Section 712-01, Water.

Additional aggregates required for cold-in-place recycling of pavements shall be crushed stone, gravel or sand conforming to the requirements of Section 703-02, Coarse Aggregate, or fine aggregate conforming to the requirements of Section 703-01, Fine Aggregate of the Standard Specifications. The gradation of the aggregate shall be specified by the vendor and included in the proposed mix design.

Prior to the mixing and placing operation, the RAP imported aggregate (if required) shall meet the following gradation.

Sieve Size	Percent Passing
1-1/2	100%

Equipment:

The equipment shall consist of a self-propelled machine capable of pulverizing in-place bituminous pavement to depth shown on the plans, in one pass per lane width. The machine shall have a minimum rotor cutting width of ten feet, standard automated grade and slope controls, and the capability of maintaining a consistent depth of cut.

The equipment shall include screening and crushing capabilities to ensure all oversize particles and chunks are reduced to a minus one and a half (1-1/2") inch gradation prior to mixing with the asphalt emulsion. Spillover is not allowed.

The asphalt emulsion, stabilizing additive shall be applied through a separate mixing machine capable of blending the sized RAP into homogeneous mixture. Placement of the blended materials to grade shall be such that segregation is minimized.

The mixing equipment shall have a positive displacement asphalt emulsion pump, which shall be interlocked with the dry materials feeding system so that wet and dry components are volumetrically consistent.

Compaction equipment will consist of a minimum of one dual steel drum vibratory roller and one pneumatic tired roller of adequate size and weight. The pneumatic roller shall have a minimum ballasted weight of twelve point five (12.5) ton. Each roller shall have pressure adhering to the roller drums or tires.

If additional aggregate is required for the Job Mix Formula, it shall be placed ahead of the recycling train through a mechanical aggregate spreader. The mechanical spreader shall receive the aggregate from end- dump type hauling units and shall place the material to an even width and depth over the lane to be recycled. The weight of the aggregate per square yard to be included shall be verified by the contractor by removing a representative sample of material and weighing it at the site with an adequate scale.

Construction Requirements:

The pavement to be recycled shall be excavated by cold milling to the length, width and depth as specified by the Contracting Agency, processed and placed as per this specification.

When required by the Job Mix Formula, additional aggregate shall be placed through a mechanical aggregate spreader on the existing pavement prior to the removal of the pavement to be recycled. The aggregate shall be incorporated with the recycled asphalt pavement (RAP) by the milling machine as it progresses forward.

If water is required for cooling of the milling machine cutter head or is added to enhance mixing and compaction such additional water shall be added at the cutting head prior to the mixing and placing of the processed material.

The excavated RAP and additional aggregate (if any) shall be fed to a closed circuit screening /crushing unit that will reduce all oversized material to meet the gradation requirement for the project.

Introduction of the asphalt emulsion into the mixing chamber shall be through a positive displacement liquid metering system. The flow of the asphalt emulsion shall be electronically interlocked with the processed recycled material feed so they will start and stop simultaneously.

Placing of the processed recycled material shall be done to the specified lane width and depth in the path removed by the cold milling operation. Placement shall be done after the cold milling, sizing and mixing are completed with no material being returned to the newly milled surface until final placement can be accomplished. Final placement shall be done with a floating, vibrating screen, which can be crowned at the center. The screen shall be self-cleaning so that the recycled material will not cling to the screen bottom creating "scars" or "drags" in the finished mat.

Compaction shall be completed upon placement of the recycled material. A proper rolling sequence for the dual steel drum vibratory and pneumatic tired compactor will be determined at the time of construction. In general, rolling will begin with the dual steel drum vibratory compactor at the shoulder edge of the new mat and progressively work toward the centerline of the road. Each successive lane joint shall be creased with the dual steel drum vibratory compactor having approximately four (4") to six (6") inches of the drum overlapping the new lane of recycled pavement. Upon the creasing of the joint, the compaction shall continue at the edge of the mat opposite the joint and work progressively toward the joint in parallel passes of the compactor. The pneumatic tired compactor shall follow at a distance to the rear of the dual steel drum vibratory compactor and compact the recycled mat until a uniform density is achieved. Final passes will be made by the dual steel drum vibratory compactor.

Traffic shall be maintained in accordance with Sections 619-1 through 619-3 of the NYSDOT Standard Specification and the Manual of Uniform Traffic Control Devices (MUTCD).

The following functions are specific responsibilities of the Contracting agency or as otherwise specified.

A) Purchase, delivery and placement of the required aggregate to support the mix design.

B) Supply an approved water source where Contractor's hauling vehicle can be loaded as required.

C) Supply all labor and warning devices necessary for control of traffic.

Job Mix Formula:

The contractor shall provide the contracting agency a complete Job Mix Formula at least five (5) working days before the start of work. The Job Mix Formula shall include detailed construction recommendations. Recommendations shall be based on field cores of the actual pavement to be recycled, inclusive of the depth of cut. Cores shall be obtained from alternating lane locations each one thousand (1,000) linear feet for the entire length of the project A.O.B.E. Laboratory analysis of the pavement cores shall include at least the following.

A) Residual asphalt content by weight percent (ASTM D1856).
B) Penetration of residual asphalt. At 77° F, 100g, 5 sec (ASTM D5)
C) Gradation of aggregate after extraction. (ASTM C136)

The Job Mix Formula shall include:

A) Specifications of aggregate to be added.
B) Amount of aggregate to be added per square yard.
C) Complete and detailed specification of liquid additive.
D) Core reports.

Method of Measurement:

The unit price bid for recycling shall be determined by the number of square yards of recycled pavement placed for the depth of cut specified and measured from a point designated by the Contracting Agency.

Asphalt emulsion delivered and incorporated into the mix shall be measured by the gallon at sixty, (60° F) degrees Fahrenheit.

Basis of Payment:

The unit price per square yard shall include all equipment and labor to operate the recycling train. The recycling train will excavate by cold milling the existing pavement, screen and crush the reclaimed material. Mix imported aggregate and water (if any), combine the processed RAP/aggregate mixture with the asphalt emulsion, place and compact the mixture to finished grade.

The unit price per gallon of asphalt emulsion shall include delivery, labor and equipment necessary to incorporate the material into the mix. The quantity specified in the Job Mix Formula is approximate and may be adjusted as required. Payment for asphalt emulsion material added to the work shall be by the gallon; temperature corrected sixty, (60° F) degrees Fahrenheit.

The bid price shall include the cost of coring, analysis, reporting and the development and submittal of the Job Mix Formula.

Alternates:

Add Aggregates purchase, delivery and placement of new add aggregate to support the mix design shall be by the contractor. Basis of payment shall be by the US Ton incorporated into the mix design.

Dump Truck (s) the contractor shall supply dump truck (s) to remove excess RAP from the milling machine and /or place RAP in front of the milling machine to make up for deficiencies in the pavement.

Traffic Control the contractor shall supply all labor and warning devices necessary for control of traffic. Basis of payment shall be by the square yard of recycled pavement placed.

Fog Seal if contracting agency elects to Fog Seal the recycled pavement payment shall be made per gallon delivered and applied at sixty, (60° F) degrees Fahrenheit.

Pay Items:

Per Square Yard (under 7,500 sq. yd.) at one (1") inch to three (3") depth	$_____
Per Square Yard (under 7,500 sq. yd.) for each additional one (1") inch Depth Over three (3") depth.	$_____
Per Square Yard (over 7,500 sq. yd.) At one (1") inch to three (3") depth	$_____
Per Square Yard (over 7,500 sq. yd.) for each additional one (1") inch Depth Over three (3") depth	$_____

Per Gallon for HFMS:

Per Gallon for HFMS-2 with polymer Modification	$_____
Per Gallon for HFMS-2 with Rejuvenator	$_____
Per Gallon for HFRA-1	$_____
Per Gallon for HFRA-2 with polymer Modification	$_____

Optional Items

Per Ton for add Aggregates	$_____
Per Hour for Dump Truck (s)	$_____
Per Square Yard for Traffic Control	$_____
Per Gallon for Fog Seal Material (delivered & applied)	$_____

ITEM E403.9930 – COLD IN-PLACE RECYCLING OF BITUMINOUS PAVEMENT TYPE II TRAIN RECYCLING WITH HIGH FLOAT REJUVENATING AGENTS

Description:

This work shall consist of cold In-Place Recycling of existing, bituminous pavements using High Float HFRA-2 with Polymer, or HFMS-2 or HFMS-2 with Polymer or HFMS-2 with Rejuvenator, Rejuvenating Agent (HFRA-1) or High Float Rejuvenating Agent with Polymer (HFRA-2) with reclaimed asphalt (RAP) in such proportions as shall be determined by the Job Mix Formula and the Erie County Highway Department.

Materials:

The High Float Rejuvenating agent shall conform to the following:

Requirements	
Sieve Test Percent	0.10 Maximum
Storage Stability, one (1) day	1.0 Maximum
Stone Coating, shall pass	Note #1 or Note #2
Solubility in Trichloroethylene, percent	Ninety Seven point Five (97.5) percent
Flash Point, COC, Fahrenheit Minimum	Three Hundred Fifty (350°) degrees
Saturates, percent maximum	Twenty (20%) percent

Note: HFRA-2 denotes polymer modified material and shall comply with the Parent material (HFRA-1). HFRA-2 shall contain no less than two (2%) percent by weight polymer, based on the asphalt residue.

Additional Requirements:

To rejuvenate aged asphalt having a penetration between 10-20 to a penetration of 60 or more, the solids from the HFRA shall not exceed thirty (30%) percent by weight of aged asphalt.

Note #1:

ASTM Method D-244, except that the mixture of stone and asphalt emulsion shall be capable of being mixed vigorously for five (5) minutes, at the end of which period, the stone shall be thoroughly and uniformly coated. The mixture shall then be completely immersed in tap water and the water poured off. The stone shall be not less than ninety (90%) percent coated.

Note #2:

ASTM Method D-244, except that the mixture of stone and asphalt emulsion shall be mixed vigorously for five (5) minutes, then left to stand for three (3) hours. After which, the mixture shall be capable of being mixed an additional five (5) minutes. The mixture shall then be rinsed twice with approximately its own volume of tap water without showing appreciable loss in bituminous film. After the second mixing, the aggregate shall be at least ninety (90%) percent coated.

Note #3:

Float test ASTM method D-139, except that the residue from distillation shall be poured immediately into the float collar at five hundred (500° F) Fahrenheit. The water bath shall be maintained at the specified temperature +/- one (1° F) degree Fahrenheit.

Composition of Completed Recycled Asphalt Mixture:	
Mixture Requirements Screen Size	**General Limits Percent Passing**
2"	95-100 %
1"	90-100 %
½"	60-90 %
¼"	38-74 %
⅛"	25-62 %
80	4-16 %
200	2-8 %
Bituminous Material: Percent of bitumen (20) 4.5 – 7.0 %	

Note #1: Aggregate percentages are based on total weight of aggregate.

Note #2: Bitumen content is based on the total weight of the mix, exclusive of water or oil distillable.

Test on ABSON Recovery of Completed Recycled Asphalt Mix		
	Minimum	**Maximum**
Penetration, 77° F, 100g, 5sec	60	200
Solubility in Trichloroethylene, %	99.0	----
Dictility 60° F, 5 cm/min, cm	40	----
Flash Point, ° F	350	----
Loss on Heating, Percent	----	1.5

Aggregate:

The mineral aggregate shall conform to the requirements set out in the following referenced subsections in the NYSDOT Standard Specifications:

Fine Aggregate	Section 703.01
Coarse Aggregate	Section 703.02

Contractor Qualifications:

Contractor shall have access to a complete and permanently operating manufacturing Plant with facilities located within a reasonable delivery distance to the project sites.

Operator of plant facilities shall have minimum of two (2) years experience in the production of the type of material specified, to insure proper mixtures and satisfactory service. The vendor, at the time of bidding, shall own the equipment with which he intends to complete the contract, if so awarded.

Contractor shall be prepared upon twelve (12) hours prior notice to supply all required High Float Rejuvenating Agent (HFRA) at temperatures requested by the contracting Agency for specific project.

The bidder shall own, operate and maintain a working laboratory at his plant. The laboratory shall be equipped with all equipment necessary to perform all specified tests on the HFRA sample and recycled asphalt pavement (RAP) material. The laboratory shall be Operated by a full time

qualified technician and shall be available for use by any Contracting Agency personnel. In addition, the laboratory shall also include sufficient equipment to test aggregate and mixes required by NYSDOT materials method #5. The Contracting Agency, may at any time, have samples tested by a certified independent testing laboratory.

Design, Certification and Demonstration:

Prior to commencing any mixing work, the successful bidder shall sample the recycled asphalt pavement (RAP) to be used on the project. The RAP material shall then be extracted by standard ASTM methods and as a minimum, the following shall be determined:

A) Complete asphalt residue in RAP
B) Penetration of aged asphalt in RAP
C) Sieve analysis of aggregate in RAP
D) Percentage, and type HFRA required to bring aged asphalt RAP to desired penetrations

After analyzing the RAP material, the supplier shall then submit a certified recommended Job Mix Formula to the Contracting Agency. The Job Mix Formula should include the following, as a minimum

A) Complete analysis of the RAP material.
B) Percentage of RAP materials to be included in mixture.
C) Percent, type, and size of virgin aggregate to be added (If Any).
D) Combined aggregate gradation.
E) Percent of asphalt residue in finished mixture.
F) Percent and type of HFRA to be added.
G) Target or design penetration of finished mixture.
H) Test on residue from **Abson Recovery** of completed **Recycled Asphalt** (RAM) as required in **Compositions of Completed Recycled Mixtures** section.
I) Core reports

Acceptance of the Job Mix Formula by the Contracting Agency is solely for the purpose of quality control, and in no way releases the Contractor from his responsibilities.

Either during or immediately after construction the Contractor shall provide complete certified test analysis of all Job Mix Formula parameters on the completed Cold Recycled Asphalt Mixture as directed by the Contracting Agency.

Equipment:

Grinding and Mixing the equipment for grinding, mixing and profiling the pavement surface shall be a power operated, full lane planing machine or grinder capable of removing, in one pass, a thickness of asphalt concrete necessary to provide profile, cross slope, and desired texture uniformly across the entire pavement surface up to ten (10) inches in one pass.

Minimum drum cutting width shall be ten feet six inches (10'-6"). The equipment shall be self-propelled with sufficient power, traction, and stability to maintain accurate depth of cut and slope. The cutting drum shall have downward cutting capability in order to control chunk size meeting the following gradation.

Chunk Size Gradation	
Sieve Size	**Percent Passing**
3"	100%
2"	95-100%
#200	0-12%

In addition, the machine shall be so designed that the drum is capable of cutting with zero side clearances on at least one side. The reclaimed material will be discharged to the rear of the machine. The equipment shall be capable of accurately and automatically establishing profile grades along each edge of the machine (within +/- 1/8") by referencing from the existing pavement, by means of a ski or matching shoe, or from an independent system controlling grade elevation and cross slope at the given rate. The machine shall be equipped with a means to control dust and other particulate matter created by the cutting action. The speed of the machine shall be variable in order to leave the desired grid pattern surface texture. Determination of the type of carbide milling teeth shall be the sole discretion of the Contracting Agency if the intended milling is to be used as a serviceable riding texture for an indeterminate time.

When mixing in place, if it is necessary to add additional aggregate to meet gradation or depth requirements, the proper aggregate shall be placed uniformly over the existing surface at the proper rate prior to the grinding mixing, and application of the High Float Rejuvenator. The mixer shall be equipped with a stabilization package, consisting of an asphalt pump, totalizing meter and spray bar mounted within the mixing chamber. The asphalt pump shall be mechanically or electronically interlocked with the ground speed of the machine.

Compaction **shall be provided as a part of the recycled train.** It shall be accomplished by the use of double drum vibratory rollers of adequate capacity to insure proper compaction followed by a pneumatic tire roller of twenty-five (25) ton minimum capacity.

Contracting Agency to Provide:

A) Add aggregate (if required) delivered to the Contractor's spreader. **This item may be supplied by the Contractor as part of optional bids.**
B) Source of water in close proximity to the project location.
C) Permanent construction signs for the project
D) Maintenance and Protection of traffic. **This item may be supplied by the Contractor as part of optional bids.**
E) Any temporary striping required by the project.

Damage:

Payment shall be made to the Contractor for repair or replacement of any permanent element of the highway, which is completed to the stage of serving its intended function and is subsequently damaged by accident or by public traffic. The Contractor must supply satisfactory evidence that such damage was caused by a public traffic accident and not by vandalism or by the Contractor's equipment. Satisfactory evidence shall generally be limited to; accident reports filed with the Motor Vehicle Department, Police Agencies, of Insurance companies; statements by reliable unbiased eye witnesses; identification of the vehicle involved in the accident. Physical evidence that the damage was caused by a motor vehicle (such as tire marks, broken headlight glass) will not be sufficient unless it can be shown that the damage was not caused by the Contractor's vehicles or vandalism.

Work for which there is a bid item will be paid for at the unit price for that item. Work, for which there is not a bid item, will be paid for at an agreed price or by means of force account. Payment will not be made for repair or replacement in any way connected with untimely failure of any portion of the highway under public traffic, and the determination regarding this matter shall be

made by the Contracting Agency, taking into consideration the normal life and amount of normal wear of the element involved.

This provision does not relieve the Contractor of the responsibility of having a wholly complete and acceptable job at the time of final inspection and acceptance of the entire contract. Payment for such damage shall be made only after the Contractor has demonstrated to the satisfaction of the Contracting Agency that he has made every reasonable effort to collect the costs from the persons responsible for the damage.

Measurement:

Work prescribed by this item will be measured by the square yard surface area. Square yard calculations will be based on dimensions determined from measurements of the actual area planed and textured as authorized. All bituminous materials will be measured and paid by the gallon.

Payment:

The work as prescribed by this item, measured as provided under the Measurement will be paid for at the unit price bid per square yard. The bituminous materials will be paid for under their appropriate items. Measurement and payment will be limited to the longitudinal length and width of which there is a definite texture present.

The price bid per square yard shall include all labor and supplies for recycling various highways in accordance with these specifications.

The price bid per gallon shall include HFRA, testing, labor and supplies, and a stabilization package on the grinding machine consisting of an asphalt pump, meter and a spray bar inside the cutting drum. The asphalt pump shall be a variable speed pump interlocked with the ground speed of the machine. The operation shall be capable of grinding, mixing, placing and compacting the recycled material at the desired width and depth requirements of the specification.

ITEM E403.9930 – Cold In-Place Recycling of Bituminous Pavement - Type II Train Recycling

Bid Sheet

Price bid per square yard (under 7,500 sq. yd.) @ 1" to 3" depth	$_____
Price bid per square yard (under 7,500 sq. yd.) for each additional 1" depth over 3"	$_____
Price bid per square yard (over 7,500 sq. yd.) @ 1" to 3" depth	$_____
Price bid per square yard (over 7,500 sq. yd.) for each additional 1" depth over 3"	$_____
Price bid per gallon for HFMS-2	$_____
Price bid per gallon for HFMS-2 with Polymer	$_____
Price bid per gallon for HFMS-2 with Rejuvenator	$_____
Price bid per gallon for HFRA-1	$_____
Price bid per gallon for HFRA-2	$_____

Optional Items

Price per square yard for Maintenance & Protection of Traffic	$_____
Price per ton for Add Aggregate delivered To Contractor's spreader	$_____
Price per hour for Hauling Trucks (If Required)	$_____
Price per gallon for fog seal material (delivered & applied)	$_____

ITEM E403.9940 – COLD IN-PLACE RECYCLING OF BITUMINOUS PAVEMENT FULL DEPTH RECLAMATION TYPE III RECYCLING

Description:

This work shall consist of pulverizing roadway for a specified length width and depth, upgrading with virgin aggregate, as required and blending with an additive to produce a recycled in-place stabilized base materials.

Materials:

The stabilization additive shall be furnished by the contractor. The additive shall be the type and quantity specified in the Job Mix Formula and will be paid for under a separate pay item.

Virgin aggregate, if required, for grade or gradation control shall be furnished by the contractor or County and spread to a depth and width as necessary to assure conformity with the Job Mix Formula.

Water for dust control or compaction aid shall be furnished by the contractor and placed evenly across the surface of the work area to assure conformity with the Job Mix Formula.

The pulverized aggregate material in the roadway, including virgin aggregate (if any) shall meet the following specification:

Sieve Size	Percent Weight Passing
3"	100
2"	90-100
¼"	30-65
#200	0-10*

Note: The top size of the pulverized material shall not exceed half the depth of the total recycled base course thickness after final compaction. Resident cobbles and oversize materials in the subbase beneath mat are not subject to this requirement.

Construction Requirements:

The roadway to be recycled shall be pulverized to the length, width and depth as specified by the County. The contractor shall be equipped to verify the actual depth of cut at any point throughout the project.

When required by the Job Mix Formula, additional aggregate shall be imported and spread over the pavement to be pulverized by the contractor or County, tailgating not permitted. This "new" aggregate shall then be combined with the material being recycled with the initial pass of the pulverized machine.

Shaping of the grade for profile may be required during various stages of the construction and shall be provided by the contractor or County under the direction of the project superintendent.

Application of the stabilizing material shall be through the computerized liquid metering spray system on the pulverizing machine. The type and amount of stabilizing agent to be added shall be as specified in the Job Mix Formula.

Shaping and compacting of the pulverized material throughout all construction phases shall be the responsibility of the contractor or the County.

Job Mix Formula:

It shall be the responsibility of the contractor to analyze the existing pavement structure. At least five (5) working days prior to the start of the work, written construction recommendation, laboratory analysis and Job Mix Formula shall be delivered to the Contracting Agency for approval. Core reports are required.

The Job Mix Formula shall be determined from field samples. Field Samples will be obtained from the pavement that is to be recycled and will consider the entire length of the reject and depth inclusive of the actual intended cut. The samples shall be submitted to a qualified laboratory for extraction of bituminous materials and analysis.

The specifics of the proposed mix design, analysis parameters, the number and location of the core samples shall be a joint recommendation of the contractor and the County.

Upon completion of the laboratory evaluation, A Job Mix Formula for the optimum mix design and a contractor's cost estimate for each project will be submitted to the County for approval.

Equipment:

The contractor shall furnish a self- propelled machine capable of pulverizing, in-place, the existing pavement and mixing any added aggregate to a design depth of twelve (12) inches. A multiple pass may be utilized to achieve the design recycle depth.

The machine shall be equipped with a computerized liquid proportions system capable of regulating and monitoring the liquid application rate relative to forward speed and shall be able to handle a complete range of liquid additives. The equipment shall be capable of mixing the liquid additives and the pulverized reclaimed pavement into a homogeneous mixture.

The cutting drum shall be able to up cut or down cut and have replaceable teeth. The minimum width of cut shall be one hundred twenty (120") inches and shall be fully maintained with adequate cutting teeth at all times throughout the work.

The contractor shall furnish a qualified operator and will be responsible for all movement of the equipment including trailer moves to and from the work site.

The method of recycling and the proposed equipment must be approved by the Contracting Agency.

Method of Measurement:

The quantity for payment will be measured by the square yard for material pulverized and mixed within the length, width and design depth of each project as ordered by the contracting agency. Liquid additives will be measured by the gallon.

Basis of Payment:

Payment will be based on the square yards of design depth of recycling work completed plus the gallons of stabilizing additive included in the work. The unit price per square yard includes the cost of equipment, maintenance, materials and labor necessary to operate the pulverizing equipment, grading, shaping, rolling and compaction and perform the laboratory analysis and to prepare and submit the Job Mix Formula. The unit price for stabilizing additive includes the cost of the supply and delivery of the stabilizing additive to the pulverizing machine.

ITEM E403.9940 Cold In-Place Recycling of Bituminous Pavement – Full Depth Reclamation Type III Pulverize Only Bid Sheet

Depth of Cut

Six (6) inches or less per square yard $_____

Over six (6) inches per square yard $_____

With Thirty Three Percent Calcium Chloride Solution

Depth of Cut:

Six (6) inches or less per square yard (1a) $_____

Over six (6) inches per square yard (1b) $_____

Additive:

Calcium Chloride Thirty-three (33%) percent solution. Delivered and added to the mix (2) $_____

* Total square yard price for recycling using one (1) gallon per square yard of additive

(1a + 2 = 3a) $_____

(1b + 2 = 3b) $_____

The low bid for each respective depth of cut will be determined from line (3a) or (3b), which is the sum of the square yard price for pulverizing (line (1a) or (1b)) plus the cost of an application of Calcium Chloride Thirty-three (33%) percent solution at the rate of one gallon per square yard (line 2).

Note: Using one (1) gallon per square yard of liquid Calcium Chloride solution is only for the purpose of determining the low bid price for the work. The actual amount of liquid per square yard will vary depending on the Job Mix Formula.

Deduct per square yard from (1a) for Contracting Agency doing Grading and Rolling $_____

Deduct per square yard from (1b) for Contracting Agency doing Grading and Rolling $_____

Virgin Aggregate (if required) per ton $_____

ITEM E403.9940 Cold In-Place Recycling of Bituminous Pavement – Full Depth Reclamation Type III With Emulsified Asphalt Bid Sheet

Depth of Cut

Six (6) inches or less per square yard $_____

Over six (6) inches per square yard $_____

Additive:

Emulsified Asphalt delivered and added to the mix (2) $_____

* Total square yard price for recycling using one (1) gallon per square yard of additive

(1a + 2 = 3a) $_____

(1b + 2 = 3b) $_____

The low bid for each respective depth of cut will be determined from line (3a) or (3b), which is the sum of the square yard price for pulverizing (line (1a) or (1b)) plus the cost of an application of Emulsified Asphalt at the rate of one gallon per square yard (line 2).

Note: Using one (1) gallon per square yard of Emulsified Asphalt is only for the purpose of determining the low bid price for the work. The actual amount of liquid per square yard will vary depending on the Job Mix Formula.

Deduct per square yard from (1a) for Contracting Agency doing Grading and Rolling $_____

Deduct per square yard from (1b) for Contracting Agency doing Grading and Rolling $_____

ITEM E403.9950 – COLD IN-PLACE RECYCLING OF BITUMINOUS PAVEMENT CENTRAL PLANT RECYCLING OPTION WITH HIGH FLOAT REJUVENATING AGENTS

All conditions as outlined in the preceding recycling specifications will apply with the following Central Plant Options;

Equipment:

The equipment for grinding and profiling pavement surface shall be a power operated, planing machine or grinder capable of removing, in one pass, a thickness of asphaltic concrete necessary to provide profile, cross slope, and desired texture uniformly across the entire pavement surface up to ten (10") inches in one pass. Minimum drum cutting width shall be six feet six inches (6'6"). The equipment shall be self-propelled with sufficient power, traction, and stability to maintain accurate depth of cut and slope. The cutting drum shall have downward cutting capability in order to control chunk size meeting the following gradations:

Chunk Size Gradation	
Sieve Size	**Percent Passing**
3"	100%
2"	95-100%
#200	0-12%

In addition machine shall be so designed that the drum is capable of cutting with a zero side clearance on at least one side. The reclaimed material will be discharged to the rear of the machine on to a thirty-six (36") inch pickup conveyor belt. The conveyor belt will either windrow material behind the machine and clear of the tracks or transfer material to a minimum thirty-six (36") inch wide truck, loading conveyor. The equipment shall be capable of accurately and automatically establishing profile grades along each edge of the machine (+/-1-1/8") by referencing from the existing pavement by means of a ski or matching shoe or from an independent grade control and shall be controlled by an independent grade control and shall be controlled by an automatic system for controlling grade elevation and cross slope at a given rate. The machine shall be equipped with a means to control dust and other particulate matter created by the cutting action. The speed of the machine shall be variable in order to leave the desired grid pattern surface texture. Determination of the type carbide teeth shall be the sole discretion of the Contracting Agency, if the intended milling is to be used as a serviceable riding texture for an indeterminate time.

The pavement surface shall be removed to the depth, width, grade and cross section as directed by the Contracting Agency. The Contracting Agency may require that the pavement planing operations be referenced from an independent grade control in those areas where they deem this type of control to be appropriate. For this type of operation, the independent grade control shall be established and maintained by the Contracting Agency. In the event the entire pavement width along a section of the highway has not been planed to a flat surface by the end of a work period, resulting in a vertical or near vertical longitudinal face exceeding 1 ¼" in height, this longitudinal face shall be sloped in a manner acceptable to the Contracting Agency so as not to create a hazard to traffic using the facility during periods when construction is not in progress. Transverse faces that are present at the end of a work period will be tapered in the manner approved by the Contracting Agency to avoid creating a hazard for traffic.

Contracting Agency to Provide:

A) Purchase, deliver, and stockpile any aggregate (if required). May be done by the Contractor if desired under optional bid.

B) Provide maintenance and protection of traffic (May be done by the Contractor if desired under optional bid).

C) Supply sufficient hauling trucks to haul RAP or recycled materials (May be done by the Contractor if desired under optional bid).

D) Furnish suitable stockpile area with adequate room for mixing and stockpiling.

E) Furnish loader with operator to stockpile RAP and charge portable mixing machine.

F) Provide source of water for the project.

G) Rollers and operators for compaction (May be done by the Contractor if desired under optional bid).

H) Raise and lower any structures in the highway (May be done by the Contractor if desired under optional bid).

J) Paver and crew for application of the driving surface (May be done by the Contractor if desired under optional bid).

ITEM E403.9950

Bid Items

Price per square yard (under 7,500 square Yards) for one (1") inch to three (3") inch milling	$_____
Price per square yard (under 7,500 square Yards) for each additional one (1") inch depth	$_____
Price per square yard (over 7,500 square Yards) for one (1") inch to three (3") inch milling	$_____
Price per square yard (over 7,500 square Yards) for each additional (1") inch depth	$_____
Price per gallon HFRA-1 (Includes pugmill and operator)	$_____
Price per gallon HFRA-2 (Includes pugmill and operator)	$_____
Price per day for paver with operator	$_____
Price per day for paver with paving crew	$_____
Price per day for vibratory with operator	$_____
Price per structure for adjusting manholes (Only applies to recycle project)	$_____
Price per gallon for fog seal (delivered & applied)	$_____

ITEM E403.9960 - HOT IN-PLACE ASPHALT RECYCLING, HEATER SCARIFICATION OF EXISTING ASPHALT PAVEMENT

1.0 DESCRIPTION:

This item shall be part of a multi-step process of asphalt surface rehabilitation that consists of softening the existing flexible pavement with heat and thoroughly stirring spinning or tumbling the mixture, applying an asphalt rejuvenator, milling/remixing, reshaping and compacting the hot in-place recycled surface. Installing a surface treatment or overlay is a separate and/or concurrent function of this work.

2.0 EQUIPMENT REQUIREMENTS:

A. Preheater:

The preheating machine shall be one self-contained machine specifically designed to heat the upper layers of the existing asphaltic pavements. The preheating machine shall be a self-propelled and completely self-contained unit capable of operating at speeds from ten (10') feet to twenty-five (25') feet per minute while uniformly heating the existing surface of the asphalt.

The heating unit shall consist of multi-rows of burners of a type specifically designed for and capable of producing 48 million BTUH; LPG will be used for the heating fuel in compliance with the standards of the State's Air Pollution Control Laws. The BTUH production rate is based upon heating twelve (12') feet wide. Burners shall be located on the front of the heater boxes spaced no more than ten (10") inches apart to achieve proper heat penetration at the required temperature while causing no injury due to overheating the asphaltic surface.

The entire burner assembly shall be so designed so that it may be raised or lowered by a single control and capable of articulation. The burner assembly shall be adjustable in width from eight (8') feet to fourteen (14') feet. The entire heating unit shall be enclosed and vented to contain the heat and prevent damage to plant material or any structures along the roadway. Each unit shall be equipped with an on board 500 gallon water system to be used to adequately reduce the temperature of the exhaust in the venting system thereby preventing desiccation of trees and shrubs by evapotranspiration due to high heat. Hand hoses with adjustable nozzles will be placed on each unit to allow for prewetting of specific plants or objects.

B. Heater-Scarifier:

The heater-scarifier machine shall be one self-contained machine specifically designed to reprocess upper layers of existing asphalt pavements. The heater-scarifier machine shall be a self-propelled and completely self-contained unit capable of operating at speeds of ten (10') to twenty-five (25') feet per minute while uniformly heating, scarifying, applying rejuvenator, mixing, and screeding the existing pavement to a minimum depth of one (1") to one and one-half (1-1/2") inches at a minimum temperature of 250 degrees Fahrenheit. The wheel base shall not be less than eighteen (18') feet and the total weight shall not be less than 35,000 pounds.

The heating unit shall consist of multi-rows of burners of a type specifically designed for and capable of producing 48 million BTUH; LPG will be used for the heating fuel in compliance with the standards the State's Air Pollution Control Laws. The BTUH production rate is based upon heating twelve (12') feet wide. Burners shall be located on the front of the heater boxes spaced no more than ten (10") inches apart to achieve proper heat penetration at the required temperature while causing no injury due to overheating the asphaltic surface.

The entire burner assembly shall be so designed so that it may be raised or lowered by a single control and capable of articulation. The burner assembly shall be adjustable in width from eight (8') feet to fourteen (14') feet. The entire heating unit shall be enclosed and vented to contain the heat and prevent damage to plant material or any structures along the roadway.

All equipment shall conform to Federal, State and local DOT and Fire Marshall regulations, and laws relative to the transportation of LPG.

C. Scarifying Unit:

The scarifying unit consists of no less than two rows of spring loaded, carbide tip teeth adjustable in width from eight (8') to fourteen (14') feet in increments to one (1") inch and construction in one (1') foot sections to conform to the pavement contour to insure penetration of the teeth and prevent damage to utility structures.

D. Spraying Unit:

Immediately behind the teeth of the scarifying unit, an application of a polymer modified rejuvenator shall be applied to the newly remixed area. Nozzle size on the spray bar and pump shall be a combination that will deliver the approved rate of application according to the forward speed of the machine in conjunction with discretion of Highway Superintendent. The tank on the machine shall be heated, and the heating unit on the storage tank for rejuvenator shall be thermostatically controlled to maintain an even specified temperature.

In addition to the above, it will be required that the spraying unit on the machine be equipped with an electronic, digital measuring system (computer) to constantly monitor the quantity of rejuvenating agent being applied. This device will be calibrated to show gallons used to the nearest tenth.

E Mill/Remixer Unit:

Immediately following the application of the recycling agent, a dual-drum enclosed mill shall mill the heated asphalt to the depth of the heat thoroughly mixing the rejuvenating agent with the scarified and milled material. This mill/remixer system shall be an integral part of the scarifying machine and shall be located between the spraying system, which applies the rejuvenator, and

the screed. This mill/remixer system shall be fully hydraulically operated and shall be able to work at variable speeds from o to 60 rpm, and shall be retractable from 14.6 ft. to 8.6 ft. wide. This mill shall also be able to break in the center to allow for quarter point and crown control.

No heater scarification can take place without this unit present and in operating condition.

F. Screed and Initial Compaction Unit:

1. Screed:

The hot Scarified material shall be uniformly distributed to the desired longitudinal and transverse section by the use of a heated, augered screed. The screed must be equipped with an adjustable crown control, and each end of the screed must have handwheel adjusting screws for providing the desired longitudinal and transverse section.

2. Compaction Unit:

Immediate compaction shall take place with rolling equipment of sufficient type and size to compact the recycled bituminous material to the required density. Normally this can be accomplished with the application of an eight (8) to twelve (12) ton vibratory roller. State specifications for bituminous concrete surfaces shall apply.

3.0 CONSTRUCTION REQUIREMENTS:

1. Pavement Preparations:

The entire area to be resurfaced shall be cleaned of all deleterious material. If required, the Owner shall broom clean the area prior to commencement of work or specify the contractor to do the same. The Contractor is required to provide traffic control.

2. Heating, Scarifying, Leveling, and Rejuvenating:

The existing asphaltic material shall be heated, scarified and mixed to a minimum depth of one (1") inch. Under no circumstances shall the scarifying teeth penetrate into the existing base.

The heated polymer modified rejuvenator shall be applied immediately following the scarifying teeth. The polymer modified rejuvenator is specifically formulated for use with the hot in-place recycling, and therefore, shall not be substituted.

The hot scarified material shall then be mill/remixed immediately following the application of the recycling agent to eliminate premature compaction of the hot recycled asphalt resulting in final differential compaction and to the desired longitudinal and transverse section by the use of an attached, heated, auguered screed. Directly behind the screed process shall be an 8 to 12 ton roller for compaction

3. Overlay:

The application of the final wearing surface consisting of either hot mix asphalt pavements, nova-chip, micro-paving, or chip seals follow after a prescribed interval or delay. These materials are applied with conventional equipment in conformance with standard construction methods. NOTE: Surface treatment not included in unit price (work to be done by others).

At all manholes, valve boxes, etc., the finished grade of the heater-scarifying process shall be transitioned to blend into the existing grade.

4.0 METHOD OF MEASUREMENT

Asphalt recycling performed and application of rejuvenating agent shall be measured by the square yard.

5.0 BASIS OF PAYMENT:

Prices shall include all labor, equipment, materials, fuels, supplies, rejuvenating agent, mobilization, bond and insurance required to complete the above item. Payment for heating, scarifying, application of rejuvenating agent, milling/remixing, and compaction will be made at the price bid per square yard.

ITEM E403.9960 - Hot In-Place Asphalt Recycling,
Heater Scarification of Existing Asphalt Pavement $_____ per Sq. Yd.

SPECIAL SPECIFICATIONS FOR EMULSIFIED RECYCLING AGENTS FOR USE IN ITEM E403.9960

These specifications cover emulsified recycling agents to be used in cold mix recycling or hot in-place recycling. The final acceptance of these materials shall be based on their performance to (a) restore the aged "old" asphalt characteristics to a consistency level appropriate for construction purposes, (b) restore the aged asphalt to its optimal chemical characteristics for durability, (c) provide sufficient additional binder to coat new aggregate that is added to the recycled mixture, and (d) provide sufficient additional binder to satisfy mixture design requirements.

The specific gravity of the emulsified recycling agent shall be reported for each shipment. The rejuvenating agent for hot in-place asphalt recycling shall be Koch Pavement Solutions product ERA-25P or approved equivalent.

TEST	ASTM METHOD	ERA-5 MIN.	ERA-5 MAX	ERA-25P MIN.	ERA-25P MAX
Viscosity, Saybold Furol @ 25 C, sec.	D244	15	85	15	85
Storage Stability Test, 1 Day	D244	–	1.0	–	1.0
Sieve Test, Retained on No. 20 Sieve Percent	D244	–	0.1	–	0.1
Cement Mixing, Test Percent	D244	–	2.0	–	2.0
Residue by Evaporation Percent	D244	65	–	65	–
Tests on Residue Viscosity @ 60 C cst	D2170	200	800	1000	5000
Torsional Recovery		20	–		
Base Recycling Agent (ie. Prior) to emulsification	D4552	RA-5	RA-25		

ITEM E403.9965n – BITUMINOUS ASPHALT PAVEMENT HEATING – SCARIFYING

Scope:

This item shall be part of a multi-step process of asphalt surface rehabilitation that consist of softening the existing flexible pavement with heat and thoroughly stirring, spinning or tumbling the mixture, applying an asphalt plasticizing or softening agent, reshaping and compacting the scarified surface and installing a surface treatment or overlay.

Equipment:

The heater-scarifier machine shall be one self contained machine specifically designed to reprocess upper layers of existing asphaltic pavements that has operated successfully on similar work prior to the award of this contract. The heater-scarifier machine shall be a self-propelled and completely self contained unit capable of operating at speeds of twenty five (25) to fifty (50) feet per minute and completing a minimum of three thousand (3,000) square yards per hour while uniformly heating pavement to a minimum depth three quarters (3/4) of one inch at a minimum temperature of two hundred twenty five (225°) degrees Fahrenheit and a maximum temperature of two hundred sixty (260°) Fahrenheit. The wheelbase shall not be less than eighteen (18) feet and a total weight shall not be less thirty five thousand (35,000) pounds. The rear driving wheels shall be tandem.

The heating unit shall consist of multi-rows of burners of a type specifically designed for the purpose and capable of producing thirty six million (36,000,000) BTUH, LPG will be used for heating fuel to prevent detrimental sooting or oil coating of aggregate or asphaltic materials and to fully meet the standards of the State's Air Pollution Control Laws. The BTUH is based on heating fourteen (14') feet wide.

The rows of burners shall be spaced thirty-six (36") inches apart to effect proper heat penetration to the desired temperature while causing no injury due to over heating of the asphaltic surface.

The entire burner assembly shall be so designed that it may be raised or lowered by a single control and capable of articulation. The burner assembly shall be adjustable in width from eight to fourteen feet. The entire heating unit shall be enclosed and vented to contain the heat and prevent damages to trees and shrubs.

The scarifying unit shall consist of no less than two rows of spring-loaded teeth adjustable in width from eight (8') to fourteen (14') feet in increments of one (1") inch and constructed in one (1') foot sections to conform to the pavement contour to insure uniform penetration of the teeth and prevent damage to utility structures.

Spray Unit:

Immediately behind the teeth of the scarifying unit, an application of plasticizing or softening agent shall be applied to the newly re-mixed area. Nozzle size on the spray bar and pump pressure shall be of a combination that will deliver the approved rate of application according to the forward speed of the machine. The heating unit on the storage tank for the plasticizing or softening agent shall be thermostatically controlled to maintain an even specified temperature. The application of plasticizer or a softening agent shall be uniformly applied and the agent shall be mixed into the scarifier material by mixing tines that are located immediately behind the spray bar. The spray shall be operated at an application rate of 0.01 to 0.10 gallons per square yard (or as directed by the Engineer).

In addition to the above, it will be required that the spraying unit on the machine will be equipped with an electronic digital measuring system to constantly monitor the quantity of rejuvenating agent being applied. This device will be calibrated to show gallons used to the nearest tenth.
The hot scarified material shall be uniformly distributed to the desired longitudinal and transverse section by the use of an attached, heated vibratory screed. The screed must be equipped with an adjustable crown control and each end of the screed must have hand wheel adjusting screws for providing the desired longitudinal and transverse section.

The properties of the asphalt modifier shall conform to the ones listed below, and shall be heated to a minimum of one hundred fifty (150°) degrees Fahrenheit prior to application.

Typical Characteristic			
Property	**Minimum**	**Typical**	**Maximum**
Gravity, API	10.71	12.0	15.13
Specific Gravity @ 60° F	.965	.989	.995
Viscosity @ 210° F, SUS	85	101	105
Pour Point ° F		35	35
Flash Point ° F	430	430	
Aniline Point ° F	93	96	125
Rostler Analysis, Weight %			
Asphalteness		0.5	
Nitrogen Bases (N)		10.4	
Group I Unsaturates (A1)		23.4	
Group II Unsaturates (A2)		45.9	
Saturates (P)		19.8	
Chemical Composition			
$\frac{N + A}{A^2 + P}$		0.51	

Construction:

The entire area to be resurfaced shall be cleaned of all deleterious material. (The owner shall furnish the contractor a traffic control and mechanical broom with operators for a period of two hours beginning at 7:00 AM each day). The existing asphaltic material shall be heated , scarified and mixed to a minimum depth of three quarters (3/4") an inch up to two (2") inches A.O.B.E. Under no circumstances shall the scarifying teeth penetrate into the existing base.

The plasticizing or softening agent shall be applied immediately following the scarifying teeth. The hot scarified material shall then be fine mixed and uniformly distributed to the desired longitudinal and transverse section by the use of an attached, heated, vibratory screed.

Rolling:

Following the screeding process, it will be required to roll the rejuvenated asphalt with steel wheeled, rubber tired, or vibratory roller meeting regulations of Section 403-3.03 with operator. The contractor will be required to submit bids for the entire process including Option A – rolling, and Option B, not including rolling.

It will then be the option of the municipality to select at their discretion to furnish or not to furnish the roller.

Measurement:

Asphalt recycling performed and application of rejuvenating agent shall be measured by the square yard.

Payment:

Prices shall include all labor, equipment, material, fuel supplies, rejuvenating agent, mobilization, bond and insurance required to complete the above item. Payment for the heater, scarifying, screeding and application of rejuvenating agent will be made at the price bid per square yard. Price bid will not include necessary traffic control. Payment shall be made for completing this item according to plans and specifications under the following items:

Bituminous Asphalt Payment Heating-Scarifying

Item E403.9965	**Option A** with Roller & Operator	**$_____Per Sq. Yd.**
Item E490.9966	**Option B** with Roller & Operator	**$_____Per Sq.Yd.**

ITEM E403.9970 - PAVE PREP

Pave prep:	Crack reduction/stress relief interior layer material shall consist of a flexible high-density asphltic membrane laminated between a non-woven polyester geotextile, and shall meet the physical properties listed below.
Property	**Performance**
Heat Stability	**No dripping or delamination** Use a 2" x 5" sample. Suspend vertically in a mechanical convection oven for two (2) hours at 190° F
Cold Flex	**No cracking or separation of fabric, ASTM D146 (modified)** Use 2" x 5" sample. Bend 180°, with woven fabric facing up, over a 2" diameter mandrel
Tensile Strength (peak)	**2,000 psi Minimum ASTM D412 (modified) 10% Minimum, Elongation (at Peak Tensile) ASTM D412 (Modified)** Use 1" wide strips. Remove the mastic from the portion of the sample that is placed in the grips to avoid slippage. Use the specified thickness of 0.135 inches for calculating the stress per cross sectional area. Report the machine direction and elongation.
Weight	**0.9 lbs/ft² Minimum** Measure the weight per square foot using a minimum sample size of 4" x 8". Measure five samples and report the average weight.
Density (Mastic)	**80 lbs/ft³ Minimum, ASTM D70**
Specific Gravity (Mastic)	**1.67 at 77° Minimum ASTM D1777**
Thickness	**0.135 inches Typical ASTM D1777**
Thickness Retention	**75% Minimum retained after loading, ASTM D395 (Modified)** Use 3" X 3" samples. Condition at 200° F for two (2) hours. Load at 100 psi for 5 seconds
Absorption (Mastic)	**1% Maximum, ASTM D517** Remove both top and bottom fabrics and test only the mastic.
Brittleness	**Passes – ASTM D517** Nail size: 30d, 5 gage, 0.207" dia.
Softening Point (Mastic)	**210° F - 230° F, ASTM D36**

Price Per Square Foot Delivered to any location in Erie County	**Less Than 40,000**	**$_____**	**Sq. Ft.**
	More than 40,000	**$_____**	**Sq. Ft.**

ITEM E403.9971 - PAVE PREP SA

PavePrep SA	Crack reduction/stress relief interlayer material shall consist of a flexible high density asphaltic membrane laminated between an asphalt adhesive coated non woven polyester geotextile and a woven polyester geotextile, and shall meet the physical properties listed below:
Property Performance	
Cold Flex	**No cracking or separation of fabric, ASTM D146 (Modified)** Use 2" x 5" sample. Bend 180° with woven fabric facing up, over a 2" diameter mandrel.
Tensile strength (Peak)	**2,000 psi Minimum ASTM D412 (Modified) Elongation (at Peak Tensile) 10% Minimum, ASTM D412 (Modified)** Use 1" wide strips. Remove the mastic from the portion of the sample that is placed in the grips to avoid slippage. Use the specified thickness of 0.135 inches for calculating the stress per cross sectional area. Report the machine direction strength and elongation.
Weight	**0.9 lbs/ft² Minimum** Measure the weight per square foot using a minimum sample size of 4" x 8". Measure five samples and report the average weight.
Density (Mastic)	**80 lbs/ft³ Minimum ASTM D70**
Specific Gravity (Mastic)	**1.67 at 77° F Minimum ASTM D70**
Thickness	**0.135 inches Typical, ASTM D1777**
Thickness Retention	**75% Minimum retained after loading, ASTM D395 (Modified)** Use 3" x 3" samples. Condition at 200° F for two (2) hours. Load at 100psi for 5 seconds.
Absorption (Mastic)	**1% Maximum, ASTM D517** Remove both top and bottom fabrics and test only the mastic.
Brittleness	**Passes – ASTM D517** Nail size: 30d, 5 gage, 0.207" dia.
Softening Point (Mastic)	**210° F - 230° F, ASTM D36**

Price Per Square Foot Delivered to any location in Erie County	**Less Than 40,000**	**$_____**	**Sq. Ft.**
	More than 40,000	**$_____**	**Sq. Ft.**

SECTION 405 COLD MIX BITUMINOUS PAVEMENT (OPEN GRADED)

ITEMS E405.01, E405.02 - SPECIFICATIONS FOR PLANT MIXED STOCKPILE PATCHING MATERIALS

1.0 DESCRIPTION

This material shall be a plant mixed pavement patching material capable of storage in a stockpile composed of mineral aggregates and bituminous materials. The mix provided shall meet one of the standard specifications contained herein (two aggregate gradations using liquid-asphalt as the bituminous material are specified herein as standard mixtures) as ordered by the Engineer; or the Producer may elect to furnish an alternate material subject to approval of the mixture by the Department.

Material shall be provided in accordance with the general specifications for Section 401 - Plant Mix Pavements - General, of the New York State Department of Transportation Specifications of May 1, 2008 with ammendments, except as modified herein.

Regardless of the material provided, it shall be uniform, workable, and have satisfactory setting properties at the time of delivery.

2.0 MATERIALS

A. Aggregates: Fine aggregate shall conform to Section 703-01, Fine Aggregate, except for gradation and except that approved limestone and slag screenings, may be used. Coarse aggregate shall conform to Section 703-02, Coarse Aggregate. Crushed stone, crushed gravel, or approved crushed slag may be used.

B. Mineral Filler: Mineral filler, if used, shall conform to the requirements of Section 703-08, Mineral Filler.

c. Bituminous Materials: The bituminous material shall conform to the requirements outlined in Section 702, Bituminous Materials, or the Producer may elect to use an alternative bituminous material with or without modifying agents. Prior approval shall be obtained from the Department for the use of alternative materials. For any bituminous material not listed in Section 702, Bituminous Materials, the Producer shall provide specifications for the alternative material to the Department.

d. Anti-Striping Mixtures: A suitable anti-stripping agent shall be used as needed to meet the stripping test requirements. This may be incorporated with the bituminous material at the refinery or at the mixing plant.

3.0 COMPOSITION OF MIXTURES:

The aggregate gradation and bituminous material quantities shall meet the requirements noted below unless otherwise approved by the Department.

The Producer shall submit a Job Mix Formula for any standard mixture ordered by the Engineer or for a proposed non-standard mixture. The Job Mix Formula shall be submitted on forms available at the Department's Regional Offices. The following information shall be provided with the Job Mix Formula Submission:

1. Aggregate gradation band and aggregate types.

2. Bituminous Material - amount and type.

3. Description and quantities of additives, if used.

4. Temperature ranges for material preparation.

The Job Mix Formula shall be submitted to the Regional Office which has jurisdiction over the area in which the material is to be produced. The Job Mix Formula shall be approved and received by the Producer prior to the production of any mixture in accordance with the Department's instructions.

If one of the standard mixes is ordered by the Engineer, it shall conform to the requirements of the following table of composition:

TABLE OF COMPOSITION (1)

Standard Asphalt Mixtures General Limits and Job Mix Formula Tolerances				
Sieve	Intermediate Mix (2)		Fine Mix	
Size	% Passing	Tolerance.	% Passing	Tolerance
1	100	0		
½	95-100	±5	100	0
¼	55-75	±5	95-100	±5
1/8	15-40	±6	20-40	±6
#80	0-5	±2	0-5	±2
Bituminous Material (3)	5.5-7.5	±0.4	6.0-8.0	±0.4

(1) This table does not apply if the Producer elects to furnish an alternate mixture, subject to Department Approval.

(2) All aggregate percentages are based on the total weight of the aggregate.

(3) Bituminous material percentage is based on the total weight of the mix and shall include any additives.

4.0 PREPARATION OF MIXTURES

The aggregate shall be introduced into the pugmill at a temperature to eliminate free moisture on the aggregate surface, but no greater than 175°F. for the liquid asphalts.

Preparation of the mixture shall conform to the specification requirements outlined in Section 401, Plant Mix Pavements - General, except that automatic proportioning and recording equipment is not required.

5.0 INSPECTION, TESTING, & ACCEPTANCE

The Producer shall contact the having jurisdiction for his plant to arrange for a Department Inspector to inspect the preparation of mixtures. If inspection is not performed at the time of mixture preparation, samples from the stockpile shall be tested by the Department to determine the acceptability of the mixture prior to use for patching.

The following stripping test shall be conducted on the plant mixed material:

STRIPPING TEST

A suitable size sample of the plant mixed material shall be permitted to cure at normal laboratory temperature for at least 24 hours after which it shall be placed in a glass jar, fitted with a tight cover, and completely covered with distilled water. The jar and contents shall then be allowed to stand for a period of 24 hours at normal laboratory temperature (approx.70°F.). The sample shall then be shaken vigorously for a period of 15 minutes. The water shall then be poured from the jar and the sample removed to a flat surface and be permitted to air dry after which it shall be visually examined for stripping of the bituminous film from the aggregate. The aggregate surfaces shall be at least 90 percent coated with bituminous film.

The initial approval of a mixture or the initial acceptance of material shall in no way preclude further examination and testing if unsatisfactory results are achieved. The acceptance at any time shall not bar its future rejection.

Pay Items:

Item E405.01 Standard Cold Patch Material $_____Per Ton F.O.B. TRUCKS

COLD PATCH MATERIAL WITH POLYESTER FIBER MIXTURE shall conform to the above with the addition of 6 lbs./ton of polyester fibers.

Item E405.02 Cold Patch Material With Polyester Fiber $_____Per Ton F.O.B. TRUCKS

ITEM E405.03 - SPECIFICATION FOR MODIFIED STOCKPILE PATCHING MATERIALS

1. DESCRIPTION

This material shall be a plant mixed pavement patching material capable of storage in a stockpile compiled of mineral aggregates and a modified bituminous material. The mix provided shall meet the gradation contained herein.

Material shall be provided in accordance with the general specifications for Section 40I - Plant Mix Pavements - General of the New York State Department of Transportation Standard Specifications of May 1, 2008, as addended, except as modified herein.

The material shall be uniform, workable, and have satisfactory setting properties at the time of delivery.

2. MATERIALS:

A. Aggregates: Fine aggregate shall conform to Section 703-01, Fine Aggregate. Coarse aggregate shall conform to Section 703-02, Coarse Aggregate. Crushed stone, stone, crushed gravel, or approved crushed slag may be used, except that aggregate shall contain no more than 5% chert stone.

B. Mineral Filler: Mineral filler, if used, shall conform to the requirements of Section 703-08, Mineral Filler.

C. Bituminous Material: The bituminous material shall be QPR2000 supplied by, U.S.Pro Tec., Inc. or an approved equal.

3. COMPOSITION OF MIXTURES:

The aggregate gradation and bituminous material quantities shall meet the requirements noted in Table I.

The Job Mix Formula shall be submitted to the Erie County Division of Highways Buffalo office. The following information shall be provided with the Job Mix Formula submission:

1. Aggregate graduation band and aggregate types.
2. Bituminous Material - amount and type, including any additives.
3. Temperature ranges for material preparation.

The Job Mix Formula shall be submitted to the Erie County Division of Highways, Buffalo Office which has jurisdiction over the plant in which the material is to be produced. The Job Mix Formula shall be approved by the Deputy Commissioner of Public Works, or his representative, and received by the Producer prior to the production of any mixture.

TABLE 1
COMPOSITION OF STOCKPILE PATCHING MATERIALS

Screen Size	General Limits % Passing (1)	Job Formula Mix % Tolerance
½"	100	-
¼"	90/11	-
1/8"	10-25	±6
#80	2-10	±3
#200	0-2	-
Bituminous (2) Material		

(1) All aggregate percentages are based on the total weight of aggregate.
(2) Bituminous material percentage is based on the total weight of the mix and shall include any additives.

4. PREPARATION OF MIXTURES:

Preparation of the mixture shall conform to the specifications requirements outlined in Section 401 - Plant Mix Pavements.

5. INSPECTION, TESTING & ACCEPTANCE:

The Producer shall contact the Buffalo office having jurisdiction for his plant to arrange for a Department inspector to inspect the preparation of mixtures. If inspection is not performed at the time of mixture preparation, samples from the stockpile will be tested by the Department to determine the acceptability of the mixture prior to use for patching.

The following stripping test shall be conducted on the plant mixed material:

STRIPPING TEST

A quantity of 50 grams of cold mix material is added to 400ML of distilled water in a beaker and boiled for 3 minutes while being stirred at one revolution/second for the duration. The water shall then be poured from the jar and the sample removed to a flat surface and be permitted to air dry after which it shall be visually examined for striping of the bituminous film from the aggregate. The aggregate surface shall be a least 90 percent coated with the bituminous film.

The initial approval of a mixture or the initial acceptance of material shall in no way preclude further examination and testing if unsatisfactory results are achieved. The acceptance at any time shall not bar its future rejection.

Pay Item:

Item E405.03 Modified stockpile patching material $_____Per Ton - F.O.B. Trucks

ITEM E405.04 - SPECIFICATION FOR BITUMINOUS PATCHING (CO-LINE) OR EQUAL

1.0 DESCRIPTION:

This material shall be composed of an open-graded mineral aggregate premixed with an asphalt binder in accordance with these specifications.

2.0 MATERIALS:

The materials for this work shall conform to the following requirements:

Asphaltic Material — The asphaltic material shall conform to the New York State Specifications for Item 618.22. A satisfactory wetting agent shall be added to the asphaltic material at the refinery in accordance with the manufacturers recommendations.

Aggregates — The aggregates shall conform to the New York State requirements for bituminous concrete.

General Composition of the Mix — The mineral aggregate shall be graded to meet the following limits by weights:

Proportionate Amount	
(Square Mesh Sieves)	Percent Passing
Aggregate Size ½"	100%
¼"	80-90%
1/8"	0-15%

The proportion of bitumen to total mixture by weight shall be 4.5-5.5%.

The temperature of the mix as it is discharged from the mixer shall be from 130°F to 160°F.

3.0 JOB MIX TOLERANCES

The proportion of material passing any sieve shall not vary more than plus or minus 5%.

4.0 MIXING

After discharging the aggregates into the mixer, they shall be dry mixed not longer than 5 seconds before adding the asphalt. Wet mixing shall be continued only as long as is required to obtain a uniform mixture.

Pay Item:

Item E405.04 Bituminous Patching (Co-Line) or Equal $_____per ton - F.O.B. Trucks

SECTION 407 TACK COAT

Section 407 of the NYSDOT Standard Specifications, dated May 1, 2008 and all addenda shall apply

Pay Item:

407.01	Tack Coat	$_____per Gallon

SECTION 410 BITUMINOUS SURFACE TREATMENT – SINGLE COURSE

ITEM E410.10xx – MICRO-SURFACING

Description:

This work shall consist of the construction of a bituminous surface system consisting of a mixture of polymer modified asphalt emulsion mineral aggregate mineral filler, water and other additives, properly proportioned, mixed and spread on a paved surface in accordance with these specifications in substantial conformance with the limits established by the Engineer.

Price:

Material price quoted shall be F.O.B. the storage facility, **per ton.**

Payment:

Payment for Micro-Surfacing Types I, II, III and Rut Filling shall be made at the contract price per ton for the total tons of aggregate, mineral filler, and asphalt emulsion verified by the receiving agency used in the accepted portion of the work. An invoice shall be sent promptly by the vendor to the Engineer or the Municipal Agency (or any other entity authorized to purchase).

Price Additional to Haul and Apply with Contractor's Equipment:

The price quoted shall be F.O.B. per ton furnished, delivered, and applied at the locations indicated by the Contracting Agency. Micro - Surfacing shall be applied in accordance with NYSDOT's Standard Specifications and as per the attached material specification for Micro – Surfacing. Cleaning and preparing the existing pavement, erecting warning signs, and directing traffic will be the responsibility of the purchasing agency.

Total Allowable Petroleum:

The percentage of total allowable petroleum for each Micro – Surfacing items is as follows:

Item	Asphalt Percentage	Petroleum Allowance Percentage	Total Petroleum Allowance Percent
E410.1000	9.0	0	9.0
E410.1001	9.0	0	9.0
E410.1002	7.5	0	7.5
E410.1003	7.5	0	7.5
E410.1004	9.0	0	9.0
E410.1005	7.5	0	7.5

Price Adjustments:

Price adjustments will be based on NYSDOT asphalt index.

Material Requirements:

A) Bituminous Materials:

The bituminous material shall be obtained from a primary source/supplier that has been approved by the Director of Materials Bureau within the current calendar year, prior to the

start of work. The bituminous material shall be a **Quick – Set Polymer Modified** CSS-1h emulsion Item 702-4501 and the cement mixing test will be waived for this emulsion. The polymer material will be milled or blended into the asphalt or into the emulsifier solution prior to the emulsification process.

B) Aggregates:

The mineral aggregate material shall be obtained from an approved source. The mineral aggregate used shall be of the type and specified for the particular use of the Micro-Surfacing.

Mineral aggregate shall consist of material conforming to the requirement of Section 703-01, Fine Aggregates. In Addition, the plus No. 30 sized material used in these mixes shall meet one of the following frictional requirements.

Plus No. 30 sized aggregates shall be crushed limestone having an acid insoluble residue content of not less than twenty (20%) percent, excluding particles of chert and similar siliceous rocks unless approved by the Deputy Commissioner of Highways.

Plus No. 30 sized aggregates shall be crushed sandstone, granite, chert, traprock, ore tailings or other similar non-carbonate materials.

Plus No. 30 sized aggregates shall be crushed dolomite.

Plus No. 30 sized aggregates shall be crushed gravel or blends of two or more of the following materials; crushed limestone, dolomite, sandstone, granite, chert, traprock, ore tailings or other similar materials.

These aggregates shall meet the following requirements:

Not less than forty (40%) percent (by weight adjustments to equivalent volumes for materials of different specific gravities) of the total plus No. 30 sized material shall be non-carbonate particles are defined as those having an acid insoluble residue content not less than eighty (80%) percent.

Blends of siliceous and non-siliceous limestone will not be permitted,

Aggregates for use in pavements having land AADT's of 4,000 or more:

Mineral aggregates shall consist of material conforming to the requirements of Section 703-01, Fine Aggregates. In Addition, the plus No. 30 sized material used in these mixes shall meet one of the following frictional requirements:

Plus No. 30 sized aggregates shall be crushed limestone having an acid insoluble residue content of not less than twenty (20%) percent, excluding particles of chert and similar siliceous rocks unless otherwise approved by the Deputy Commissioner of Highways.

Plus No. 30 sized aggregates shall be crushed sandstone, granite, chert, traprock, ore tailings or other similar non-carbonate materials.

Plus No. 30 sized aggregates shall be crushed dolomite. (excluding Wappinger dolomite as defined by the Department).

Plus No. 30 sized aggregates shall be crushed gravel or blends of two or more of the following materials; crushed limestone, dolomite (including Wappinger Dolomite as defined by the Department), sandstone, granite, chert, traprock, ore tailings or other similar materials. These aggregates shall meet the following requirements:

Not less than forty (40%) percent (by weight adjustments to equivalent volumes for materials of different specific gravities) of the total plus No. 30 sized material shall be non-carbonate. Non-carbonate particles are defined as those having an acid insoluble residue content not less than eighty (80%) percent.

Blends of siliceous and non-siliceous carbonate rocks will not be permitted.

When aggregates for Micro-Surfacing are from more than one source, they shall be proportioned and blended to provide a uniform mixture. The mineral aggregate selected shall have a sand equivalent quality of sixty five (65) minimum.

The mineral aggregate, including mineral filler, shall meet the following gradation requirements:

Sieve Size	Type II General Surfacing Percent Passing	Type III Coarse Resurfacing Rut Filling Percent Passing	Stockpile Tolerance
3/8	100	100	
#4	90 – 100	70 - 90	+/- 5%
#8	65 – 90	45 - 70	+/ 5%
#16	45 – 70	28 – 50	+/ 5%
#30	30 – 50	19 – 34	+/ 5%
#50	18 – 30	12 - 25	+/- 4%
#100	10 – 21	7 - 18	+/- 3%
#200	5 – 15	5 - 15	+/- 2%

The job mix gradation shall be within the gradation band for the desired type. After the job mix design is submitted and approved, then the percent passing each sieve size shall not vary by more than the stockpile tolerance and shall remain within the gradation band. The percent passing shall not go from the high end to the low end of the range for any two consecutive screens.

The mineral aggregate shall be placed in a stockpile at the job location or at some other approved location as described in the NYSDOT Materials Bureau M.M.5. If the tests show material to be out of gradation the contractor will be given the choice to either remove the material or blend other approved aggregate with the stockpile material to bring it into specification. Materials used in blending must meet the quality tests before blending and must be blended in a manner to produce a consistent gradation. **This may require a new mix design.**

Screening shall be required at the stockpile prior to the delivery of the mineral aggregate to the paving machine.

C) Water:

The requirements of Section 712.01, Water, shall apply.

D) Mineral Filler:

Mineral filler shall be o-air entrained Portland Cement or hydrated Lime meeting the requirements of Section 703-08, Mineral Filler. The type and amount of mineral filler needed shall be determined by a laboratory mix design and shall be considered as part of the mineral aggregate gradation requirement. An increase or decrease of less than one percent may be permitted by the Engineer as the Micro-Surfacing is being paved, for better consistency or set times.

E) Polymer Modifier:

The minimum amount and type of polymer modifier shall be based on the bitumen content and shall be determined by the laboratory performing the mix designs. The minimum polymer modifier content shall be three (3%) percent polymer solids, based on bitumen weight. Any deviations shall be approved by the Deputy Commissioner.

F) **Additives:**

Additives may be added to the asphalt emulsion mix or any of the component materials to provide the control of the quickset properties and increase adhesion. These additive (s) must be part of the mix design and be compatible with other components of the mix.

Mix Design:

A) Mix Design:

At least seven (7) working days before the work commences the Contractor shall submit a written mix design to the Deputy Commissioner of Highways covering the specific materials to be used on the project. The mix design should be preformed by properly trained personnel in a laboratory approved by the Deputy Commissioner of Highways.

B) Mix Contents:

The mix design must clearly show the proportion of mineral aggregate, mineral filler (minimum & maximum), water (minimum & maximum),

C) Approval:

The Deputy Commissioner will approve all mix designs, all Micro-Surfacing material and design methods prior to use. The component materials shall be within the following limits.

Residual Asphalt:	Type II 6.5% to 9.0% by dry weight of aggregate Type III 5.5% to 7.5% by dry weight of aggregate Ring and Ball softening point shall be 135° F minimum.
Mineral Filler:	0% to 3% solids based on bitumen weight.
Polymer Based: Modifiers:	Minimum of 3% solids based on bitumen weight
Additive:	As needed

Water:	As required to produce proper mix consistency

D) Acceptability:

Minimum acceptable values for the trial mixes are as follows:

Property	Test Method	Requirements
Wet Cohesion	ISSA TB 139 30 Minutes ISSA TB 139 60 Minutes	12 kg-cm minimum
Wet Track Abrasion Loss	ISSA TB 100 1Hour Soak ISSA TB 100 six (6) day Soak	50 g/fr squared maximum 75 g/fr squared maximum
Mix Time	ISSA TB 113	Controllable to 120 seconds minimum
Classification Compatibility	ISSA TB 144	11 grade points minimum
Wet Stripping	ISSA TB 114	Pass (90% minimum)
Excess Asphalt by LWT Sand Adhesion	ISSA TB 109	50 g/fr squared maximum
Lateral Displacement	ISSA TB 147A	50% maximum
Specific Gravity after 1000 Cycles of 125 pounds	ISSA TB 147A	2.10 maximum

Equipment Requirements:

All equipment, tools and machines used in the performance of this work shall be the property of the Contractor, approved by the Commissioner and maintained in proper working condition at all time during the performance of this work.

A) Mixing Machines:

The mixing machines shall be specifically designed and manufactured to pave Micro-Surfacing. The material shall be mixed by an automatic sequenced, self-propelled Micro-Surfacing mixing machine, which shall be a continuous flow mixing unit, able to accurately deliver and proportion the mineral aggregate, emulsified asphalt, mineral filler, control setting additive and water to a revolving multi-blade twin shaft pug mill type mixer and discharge the mixed product in a continuous flow basis. The machine shall have sufficient storage capacity and water to maintain an adequate supply to the proportioning controls.

B) Proportioning Devices:

Individual volume or weight controls for proportioning each material to be added to the mix shall be provided and properly marked. These or similar devices are usually

revolution counters or similar devices and are used in material calibration and determining the material output at any time.

C) Spreading Equipment:

The mixture shall be spread uniformly by means of a conventional augured surfacing spreader box attached to the mixer and equipped with paddles/augers to agitate and spread the material evenly throughout the box. A front seal shall be provided to insure no loss of mixture at the road contact point. The rear seal shall act as final strike-off and shall be adjustable. The spreader box and rear strike-off shall be designed and operated so that a uniform consistency is achieved to produce a free flow of material to the rear strike-off. The rear strike-off shall have no joints or seams in its entire length. The spreader box shall have suitable means provided to side shift the box to compensate for variations in the pavement geometry. It also must be able to be adjusted from nine (9') feet to fifteen (15') feet without stopping the application process.

D) Calibration:

Each mixing unit to be used in performance of the work shall be calibrated in accordance with written instructions in the presence of the Commissioner prior to construction. No machine will be allowed to work on the project until the calibration has been completed and/or accepted.

Application:

A) Rate of Application:

The micro-Surfacing mixture shall be of proper consistency at all times so as to provide the application rate required by the plans.

When Type II Micro-Surfacing is required, the minimum rate of application shall be fifteen (15) pounds per square yard for a single application, and a minimum rate of application shall be twenty-five (25) pounds per square yard for a double application.

When Type III Micro-Surfacing is required, the minimum rate application shall be twenty-five (25) pounds per square yard for a single application, and a minimum rate of thirty-five pounds per square yard for a double application.

When Rut Filling is required Type III Micro-Surfacing shall be paved at the rate approved by the Commissioner to fill the wheel rut as detailed on the plans.

B) Application:

The surface may be pre-wetted with water by fogging ahead of the spreader box. The rate of application of the fog spray shall be adjusted during the day to suit temperature, surface texture, humidity, and dryness of pavement. The pavement surface shall be damp without any free flowing water ahead of the spreader box.

The Micro-Surfacing shall be of the desired consistency upon leaving the mixer. A sufficient amount of material shall be carried in all parts of the spreader box at all times so that a complete coverage is obtained. Overloading of the spreader

box shall be avoided. No lumping, bailing, or unmixed aggregate shall be permitted.

No streaks, such as those caused by oversized aggregate, will be left in the finished surface. If excess oversize develops, the job will be stopped until the Contractor proves to the Commissioner that the situation has been corrected.

No excess buildup, uncovered areas, or unsightly appearance will be permitted on longitudinal or transverse joints. The Contractor shall provide suitable width spreading equipment to produce a minimum number of longitudinal joints throughout the project. When possible, longitudinal joints shall be placed in proximity to lane markings. Half passes and odd width passes will be used only in minimum amounts. If half passes are used, they shall not be the last pass of any paved area.

A differential of not greater than a ¼" along the transverse joints will be permitted, when measured with a ten (10') foot straight edge centered on the joint parallel to the traffic flow.

The Contractor shall protect and cover all utility structures and catch basins during the application of the Micro-Surfacing that are within the areas to be paved. These same protective coverings shall be removed upon completion of the project.

The Micro-Surfacing shall possess sufficient stability so that premature breaking of the material in the spreader box does not occur. The mixture shall be homogeneous during and following mixing and placing. It shall be free of excess water or emulsion and free of segregation of the aggregate fines from the coarser aggregate.

The areas which cannot be reached, with the mixing machine shall be surfaced using hand squeegees to provide complete and uniform coverage. If necessary the area to be hand worked shall be lightly dampened prior to mix placement. Care shall be exercised to leave no unsightly appearance from the hand- work. The same type of finish as applied by the spreader box shall be applied. Handwork shall be completed during the machine application.

Care should be taken to insure straight lines along curbs and shoulders. No run off on these areas will be permitted. Lines at intersections will be kept straight to provide a good appearance. The Contractor shall remove any excess material in areas such as driveways, gutters, and intersections, as specified by the Commissioner. The Contractor shall, on a daily basis, remove any debris associated with the performance of work.

Curing:

Traffic Control shall be provided by the purchasing agency, unless specifically requested and provided for on the bid form, to protect the Micro-Surfacing until the mixture has cured sufficiently to prevent damage from traffic. It is the vendor's responsibility to inform the purchasing agency's representative when traffic may be permitted on the completed Micro-Surfacing. Any damage by allowing traffic on the Micro-Surfacing prematurely shall be repaired by the Contractor, to the

satisfaction of the Commissioner, at no additional cost to the purchasing agency.

Testing:

The Contractor shall sample, test and supply test results to the Commissioner on samples of Micro-Surfacing mixture taken from the project. The samples shall be representative. The testing shall be performed by properly trained personnel in a laboratory approved by the Commissioner. The following tests shall be preformed on representative mix samples.

Aggregate Gradation	NYSDOT Materials Bureau MM5
Asphalt Content	NYSDOT Materials Bureau MM5

A minimum of three samples shall be tested at the start of the project. Each day, during routine production, two samples shall be taken. One of these daily samples shall be tested and the remaining sample shall be retained until the acceptance of the project. Test results shall be made available to the Commissioner within three (3) days. If conditions warrant, the Commissioner may stop work until the required test results become available.

ITEM E410.1006 - MICRO TEKK

1. DESCRIPTION

The micro-surfacing surface shall consist of a mixture of polymer modified asphalt emulsion, mineral aggregate, mineral filler, additives and water; and it shall be properly proportioned, mixed and spread on an existing surface in accordance with plans, specifications, and as ordered by the Engineer. The references are made herein to New York State Department of Transportation, Standard Specifications, Construction and Materials.

2. MATERIALS

2.1 Bituminous Materials

2.1.1 Bituminous material approval

The bituminous material shall be obtained from a storage facility that has been approved by the Director, Materials Bureau within the current calendar year, prior to the start of work.

2.1.2 Bituminous material selection

The bituminous material shall be a polymer modified asphalt emulsion meeting the following specification for MSE (Micro-Surfacing Emulsion) and intended for use in the micro-surfacing system.

SPECIFICATION FOR MICRO-SURFACING EMULSION (MSE)

	MIN	MAX
Viscosity, Saybolt Furol @ 77 F,sec.	20	100
Storage Stability Test, 1 day		1.0
Particle Charge	positive	
Sieve, %		0.1
Residue by distillation, %	62	
Mixing Test (a)		
Break Time (sec)	40	120
Set Time (min)	10	
Set/cure direction	Bottom to Top	
Cohesion (min kg/cm @ 60 mins.)	20	
% Polymer (b)	3.0	
Test on Residue from Distillation @ 350 F (c)		
Penetration, 77 F, 100g, 5 sec	40	80
Ductility , 77 F 5 cm/min, cm	60	
Absolute Viscosity @ 140 F-poise	8000	
Solubility in Trichlorethylene	97.5	
Softening point, Ring & Ball, F	140	

Notes: a, b, & c additional

(a) All mixing tests shall be performed using approved job aggregate and materials.

(b) Polymers shall not be post-added to the finished emulsion. All polymers shall be incorporated, during the milling process, at the producer's manufacturing facility.

(c) AASHTO T 59 modified to maintain a 350 F +/- 10 F maximum temperature for 15 minutes.

2.2. Aggregates

2.2.1. Aggregate Approval

The aggregates for micro-surfacing shall conform to the requirements of NYS Standard Specifications Section 703.01 "Fine Aggregate", 703.02 "Coarse Aggregate" and 703-08 "Mineral Filler" and be from an approved source. The Aggregate shall be manufactured crushed stone such as granite, slag, limestone, chert or other high quality aggregate or combination thereof. Aggregate blend shall be greater than 20% acid insoluble when tested in accordance with NYSDOT Materials Method 28 for surface courses.

2.2.2. Aggregate Selection

All aggregates should meet requirements of NYSDOT Standard Specification Section 203. The mineral aggregate used shall be of the type and gradation specified for microsurfacing. (see section 2.7)

2.2.3. Aggregate Physical Properties

a. The aggregate selected shall have a minimum sand equivalent value of 65 when tested by ASTM D-2419.

b. The aggregate shall have a weighted loss of not more than 20% using the magnesium sulfate test.

c. The aggregate wear, from resistance to abrasion, shall be a maximum of 35% when tested by ASTM C-131.

d. The aggregate shall have a maximum methylene blue value of 15.

2.3. Mineral Filler

Mineral filler shall be added to the mineral aggregate and may be any recognized brand of non-airentrained type I or II Portland cement or hydrated lime that is free of lumps or other irregularities or any other approved mineral additive. It may be accepted upon visual inspection. The amount of mineral additive needed shall be determined by the laboratory mix design and will be considered as part of the material gradation requirements.

2.4. Water

The water shall be potable and shall be free of harmful soluble salts.

2.5. Polymer Modifier

A minimum of 3.0% polymer solids content based on bitumen weight content, certified from the emulsion supplier, along with special quick-setting emulsifier agents shall be milled into the asphalt emulsion during manufacture. The emulsified asphalt shall be so formulated that when the paving mixture is applied at a thickness of one inch and the ambient air temperature of at least 75 degrees F. the material will cure sufficiently so that rolling traffic can be allowed in one hour with no damage to the surface, as verified by the Engineer.

2.6 Additives

These are materials that are added to the emulsion/aggregate mix to provide the specified quickset properties. The additives shall be supplied and certified by the emulsion manufacturer as being compatible with the emulsion and the mixture and included as part of the mix design.

2.7 Micro-Surfacing Mixture Components

The micro-surfacing mixture shall conform to the following limits. Gradation: ASTM C136-05 or AASHTO T 27=06 and AASHTO T-11 Materials finer than no.200 sieve.

Screen Size	Micro Type II % Passing *	Micro Type III % Passing *
3/8"	100	100
#4	90-100	70-90
#8	65-90	45-70
#16	45-70	28-50
#30	30-50	19-34
#50	18-30	12-25
#100	10-21	7-20
#200	5-20*	5-20*

*Determined by AASHTO T-27 or equivalent.

Residual Asphalt	5.5% to 10.5% by dry weight of aggregate
Mineral Additive	0% to 3% by dry weight of aggregate
Polymer Modifier	Minimum 3% by weight
Field Control Additive	as required to provide the specified properties
Water	As required to produce consistency
Mixture Performance Additive	As required by the mix design.

* The percent of aggregate passing shall not go from the high end to the low end of the specified range on any two successive sieves.

2.8. Suggested Application and Rate:

Scratch Course: As required to true and level:

Type II -Urban and Residential Streets: (20+/-4 lbs. per sq yd per lift)

Type III-Primary and Interstate Routes: (30 +/- lbs. per sq yd per lift)

Wheel Ruts: Application rates as required.

3. MICRO-SURFACING MIX DESIGN

The Contractor shall be responsible for selecting an asphalt emulsion and aggregate within the specification limits which are compatible and capable of being combined to provide a micro-paving mixture which will be homogeneous, fill cracks and voids, adhere firmly to the existing pavement surface and be resistant to abrasion from traffic.

Prior to beginning work, the Contractor shall submit the names of sources and suppliers of all materials to be used to the Engineer for review and approval by the Regional Materials Engineer.

Samples of these materials shall be obtained by the Contractor and tested at the Contractor's expense in a laboratory approved by the Buyers Engineer to determine their conformance to the Materials Requirements noted above.

3.1. Mix Design

Before work commences, the Contractors shall submit a certified mix design covering the specific materials to be used on the project. A qualified laboratory shall perform this design. Once the materials are approved, no substitution will be permitted unless first tested and approved by the laboratory preparing the mix design and the Buyers Engineer.

The qualified laboratory shall develop the job mix design and present certified test results for the contractor's approval. Compatibility of the aggregate and emulsion shall be verified by the mix design. The mix design shall meet current NYSDOT specifications. All component

materials used in the mix design shall be representative of the material proposed by the contractor for use on the project.

Table 3.1.1
Mix Design Properties

Property	Test Method	Requirement
Break Time Set Time Set/Cure Direction		40-120 seconds 10 Minutes Maximum Bottom to top
Wet Cohesion	ISSA TB 139; 30 minutes ISSA TB 139; 60 minutes	12 kg-cm, minimum 20 kg-cm, minimum
Wet Track Abrasion Loss	ISSA TB 100; 1 hour soak ISSA TB 100; 6 day soak	538 g/m2, maximum 807 g/m2, maximum
Mix Time	ISSA TB 113	Controllable to 120 sec., min.
Classification Compatibility	ISSA TB 144	11 grade points, minimum
Wet Stripping	ISSA TB 114	Pass (90.0% minimum)
Excess Asphalt by LWT Sand Adhesion	ISSA TB 109	538 g/m2 maximum
Lateral Displacement Vertical Displacement Specific Gravity after 1000 cycles of 125 lbs.	ISSA TB 147	7.5% maximum 15% maximum 2.10 maximum
Flexural Tension Test	ISSA TB 146	Min. 30 cm travel distance
Overlay Test @5C, 90% or less of Ultimate Load at 100 cycles, Specimen Size:(H=0.5", L=6", W=3"), Loading cycles=60 seconds, Displacement=0.05"	Tex-248-F	

3.2. Reporting

A complete laboratory analysis and report accompanied by samples of the components and abraded and unabraided micro-surfacing test samples shall be submitted to and approved by the Buyers Engineer prior to beginning work. The report shall include the following minimum data:

1. Sieve analysis for aggregate (AASHTO T-27 and T-11).
2. Sand Equivalency test value (ASTM D2419).
3. Methylene blue value- as needed
4. Percentage of mineral filler used.
5. Percentage of additive used.
6. Grade of asphalt emulsion and percentage of asphalt residue in emulsion.
7. Percentages of asphalt emulsion, water, cement and additive in system.
8. Results from the break time, set time, set cure direction, cohesion, and Schulze Breuer tests. (see table 3.1.1)

4. EQUIPMENT

4.1. General

All equipment, tools, and machines used in the performance of this work shall be maintained in satisfactory working condition at all times to ensure a high quality product. All micro-surfacing mixing and spreading equipment shall be approved by the Engineer prior to beginning work.

4.2 Mixing Equipment

The material shall be mixed by a self-propelled or truck mounted micro-surfacing mixing machine which shall be a continuous flow mixing unit able to accurately deliver and proportion the aggregate, emulsified asphalt, mineral and field control additives, and water to a revolving multi-blade twin shafted mixer and discharge the mixed product on a continuous flow bases. The machine shall have sufficient storage capacity for aggregate, emulsified asphalt, mineral and field control additives, and water to maintain an adequate supply to the proportioning controls. The machine shall be equipped with self-loading devices, which provide for the loading of materials while continuing to lay micro-surfacing, thereby minimizing construction joints. When truck mounted machines are used, a minimum of two (2) machines shall be provided to maintain continuity of the project. The mixing machine shall be equipped with a water pressure system and fog spray bar, which can completely fog spray the existing surface prior to placing the slurry. During the spraying process, water puddles will not be permitted. Use Micro-Surfacing equipment appearing on the NYS DOT approved list.

4.3. Proportioning Devices

Individual volume or weight controls for proportioning each material to be added to the mix, i.e., aggregate, emulsified asphalt, mineral and field control additives, and water shall be provided and properly marked. These proportioning devices are usually revolution counters or similar devices and are used in material calibration and determining the materials output at any time. These proportioning devices shall be calibrated within the current calendar year. Quantities in pounds of the mixture performance additive shall be recorded during calibration. The field components shall be sampled during calibration. The materials shall then be sent to an approved lab for re-blending to verify conformance to ISSA TB-147 and TEX-248-F.

4.4. Emulsion Pump

The emulsion pump shall be a heated positive displacement type.

4.5 Spreading Equipment

The surfacing mixture shall be spread uniformly by means of a mechanical type spreader box attached to the mixer, equipped with paddles to agitate and spread the materials throughout the box. The spreader box shall have the ability to extend from nine (9) feet to fifteen (15) feet in width without stopping the Microsurfacing operation. A front seal shall be provided to insure no loss of the mixture at the road contact point. The rear seal shall act as final strike off and shall be adjustable. The mixture shall be spread to fill cracks and minor surface irregularities and leave a uniform skid-resistant application of material on the surface. The spreader box and rear strike off shall be so designed and operated that a uniform consistency is achieved to produce a free flow of material to the rear stride off. The longitudinal joint where two passes join shall be neat appearing, uniform and lapped. All excess material shall be removed from the job site prior to opening the road. The spreader box shall have suitable means provided to side shift the box to compensate for variations in pavement width and longitudinal alignment. The spreader box shall be kept clean and buildup of emulsion and aggregate on the box will not be permitted.

4.6 Machine Calibration

Previous calibration documentation, for each mixing unit, covering the exact materials to be used shall be acceptable provided they were made during the current calendar year. The documentation shall include the individual calibration of each material at various settings, which can be related to the machine metering devices.

5. CONSTRUCTION DETAILS

5.1 Weather Limitations

The micro-surfacing shall not be placed in the rain or when rain is threatening and shall not be placed if either the pavement or air temperature if 50 F and falling, and there is no forecast of temperatures below 32 F within 24 hours from the time of placement of the mixture. The Contractor shall be responsible for constructing and curing the microsurfacing under proper weather conditions. The Contractor at his/her expense shall replace any areas of microsurfacing that do not cure within a period acceptable to the Engineer. Microsurfacing shall be placed only during the period of May 1 up to and including the last Saturday of September.

5.2 Preparation of Surface

Immediately prior to applying microsurfacing, the surface shall be cleaned of all loose materials, silt spots, vegetation, and other objectionable materials. Any standard cleaning method used to clean pavements will be acceptable, except water flushing will not be permitted in areas where considerable cracks are present in the surface. The Engineer will determine cleanliness of the surface at the time of placement.

Manhole covers, drop inlets, catch basins, curbs and other structures within the area shall be protected against the application of micro-surfacing materials.

If required by the Engineer or plans, crack sealing will be done prior to the application of the micro-surface as detailed in Section 663. Crack filling will be paid under its appropriate item.

5.3 Tack Coat

If required by the plans, the Contractor shall apply a tack coat consisting of one part emulsified asphalt and one part emulsifier solution with a distributor at .05-.15 gallons per square yard. The tack coat shall meet the requirements of 702-90. A tack coat shall always be applied to a concrete or brick surface.

5.4 Application:

The Contractor shall stockpile aggregates in an area that is free draining and shall be kept free from contamination by unsuitable materials and excessive moisture. Segregation of aggregate particle sizes in the stockpiles will not be permitted. All aggregate shall be screened just prior to loading for job site delivery.

The amount of asphalt emulsion to be blended with the aggregate shall be that as determined by the laboratory report after final adjustment in the field. Water shall be added as necessary to obtain a fluid and homogeneous mixture. The Engineer will approve the final rate of application.

The surface should be pre-wetted by fogging ahead of the spreader box when required by local conditions. The rate of application of the fog spray shall be adjusted during the day to suit temperatures, surface texture, humidity, and dryness of the pavement surface.
A sufficient amount of micro-surface mixture shall be carried in all parts of the spreader at all times so that a complete coverage is obtained.

No lumping, balling or unmixed aggregate will be permitted. No segregation of the emulsion and aggregate will be permitted. If the coarse aggregate settles to the bottom of the mix, the micro-surface shall be removed from the pavement. No excessive breaking of the emulsion will be allowed in the spreader box. No streaks such as caused by oversized aggregate shall be left in the finished pavement.

Every effort shall be made to prevent the micro-surface from spilling onto the adjacent pavement or curbs. Should spillage occur, it shall be cleaned to the satisfaction of the Engineer.

During production, the actual percentage of asphalt residue shall not vary by more than 1% of that indicated in the approved mix and must remain within the general limits.

5.5 Test Strips

Test strip, if requested, shall be placed prior to commencing the project to ensure that the equipment is properly calibrated and that the mixture has the indicated properties of the approved mix design. The test strips shall be provided as required by the Engineer in or near the work site and shall be representative of the traffic and pavement conditions of the project.

The finished micro-surfacing mixture shall accept rolling traffic within one (1) hour for all applications.

For rut fill applications the contractor may remove 1-1/2" of material a minimum of three (3) feet wide by grinding for a test section.

5.6 Workmanship

No excessive buildup, uncovered areas or unsightly appearances shall be permitted on longitudinal or transverse joints. The contractor shall provide suitable width spreading equipment to produce a minimum number of longitudinal joints throughout the project. When possible, longitudinal joints shall be placed on lane lines. Half passes and odd widths passes will be used only in minimum amounts. If half passes are used, they shall not be the last pass of any paved area.

The micro-surfacing mixture shall possess sufficient stability so that premature breaking of the material in the spreader box does not occur. The mixture shall be homogeneous during and following mixing and spreading. It shall be free of excess water or emulsion and free of segregation of the emulsion and aggregate fines from the coarser aggregate.

Areas, which cannot be reached with the mixing machine, shall be surfaced using hand squeegees to provide complete and uniform coverage. The area to be hand worked shall be lightly dampened prior to mix placement. Care shall be exercised to leave no unsightly appearance from handwork.

The same type finish as applied by the spreader box shall be required. Handwork shall be completed at the time of the machine applying process.

Care shall be taken to insure straight lines along curbs and shoulders. No runoff on these areas will be permitted. Lines at intersections will be kept straight to provide a good appearance.

If required by the plans, specified areas shall be rolled by a self-propelled 10-ton pneumatic roller with a tire pressure of 50 PSI and equipped with a water spray system.

6. QUALITY CONTROL

6.1 Materials

The Contractor will permit the Engineer to take samples of the aggregate and asphalt emulsion to be used in the project at the Engineer's discretion. Gradation and sand equivalent tests may be run on the aggregate and residual asphalt content test on the emulsion. Test results will be compared to specifications.

Tests will be run by a qualified laboratory at the expense of the buyer. The buyer must notify the contractor immediately if any test failed to meet the specifications.

6.2 Micro-Surfacing Mixture

Samples of the mixture will be taken daily and will be taken directly from the mixing unit(s). Consistency and residual asphalt content test will be made on the samples and compared to the mix design and specifications. The Engineer will notify the Contractor immediately if any test fails to meet specifications and the job will cease until corrective action is taken.
The Engineer may use the recorders and measuring facilities of the unit to determine application rates, asphalt emulsion content, mineral and field control additives, and water.

6.3 Non-Compliance

If any two successive tests fail on the stockpile material, the job shall be stopped. It is the responsibility of the Contractor, at his own expense, to prove the Engineer that the conditions have been corrected. If any two successive tests on the mix from the same machine fail, the use of the machine shall be suspended. It will be the responsibility of the Contractor, at his own expense, to prove the Engineer that the machine is working properly.

7. SUBMITTAL

Bidder shall at the time of the bid submit the following:

1. Bidder Qualifications page 8-16.
2. Sample of specifications, emulsion and aggregate.
3. Certified letter attesting that these are materials intended for use on bid project.

PERFORMANCE WARRANTY

The Contractor must furnish the following warranty after completion of the work and prior to final payment:

The Contractor hereby warrants that all workmanship and all materials furnished under the Contract comply fully with requirements of these Micro-Surfacing Specifications. If at any time within two years after the date of the final inspection, any unfaithful or defective work should appear, which in the opinion of the Engineer is due to inferior materials or workmanship, the Contractor warrants to do whatever is necessary to remedy the defects immediately without cost to the Buyer. The Engineer will notify the Contractor in writing of the defects and the repairs to be made, and the Contractor will begin repairs within a mutually agreed time frame.

9. METHOD OF MEASUREMENT

The quantity of microsurfacing used shall be measured by the proportioning devices on the microsurfacing machine, which shall be calibrated as stated in Section 4.3.

10. BASIS OF PAYMENT

The accepted quantity of mixture used in the "Micro-Surfacing" will be paid for at the contract unit price per ton for the type material specified. The unit price shown in the contract shall be full compensation for all materials; including emulsion, modifiers, mineral additives, labor, tools, equipment, traffic control, and all other incidentals necessary to complete the work.

Item No.	Item	Pay Unit
---.01	Micro-Surfacing Type II Surface	Ton
---.02	Micro-Surfacing Type III Surface	Ton
---.03	Micro-Surfacing Rut Fill	Ton

BIDDER QUALIFICATIONS

No bid will be considered unless the firm submitting the bid meets the following conditions:

1. Has in operation, company owned and maintained or rented/leased equipment operated by properly trained staff, including supervision and labor, capable of successfully performing the work described in the proposal and specification.

2. Has been engaged in the type of work described in the proposal and specification for a period of two (2) years unless a subsequent investigation by the Department indicates that the successful bidder's firm is, in fact, reputable in its field and capable of satisfactorily completing the contract.

3. The bidder must submit to the Engineer acceptable skid resistant values of previous jobs demonstrating the ability to maintain skid resistance after a minimum of one (1) year.

Bidders Note: Materials bid from other than approved NYSDOT storage facilities will not be considered for award and will be sufficient cause for rejection of bid.

Material Designation	Type of Material	Grade	Price per Ton F.O.B. Storage Facility
E410.1000	Micro-Surfacing (Under 4000ADT)	Type I	$_____
E410.1001	Micro-Surfacing (Under 4000ADT)	Type II	$_____
E410.1002	Micro-Surfacing (Under 4000ADT)	Type III	$_____
E410.1003	Micro-Surfacing	Rut Filling	$_____
E410.1004	Micro-Surfacing (Over 4000ADT)	Type II	$_____
E410.1005	Micro-Surfacing (Over 4000ADT)	Type III	$_____
E410.1006	Micro-Surfacing (Over 4000ADT)	Fiber Added	$_____

Price Additional Per Ton to Haul, Deliver and Apply with Contractor's Equipment:

Bid Price to Haul, Deliver and Apply	Up to 25 Ton Per Day	$_____
Bid Price to Haul, Deliver and Apply	26 - 100 Ton Per Day	$_____
Bid Price to Haul, Deliver and Apply	101 - 300 Ton Per Day	$_____
Bid Price to Haul, Deliver and Apply	301 - 500 Ton Per Day	$_____

Price Additional for Optional Maintenance and Protection of Traffic

Square Yard Price for Maintenance and Protection of traffic $_____

ITEM E410.9902 - ASPHALT SEALER

1.0 DESCRIPTION

This is to be a heavy-duty protective coating for existing bituminous pavements to prevent surface oxidation of the pavement and to inhibit softening or erosion due to spillage or dripping of petroleum derivatives.

2.0 QUALITY ASSURANCE

Successful Bidder Shall:

1. Provide adequate number of skilled workmen who are trained and experienced in the necessary crafts.

2. Secure all necessary work permits.

3. Repair any damage that occurs during construction to existing utilities, paving, curbs or lawn to the owner's satisfaction at no cost to the owner.

4. Visit the work site to familiarize himself with the conditions prior to commencing work.

3.0 GENERAL REQUIREMENTS

Scope Of Work:

The contract or work to be performed consists of furnishing required labor, material, equipment, parts and supplies necessary for the application of Asphalt Emulsion Protection Coating to previously prepared asphalt surfaces in accordance with these specifications.

Standards*:*

The work hereunder shall be done in a thorough workmanlike manner and conform to standards prescribed or approved by the responsible agency. Any reference to a Specification or procedure of the American Society for Testing and Materials, Federal Specifications or other refers to most recent specification, procedure or standards.

4.0 PRODUCT

Sealer Shall:

1. Be an asphalt emulsion containing not more that 53% water and not less than 47% non-volatile materials (solids).

2. Conform to Federal specification TTC-55B sect. 4.4.6. and 4.4.7, and FAA spec. P-626A.

3. Conform to current ASTM testing methods.

5.0 CHARACTERISTICS

Product Shall Be:

1. An asphalt emulsion based material specifically designed to be a pavement sealer.

2. Show little or no dissolution, softening or discoloration when subjected to kerosene, gasoline, anti-freeze, brake fluid, diesel fuel, de-icing chemicals, salts, or other petroleum derivatives or acids.

3. Thixotropic nature, and show no significant settlement of solids for a period of not less than three (3) months.

4. Capable of suspending a clean aggregate sand in the amount of 4 to 6 pounds per gallon with use of additives to provide extra traction for vehicluar and pedestrian traffic.

5. Bond to the asphalt pavement surface and add a fresh coat of asphalt to the pavement surface.

6. Durable and resist traffic wear as well as protect the pavement from oxidation and water intrusion.

7. Latex additives consist of a combination of Allates Coatings P.T.A.S.

A product such as SealMaster, Inc.'s PetroSeal or an equivalent modified asphalt, (a modified latex emulsion) shall be used to seal small areas of asphalt contaminated with oil, grease, and gasoline prior to application of finish seal coats, to prevent "bleeding" of these contaminants through the finish seal coats and to promote adhesion of the asphalt emulsion over these areas. Drying time should be approximately 20-30 minutes.

7.0 MINERAL AGGREGATE:

Shall be clean, hard durable, and free from deleterious matter such as clay, dirt, organic matter or mineral salts. Sands meeting the specifications as listed below shall be used. For best results "BLACK BEAUTY" brand sand or 30-60 sandblasting sands are recommended.

Sieve Designation	Percent Passing
#16	100
#30	15.85
#50	2.10
#100	0.2

8.0 PREPARATION OF PAVEMENT

1. Pavement surface - surface to be coated must be sound, surface cured and clean in order for asphalt emulsion slurry to perform properly.

2. Cleaned surface - to be clean, the pavement shall be free from clay, salt, sand, grease, dirt and other foreign matter. Cleaning shall be accomplished by means of power blowers, stiff bristle brooms, or by pressure water flushing. The Contracting Agency shall provide Cleaning and Traffic Control.

3. Areas contaminated with petroleum derivatives must be treated with a modified asphalt by contractor. If damage is severe the areas must be cut out and replaced by the municipality.

4. Any cracks larger than 1/4 inch shall be cleaned and filled with either hot or cold liquid type crack filler. Cracks in excess of 1/4 inch must be filled with hot liquid sealant and crack bedding material.

5. Temperature - Application temperature for material is 70 - 100°F

6. Application Rate - Apply sealer coat in smooth, uniform consistency according to the guidelines indicated in the following table:

	TT-55B (gal).	Water (gal.)	Sand (#)	P.T.A.S. (gal.)	Application (gal./sq.yd.)
1st Coat	100	20	400	2-3	.15
2nd Coat	100	20	400	2-3	.10

NOTE: Sand slurry must be applied at a uniform rate and evenly distributed.

Each applied coat shall have sufficient time to dry before applying an additional coat. A minimum of 2-4 hours shall be allowed for drying. Documentation of material used on the project will be provided on a daily basis.

7. All equipment must be equipped with full sweep agitation or other mechanical means to assure proper mixing of material.

8. Ambient temperature - the sealer should be applied when the ambient temperature is 50 degrees and rising with no threat of rain for an 8-hour period. Do not apply to Damp or Moist pavement surfaces.

Any sealer that washes away or does not adhere must be replaced by the contractor at the contractor's expense.

9. Drying Time-the newly applied material must be allowed a minimum of 1 - 2 hours of curing time prior to opening to traffic. The contractor shall be responsible for determining the adequacy of cure time.

9.0 PRICE ADJUSTMENT

Price adjustments shall apply as specified for Item 403 - Hot Mix Asphalt Concrete Pavement.

Price Adjustment = New Average FOB Terminal price - Base Average FOB Terminal Price **x** Total % Asphalt ton

Type	% Asphalt	Fuel Allowance	Total % Asphalt
2	6	------	6.00

Item E410.9902 – Asphalt Sealer
Price Per Square Yard includes F.O.B to any point in Erie County

Under 5,000Sq. Yds.
Two Coat: $_____

5,000 to 10,000 Sq. Yds.
Two Coat: $_____

10,001 to 25,000 Sq. Yds.
Two Coat: $_____

Over 25,000 Sq. Yds.
Two Coat: $_____

ITEM E410.9903 – SOLVENATED POTHOLES-BE-GONE (SPBG)

Description:

SPBG is an asphalt polymer designed to rejuvenate, strengthen and waterproof asphaltic materials used in the repair and overlay of asphaltic or concrete roadway services.

Material:

SPBG is a dual component, asphalt polymer.

Application:

Apply in accordance with manufacturer's instruction.

Basis of Payment:

The unit price bid per gallon for the material shall include the cost of furnishing materials and all labor and equipment necessary to complete the work.

Five (5) Gallon Pail	$_____
Fifty-five (55) Gallon Drum	$_____

ITEM E410.9904 – 4 SEASONS/NEW LIFE

Description:

4 Seasons™ Pourable Pothole Filler is used to permanently seal repair potholes, wide cracks, and irregularities in asphalt & concrete pavement. Repairs can be made when moisture is present. Just remove standing water and pour.

Material:

Non-toxic, water based, self-leveling rubberized pourable filler.

Item Quantity:

(1) #5 Pre-Measured Kit (900 cu/in or ~ 4 liquid gallons), Shipping weight: 31 lbs.
Cured Color: Black

Application:

Apply in accordance with manufacturer's instruction.

Basis of Payment:

The unit price bid per kit for the material shall include the cost of furnishing materials only.

Five (5) Gallon Kit to any location in Erie County:

1 – 47 Kits	**$**_____
48 – 450 Kits	**$**_____
451 + Kits	**$**_____

SECTION 490 COLD MILLING

ITEM E490.50xx – PLANING AND TEXTURIZING EXISTING PAVEMENT OF VARIOUS ERIE COUNTY HIGHWAYS TO VARYING WIDTHS AND DEPTHS

Description:

This item shall consist of improving the profile, cross slope, and surface texture of an existing asphaltic concrete pavement at varying depths. The Erie County Highway Department forces will remove materials. The planed surface shall provide a smooth riding surface free from gouges, continuous grooves, ridges, oil film and other imperfections of workmanship and shall have a uniform textured appearance.

Equipment:

The equipment for profiling and texturizing pavement surface shall be a power operated, self-propelled planing machine or grinder capable of removing, in one pass, a thickness of asphaltic concrete necessary to provide profile, cross slope and desired texture uniformly across the entire pavement surface. The equipment shall be self-propelled with sufficient power, traction, and stability to maintain accurate depth of cut and slope. The equipment shall be capable of accurately and automatically establishing profile grades along each edge of the machine within + 1/8" by referencing from the existing pavement by means of a ski or matching shoe or from an independent grade control and shall be controlled by an automatic system for controlling grade elevation and cross slope at a given rate. The machine shall be equipped with means to control dust and other particulate matter created by the cutting action. The speed of the machine shall be variable in order to leave the desired grid pattern specified under Surface Texture. Determination of the type carbide milling teeth shall be the sole discretion of the using agency if the intended milling is to be used as a serviceable riding texture for an indeterminate time.

Construction Methods:

The pavement surface shall be removed to the depth, width, grade and cross section as directed by the Deputy Commissioner of Highways. The Commissioner of Highways may require that the pavement planing operations be referenced from an independent grade control in those areas where he deems this type of control to be appropriate. For this type of operation, the independent grade control shall be established and maintained by the contractor in a manner acceptable to the Deputy Commissioner of Highways, and the final position of it shall be acceptable to the Deputy Commissioner of Highways. In the event the entire pavement width along a section of highway has not been planed to a flush surface by the end of a work period, resulting in a vertical or near vertical longitudinal face exceeding 1 ¼" in height, this longitudinal face shall be sloped in a manner acceptable to the Deputy Commissioner of Highways as not to create a hazard to traffic using the facility during periods when construction is not in progress. Transverse faces that are present at the end of a working period will be tapered and pavement will be swept in a manner approved by the Deputy Commissioner of Highways to avoid creating a hazard for traffic.

The loose material resulting from the operation shall remain the property of the County of Erie.

Loading Options:

A) The planing machine shall have an automatic self-propelled belt type loader to load material milled off surface into Owner's vehicles.

B) The unit loader shall be a minimum twenty-five (25') feet conveyor, Model 7-11 Vathey type loader or equal to load material milled off surface into Owner's vehicles.

C) The milled material shall **NOT** be loaded but left in place.

D) The milled material shall be loaded onto the milling contractor's trucks and shall become the property of the contractor. All pavement areas, along curbs, around utility manholes and drop inlets, etc., shall be cleaned up by the milling contractor.

E) The milled material shall be loaded onto the milling contractor's truck and shall become the property of the contractor. All loose material shall be swept up by the contractor with a mechanical broom. Areas around manholes, drop inlets, etc. will be taken care of by the municipality.

F) The milled material shall be loaded onto the milling contractor's trucks and shall become the property of the contractor.

Surface Texture:

The surface texture produced for a finished pavement shall be a grid surface with uniform discontinuous longitudinal striations or any other pattern that will provide, in the opinion of the Deputy Commissioner of Highways, a satisfactory riding surface with adequate skid resistance. It is the intent that the average texture depth resulting from a number of tests directed by the Commissioner of Highways be not less than 0.20". Should the texture depth fall below the intended, the finish procedures shall be revised to produce a surface texture acceptable to the Deputy Commissioner of Highways.

Measurement:

Work prescribed by this item will be measured by the square yard surface area. Square yard calculations will be based on dimensions determined from measurements of the actual area planed and textured as authorized.

Payment:

The work performed as prescribed by this item, measured as provided under **Measurement** will be paid for at the unit price bid per square yard for **"Planing and Texturing Pavement Surface"**. Measurement and payment will be limited to the longitudinal length and width of which there is a definite texture present.

Provide all labor and equipment for cold milling and Texturizing various County Highways in accordance with attached specifications and Loading option A.

Item E490.5010 Loading Option A

One (1) square yard to One thousand (1,000) square yards at one (1") inch to three (3") inch	$_____**Per Sq. Yd.**
One thousand (1,000) square yards to two thousand (2,000) square yards at one (1") inch to three (3") inch	$_____**Per Sq. Yd.**
One (1) square yard to one thousand (1,000) square yard for each additional one (1") inch of depth over three (3") inch may not exceed twenty five (25%) percent of price bid for one (1") inch to three (3") inch nominal depth	$_____**Per Sq. Yd.**
One thousand (1,000) square yard to two thousand (2,000) square yard for each additional one (1") inch of depth over three (3") inch may not exceed twenty five (25%) percent of price bid for one (1") inch to three (3") inch nominal depth	$_____**Per Sq. Yd.**
Two thousand (2,000) square yard to four thousand (4,000) at one (1") inch to three (3") inch nominal depth	$_____**Per Sq. Yd.**
Two thousand (2,000) square yard to four thousand (4,000) square yard for each additional one (1") inch of depth over three (3") inch may not exceed twenty five (25%) percent of price bid for one (1") inch to three (3") inch nominal depth	$_____**Per Sq. Yd.**
Over four thousand (4,000) square yard at one (1") inch to three (3") inch nominal depth	$_____**Per Sq. Yd.**
Over four thousand (4,000) square yard for each additional one (1") inch of depth over three (3") inch may not exceed twenty five (25%) percent of price bid for one (1") inch to three (3") inch nominal depth	$_____**Per Sq. Yd.**

Payment:

The work performed as prescribed by this item, measured as provided under **Measurement** will be paid for at the unit price bid per square yard for **"Planing and Texturing Pavement Surface"**. Measurement and payment will be limited to the longitudinal length and width of which there is a definite texture present.

Provide all labor and equipment for cold milling and Texturizing various County Highways in accordance with attached specifications and Loading option B.

Item E490.5020 Loading Option B

One (1) square yard to One thousand (1,000) square yards at one (1") inch to three (3") inch	$_____**Per Sq. Yd.**
One thousand (1,000) square yards to two thousand (2,000) square yards at one (1") inch to three (3") inch	$_____**Per Sq. Yd.**
One (1) square yard to one thousand (1,000) square yard for each additional one (1") inch of depth over three (3") inch may not exceed twenty five (25%) percent of price bid for one (1") inch to three (3") inch nominal depth	$_____**Per Sq. Yd.**
One thousand (1,000) square yard to two thousand (2,000) square yard for each additional one (1") inch of depth over three (3") inch may not exceed twenty five (25%) percent of price bid for one (1") inch to three (3") inch nominal depth	$_____**Per Sq. Yd.**
Two thousand (2,000) square yard to four thousand (4,000) at one (1") inch to three (3") inch nominal depth	$_____**Per Sq. Yd.**
Two thousand (2,000) square yard to four thousand (4,000) square yard for each additional one (1") inch of depth over three (3") inch may not exceed twenty five (25%) percent of price bid for one (1") inch to three (3") inch nominal depth	$_____**Per Sq. Yd.**
Over four thousand (4,000) square yard at one (1") inch to three (3") inch nominal depth	$_____**Per Sq. Yd.**
Over four thousand (4,000) square yard for each additional one (1") inch of depth over three (3") inch may not exceed twenty five (25%) percent of price bid for one (1") inch to three (3") inch nominal depth	$_____**Per Sq. Yd.**

Payment:

The work performed as prescribed by this item, measured as provided under **Measurement** will be paid for at the unit price bid per square yard for **"Planing and Texturing Pavement Surface"**. Measurement and payment will be limited to the longitudinal length and width of which there is a definite texture present.

Provide all labor and equipment for cold milling and Texturizing various County Highways in accordance with attached specifications and Loading option C.

Item E490.5030 Loading Option C

One (1) square yard to One thousand (1,000) square yards at one (1") inch to three (3") inch	$_____**Per Sq. Yd.**
One thousand (1,000) square yards to two thousand (2,000) square yards at one (1") inch to three (3") inch	$_____**Per Sq. Yd.**
One (1) square yard to one thousand (1,000) square yard for each additional one (1") inch of depth over three (3") inch may not exceed twenty five (25%) percent of price bid for one (1") inch to three (3") inch nominal depth	$_____**Per Sq. Yd.**
One thousand (1,000) square yard to two thousand (2,000) square yard for each additional one (1") inch of depth over three (3") inch may not exceed twenty five (25%) percent of price bid for one (1") inch to three (3") inch nominal depth	$_____**Per Sq. Yd.**
Two thousand (2,000) square yard to four thousand (4,000) at one (1") inch to three (3") inch nominal depth	$_____**Per Sq. Yd.**
Two thousand (2,000) square yard to four thousand (4,000) square yard for each additional one (1") inch of depth over three (3") inch may not exceed twenty five (25%) percent of price bid for one (1") inch to three (3") inch nominal depth	$_____**Per Sq. Yd.**
Over four thousand (4,000) square yard at one (1") inch to three (3") inch nominal depth	$_____**Per Sq. Yd.**
Over four thousand (4,000) square yard for each additional one (1") inch of depth over three (3") inch may not exceed twenty five (25%) percent of price bid for one (1") inch to three (3") inch nominal depth	$_____**Per Sq. Yd.**

Payment:

The work performed as prescribed by this item, measured as provided under **Measurement** will be paid for at the unit price bid per square yard for **"Planing and Texturing Pavement Surface"**. Measurement and payment will be limited to the longitudinal length and width of which there is a definite texture present.

Provide all labor and equipment for cold milling and Texturizing various County Highways in accordance with attached specifications and Loading option D.

Item E490.5040 Loading Option D

One (1) square yard to One thousand (1,000) square yards at one (1") inch to three (3") inch	$_____**Per Sq. Yd.**
One thousand (1,000) square yards to two thousand (2,000) square yards at one (1") inch to three (3") inch	$_____**Per Sq. Yd.**
One (1) square yard to one thousand (1,000) square yard for each additional one (1") inch of depth over three (3") inch may not exceed twenty five (25%) percent of price bid for one (1") inch to three (3") inch nominal depth	$_____**Per Sq. Yd.**
One thousand (1,000) square yard to two thousand (2,000) square yard for each additional one (1") inch of depth over three (3") inch may not exceed twenty five (25%) percent of price bid for one (1") inch to three (3") inch nominal depth	$_____**Per Sq. Yd.**
Two thousand (2,000) square yard to four thousand (4,000) at one (1") inch to three (3") inch nominal depth	$_____**Per Sq. Yd.**
Two thousand (2,000) square yard to four thousand (4,000) square yard for each additional one (1") inch of depth over three (3") inch may not exceed twenty five (25%) percent of price bid for one (1") inch to three (3") inch nominal depth	$_____**Per Sq. Yd.**
Over four thousand (4,000) square yard at one (1") inch to three (3") inch nominal depth	$_____**Per Sq. Yd.**
Over four thousand (4,000) square yard for each additional one (1") inch of depth over three (3") inch may not exceed twenty five (25%) percent of price bid for one (1") inch to three (3") inch nominal depth	$_____**Per Sq. Yd.**

Payment:

The work performed as prescribed by this item, measured as provided under **Measurement** will be paid for at the unit price bid per square yard for **"Planing and Texturing Pavement Surface"**. Measurement and payment will be limited to the longitudinal length and width of which there is a definite texture present.

Provide all labor and equipment for cold milling and Texturizing various County Highways in accordance with attached specifications and Loading option E.

Item E490.5050 Loading Option E

One (1) square yard to One thousand (1,000) square yards at one (1") inch to three (3") inch	$_____**Per Sq. Yd.**
One thousand (1,000) square yards to two thousand (2,000) square yards at one (1") inch to three (3") inch	$_____**Per Sq. Yd.**
One (1) square yard to one thousand (1,000) square yard for each additional one (1") inch of depth over three (3") inch may not exceed twenty five (25%) percent of price bid for one (1") inch to three (3") inch nominal depth	$_____**Per Sq. Yd.**
One thousand (1,000) square yard to two thousand (2,000) square yard for each additional one (1") inch of depth over three (3") inch may not exceed twenty five (25%) percent of price bid for one (1") inch to three (3") inch nominal depth	$_____**Per Sq. Yd.**
Two thousand (2,000) square yard to four thousand (4,000) at one (1") inch to three (3") inch nominal depth	$_____**Per Sq. Yd.**
Two thousand (2,000) square yard to four thousand (4,000) square yard for each additional one (1") inch of depth over three (3") inch may not exceed twenty five (25%) percent of price bid for one (1") inch to three (3") inch nominal depth	$_____**Per Sq. Yd.**
Over four thousand (4,000) square yard at one (1") inch to three (3") inch nominal depth	$_____**Per Sq. Yd.**
Over four thousand (4,000) square yard for each additional one (1") inch of depth over three (3") inch may not exceed twenty five (25%) percent of price bid for one (1") inch to three (3") inch nominal depth	$_____**Per Sq. Yd.**

Planing and Texturizing Existing Pavement of Various Erie County Highways to Varying Widths and Depths continued:

Payment:

The work performed as prescribed by this item, measured as provided under **Measurement** will be paid for at the unit price bid per square yard for **"Planing and Texturing Pavement Surface"**. Measurement and payment will be limited to the longitudinal length and width of which there is a definite texture present.

Provide all labor and equipment for cold milling and Texturizing various County Highways in accordance with attached specifications and Loading option F.

Item E490.5060 Loading Option F

One (1) square yard to One thousand (1,000) square yards at one (1") inch to three (3") inch	$_____**Per Sq. Yd.**
One thousand (1,000) square yards to two thousand (2,000) square yards at one (1") inch to three (3") inch	$_____**Per Sq. Yd.**
One (1) square yard to one thousand (1,000) square yard for each additional one (1") inch of depth over three (3") inch may not exceed twenty five (25%) percent of price bid for one (1") inch to three (3") inch nominal depth	$_____**Per Sq. Yd.**
One thousand (1,000) square yard to two thousand (2,000) square yard for each additional one (1") inch of depth over three (3") inch may not exceed twenty five (25%) percent of price bid for one (1") inch to three (3") inch nominal depth	$_____**Per Sq. Yd.**
Two thousand (2,000) square yard to four thousand (4,000) at one (1") inch to three (3") inch nominal depth	$_____**Per Sq. Yd.**
Two thousand (2,000) square yard to four thousand (4,000) square yard for each additional one (1") inch of depth over three (3") inch may not exceed twenty five (25%) percent of price bid for one (1") inch to three (3") inch nominal depth	$_____**Per Sq. Yd.**
Over four thousand (4,000) square yard at one (1") inch to three (3") inch nominal depth	$_____**Per Sq. Yd.**
Over four thousand (4,000) square yard for each additional one (1") inch of depth over three (3") inch may not exceed twenty five (25%) percent of price bid for one (1") inch to three (3") inch nominal depth	$_____**Per Sq. Yd.**

ITEM E490.60xx – HIGHWAY SHOULDER REMOVAL

Description:

This work shall consist of milling, shaping, and removal of existing roadway shoulders by a cold milling process, utilizing equipment and procedures meeting the requirements in this specification.

Equipment:

The equipment used for the milling, shaping, and removal of the existing shoulder material shall be a self-propelled milling machine with sufficient power, traction, and stability to maintain an accurate depth of cut and cross slope of the shoulder area while operating from the roadway surface. At no time shall any of the equipment weight or drive units be allowed on, or to disturb the integrity of the shoulder area.

The machine shall be capable of grinding and removing the desired thickness, depth, and width of shoulders material in one pass, and to load the excavated material onto trucks by means of a minimum twenty-four (24") inch wide truck loading conveyor. The machine shall have equipment capable of accurately and automatically establishing grade and slope of the shoulder area by referencing from the road pavement by means of a ski or machine shoe.

The machine shall be equipped with means to control dust and other particle matter created by the cutting action. (Water source to be provided by the Contracting Agency).

The speed of the machine shall be variable to leave the desired grid pattern surface texture. Determination of the type carbide teeth shall be the sole discretion of the contracting agency.

The rotation of the cutting drum shall be in a **Down Cutting Mode** in order to control chunk size gradation, and have capability of cutting up to ten (10") inch depth.

The equipment shall have a minimum horsepower rating of five hundred (500), such as a Roadtec RX-50, or equal.

Responsibilities:

A) Contracting Agency to:

1) Provide maintenance and protection of traffic.
2) Locate, mark and be responsible for all utilities located within the shoulder area to be removed.
3) Supply all water necessary for the operation of the shoulder project.
4) Provide all necessary sweeping and clean up of roadway.

B) Contractor to:

1) Provide equipment specified with all necessary teeth, fuel, and two (2) skilled and experienced operators.

Payment Schedule:

Method of measurement and payment the work prescribed by this will be measured by the lineal foot. Calculation will be based on the total distance of shoulder multiplied by the number of passes made by the milling machine.

Mobilization on the projects shall be paid for by each time the low bed is used, excluding the move out at the end of the project.

		2' Wide	3' Wide	4' Wide
Price per Lineal Foot Under 10,000 Lineal Foot at:				
E490.6010	0" ---- 4" Depth	$_____	$_____	$_____
E490.6011	4" ---- 8" Depth	$_____	$_____	$_____
E490.6012	8" ---- 10" Depth	$_____	$_____	$_____
Price per Lineal Foot 10,000-20,000 Lineal Foot at:				
E490.6020	0" ---- 4" Depth	$_____	$_____	$_____
E490.6021	4" ---- 8" Depth	$_____	$_____	$_____
E490.6022	8" ---- 10" Depth	$_____	$_____	$_____
Price per Lineal Foot 20,000-30,000 Lineal Foot at:				
E490.6030	0" ---- 4" Depth	$_____	$_____	$_____
E490.6031	4" ---- 8" Depth	$_____	$_____	$_____
E490.6032	8" ---- 10" Depth	$_____	$_____	$_____
Mobilization:		$_____**/move**		

ITEM E490.70xx – REVERESE DOWN MODE MILLING

The general specification of the NYSDOT Section 490 shall apply.

Under this item the milling machine shall be modified to work in the down mode or up mode rotation and be able to do so within a thirty-minute time frame so that the entire operation shall remain homogeneous.

The operation calls for experienced operators or a knowledgeable Superintendent that can adjust depth and /or speed as conditions warrant in order to achieve the best results. The machine must be equipped with a strike off device to leave a roadway plane or cross-section that can be rolled in order to eliminate extra grading when possible.

If the owner so chooses virgin material can be added prior to grinding, or re-grading after the grinding, if existing grade and structural condition warrant.

Basis of Payment:

E490.7010	1 to 1,000 Sq. Yd.	$_____
E490.7020	1,000 to 2,000 Sq. Yd.	$_____
E490.7030	2,000 to 4,000 Sq. Yd.	$_____
E490.7040	Over 4,000 Sq. Yd.	$_____

SECTION 502 PORTLAND CEMENT CONCRETE PAVEMENT

The materials, proportioning, batching, mixing and delivery operations shall conform to Section 502 of the New York State specifications of May 1, 2008 with subsequent modifications except as further modified herein.

Item E502.9901 – PCC Pavement Class C shall conform to Section 502 of the Standard Specifications. The pavement and reinforcement (R), profilographing (P), and friction (F), requirements shall be determined by the County for each job mix.

All cement used shall be Portland Cement, Type 1 or 2 as required by 701-01 Portland Cement.

For Concrete, Proportions per Cubic Yard – See Table 501.3 Concrete Mixtures.

An Air Entraining Agent, in its concentrated liquid form, shall be added to the water or fine aggregate prior to mixing of concrete batch.

The amount of air entraining agent shall be added by an approved automatic proportioning mechanical device and dispenser and shall meet the requirements of Section 501, Table 501.3 and Table 501-5.

Water reducing agents shall conform to Section 501 Portland Cement concrete.

Price per cubic yard of the Portland Cement Concrete as specified above shall include delivery within eight (8) miles of the supplier's plant. Payment will be made for mileage in excess of eight (8) miles per delivery regardless of concrete quantity.

Unloading time in excess of five (5) minutes per cubic yard of concrete shall be paid per minute of additional waiting time per delivery.

An approved Retarding Admixture shall be added in accordance with the manufacturer's recommendations when requested. The price for addition of Retarder shall be a separate extra charge per cubic yard of concrete so treated.

Specification requirements for automation and recordation of batching facilities may be waived when requested in writing for pours of less than five (5) yards total under the terms and conditions of control and inspection as stipulated at the time of request,

Pay Items:

E502.9901	**PCC Pavement, Class C**	**$_____**	**Per Cubic Yd.**
ADDITIONAL ITEMS			
	Retarder Treatment	**$_____** 100 Weight of Cement	**Per ounce**
	Accelerator Treatment (Non-Chloride)	**$_____** 100 Weight of Cement	**Per ounce**
	Extra Mileage	**$_____**	**Per Mile**
	Waiting Time in excess of five (5) minutes / cubic yard with a fifteen (15) minute minimum	**$_____**	**Per Minute**
	Heating Materials	**$_____**	**Per Cubic Yard**

Minimum Load	_____**Cubic Yards**
Specify single charge for loads less than the minimum load	**$**_____**Per Load**

SECTION 502 PORTLAND CEMENT CONCRETE PAVEMENT

ITEM E502.9901 – MEND-IT

Description:

Mend-It is a thermo-setting reactive admix for concrete restoration and repair. It is ideally suited for use in highway patching, repair and resurfacing.

Materials:

Mend-It is a thermo-setting, reactive, water-miscible, polymer admix.

Application:

Apply in accordance with manufacturer's instructions.

Basis of Payment:

The unit price bid per gallon for the material shall include the cost of furnishing materials and all labor and equipment necessary to complete the work.

Five (5) Gallon Pail $_____

Fifty-five (55) Gallon Drum $_____

SECTION 502 PORTLAND CEMENT CONCRETE PAVEMENT

ITEM E502.9902 - FLEXSET

Description:

FlexSet is installed in problem areas where concrete is spalled, delaminated or cracked. FlexSet combines polymers with a specially-treated aggregate to create a rapid setting, easy to apply, long lasting and durable concrete repair. Repairs can be done in minutes using Four (4) simple steps.

Material:

FlexSet Kits are shipped in three (3) and five (5) gallon size's containing thirty (30lbs) pounds of Polymer Coated Silica Quartz blend, a half (1/2) gallon each of Type "A" and Type "B" liquids and Twelve (12lbs) pounds of White Silica Quartz topping.

Application:

Apply in accordance with manufacturer's instruction.

Basis of Payment:

The unit price bid per gallon for the material shall include the cost of furnishing materials and all labor and equipment necessary to complete the work.

Three (3) Gallon Kit to any location in Erie County

1 – 63 Kits	**$**_____
64 – 650 Kits	**$**_____
651 + Kits	**$**_____

Five (5) Gallon Kit to any location in Erie County

1 – 47 Kits	**$**_____
48 – 450 Kits	**$**_____
451 + Kits	**$**_____

Aggregates- Crushed Stone Polymerized by the Roklin System Process

Item		**F.O.B.Trucks**
Screenings		**$**_____ **Per Ton**
#1-Stone	(NYSDOT Table 703-4) Polymer Coated	**$**_____ **Per Ton**
#1A-Stone	(NYSDOT Table 703-4) Polymer Coated	**$**_____ **Per Ton**
#1ST	(NYSDOT Table 703-4) Polymer Coated	**$**_____ **Per Ton**

SECTION 520 SAW CUTTING OF PAVEMENT

Supply all manpower, materials and equipment necessary to saw cut streets as required.

Sawcutting shall be performed to a minimum depth of 12", using a Vermier type machine.

BID SHEET FOR SAW CUTTING OF PAVEMENT

Pavement Saw Cutting (All bid items are per linear ft. of pavement)	
Item E520.01 Sawcutting of Bituminous Pavement:	$
Item E520.02 Sawcutting of Bituminous Pavement Pavement w/reinforced concrete subbase:	$
Item E520.9901 Quote & Identify any Mobilization/transportation (per move) charges which may apply:	$

SECTION 551 PILES AND PILE DRIVING EQUIPMENT

Section 551 of the NYSDOT Standard Specifications dated May 1, 2008, and all addenda shall apply except as modified herein.

Item E551.04 CREOSOTED TIMBER PILES

2.0 MATERIALS

Piles shall be Southern Yellow Pine or Douglas Fir containing a minimum thickness of sapwood of not less than one and one-half inches in Southern Yellow Pine and not less than one inch of Douglas Fir at the butt ends.

Piles shall be peeled clean of bark, including the inner bark, soon after cutting, so that the piles are smooth and clean. Care shall be taken to remove as little sapwood as possible in the bark peeling operation.

The preservative used in the treatment of piles shall conform to the requirements of Section 708-30, Wood Preservative Creosote Oil, or Section 708-31, Wood Preservative Water Borne.

Timber piles used as foundation piles for railroad structures shall have a minimum butt diameter of 14 inches. Timber piles used as foundation piles for highway, utility, or pedestrian structures shall have a minimum butt diameter of 12 inches.

3.0 CONSTRUCTION DETAILS

Points. The tips of Creosoted Timber Piles shall be sawed square such that, when cut off, the end is perpendicular to the longitudinal axis of the pile or tapered to a point not less than four (4) inches in diameter. When indicated on plans or approved by the Engineer, timber piles shall be shod with metal shoes. The points of the piles shall be carefully shaped to secure an even and uniform bearing on the shoes.

Butts. The butts of Creosoted Timber Piles shall be sawed square.

Splices. Timber Piles shall not be spliced unless ordered by the Engineer.

Treatment of Pile Heads and Bolt Holes. The heads of piles shall be treated as follows: The sawed surface shall be treated in accordance with AWPA M4 with the addition that at least three coats of preservative be applied followed by a thick application of a mixture of 30% creosote and 70% pitch. The application of the pitch coat shall not apply to pile heads encased in concrete. All bolt holes bored subsequent to treatment shall be treated with preservative by means of an approved pressure bolt hole treater. Any unfilled holes, after being treated with preservative shall be plugged with preservative treated plugs.

The Contractor shall obtain all necessary permits pertaining to the purchase and field application of wood preservatives from the U.S. Environmental Protection Agency and the New York State Department o Environmental Conservation.

4.0 METHOD OF MEASUREMENT

The quantity of piles to be paid for the work specified for Creosoted Timber Piles will be the number of lineal feet of driven, acceptable piles below the cut-off elevation, remaining in the finished work in accordance with the Plans, Specifications and as directed by the Engineer.

5.0 BASIS OF PAYMENT

As per Section 551-5.02 of the NYSDOT Standard Specifications dated May 1, 2008, and all addenda

Item E551.13 shall be as specified in Section 551 except the pay unit shall be per hour.

	Item	Price	
E551.04M	Creosoted Timber Piles	$ _____	per lin. ft
551.1001M	Steel Bearing Piles (HP10 x 42)	$ _____	per lin. ft.
551.1002M	Steel Bearing Piles (HP10 x 57)	$ _____	per lin. ft.
551.1003M	Steel Bearing Piles (HP12 x 53)	$ _____	per lin. ft.
551.1004M	Steel Bearing Piles (HP12 x 74)	$ _____	per lin. ft.
551.11M	Cast in Place Concrete Piles	$ _____	per lin. ft.
E551.13	Furnish Equipment for Driving Piles	$ _____	per hour

SECTION 552 SUPPORT AND PROTECTION SYSTEMS

SHEET PILING

Section 552 of the NYSDOT Standard Specifications dated May 1, 2008, and all addenda shall apply except as modified herein.

Mobilization shall be included in the unit price bid.

Price per F.O.B. to any point in Erie County.

	Item	Price	
552.11M	Permanent Steel Sheet Piling, SPZ-23	$ _____	per sq.ft.
552.13M	Temporary Steel Sheet Piling, SPZ-23	$ _____	per sq.ft.

SECTION 555 STRUCTURAL CONCRETE

The materials, proportioning, batching, mixing and delivery operations shall conform to Section 555 of the New York State Standard Specifications dated May 1, 2008 with subsequent modifications, except as further modified herein.

All cement used shall be Portland Cement, Type 1 or 2 as required by 701-01 Portland Cement.

For Concrete, Proportions per Cubic Yard – See Table 501.3 Concrete Mixtures.

An Air Entraining Agent, in its concentrated liquid form, shall be added to the water or fine aggregate prior to mixing of concrete batch.

The amount of air entraining agent shall be added by an approved automatic proportioning mechanical device and dispenser and shall meet the requirements of Section 501, Table 501.3 and Table 501-5.

Water reducing agents shall conform to Section 501 Portland Cement concrete.

Price per cubic yard of the Portland Cement Concrete as specified above shall include delivery within eight (8) miles of the supplier's plant. Payment will be made for mileage in excess of eight (8) miles per delivery regardless of concrete quantity.

Unloading time in excess of five (5) minutes per cubic yard of concrete shall be paid per minute of additional waiting time per delivery.

An approved Retarding Admixture shall be added in accordance with the manufacturer's recommendations when requested. The price for addition of Retarder shall be a separate extra charge per cubic yard of concrete so treated.

Specification requirements for automation and recordation of batching facilities may be waived when requested in writing for pours of less than five (5) yards total under the terms and conditions of control and inspection as stipulated at the time of request,

Pay Items:

555.0104M	**Footing Concrete, Class A** (No concrete class substitutions permitted, except Class H where footing is 3 ft thick or less)	**$_____**	**Per Cubic Yd.**
555.0105M	**Concrete for Structures, Class A**	**$_____**	**Per Cubic Yd.**
555.05M	**Concrete for Structures, Class F**	**$_____**	**Per Cubic Yd.**
555.06M	**Concrete for Structures, Class G** Deposited Under Water	**$_____**	**Per Cubic Yd.**
555.09M	**Concrete for Structures, Class HP**	**$_____**	**Per Cubic Yd.**
555.10M	**Concrete for Structures, Class D**	**$_____**	**Per Cubic Yd.**

ADDITIONAL ITEMS

Retarder Treatment	**$_____**	**Per ounce** 100 Weight of Cement

Accelerator Treatment (Non-Chloride)	$_____**Per ounce** 100 Weight of Cement
Extra Mileage	$_____**Per Mile**
Waiting Time in excess of five (5) minutes / cubic yard with a fifteen (15) minute minimum	$_____**Per Minute**
Heating Materials	$_____**Per Cubic Yard**
Minimum Load	_____**Cubic Yards**
Specify single charge for loads less than the minimum load	$_____**Per Load**

SECTION 556 REINFORCING STEEL FOR CONCRETE STRUCTURES

Section 556 of the NYSDOT Standard Specifications dated May 1, 2008, and all addenda shall apply except as modified herein.

Price per F.O.B. to any point in Erie County.

	Item	Price	
556.0201M	Uncoated Bar Reinforcement for Structures	$ _____	per lb.
556.0202M	Epoxy-Coated Bar Reinforcement for Structures	$ _____	per lb.

SECTION 557, SUPERSTRUCTURE SLABS AND STRUCTURAL APPROACH SLABS

The materials, proportioning, batching, mixing and delivery operations shall conform to Section 557 of the New York State Standard Specifications dated May 1, 2008 with subsequent modifications, except as further modified herein.

All cement used shall be Portland Cement, Type 1 or 2 as required by 701-01 Portland Cement.

For Concrete, Proportions per Cubic Yard – See Table 501.3 Concrete Mixtures.

An Air Entraining Agent, in its concentrated liquid form, shall be added to the water or fine aggregate prior to mixing of concrete batch.

The amount of air entraining agent shall be added by an approved automatic proportioning mechanical device and dispenser and shall meet the requirements of Section 501, Table 501.3 and Table 501-5.

Water reducing agents shall conform to Section 501 Portland Cement concrete.

Price per cubic yard of the Portland Cement Concrete as specified above shall include delivery within eight (8) miles of the supplier's plant. Payment will be made for mileage in excess of eight (8) miles per delivery regardless of concrete quantity.

Unloading time in excess of five (5) minutes per cubic yard of concrete shall be paid per minute of additional waiting time per delivery.

An approved Retarding Admixture shall be added in accordance with the manufacturer's recommendations when requested. The price for addition of Retarder shall be a separate extra charge per cubic yard of concrete so treated.

Specification requirements for automation and recordation of batching facilities may be waived when requested in writing for pours of less than five (5) yards total under the terms and conditions of control and inspection as stipulated at the time of request,

Pay Items:

E557.0102M	**Superstructure Slab with Integral Wearing surface, Bottom Formwork Required, Type 2 Friction** (2-way, 2-3 lane AADT >8, 000) or (2-way, 4+ lane AADT >13,000)	**$_____ Per Cubic Yd.**
E557.0103M	**Superstructure Slab with Integral Wearing surface, Bottom Formwork Required, Type 3 Friction** (2-way, 2-3 lane AADT <8, 000) or (2-way, 4+ lane AADT <13,000)	**$_____ Per Cubic Yd.**

ADDITIONAL ITEMS

Retarder Treatment	**$_____Per ounce** 100 Weight of Cement
Accelerator Treatment (Non-Chloride)	**$_____Per ounce** 100 Weight of Cement
Extra Mileage	**$_____Per Mile**

Waiting Time in excess of five (5) minutes / cubic yard with a fifteen (15) minute minimum	$_____	**Per Minute**
Heating Materials	$_____	**Per Cubic Yard**
Minimum Load	_____	**Cubic Yards**
Specify single charge for loads less than the minimum load	$_____	**Per Load**

SECTION 559 CLEANING AND SEALING OF CONCRETE

ITEM E559.10 – CLEAN-BRITE

1.0 Description:

Clean-Brite is an organic-based acid complex for use in cleaning and brightening concrete, brick, masonry and sandstone. Clean-Brite was specifically designed to work in conjunction with BCI's "Poly-Seal" product as a means of both cleaning aged concrete and protecting against further infiltration of water and chlorides.

2.0 Material:

Acid based cleaner for concrete.

3.0 Construction Details:

Apply in accordance with manufacturer's instructions.

1.0 Method of Measurement:

The amount of material used shall be measured as the number of gallons used in the cleaning of the designated area.

5.0 Basis of Payment:

The unit price bid per gallon for the material shall include the cost of furnishing materials and all labor and equipment necessary to complete the work.

Five (5) Gallon Pail	$ _____
Fifty-five (55) Gallon Drum	$ _____

SECTION 559 CLEANING AND SEALING OF CONCRETE

ITEM E559.11 – POLY-SEAL

Description:

This specification applies to a ready to use penetrating sealer for concrete, brick and other masonry substrates. This product is used to prevent penetration of potentially damaging water and water –borne chemicals.

Material:

Single component, chemically reactive ready to use sealer for concrete, brick and other masonry substrates.

Application:

Apply in accordance with manufacturer's instructions.

Measurement:

The amount of material used shall be measured as the number of gallons applied.

Basis of Payment:

The unit price bid per gallon for the material shall include the cost of furnishing materials and all labor and equipment necessary to complete the work.

Five (5) Gallon Pail	**$**_____
Fifty-five (55) Gallon Drum	**$**_____

SECTION 583 SHOTCRETE

Section 583 of the New York State Standard Specifications dated May 1, 2008 and all addenda shall apply. Fifty (50) bags minimum per job site.

E583.01 Shotcrete **$_____Per Bag**

SECTION 587 BRIDGE RAILING RECONSTRUCTION

Section 587 of the NYSDOT Standard Specifications dated May 1, 2008, and all addenda shall apply except as modified herein.

Item 587.1002M-BOX BEAM BRIDGE RAIL, TWO RAIL (furnished & Installed)
(Various Locations in Erie County

587.1002M	$ _____	Per Linear Ft.
587.1002UM	$ _____	Per Linear Ft.

ITEM 587.1002M - BOX BEAM BRIDGE RAIL, TWO RAIL (Furnished Only)

The requirements for this Item are the same as 587.1002M but less installation. The unit price bid shall be per linear foot and shall include all costs of furnishing and delivering the materials to any point in Erie County.

587.1002M	$ _____	Per Linear Ft.
587.1002UM	$ _____	Per Linear Ft.

Note: The Contractor's attention is directed to Section 606 of the bid items for additional guide railing items

SECTION 595 WATERPROOFING MEMBRANES

ITEM 18595.53 M - MEMBRANE WATERPROOFING SYSTEM FOR CULVERTS

1.0 DESCRIPTION

This work shall consist of furnishing and applying a membrane waterproofing system where indicated on the Contract Plans. The work shall include the preparation of concrete surfaces. The Contractor shall select, furnish, and apply one of the membrane waterproofing systems included in this specification on each structure designated to receive Membrane Waterproofing System.

The Contractor has the option of using any one of the membrane waterproofing systems included in this specification, as desired. Also, substitution of one system for another may be done at will. However, only a single system may be used on any one structure, regardless of the length or design of that structure. No system may be substituted for any system which is already in any stage of installation.

2.0 MATERIALS

A. Bituthene Preformed System - shall consist of Bituthene P-3000 Primer, Bituthene 5000 Membrane, and Bituthene EM-3000 Mastic; all as manufactured by W. R. Grace and Company, Cambridge, Massachusetts.

Or

B. Royston Preformed System - shall consist of Royston Bridge Membrane No. 10-A, Royston Bridge Membrane Primer 713-A, and Royston 104CM Caulkable Mastic; all as manufactured by Royston Laboratories, Inc., Pittsburgh, Pennsylvania.

Or

C. Protecto-Wrap Preformed System - shall consist of Protecto-Wrap No. 80 Primer, Protecto-Wrap M-400A Membrane, and Protecto-Wrap 160H Mastic; all as manufactured by Protecto-Wrap Company, Denver, Colorado.

Or

D. Other sheet membrane system approved by the DCES.

3.0 CONSTRUCTION DETAILS

A. General.

Waterproofing membrane shall be placed over the entire surface of precast units and over the vertical sides of precast units.

Work shall not be done during wet weather conditions. No work shall be done when the concrete slab surface temperature is below 10°C. The concrete culvert slab and sidewalls shall be surface dry at the time of application of the membrane waterproofing system.

To prevent stretching and possible damage to the membrane, prior to membrane application, the joints between precast culvert sections shall be filled flush to the culvert slab and sidewall surfaces with a grout conforming to 701-08 Vertical and Overhead Patching Material. In areas where the joints do not line up evenly, grout shall be tapered, with a maximum slope of 2:1, from the high side of the joint to the low side to provide a smooth transition from one unit to the next.

B. Cleaning.

All surfaces against which the membrane waterproofing system is to be placed shall be cleaned as follows:

1. All loose material, including dirt, gravel, and concrete laitance, shall be removed by vacuuming or blowing with dry, oil-free compressed air.

2. Any excess laitance (surface film of concrete), road oil, other bituminous based materials, previous membrane treatments, and other foreign materials, including concrete curing compounds, shall be removed by sandblasting or wire brushing and washing with water or a combination of these methods. To confirm the adequacy of the cleaning, small test patches of primer and membrane shall be applied to any area(s) in question. These test patches shall then be evaluated by the Engineer. The Engineer may order additional cleaning where poor adhesion is found.

3. Immediately prior to application of the membrane system, surfaces to be coated shall be recleaned of dust and other loose material by vacuuming or blowing with dry, oil-free compressed air.

C. Application of Preformed Sheet Membrane Systems

1. Primer Application: After cleaning, all surfaces that will receive the membrane shall be primed with the primer required for the selected preformed system. The primer shall be thoroughly mixed prior to application. Mixing shall be done with mechanical mixers or by hand mixing using clean paddles or other suitable instruments.

   The primer shall be applied, without dilution, using brushes, squeegees, rollers, or a combination of these methods. The primer shall be applied at the rate stated in the manufacturer's written instructions and shall uniformly cover the surface. Areas of concrete which are porous and appear dry shall be given a second coat of primer.

   The primer shall be allowed to dry to a "tack free" condition prior to application of the preformed membrane. Excess primer, occurring as puddles or wet areas, shall be removed by brushes, or as directed by the Engineer. The appearance of bubbles in the primer is normal, due to outgassing of air and moisture in the concrete. After the primer has dried to a "tack free" condition, these bubbles shall be broken with squeegees or brooms. Unless otherwise directed by the Engineer, it shall not be necessary to repair the areas where bubbles have been broken.

   Primed surfaces which the Engineer determines have become contaminated by dust or dirt shall be cleaned by vacuuming or blowing with dry, oil-free compressed air and reprimed. Primed areas which have not been covered with preformed membrane within 24 hours of primer application shall be cleaned and reprimed. All such cleaning and repriming work shall be done at no additional cost to the State.

2. Preformed Sheet Membrane Installation:

   a. General.
      Rolls of preformed sheet membrane may be applied by hand or mechanical means. The sheet shall be placed on the culvert with the sticky side against the concrete. Rolls of sheet membrane shall be placed in such a manner as to minimize wrinkles and bubbles.

No overlaps shall be made on vertical surfaces and overlaps on horizontal surfaces shall be a minimum of 600 mm from the edge of the horizontal surface. Unless otherwise noted herein, adjacent rolls of sheet shall overlap a minimum of 50 mm on transverse laps and 200 mm on longitudinal laps.

Stiff bristled brooms shall be used at the time of application to smooth the sheet at its point of contact with the culvert.

The completed membrane shall be free of wrinkles larger than 50 mm, air bubbles, and other placement defects. These shall be corrected in a manner satisfactory to the Engineer. Where patches are used, the area shall be coated with mastic sealer and pieces of membrane pressed into the sealer over the defective area. The patches shall extend at least 150 mm in every direction beyond the edge of the defect.

Bubbles of 25 mm diameter and greater shall be vented by piercing with an ice pick, or other suitable instrument, and expelling the air. Vented bubbles shall be coated with mastic sealer.

To insure adhesion to the horizontal culvert surfaces, the preformed membrane shall be rolled with a 45-91 kg hand roller. On vertical surfaces, the preformed membrane shall be pressed with a stiff bristled broom. Laps which have not been thoroughly sealed by rolling operations shall be sealed with mastic.

When only a portion of the membrane application is completed in one day, the exposed edge of the membrane shall be sealed with mastic. The termination edge of the membrane at slab ends and expansion joints constructed without headers shall be sealed with mastic sealer.

b. Bituthene System: Rolls of preformed membrane shall be placed on the culvert, sticky side down, by removing the release paper as the work progresses. The membrane shall not be stretched or otherwise placed in tension during the installation.

c. Royston System: Rolls of membrane shall be placed on the culvert, sticky side down, by removing the release paper as the work progresses. The polyester film on the surface of the membrane need not be removed.

Adjacent rolls of sheet shall overlap a minimum of 100 mm on transverse laps. End laps shall be sealed by heating the membrane surface to be covered with a propane torch, melting the polyester film and fusing the melted surface to the underside of the covering roll. Caution should be taken to avoid overheating or entrapping air.

Wrinkles in the membrane may be repaired by slitting the membrane and heat-fusing the overlapping pieces. Mastic shall be used to seal the edges of the repair areas.

d. Protecto-Wrap System. Rolls of preformed membrane shall be placed sticky side down, by removing the release sheet as the work progresses. To minimize wrinkles and bubbles, the rolls of membrane shall be slightly pulled into place. The membrane is interwound with polyethylene release film on the top surface. Except for the perforated edge strip, the film shall be left-in-place until the day the bituminous overlay is placed or

backfilling occurs. The perforated edge strip of the polyethylene film shall be removed at the time of placement of an overlapping roll of membrane. Spliced rolls of membrane have release film on the bottom (sticky) side, so care shall be taken to ensure removal of the release film from spliced areas at the time of membrane application

D. Membrane Protection.

To protect the membrane waterproofing system from punctures, the following procedures shall be used:

1. On vertical surfaces, the waterproofing membrane shall be covered with material conforming to Item 705-07 Premoulded Resilient Joint Filler.

2. On horizontal surfaces,

   a. If select granular fill is specified over the culvert, a 0.15 m thick protective layer of concrete sand meeting the requirements of Standard Specification 703-07 Concrete Sand shall be placed on the membrane.

   or

   b. If asphalt pavement using aggregate larger than 9.5 mm is specified directly above the membrane, or if clearances don't allow for 0.15 m of concrete sand, a 25 mm thick (minimum) course of 9.5 mm Superpave HMA (maximum aggregate size of 9.5 mm) shall be placed on top of the membrane. The hot mix asphalt shall be thoroughly compacted with mechanical tampers as directed by the Engineer.

4.0 METHOD OF MEASUREMENT

The work shall be measured as the number of square meters (square yards) of culvert surface area shown on the plans as requiring coverage by the complete membrane waterproofing system.

5.0 BASIS OF PAYMENT

The unit price bid per square meter for this item shall include the cost of furnishing all labor, materials, (including 705-07 Premoulded Resilient Joint Filler, concrete sand, or 9.5 mm Superpave HMA), and equipment necessary to complete the work.

PRICE BID

Item No.	Item	Pay Unit	
18595.53M	Membrane Waterproofing System for Culverts	$_____	Per square yard

SECTION 799

MATERIALS – DELIVERY

DELIVERY ON ALL BITUMINOUS MIXES
DELIVERY ON ALL STONE, GRAVEL, OR SLAG ITEMS

The mileage to be allowed from plant to destination is the actual minimum mileage between the two points over properly conditioned roads, as determined by the County.

Mileage delivery cost per ton in County trucks from plant to destination will be figured on the following basis:

.30 each mile for the first five (5) miles
plus (+)
.25 each additional mile six to fifteen (6 – 15) miles
plus (+)
.20 each additional mile over fifteen to fifty (15 – 50) miles

This cost shall be added to bid price for material to determine bid award.

For estimating purposes only, trucks rented by the County for hauling materials under this contract shall be considered as County-owned trucks.

It will be assumed that bidder's transportation rates indicated in the Invitation for Bids are to be calculated in the same manner unless different method of calculation is explained.

Hauling From Plant Gate or Pit to Job Site

	0-5 Miles Fixed Charge Price Per Ton	6-15 Miles Price Per Ton Per Mile	Price Per Ton Per Mile for Over 15 Miles
All Bituminous Mixes or Aggregate Delivered to a Paver or Widener	$ _____	$ _____	$ _____
All Asphalt, Stone, Gravel or Slag Delivered to Stockpile or Plant	$ _____	$ _____	$ _____

GENERAL MUNICIPAL LAW

SECTION 103-A, 103-B – WAIVER OF IMMUNITY

The vendor hereby agrees to provisions of section **103-A** and **103-B** being part of **Chapter 605** of the laws of 1959 of the **General Municipal Law**, which requires that upon refusal of a person, when called before a Grand Jury to testify concerning a transaction or contract had with the State, any political subdivision thereof, a public authority or with any public department, agency or official of the State or of any political sub-division thereof or of a public authority, to sign a waiver of immunity against subsequent criminal prosecution or to answer any relevant question concerning such transaction or contract.

A) Such person, any firm, partnership or corporation of which he is a member, partner, director or officer, shall be disqualified from thereafter selling to or submitting bids to or receiving awards from or entering into any contracts with any municipal corporation or any public department, agency, or official thereof, for goods, work or services, for a period of five (5) years after such refusal and

B) Any and all contracts made with any municipal corporation or any public department, agency or official thereof, since the effective date of this law, by such person, and by any firm, partnership, or corporation of which he is a member, partner, director or officer may be cancelled or terminated by the municipal corporation without incurring any penalty or damages on account of such cancellation or termination, but any monies owing by the municipal corporation for goods delivered or work done prior to the cancellation or termination shall be paid.

GENERAL MUNICIPAL LAW
SECTION 109 – ASSIGNMENT OF PUBLIC CONTRACTS

1) A clause shall be inserted in all specifications of contracts hereafter made or awarded by an officer, board or agency of a political subdivision, or of any district therein, prohibiting any contractor, to whom any contract shall be let, granted or awarded as required by law, from assigning, transferring, conveying, subletting or otherwise disposing of the same, or of his right, title or interest therein, or his power to execute such contract, to any other person or corporation without the previous consent in writing of the **Officer, Board or Agency awarding the contract.**

2) If any contractor, to whom any contract is let, granted, or awarded as required by law, by any office, board or agency of a political subdivision, or of any district therein, without the previous written consent specified in subdivision one of this section assign, transfer, convey, sublet or otherwise dispose of such contract, or his right, title or interest therein, or his power to execute such contract, to any other person or corporation, the officer, board or agency which let, made, granted or awarded such contract shall revoke and annual such contract, and the political subdivision or district therein, as the case may be, and such officer, board or agency shall be relieved and discharged from and all liability and obligations growing out of such contract or such contractor, and to the person or corporation to which such contract shall have been assigned, transferred, conveyed, sublet or otherwise disposed of, and such contractor, and his assignees, transferees or sub lessees shall forfeit and lose all monies, theretofore earned under such contract, except so much as may be required to pay his employees. The provisions of this section shall not hinder, prevent or affect any assignment by any such contractor for the benefit of his creditors made pursuant to the laws of this State.

LABOR LAW SECTION 220 AND 220-B

1) All contractors shall be governed by all of the laws of the State of New York and of the County of Erie now in force, or which hereafter may be adopted, which are applicable to this work, including Article 8 of the New York State Labor Law.

2) The contractor agrees that no laborer, workmen or mechanic in the employ of the contractor, a subcontractor, or other person doing or contracting to do the whole or a part of the work contemplated by this contract, shall be permitted or required to work more than eight (8) hours in any one calendar day, or more than five (5) days in any one week, excepting in case of extraordinary emergency caused by fire, flood, or danger to life or property, workmen, or mechanic employed by said party of the first part, subcontractor, or other person, on about, or upon the work to be performed under this contract, the wages required to be paid pursuant to the provisions of Section 220 of the Labor Law of the State of New York.

3) In the hiring of employees for the performance of work under this contract, or any subcontract hereunder, the contract agrees that he or any person acting on his behalf, shall not by reason of race, color, creed, or national origin, discriminate against any citizen of the State of New York who is qualified and available to perform the work to which the employment relates; the contractor further agrees that he as a subcontractor, nor any person on his behalf, shall not in any manner discriminate against or intimidate any employee hired for the performance of work under this contract, on account of race, creed, color or national origin; and it is further agreed by the parties hereto that there may be deducted from the amount payable to the contractor by the party of the second part under this contract, a penalty of Five Dollars ($5.00) for each person for each calendar day during which such person was discriminated against or intimidated in violation of the provision of the contract, and it is further agreed by the parties hereto that this contract may be canceled or terminated by the County of Erie and all monies due or to become due or to become due hereunder may be forfeited, for a second or any subsequent violation of the terms or conditions of this section of the contract.

NON-COLLUSIVE BIDDING CERTIFICATION

By submission of this bid or proposal, the bidder certifies that:

A) This bid or proposal has been independently arrived at without collusion with any other bidder or with any competitor or potential competitor;

B) This bid or proposal has not been knowingly disclosed and will not be knowingly disclosed prior to the opening of bids or proposals for this project, to any other bidder, competitor or potential competitor;

C) No attempt has been or will be made to induce any other person, partnership or corporation to submit or not to submit a bid or proposal;

D) The person signing this bid or proposal certifies that he has fully informed himself regarding the accuracy of the statements contained in this certification and under the penalties of perjury, affirms the truth thereof, such penalties being applicable to the bidder as well as to the person signing in its behalf;

E) Attached hereto (if a corporate bidder) is a certified copy of resolution authorizing the execution of this certificate by the signatory of this bid or proposal in behalf of the corporate bidder?

Resolved that_____be
(Name of the Person)

Authorized to sign and submit the bid or proposal of this corporation for the furnishing of maintenance and construction materials, labor and equipment as required in the 2011 specifications of the Erie County Department of Public Works, Division of Highways and to include in such bid or proposal the certificate as to non-collusion required by section one hundred three-d (103-d) of the General Municipal Law as the act and deed of such corporation, and for any inaccuracies or misstatements in such certificate this corporate bidder shall be liable under the penalties of perjury.

The foregoing is a true and correct copy of the resolution adopted by _____Corporation at a meeting of its board of directors held on the_____day of,_____ 20_____.

(Seal of the Corporation)

County of Erie
Division of Purchase and Central Services
Edward A. Rath County Office Building
95 Franklin, Buffalo, New York 14202

The undersigned proposes to furnish to the Erie County Department of Public Works, Division of Highways, Construction and maintenance Materials Until **March 31, 2012** at the price shown, in quantities desired and in accordance with the specifications now on file in the

Respectfully submitted this_____day of_____20____

Sign Here_____
Legal Name Firm

By_____

By_____