COUNTY OF ERIE

MARK C. POLONCARZ
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: Tricia Pierce, 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: 222105-004

OPENING DATE Thursday, March 17, 2022 TIME: 10:00 am

FOR: Highway Summer Maintenance Bid

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
X	EXHIBIT "C" - Construction/Reconstruction Contracts
	EXHIBIT "D" - Bid Bond (Formal Bid)
N/A	EXHIBIT "E" - Bid Bond (Informal Bid)
X	EXHIBIT "EP" - Erie County Equal Pay Certification
	EXHIBIT "F" - Standard Agreement
X	EXHIBIT "G" - Non-Collusive Bidding Certification
X	EXHIBIT "H" - MBE/ WBE Commitment
X	**EXHIBIT "IC" - Insurance**
	EXHIBIT “J” - Apprentice Training Program Certification
	EXHIBIT "P" & EXHIBIT "PBI" - Performance Bond
	EXHIBIT “PW” - NYS Prevailing Wage
	EXHIBIT “Q” - Confined Space Program Certification
X	EXHIBIT “V” - Certification Regarding Debarment and Suspension

(Rev. 1/15)

County of Erie

DIVISION OF PURCHASE
BID SPECIFICATIONS

BID NO 222105-004

Ship to: County of Erie
Attention: DPW Highways &
Address: Various Departments

Ship Via: Most Economical
Date Required at Destination: As Needed

ITEM NO.	QUANTITY	UM	CATALOG NO./DESCRIPTION	UNIT PRICE	TOTAL PRICE
			Please furnish pricing for Highway Maintenance Materials as per the following specifications for the contract period **April 1, 2022 through March 31, 2023**		
			Questions: Please call 716-858-7686		
			Note: See Exhibit "H" 1. List of WBE/MBE as requested **OR** 2. Complete the Waiver Form One or the other **MUST** be completed and returned with the 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		
			Insurance Certificates MUST be Submitted with the sealed bid or the bid will be REJECTED		

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_____

County of Erie

DIVISION OF PURCHASE
BID SPECIFICATIONS

BID NO 222105-004

Ship to: County of Erie
Attention: DPW Highways &
Address: Various Departments

Ship Via: Most Economical
Date Required at Destination: As Needed

ITEM NO.	QUANTITY	UM	CATALOG NO./DESCRIPTION	UNIT PRICE	TOTAL PRICE
			IMPORTANT PLEASE NOTE		
			Bidders do NOT need to print SPECIFICATIONS. Only Submit the SPREADSHEET and required documentation for bidding		
			All bid pages must be **BOUND** together if submitting more than one piece of paper		
			Any items written in will **NOT** be included in the Bid Results		
			All bidders must submit (10) **"EXTRA COPIES"** of **PRICING PAGES ONLY**, clearly marked with **Company Name and Pit Locations on each copy - COLLATED AND BOUND.**		
			Provide the electronic Excel File on a **USB Thumb Drive** with **SEALED** bid! Do **NOT** Lock!!!		
			Please No CD's		

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_____

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 anyone 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 BYTHE 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.

County of Erie

DIVISION OF PURCHASE

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 not 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.

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.

County of Erie

DIVISION OF PURCHASE

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.

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.

County of Erie

DIVISION 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:

FIRMNAME _____

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 _____

TRADENAMES: _____

ADDRESS OF LOCAL OFFICE STREET _____

CITY _____

AREA CODE _____ PHONE _____ STATE _____ ZIP _____

NAMES AND ADDRESSES OF PARTNERS:

_____ _____

_____ _____

_____ _____

_____ _____

EXHIBIT "A"

COUNTY OF ERIE

MARK C. POLONCARZ
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. 1/00)

"EXHIBIT B"

COUNTY OF ERIE

MARK POLONCARZ
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 MUNICIPAL HOUSING AUTHORITY, 300 Perry St., Buffalo, NY 14204-2299
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 COMMUNITY COLLEGE, South Campus Business Office, 4041 Southwestern Blvd., Orchard Park, NY 14127-2199
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
MONROE ONE BOCES, Educational Services, 41 O'Connor Rd., Fairport, NY 14450
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
SUNY ERIE COMMUNITY COLLEGE, 6205 Main St., Williamsville, NY 14221
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

COUNTY OF ERIE

MARK C. POLONCARZ
COUNTY EXECUTIVE

DIVISION OF PURCHASE

CONSTRUCTION/RECONSTRUCTION CONTRACTS

1. DISCRIMINATION. The successful bidder agrees:

(a) that in the hiring of employees for the performance of work under this contract or any subcontract hereunder, no contractor, subcontractor, nor any person acting on behalf of such contractor or subcontractor, shall by reason of race, creed, color, sex 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;

(b) that no contractor, subcontractor, nor any person on his behalf shall, in any manner, discriminate against or intimidate any employee hired for the performance of work under this contract on account of race, creed, color, sex or national origin;

(c) that there may be deducted from the amount payable to the contractor by the County of Erie under this contract a penalty of fifty dollars for each person for each calendar day during which such person was discriminated against or intimidated in violation of the provisions of the contract;

(d) that this contract may be cancelled or terminated by the County of Erie and all monies 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; and

(e) the aforesaid provisions of this section covering every contract for or on behalf of the County of Erie for the manufacture, sale or distribution of materials, equipment or supplies shall be limited to operations performed within the territorial limits of the State of New York.

(N.Y. State Labor Law Article 8 Section 220-e)

(f) Provisions of the State Law Against Discrimination also prohibit discrimination in employment because of age.

2. CONSTRUCTION, RECONSTRUCTION, OR REPAIR CONTRACTS FOR PUBLIC WORKS FACILITIES are subject to minimum wage rates, as established by the State of New York Department of Labor. The successful bidder on any contract for public works to which the provisions of the New York State Labor Law Article 8 apply agrees that:

(a) No laborer, workman or mechanic in the employ of the contractor, subcontractor or other person doing or contracting to do the whole or a part of the work contemplated by the contract shall be permitted or required to work more than eight hours in anyone calendar day or more than five days in anyone week except in cases of extraordinary emergency including fire, flood or danger to life or property. (Section 220, subd. 2, N.Y. State Labor Law)

(b) Each laborer, workman or mechanic employed by the contractor, subcontractor or other person doing or contracting to do the whole or part of the work contemplated by the contract shall be paid not less than the hourly minimum rate of wage and provided supplements not less than the prevailing supplements as designated by the New York State Industrial Commission. (Section 220, subd. 3, NY. State Labor Law)

Wage and supplement rates are on file in the Division of Purchase.

3. AFFIRMATIVE ACTION PROGRAM AFFECTING CONSTRUCTION CONTRACTS. The Erie County Legislature has adopted a resolution directing that County Construction Contracts require the contractor to take affirmative action to secure equal opportunity for minority group workers and to comply with the Affirmative Action Program of the County of Erie. The Legislative resolution provides that a contract for the purchase of equipment involving installation work by building trade employees shall be considered a construction contract if the number of such employees on the job site shall at any time exceed ten (10). If the contractor intends to have more than ten (10) such employees on the job site at any one time, it shall be the contractor's obligation to make a written request to the Director of the Division of Purchase for a copy of the special conditions pertaining to affirmative action. The contractor shall not, at any time, place more than ten (10) such employees on the job site except in compliance with the said resolution and the said special conditions.

Erie County Equal Pay Certification

In order to comply with Executive Order 13 dated November 6, 2014, we hereby certify that we are in compliance with federal law, including the Equal Pay Act of 1963, Title VII of the Civil Rights Act of 1964, Federal Executive Order 11246 of September 24, 1965 and New York State Labor Law Section 194 (together " Equal Pay Law"). The average compensation for female employees is not consistently below the average compensation for male employees, taking into account mitigating factors. We understand that this certification is a material component of this contract. Violation of the provisions of Executive Order 13, which is attached hereto and made a part hereof, can constitute grounds for the immediate termination of this contract and may constitute grounds for determining that a bidder is not qualified to participate in future county contracts.

We have evaluated wages and benefits to ensure compliance with the Federal Equal Pay Law.

_____
Signature

Verification

STATE OF _____)
COUNTY OF _____) SS:
A)
_____, being duly sworn, states he or she is the owner of (or a partner in) _____, and is making the foregoing Certification and that the statements and representations made in the Certification are true to his or her own knowledge.

B)
_____, being duly sworn, states that he or she is the Name of Corporate Officer _____, of _____, Title of Corporate Officer Name of Corporation the enterprise making the foregoing Certification, that he or she has read the Certification and knows its contents, that the statements and representations made in the Certification are true to his or her own knowledge, and that the Certification is made at the direction of the Board of Directors of the Corporation.

Sworn to before me this _____
Day of _____, 20__
_____

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. _____

EXHIBIT "H"

COUNTY OF ERIE

MARK C. POLONCARZ
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 least 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

(01/09)

EXHIBIT "V"

Certification Regarding Debarment And Suspension

1) As required by Federal Executive Order 12549, and prescribed by federal regulations, including 48 C.F.R. Subpart 9.4, the Contractor certifies that it, and its principals:

(a) Are not presently disbarred, suspended, proposed for debarment, declared ineligible or voluntarily excluded by any Federal department or agency;

(b) Have not within a 3-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction, including any violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(c) Are not presently indicted for or otherwise criminally or civilly charged by a Government entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (b) above; and

(d) Have not within a 3-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

2) Where the Contractor is unable to certify to any of the statements in this paragraph, the Contractor shall attach an explanation to this certification.

Date:_____

_____
Signature

_____
Title

_____
Business Name

Certification Regarding Drug-Free Workplace Requirements Grantees Other Than Individuals

This certification is required by regulations implementing Sections 5151-5160 of the Drug-Free Workplace Act of 1988, 41 U.S.C. § 701 et seq. *See* 48 C.F.R. Subpart 23.5.

The Contractor certifies that it will provide a drug-free workplace by:

(a) Publishing a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession or use of a controlled substance is prohibited in the grantee's workplace and specifying the actions that will be taken against employees for violation of such prohibition;

(b) Establishing a drug-free awareness program to inform employees about:

(1) The dangers of drug abuse in the workplace;
(2) The grantee's policy of maintaining a drug-free workplace;
(3) Any available drug counseling, rehabilitation, and employee assistance programs; and,

(4) The penalties that may be imposed upon employees for drug abuse violations occurring in the workplace;

(c) Making it a requirement that each employee to be engaged in the performance of the grant be given a copy of the statement required by paragraph (a);

(d) Notifying the employee in the statement required by paragraph (a) that, as a condition of employment under the grant, the employee will:

(1) Abide by the terms of the statement; and,

(2) Notify the employer of any criminal drug statute conviction for a violation occurring in the workplace no later than five days after such conviction;

(e) Notifying the agency within ten days after receiving notice under subparagraph (d)(2) from an employee or otherwise receiving actual notice of such conviction;

(f) Taking one of the following actions, within 30 days of receiving notice under subparagraph (d)(2), with respect to any employee who is so convicted:

(1) Taking appropriate personnel action against such an employee, up to and including termination; or

(2) Requiring such employee to participate satisfactorily in a drug abuse assistance or rehabilitation program approved for such purposes by a Federal, State or local health, law enforcement, or other appropriate agency;

(g) Making a good faith effort to continue to maintain a drug-free workplace through implementation of paragraph (a), (b), (c), (d), (e) and (f).

Date:_____

_____
Signature

_____
Title

_____
Business Name

Certification Regarding Lobbying Certification for Contracts, Grants, Loans, and Cooperative Agreements

The undersigned certifies, to the best of his or her knowledge and belief, that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member or Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, A Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. § 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

Date:_____

_____
Signature

_____
Title

_____
Business Name

NOTE: If Disclosure Forms are required, please contact: Mr. Will Sexton, Deputy Director, Grants and Contracts Management Division, Room 341F, HHH Building, 200 Independence Avenue, SW, Washington, D.C. 20201-0001

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 RELEVENT CORRESPONDENCE AND DOCUMENTS, INCLUDING RETURN RECEIPTS.

_____

SIGNATURE OF AUTHORIZED REPRESENTIVE DATE

(01/09)

MBE/WBE UTILIZATION REPORT – PART B

FINAL CERTIFICATION OF EXPEDITURES 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 AMOUNT EXPENDED

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: X_____

ADDRESS: X._____

TELEPHONE NUMBER: (X_____) _____ BID NO.:_____

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 9Ppropriate 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 sheet if necessary.)

If a partial waiver is granted, the Vendor will make a good faith 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)

CLASSIFICATION A:
Construction or Maintenance

County of Erie

STANDARD INSURANCE REQUIREMENTS

Vendors 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. Commercial General Liability -with a minimum combined single limit of liability for Bodily Injury and Property Damage of $1 ,000,000 per occurrence and $2,000,000 general aggregate and $2,000,000 Products -Completed Operation Aggregate. The coverage shall include:

- Premises and Operations
- Products and Completed Operations
- Independent Contractors
- Blanket Broad Form 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) must NOT be excluded.

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 $5,000,000 each occurrence /$5,000,000 aggregate.

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 (Form C-105.2).

E. Disability Benefits -providing statutory coverage in compliance with the New York State Disability Benefits Law (Forms DB-120.1 or DB-155).

Failure to maintain coverage herein shall constitute a material breach of this contract and the Contractor shall suspend all work immediately upon such lapse in coverage.

2. Commercial 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 on ISO Form CG 2010 1185 Edition. Coverage should be provided on a primary and non-contributory bases. Designated Construction Project General Aggregate Limit Per Person Endorsement CG 2503 is required. Waiver of Subrogation is required on all lines in favor of Erie County.

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, 95 Franklin Street, Room 1634, 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.

6. The "ACCORD" form certificate may be used in place of the Erie County Standard Insurance Certificate, provided that all of the requirements set forth in the instructions for the Erie County Standard Insurance Certificate are incorporated into the "ACCORD" form certificate.

County of Erie Standard Insurance Certificate

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATION HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND, OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUE A CONTRACT BEWTEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement of this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER	CONTACT NAME	
	PHONE AC/ NO. EXT	FAX A/C NO.
	E-MAIL ADDRESS	
	PRODUCER CUSTOMER ID #	
	INSURER(S) AFFORDING COVERAGE	NAIC #
INSURED	INSURER A:	
	INSURER B:	
	INSURER C:	
	INSURER D:	
	INSURER E:	
	INSURER F:	

COVERAGES CERTIFICATE NUMBER: REVISION NUMBER:

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAME ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY TYE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OR SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSR	SUBR WVD	POLICY NUMBER	POLICY EFF MM/DD/YYYY	POLICY EXP MM/DD/YYYY	LIMITS	
	GENERAL LIABILITY ☐ COMMERCIAL GENERAL LIABILITY ☐ CLAIMS-MADE ☐ OCCUR ☐ ---------- ☐ ---------- GEN'L AGGREGATE LIMIT APPLIES PER: ☐ POLICY ☐ PROJECT ☐ LOC						EACH OCCURANCE	$
							DAMAGE TO RENTED PREMISES (Ea occurnace)	$
							MED EXP (Any one person)	$
							PERSONAL & ADV INJURY	$
							GENERAL AGGREGATE	$
							PRODUCTS COMP/OP AGG	$
								$
	AUTOMOBILE LIABILITY ☐ ANY AUTO ☐ ALL OWNED AUTOS ☐ SCHEDULED AUTOS ☐ HIRED AUTOS ☐ NON-OWNED AUTOS ☐						COMBINED SINGLE LIMIT (Ea accident)	$
							BODILY INJURY (Per person)	$
							BODILY INJURY (Per accident)	$
							PROPERTY DAMAGE (Per accident)	$
								$
								$
	☐ UMBRELLA LIAB ☐ OCCUR ☐ EXCESS LIAB ☐ CLAIMS						EACH OCCURANCE	$
							AGGREGATE	$
	☐ DEDUCTIBLE ☐ RETENSION $							

County of Erie Standard Insurance Certificate

	WORKERS COMPENSATION AND EMPLOYER'S LIABILITY ANY PROPRIETOR/PARTNER/ EXECUTIVE OFFICE/MEMBER EXCLUDED? Y/N ☐ If yes describe under DESCRIPTION OF OPERATIONS below	N/A						WC STATUTO-RY LIMITS / OTH ER	$
								E.L. EACH ACCIDENT	$
								E.L DISEASE-EA EMPLOYEE	$
								E.L DISEASE – POLICY LIMIT	$

DESCRIPTION OF OPERATIONS/LOCATIONS/VEHICLES (Attach ACCORD 101, Additional Remarks Schedule, if more space is required)

CERTIFICATE HOLDER	CANCELLATION
County of Erie 95 Franklin Street Buffalo, NY	SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS. AUTHORIZED REPRESENTATIVE

X. FOR COUNTY USE ONLY:

Name of County Dept. Requesting Certificate _____

Purchase Order or Contact Number _____

Vendor Insurance Classification _____

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. 95 Franklin St, Buffalo NY, 14202"

B. Coverage must comply with all specifications of the contract.

C. Must be executed by an Insurance company, agency or broker, which is licensed by the Insurance Department of the Slate 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
Commercial Gen. Liab.	$1,000,000 per occ	$1,000,000 CSL	$1,000,000 CSL	$1,000,000	$1,000,000 CSL	$1,000,000	$1,000,000 CSL
General Aggregate	$2,000,000	$2,000,000	$2,000,000	$2,000,000	$2,000,000	$2,000,000	$2,000,000
Products Completed Operations Liability	$2,000,000	$2,000,000	$2,000,000	$2,000,000	$2,000,000	$2,000,000	$2,000,000
Blanket Broad Form Contractual Liability	INCLUDE						
Contractual Liability		INCLUDE	INCLUDE	INCLUDE	INCLUDE	INCLUDE	INCLUDE
Broad Form PD	INCLUDE						
X.C.U. (explosion, collapse, underground)	INCLUDE						
Liquor Law				INCLUDE	INCLUDE		
Auto Liab.	$1,000,000 CSL		$1,000,000 CSL	$1,000,000 CSL	$1,000,000 CSL	$1,000,000 CSL	$1,000,000 CSL
Owned	INCLUDE		INCLUDE	INCLUDE	INCLUDE	INCLUDE	INCLUDE
Hired	INCLUDE		INCLUDE	INCLUDE	INCLUDE	INCLUDE	INCLUDE
Non-Owned	INCLUDE		INCLUDE	INCLUDE	INCLUDE	INCLUDE	INCLUDE
Excess/Umbrell a Liab.	$5,000,000	$1,000,000	$1,000,000	$1,000,000	$1,000,000	$1,000,000	$1,000,000
Worker's Compensation & Employer's Liability	STATUTORY	STATUTORY	STATUTORY	STATUTORY	STATUTORY	STATUTORY	STATUTORY
Disability Benefits	STATUTORY	STATUTORY	STATUTORY	STATUTORY	STATUTORY	STATUTORY	STATUTORY
Professional Liability	STATUTORY	STATUTORY	STATUTORY	STATUTORY	STATUTORY	STATUTORY	STATUTORY

Erie County, To Be Named Add'l Insd.	STATUTORY	STATUTORY	STATUTORY	STATUTORY	STATUTORY	STATUTORY	STATUTORY

V. Construction contracts require excess Umbrella Liability limits of $5,000,000

VI. Coverage must be provided on a primary-non contributory bases.

VII. Designated Construction Project General Aggregate Limit Per Project Endorsement CG 25 03 is required. 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.

VIII. Waiver of Subrogation: Required on all lines unless noted

X. Transportation of people in buses, vans or station wagons requires $5,000,000 excess liability,

XI. Workers Compensation: State Workers' Compensation/Disability Benefits law

Use Applicable Certificates Below:

Workers Compensation Forms

CE-200	Exemption
C105.2	Commercial Insurer
SI-12	Self Insurer
GSI-105.2	Group Self Insured
U-26.3	New York State Insurance Fund

DBL (Disability Benefits Law) Forms

CE-200	Exemption
DB-120.1	Insurers
DB-155	Self Insurer

XII. The "ACORD" form certificates 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, 2022

Table of Contents

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, 2022

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

2. Bids are solicited on construction and maintenance materials as shown by attached specifications and proposal form.

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. Bidders are advised to bid on all items in a given section, as determination of a low bidder for a particular project shall be made with consideration of all work items involved. For example, a guide railing project shall be made for items including guide railing, guide railing removal, windrow excavation and disposal, and paving of mowing strips.

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, 2023**.

6. All references to the NYSDOT Standard Specifications refer to the New York State Department of Transportation Standard Specifications, Construction and Materials, dated **1 January 2022** and all updates and addenda. All references to NYSDOT **Special** Specifications refer to specifications which are not included in the NYSDOT Standard Specifications and have been authored by those other than NYSDOT. The NYSDOT Special Specifications can be found on the NYSDOT website (https://www.dot.ny.gov/main/business-center/engineering/specifications/special-specifications-us). Erie County Special Specifications will have the letter "E" preceding the item number, and are attached in this document. Note that Erie County Special Specifications may be modifications to the NYSDOT Standard Specifications, NYSDOT Special Specification, or be fully defined in the attached. Any references to the State shall be taken to refer to the County or Purchaser.

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 Purchaser's truck (owned or rented) at the vendor’s 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.

13. ECDPW FORCE ACCOUNT INVOICE REQUIREMENTS FOR THE FOLLOWING ITEMS:

- Item E636.0101 - Emergency: Highway Repair Overhead and Profit -Percent (Maximum Bid 20%)
- Item E636.0102 - Emergency: Bridge Repair Overhead and Profit -Percent (Maximum Bid 20%)
- Item E636.0103 -As Directed: Bridge Maintenance Work and Repair Work Overhead and Profit -

Percent (Maximum Bid 20%)

- Item E636.0104 – As Directed: Portland Cement Pavement Maintenance and Repair Work (Maximum Bid 20%)
- Item E636.0105 – As Directed: Railing Maintenance and Repair Work (Maximum Bid 20%)
- Item E636.0106 – As Directed: Sign Maintenance and Repair Work (Maximum Bid 20%)

Force account invoices for work done under the above items shall be prepared and submitted according to the following:

a. All documentation is to be crossed-checked for consistency before submittal to the County. Any submission found not to be sufficiently checked by the vendor prior to submission will be returned without further processing for correction.

b. All documentation is to be legible. Submissions containing illegible cut off or mis-copied information will be returned to the vendor for correction without further processing.

c. Billing for force account work is to be governed by the requirements of Section 109-05 B. of the NYSDOT Standard Specifications.

d. NYSDOT Force Account forms or duplicate reproductions are to be used for force account documentation.

e. Invoice materials are to be organized in an orderly fashion, i.e.:

1) Invoice cover sheet on company letterhead

2) Force Account Summation (MURK-13)

3) Force Account Equipment Summary (MURK-17)

4) Force Account Summary of Labor (MURK-12)

5) Daily time sheets including materials and equipment used (each sheet signed by contractor and a county representative) (MURK-11).

6) Certified Payroll reports

7) Equipment cost reference sheets (i.e. Blue Book, Equipment Watch, Invoice from a rental agency, etc.). The reference material for a particular piece of equipment has to have an ID number that links it to the Murk 13 and Murk 17 forms.

8) Invoices from service vendors (i.e. toilet rental, trucking, crane rental, etc.)

9) Invoices from material suppliers, cross referenced with entries on the Murk 13 form.

10) Subcontractor Invoices. If subcontractor invoices are included the subcontractor's invoices must contain all the information noted in items 1) - 9) above.

f. If any of the above invoice materials are missing, incomplete, illegible or otherwise unsuitable for review the submission will be returned to the contractor for correction without further processing.

g. Prevailing wages are to be paid on public works projects. If the wages paid to a particular worker or

labor classification are not straight from the latest NYSDOL Prevailing Wage Rate listing and/or are influenced by a local labor agreement the contractor will provide documentation showing how the wage rate was arrived at and that it meets prevailing wage requirements.

Delivery time for special items on Summer Bid Book:

Glass Beads	-15 days after receipt of order
Casting, Miscellaneous	- 60 days after receipt of order
Grates and Frames	- 60 days after receipt of order
Guide Rail	- 30 days after receipt of order
Paint: Federal Yellow	- 30 days after receipt of order
Traffic Zone	- 30 days after receipt of order
Post, Wood	- 60 days after receipt of order
Prefabricated Adjustment Rings for Manholes	- 60 days after receipt of order
Culvert Pipe and Related Items	- 30 days after receipt of order

County of Erie
Division of Purchase
Edward A. Rath County Office Building
95 Franklin Street, 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, 2023** 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 Firm Name

By _____

By _____

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Respectfully submitted this _____ day of _____ 20_____

Sign Here _____
Legal Firm Name

By _____

By _____

SECTION 202 – DEMOLITION OF BUILDINGS AND STRUCTURES

Section 202 of the NYSDOT Standard Specifications shall apply.

Payment will be made under:

Item No.	Item	Pay Unit
202.19	Removal of Substructures	Cubic Yard

SECTION 203 – EXCAVATION, EMBANKMENT AND SEWER LINE CHEMICAL ROOT CONTROL

Section 203 of the NYSDOT Standard Specifications shall apply, except as modified herein.

The following shall be added:

DESCRIPTION:

Definitions

Windrow Excavation and Removal. Under this item the Contractor shall remove windrows up to 2 feet high and regrade shoulders to a uniform grade and slope, as ordered by the Engineer. Disposal of excavated materials shall be offsite; the Owner will make its maintenance facilities available for disposal.

Pesticide. Shall be defined as "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, or desiccant (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)". (Code of Federal Regulations, Title 40)

Wastewater Treatment Plant. Shall be defined as 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 Operator. Shall be defined as 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.

Sewer Line Chemical Root Control. 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 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.

SECTION 203 – EXCAVATION, EMBANKMENT AND SEWER LINE CHEMICAL ROOT CONTROL

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.

The contractor shall provide the Owner with certificates evidencing the above-referenced insurance coverages. The insurance certificate(s) shall name the Owner 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.

Only licensed, experienced contractors, who meet the standards set forth herein, shall be considered for award. The Job shall be supervised by a licensed Applicator, certified by the NYSDEC, and must meet the experience requirements set forth 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.

MATERIALS

Chemical Root Control. 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.

Active ingredient:

1. Shall be a Category "E" compound, the most favorable rating attainable on the USEPA'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 USEPA 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).
4. Surfactants designed to foam chemically, upon contact with water, shall not be accepted.

The chemical root control agent shall be registered with the USEPA and the NYSDEC, 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 USEPA shall be disallowed.

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.

CONSTRUCTION DETAILS:

Chemical Root Control. 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.

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. Log sheets 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 NYSDEC. 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.

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.

SECTION 203 – EXCAVATION, EMBANKMENT AND SEWER LINE CHEMICAL ROOT CONTROL

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.

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

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

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

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.

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.

METHOD OF MEASUREMENT:

Chemical Root Control. The quantity to be measured shall be the number of linear feet of pipe treated as measured along the invert of the pipe.

Windrow Excavation and Removal. The quantity to be measured shall be the number of square yards, as measured in plan, graded.

BASIS OF PAYMENT:

Chemical Root Control. The unit price bid per linear foot for this work shall include the cost of mobilization and furnishing all labor, materials and equipment necessary to satisfactorily complete the work. Payment will be made for only those facilities designated by the Owner to be treated.

Windrow Excavation and Removal. The unit price bid per square yard for this work shall include the cost of mobilization and furnishing all labor, materials and equipment necessary to satisfactorily complete the work.

SECTION 203 – EXCAVATION, EMBANKMENT AND SEWER LINE CHEMICAL ROOT CONTROL

Payment will be made under:

Item No.	Item	Pay Unit
203.02	Unclassified Excavation and Disposal	Cubic Yard
E203.9908	Sewer Line Chemical Root Control, 8-in. dia.	Linear Foot
E203.9910	Sewer Line Chemical Root Control, 10-in. dia.	Linear Foot
E203.9912	Sewer Line Chemical Root Control, 12-in. dia.	Linear Foot
E203.9915	Sewer Line Chemical Root Control, 15-in. dia.	Linear Foot
E203.9918	Sewer Line Chemical Root Control, 18-in. dia.	Linear Foot
E203.9921	Sewer Line Chemical Root Control, 21-in. dia.	Linear Foot
E203.9924	Sewer Line Chemical Root Control, 24-in. dia.	Linear Foot
E203.99	Windrow Excavation and Removal	Square Yard

SECTION 204 – FLOWABLE FILL

Section 204 of the NYSDOT Standard Specifications shall apply, except as modified herein.

METHOD OF MEASUREMENT

Controlled Low Strength Material (CLSM). CLSM will be measured for payment in cubic yards measured to the nearest 0.1 cubic yard based on the amount of material delivered to the project site. This item does NOT include installation. The supplier shall coordinate with the Owner for placement of the CLSM using the Owner's forces.

CLSM Extra Mileage. CLSM Extra Mileage will be measured for payment as the actual minimum mileage between the supplier's plant and the project location, over properly conditioned and posted roads, as determined by the County, less the eight (8) miles included in the CLSM Item. All costs are to be calculated based on the delivery mileage only, not return trips. The mileage shall be measured independent of the CLSM quantity.

CLSM Waiting Time. Waiting time shall be measured as time in hours at the project site in excess of 15 minutes from arrival. Waiting time shall not include travel time to or from the supplier's plant, regardless of distance, or time needed for discharge of material.

CLSM Heating Materials. Heating of materials will be measured as the number of cubic yards of material heated as required to meet the temperature stated in the specifications, regardless of the heating method used.

BASIS OF PAYMENT:

Controlled Low Strength Material (CLSM). The unit price bit shall include the costs of all labor, material, and equipment necessary to satisfactorily deliver the CLSM to the project site. The unit price bid shall include delivery within eight (8) miles of the supplier's plant.

CLSM Extra Mileage. The unit price bid shall include the costs of all labor, material, and equipment necessary to deliver the CLSM to the project site when in excess of eight (8) miles of the supplier's plant.

CLSM Waiting Time. The unit price bid shall include the cost of any waiting time for personnel and equipment at the project site which is in excess of 15 minutes from arrival on site.

CLSM Heating Materials. The unit price shall include the cost of all labor, material, and equipment necessary to heat the CLSM in accordance with the material specifications.

Payment will be made under:

Item No.	Item	Pay Unit
E204.01	Controlled Low Strength Material (CLSM)	Cubic Yard
E204.01A	CLSM Extra Mileage	Mile
E204.01B	CLSM Waiting Time	Minute
E204.01C	CLSM Heating Materials	Cubic Yard

SECTION 206 – TRENCH, CULVERT, STRUCTURE EXCAVATION

Section 206 of the NYSDOT Standard Specifications shall apply.

Payment will be made under:

Item No.	Item	Pay Unit
206.01	Structure Excavation	Cubic Yard
206.0201	Trench & Culvert Excavation	Cubic Yard
206.05	Test Pit Excavation	Each

SECTION 207 – GEOSYNTHETICS

Section 207 of the NYSDOT Standard Specifications shall apply, except as modified herein.

DESCRIPTION:

Pavement Reinforcement. This work shall consist of furnishing and installing asphalt coated glass fiber strand reinforcement mesh within a pavement structure in designated areas shown on the plans or as directed by the Engineer.

MATERIALS:

Pavement Reinforcement.

A. The reinforcement mesh shall consist of a knitted, glass fiber strand grid that is coated with a modified polymer coating. The reinforcement grid shall have either a self-adhesive backing on one side or be bonded to a non-woven paving fabric or scrim to assist in adhesion in order to develop sufficient bond to allow normal construction traffic and paving machinery. The mesh shall have the following physical characteristics and mechanical properties:

Property	Test Method	Property Requirement
Weight (Mass)/Unit Area	ASTM D 5261	16 oz /yd^2 (560 g/m^2) Minimum (Glass)
Tensile Strength (MD)(1)	ASTM D 6637(2)	560 lbs/in. (100 kN/m)
Tensile Strength (XD)(3)	ASTM D 6637(2)	1120 lbs/in. (200 kN/m)
Elongation at break	ASTM D 6637(2)	< 5%
Melting Point, Min.	ASTM D 276	425° F (218° C)
Open Apertures (CL to CL)		1” x ¾” (25 x 19 mm)

Note 1 – MD denotes machine direction
Note 2 – Based on component strand strength test method
Note 3 – XD denotes cross-machine direction

Products that meet the above requirements include, but are not limited to, the following or approved equal:

GlasGrid 8512
Saint-Gobain Technical Fabrics
O1795 Baseline Rd
Grand Island, NY 14072-2010
Tel: 888-549-7667
Fax: 716-775-3900
www.glasgrid.com

Tensar International
5883 Glenridge Drive
Suite 200
Atlanta, GA 30328
Tel: 1-888-828-5126
www.tensrcorp.com

B. The reinforcement mesh shall be placed a minimum 12-foot (3.66 meter) width of roadway. The 12-foot (3.66 meter) width should be centered within the 13-foot milled lane (on a leveling course) as shown on the plans or as directed by the Engineer.

C. Each reinforcement mesh roll shall be labeled clearly with the manufacturer or supplier name, product name and lot number. The Contractor shall provide a letter of certification covering the physical and engineering properties of the reinforcement mesh at least two weeks prior to installation.

D. Approval of the proposed reinforcement mesh shall be obtained from the Owner.

E. The preferred bituminous materials for tack coating shall be CRS2-P, or NTSS-1HM.

CONSTRUCTION DETAILS:

Pavement Reinforcement.

A. The reinforcement mesh shall be stored vertically under dry conditions free from dust to prevent roll distortion and contamination.

B. A manufacturer's representative shall be present on-site during the first placement of the product.

C. The pavement surface where the mesh will be placed shall be dry, free of dirt or other foreign material. The pavement surface temperature shall be a minimum of 40 °F (5 °C). A leveling course shall be placed on any milled surface prior to the installation of the interlayer product.

Placement Requirements

D. Self-Adhesive Backing - The mesh may be laid out either by hand or by mechanical means and shall be placed with the adhesive backing side face down. It is imperative that the surface be dry in order for the adhesive to function properly. Sufficient tension shall be applied to eliminate ripples. Any rippling which occurs shall be corrected either by tensioning the mesh or other approved means such as cutting and laying flat with the cut being lapped in the direction of paving.

E. Transverse joints shall be overlapped a minimum of 6 inches (150 mm). Transverse joints shall be lapped in the direction of paving.

F. After placing, the mesh shall be rolled in accordance with the manufacturer's recommendations. No steel-wheeled or vibratory rollers shall be used. Pneumatic rolling shall be used to promote bond of the mesh to the clean, dry pavement surface.

The bond of the grid to the leveling course shall be measured using a fish scale and found to be a minimum of 20 lbs. (per manufacturer's specifications)

G. Tack

a. The application of tack shall be in accordance with NYSDOT Standard Specification Sections402-3, 402-3.-06 to407-03.1 and 407-03.02, with an application residual rate range of 0.036 to 0.047 gal/yd².

b. The following emulsion type tack coat types are preferred: CRS-2P, NTSS-1HM. The emulsion shall not be further diluted from the manufacturer's supplied formulation and shall be stored and agitated in accordance with the manufacturer's requirements. The distribution rate shall be as directed by the engineer and is dependent on surface conditions.

c. Equipment for emulsion distribution shall conform to the NYSDOT Standard Specification or Owner requirements; additionally, it shall have computerized rate control that automatically adjusts the emulsion pump to the unit ground speed. Proper spray nozzles shall be used for the material and rate specified to ensure even distribution of material on the surface.

d. In order to maximize bond strength, the emulsion tack shall be permitted to fully break and cure (evaporation of all solvents including water) prior to proceeding.

e. Traffic shall not be allowed to travel over the mesh. The asphalt paver or other construction vehicles turning on the mesh should be kept to a minimum to avoid damage to the mesh. Any damaged fabric shall be repaired per the manufacturer's recommendation and to the satisfaction of the Engineer, at the Contractor's expense. All mesh placed in a day/night shall be paved the same day/night.

METHOD OF MEASUREMENT:

Pavement Reinforcement. Glass fiber pavement reinforcement mesh will be measured by the square yard as determined by actual measurements of the length multiplied by the width. Measurement will not be made for reinforcement used for repairs or overlaps.

BASIS OF PAYMENT:

Pavement Reinforcement. The unit price bid shall include the cost of furnishing all labor, materials, and equipment necessary to satisfactorily complete the work. No separate payment will be made for tack coat for the installation of the reinforcement.

SECTION 207 – GEOSYNTHETICS

Payment will be made under:

Item No.	Item	Pay Unit
207.20	Geotextile Bedding	Square Yard
207.21	Geotextile Separation	Square Yard
207.22	Geotextile Drainage	Square Yard
207.23	Geotextile Slope Protection	Square Yard
207.24	Geotextile Stabilization	Square Yard
E207.97	Pavement Reinforcement	Square Yard

SECTION 209 – SOIL EROSION AND SEDIMENT CONTROL

Section 209 of the NYSDOT Standard Specifications shall apply, except as modified herein.

METHOD OF MEASUREMENT:

Silt Fence – Temporary. The quantity will be measured as the number of 100’ rolls of silt fence geotextile including all posts, mesh, and fasteners needed for installation of such length, delivered to the designated site. No installation is included.

BASIS OF PAYMENT:

Silt Fence – Temporary. The unit price bid shall include the cost of furnishing materials and delivery of a 100-foot roll of silt fence geotextile, including all posts, mesh, and fasteners, to the designated site

Payment will be made under:

Item No.	**Item**	**Pay Unit**
E209.13	Silt Fence – Temporary (100’ roll)	Each

SECTION 210 – REMOVAL AND DISPOSAL OF ASBESTOS CONTAINING MATERIAL – ACM (BUILDINGS, BRIDGES AND HIGHWAYS)

Section 210 of the NYSDOT Standard Specifications shall apply.

Payment will be made under:

Item No.	Item	Pay Unit
210.3001	Removal and Disposal of Concrete-Encased Pipe ACM	Foot
210.3101	Removal and Disposal of Underground Pipe ACM	Foot

SECTION 304 – SUBBASE COURSE

Section 304 of the NYSDOT Standard Specifications shall apply, except as modified herein.

METHOD OF MEASUREMENT

Subbase Course. The quantity is the number of tons of material furnished, and loaded FOB onto the purchaser's trucks at the bidder's plant or pit. No delivery or installation is included in this item.

BASIS OF PAYMENT

Subbase Course. The unit price bid shall include the costs of furnishing all labor, material, and equipment necessary to load the materials onto the purchaser's trucks.

Payment will be made under:

Item No.	Item	Pay Unit
E304.11	Subbase Course, Type 1 (Material Only)	Cubic Yards
E304.12	Subbase Course, Type 2 (Material Only)	Cubic Yards
E304.13	Subbase Course, Type 3 (Material Only)	Cubic Yards
E304.14	Subbase Course, Type 4 (Material Only)	Cubic Yards
E304.15	Subbase Course, Optional Type (Material Only)	Cubic Yards

SECTION 402 – HOT MIX ASPHALT (HMA) PAVEMENTS

Section 402 of the NYSDOT Standard Specifications shall apply except as modified herein.

Performance Grade Binder (PG 64V-22)

Requirements of this note apply to all items indicated as outlined in the *Superpave Hot Mix Asphalt Design Criteria* table.

PG Binder
Use polymer or Terminal Blend Crumb Rubber modified **PG 64V-22** (Very High) meeting the requirements of AASHTO M 332, *Standard Specifications for Performance Graded Asphalt Binder using Multiple Stress Creep Recovery (MSCR),* for the production of hot mix asphalt mixtures for this project. In addition, the binder grade must also meet the **elastomeric** properties as indicated by one of the following equations for $\%R_{3.2}$:

1. For $J_{nr3.2} \geq 0.1$, $\%R_{3.2} > 29.371 * J_{nr3.2}^{-0.2633}$
2. For $J_{nr3.2} < 0.1$, $\%R_{3.2} > 55$

   Where: $R_{3.2}$ is % recovery at 3.2 kPa
   $J_{nr3.2}$ is the average non-recoverable creep compliance at 3.2 kPa.

When terminal blend CRM PG binder is used, the following shall apply:

- Crumb rubber particles shall be finer than #30 sieve size.
- The CRM PG binder shall be storage-stable and homogeneous.
- The Dynamic Shear Rheometer (DSR) shall be set at 2-mm gap.
- The CMR PG binder shall be 99% free of particles retained on the 600 µm sieve as tested in accordance with Section 5.4 of M 322.

Use of polyphosphoric acid (PPA) to modify the PG binder properties is prohibited for mixtures under this contract. This prohibition also applies to the use of PPA as a cross-linking agent for polymer modification.

Mix Design
The mixture designs must be developed in accordance with the criteria specified in the HMA items that are appropriate for an Estimated Traffic Level as noted in *Superpave Hot Mix Asphalt Design Criteria* table.

Note: The PG binder for this contract will be modified with polymer or CRM additives to meet the requirements stated above. Handling of the HMA shall be discussed at the pre-paving meetings.

The Contractor should be aware that this is a performance-related specification in which the Contractor is responsible for compaction of the pavement within a specified density range. The Contractor must be prepared to select, operate, and control the paving and compaction equipment, to monitor the results, and to make necessary adjustments (without direction from the Engineer) to achieve the specified density results.

NUCLEAR DENSITY TESTING

The density gauge shall be a Nuclear Moisture-Density Gauge (Nuclear Gauge), a Pavement Quality Indicator (PQI) Model 301 or later, a PaveTracker Model 1 or later, or another density gauge(s) deemed equivalent by the Engineer.

METHOD OF MEASUREMENT

Nuclear Density Testing shall be measured in the number of 8 hour work days that the testing is being performed for. Testing over 8 hours in a single day shall be measured as the number of hours in excess of the 8 hour work day.

BASIS OF PAYMENT. The unit price bid for the pavement courses shall include the cost of all material, labor and equipment necessary to complete furnish and load the HMA onto the purchaser's trucks at the bidder's plant. No installation or delivery is included. The tonnage to be paid shall be within the specified range when indicated.

The unit price bid for Nuclear Density Testing shall include the cost of all material, labor, and equipment necessary to complete the work.

Payment will be made under:

Item Number	Item	Pay Unit
E402.018904	Truing & Leveling F9, HMA, 80 Series Compaction	Ton
E402.058904	Shim Course F9, HMA	Ton
E402.06820401	6.3 F2/F3 Top Course HMA, 80 Series Compaction F.O.B. plant price under 499 ton per day	Ton
E402.06820402	6.3 F2/F3 Top Course HMA, 80 Series Compaction F.O.B. plant price over 500 ton per day	Ton
E402.09720401	9.5 F2/F3 Top Course HMA, 70 Series Compaction F.O.B. plant price over 500 ton per day (PG64S-22 <0.3 M ESAL)	Ton
E402.09720402	9.5 F2/F3 Polymer-Modified HMA, 70 Series Compaction F.O.B. plant price over 500 ton per day (PG64V-22 <30M ESAL)	Ton
E402.09820401	9.5 F2/F3 Top Course HMA, 80 Series Compaction F.O.B. plant price under 499 ton per day (PG64S-22 <0.3 M ESAL)	Ton
E402.09820402	9.5 F2/F3 Top Course HMA, 80 Series Compaction F.O.B. plant price over 500 ton per day (PG64S-22 <0.3 M ESAL)	Ton
E402.09820403	9.5 F2/F3 Polymer-Modified HMA, 80 Series Compaction F.O.B. plant price under 499 ton per day (PG64V-22 <30M ESAL)	Ton
E402.09820404	9.5 F2/F3 Polymer-Modified HMA, 80 Series Compaction F.O.B. plant price over 500 ton per day (PG64V-22 <30M ESAL)	Ton
E402.12720401	12.5 F2/F3 Top Course HMA, 70 Series Compaction F.O.B. plant price over 500 ton per day (PG64S-22 <0.3 M ESAL)	Ton
E402.12720402	12.5 F2/F3 Polymer-Modified HMA, 70 Series Compaction F.O.B. plant price over 500 ton per day (PG64V-22 <30M ESAL)	Ton

SECTION 402 – HOT MIX ASPHALT (HMA) PAVEMENTS

Item Number	Item	Pay Unit
E402.12820401	12.5 F2/F3 Top Course HMA, 80 Series Compaction F.O.B. plant price under 499 ton per day (PG64S-22 <0.3 M ESAL)	Ton
E402.12820402	12.5 F2/F3 Top Course HMA, 80 Series Compaction F.O.B. plant price over 500 ton per day (PG64S-22 <0.3 M ESAL)	Ton
E402.12820403	12.5 F2/F3 Polymer-Modified HMA, 80 Series Compaction F.O.B. plant price under 499 ton per day (PG64V-22 <30M ESAL)	Ton
E402.12820404	12.5 F2/F3 Polymer-Modified HMA, 80 Series Compaction F.O.B. plant price over 500 ton per day (PG64V-22 <30M ESAL)	Ton
E402.19790401	19 F9 Binder Course HMA, 70 Series Compaction F.O.B. plant price over 500 ton per day (PG64S-22 <0.3 M ESAL)	Ton
E402.19790402	19 F9 Polymer-Modified Binder Course HMA, 70 Series Compaction F.O.B. plant price over 500 ton per day (PG64V-22 <30M ESAL)	Ton
E402.19890401	19 F9 Binder Course HMA, 80 Series Compaction F.O.B. plant price under 499 ton per day (PG64S-22 <0.3 M ESAL)	Ton
E402.19890402	19 F9 Binder Course HMA, 80 Series Compaction F.O.B. plant over 500 ton per day (PG64S-22 <0.3 M ESAL)	Ton
E402.19890403	19 F9 Polymer-Modified Binder Course HMA, 80 Series Compaction F.O.B. plant price under 499 ton per day (PG64V-22 <30M ESAL)	Ton
E402.19890404	19 F9 Polymer-Modified Binder Course HMA, 80 Series Compaction F.O.B. plant price over 500 ton per day (PG64V-22 <30M ESAL)	Ton
E402.25790401	25 F9 Binder Course HMA, 70 Series Compaction F.O.B. plant over 500 ton per day (PG64S-22 <0.3 M ESAL)	Ton
E402.25790402	25 F9 Polymer-Modified Binder Course HMA, 70 Series Compaction F.O.B. plant price over 500 ton per day (PG64V-22 <30M ESAL)	Ton
E402.25890401	25 F9 Binder Course HMA, 80 Series Compaction F.O.B. plant price under 499 ton per day (PG64S-22 <0.3 M ESAL)	Ton
E402.25890402	25 F9 Binder Course HMA, 80 Series Compaction F.O.B. plant price over 500 ton per day (PG64S-22 <0.3 M ESAL)	Ton

SECTION 402 – HOT MIX ASPHALT (HMA) PAVEMENTS

Item Number	Item	Pay Unit
E402.25890403	25 F9 Polymer-Modified Binder Course HMA, 80 Series Compaction F.O.B. plant price under 499 ton per day (PG64V-22 <30M ESAL)	Ton
E402.25890404	25 F9 Polymer-Modified Binder Course HMA, 80 Series Compaction F.O.B. plant price over 500 ton per day (PG64V-22 <30M ESAL)	Ton
E402.37790401	37.5 F9 Base Course HMA, 70 Series Compaction F.O.B. plant price over 500 ton per day (PG64S-22 <0.3 M ESAL)	Ton
E402.37790402	37.5 F9 Polymer-Modified Base Course HMA, 70 Series Compaction F.O.B. plant price over 500 ton per day (PG64V-22 <30M ESAL)	Ton
E402.37890401	37.5 F9 Base Course HMA, 80 Series Compaction F.O.B. plant price under 499 ton per day (PG64S-22 <0.3 M ESAL)	Ton
E402.37890402	37.5 F9 Base Course HMA, 80 Series Compaction F.O.B. plant price over 500 ton per day (PG64S-22 <0.3 M ESAL)	Ton
E402.37890403	37.5 F9 Polymer-Modified Base Course HMA, 80 Series Compaction F.O.B. plant price under 499 ton per day (PG64V-22 <30M ESAL)	Ton
E402. 37890404	37.5 F9 Polymer-Modified Base Course HMA, 80 Series Compaction F.O.B. plant price over 500 ton per day (PG64V-22 <30M ESAL)	Ton
E402.9901	Nuclear Density Testing	Day
E402.9902	Nuclear Density Testing (Overtime)	Hour

SECTION 402.20xx0015 - COLD MIX BITUMINOUS PAVEMENT (OPEN GRADED)

STOCKPILE PATCHING MATERIAL

All Specification Section references are to the NYSDOT Standard Specifications.

DESCRIPTION:

Stockpile patching material is a mixture composed of aggregate and bituminous material. The material shall be capable of storage in a stockpile and remain uniform, workable and have satisfactory setting properties at the time of delivery.

MATERIALS REQUIREMENTS:

A. Aggregates
Fine aggregate shall conform to Section 703-01, Fine Aggregate. 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 Material
The bituminous material shall conform to the requirements of Section 702, Bituminous Materials, or the Producer may elect to use an alternative bituminous material with or without modifying agents. Prior approval for the use of alternative materials shall be obtained from the Director, Materials Bureau, or agency authorized representative. For any bituminous material not listed in Section 702, the Producer shall provide specifications for the alternative material to the Materials Bureau.

D. Anti-Stripping Mixtures
An anti-stripping agent, approved by the Director, Materials Bureau, or agency authorized representative, shall be used as needed to meet the stripping test requirements. This may be incorporated with the bituminous material at the terminal or at the mixing plant.

COMPOSITION OF MIXTURES:

The aggregate gradation and bituminous material quantities shall meet the requirements noted in Table 1 (see below). The Producer shall submit a Job Mix Formula to the Department's Regional Materials Engineer, or agency authorized representative, who has jurisdiction over the plant in which the material is to be produced. An approved Job Mix Formula must be received by the Producer prior to production. 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.
4. Temperature ranges for material preparation

TABLE 1 - STOCKPILE PATCHING MATERIAL GENERAL LIMITS AND JOB MIX FORMULA TOLERANCES						
Sieve Size	Coarse Mix		Intermediate Mix		Fine Mix	
	% Passing	Tolerance [1]	% Passing	Tolerance [1]	% Passing	Tolerance [1]
1 inch	100	-	-	-	-	-
1/2 inch	95-100	-	100	-	100	-
1/4 inch	55-75	±5	90-100	-	90-100	-
1/8 inch	15-40	±6	12-40	±6	35-60	±6
No. 80	0-5	±2	0-5	±2	2-10	±3
No. 200	-	-	-	-	0-5	±2
Bituminous Material %[2]	4.0 – 7.5	±0.4	4.0 – 8.0	±0.4	5.5 – 8.0	±0.4

[1] All aggregate percentages are based on the total weight of the aggregate.

[2] Bituminous Material (asphalt residue) percentage is based on the total weight of the mix and shall include any additives

PREPARATION OF MIXTURES:

Stockpile patching material shall be produced using one of the following methods:

A. Hot Mix Asphalt Batch Plant

Material shall be provided in accordance with the specifications for Section 401 - Plant Production of the New York State Department of Transportation, Standard Specifications, except as modified herein. Aggregate shall be introduced into the pugmill at a temperature which eliminates free moisture on the aggregate surface. The mixture temperature shall be no greater than 212°F. Automatic batch proportioning and recording equipment is not required.

B. Portable Pugmill

Material shall be provided in accordance with the specifications for Section 302 – Bituminous Stabilized Course of the New York State Department of Transportation, Standard Specifications, except as modified herein.

The moisture content requirement shall be waived.

INSPECTION, TESTING & ACCEPTANCE:

The Producer shall contact the Regional Materials Engineer, or agency authorized representative, to arrange for inspection of 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, or agency authorized representative, to determine the acceptability of the mixture prior to use for patching.

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

A. Stripping Test

A suitable size sample of the stockpile patching 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 (approximately 70ºF). 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 surface shall be at least 90 percent coated with the bituminous film.

B. 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.

SECTION 402.20xx0015 - COLD MIX BITUMINOUS PAVEMENT (OPEN GRADED)

MODIFIED STOCKPILE PATCHING MATERIAL

DESCRIPTION:

Modified stockpile patching material is a mixture composed of aggregate and modified bituminous material. The material shall be capable of storage in a stockpile and remain uniform, workable and have satisfactory setting properties at the time of delivery.

MATERIALS REQUIREMENTS:

A. Aggregates

Fine aggregate shall conform to Section 703-01, Fine Aggregate. 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 Material

Unless otherwise noted, the bituminous material shall be any one of the brand names identified on the Department's Approved List for Materials and Equipment. This list can be found on the Department's website, www.nysdot.gov under Publications.

D. Anti-Stripping Mixtures

An anti-stripping agent, approved by the Director, Materials Bureau, or agency authorized representative, shall be used as needed to meet the stripping test requirements. This may be incorporated with the bituminous material at the terminal or at the mixing plant.

COMPOSITION OF MIXTURES:

The aggregate gradation and bituminous material quantities shall meet the requirements noted in Table 2 (see below). The Producer shall submit a Job Mix Formula to the Department's Regional Materials Engineer, or agency authorized representative, who has jurisdiction over the plant in which the material is to be produced. An approved Job Mix Formula must be received by the Producer prior to production. 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, including any additives.
3. Description and quantities of additives.
4. Temperature ranges for material preparation

TABLE 2 – MODIFIED STOCKPILE PATCHING MATERIAL GENERAL LIMITS AND JOB MIX FORMULA TOLERANCES		
Sieve Size	General Limits % Passing	Job Mix Formula Tolerance [1]
1/2 inch	100	-
1/4 inch	90-100	-
1/8 inch	12-37	±6
No. 80	2-10	±3
No. 200	0-2	-
Bituminous Material %[2]	5.0 – 7.0	±0.4

[1] All aggregate percentages are based on the total weight of the aggregate.

[2] Bituminous Material (asphalt residue) percentage is based on the total weight of the mix and shall include any additives

PREPARATION OF MIXTURES:

Modified stockpile patching material shall be produced using one of the following methods:

A. Hot Mix Asphalt Batch Plant

Material shall be provided in accordance with the specifications for Section 401 - Plant Production of the New York State Department of Transportation, Standard Specifications, except as modified herein. Aggregate shall be introduced into the pugmill at a temperature which eliminates free moisture on the aggregate surface. The mixture temperature shall be no greater than 212°F. Automatic batch proportioning and recording equipment is not required.

B. Portable Pugmill

Material shall be provided in accordance with the specifications for Section 302 – Bituminous Stabilized Course of the New York State Department of Transportation, Standard Specifications, except as modified herein. The moisture content requirement shall be waived.

INSPECTION, TESTING & ACCEPTANCE:

The Producer shall contact the Regional Materials Engineer, or agency authorized representative, to arrange for inspection of 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, or agency authorized representative, to determine the acceptability of the mixture prior to use for patching.

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

A. 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 (approximately 70ºF). 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 permitted to air dry after which it shall be visually examined for stripping of the bituminous film from

the aggregate. The aggregate surface shall be at 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.

SECTION 402.20xx0015 - COLD MIX BITUMINOUS PAVEMENT (OPEN GRADED)

FIBER REINFORCED STOCKPILE PATCHING MATERIAL

DESCRIPTION:

Fiber reinforced stockpile patching material is a mixture composed of aggregate, polymer fibers and bituminous material. The material shall be capable of storage in a stockpile and remain uniform, workable and have satisfactory setting properties at the time of delivery.

MATERIALS REQUIREMENTS:

A. Aggregates

Fine aggregate shall conform to Section 703-01, Fine Aggregate. 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 Material

The bituminous material shall conform to the requirements of 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 Director, Materials Bureau, or agency authorized representative, for the use of alternative materials. For any bituminous material not listed in Section 702, the Producer shall provide specifications for the alternative material to the Materials Bureau.

D. Polymer Fiber

The polymer fiber shall be one of the brand names identified on the Department's Approved List for Materials and Equipment. This list can be found on the Department's website, www.nysdot.gov under Publications. Polymer fiber material shall be ¼ inch (nominal) long and be incorporated into the mix at the mixing plant in the quantities noted below.

E. Anti-Stripping Mixtures

An anti-stripping agent approved by the Director, Materials Bureau, or agency authorized representative, shall be used as needed to meet the stripping test requirements. This may be incorporated with the bituminous material at the terminal or at the mixing plant.

COMPOSITION OF MIXTURES:

The aggregate gradation, fiber and bituminous material quantities shall meet the requirements noted in Table 3 (see next page). The producer shall submit a Job Mix Formula to the Department's Regional Materials Engineer, or agency authorized representative, who has jurisdiction over the plant in which the material is to be produced. An approved Job Mix Formula must be received by the producer prior to production. 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. Fiber Material - description and quantity.
4. Description and quantities of additives.
5. Temperature ranges for material preparation.

TABLE 3 – FIBER REINFORCED STOCKPILE PATCHING MATERIAL GENERAL LIMITS AND JOB MIX FORMULA TOLERANCES						
Sieve Size	Coarse Mix		Intermediate Mix		Fine Mix	
	% Passing	Tolerance [1]	% Passing	Tolerance [1]	% Passing	Tolerance [1]
1 inch	100	-	-	-	-	-
1/2 inch	95-100	-	100	-	100	-
1/4 inch	55-75	±5	90-100	-	90-100	-
1/8 inch	15-40	±6	12-40	±6	35-60	±6
No. 80	0-5	±2	0-5	±2	2-10	±3
No. 200	-	-	-	-	0-5	±2
Bituminous Material %[2]	4.0 – 7.5	±0.4	4.0 – 8.0	±0.4	5.5 – 8.0	±0.4
Fiber % [3]	0.3	-	0.3	-	0.3	-

[1] All aggregate percentages are based on the total weight of the aggregate.
[2] Bituminous Material (asphalt residue) percentage is based on the total weight of the mix and shall include any additives
[3] Fiber percentage is based on the total weight of the mix.

PREPARATION OF MIXTURES:

Fiber reinforced stockpile patching material shall be produced using a hot mix asphalt batch plant in accordance with the specification for Section 401 - Plant Production of the New York State Department of Transportation, Standard Specifications, except as modified herein.

Aggregate shall be introduced into the pugmill at a temperature which eliminates free moisture on the aggregate surface. The mixture temperature shall be no greater than 212°F. Automatic batch proportioning and recording equipment is not required.

The fibers shall be pre-weighed and pre-packaged according to batch size, and added in whole units directly into the pugmill before the asphalt is discharged into the pugmill. The net mixing time shall be sufficient to insure uniform coating after all materials are in the pugmill.

INSPECTION, TESTING & ACCEPTANCE:

The Producer shall contact the Regional Materials Engineer, or agency authorized representative, to arrange for inspection of 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, or agency authorized representative, to determine the acceptability of the mixture prior to use for patching.

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

A. 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 (approximately 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 permitted to air dry after which it shall be visually examined for stripping of the bituminous film from the aggregate. The aggregate surface shall be at least 90 percent coated with the bituminous film. Fibers stripped of bituminous material shall not be included as part of the determination of bituminous material stripping from aggregate surfaces. 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.

METHOD OF MEASUREMENT. The bituminous cold mix pavement shall be measured by the number of tons of compacted aggregate and bituminous material supplied (F.O.B. Trucks) in accordance with the specifications.

BASIS OF PAYMENT. The unit price bid per ton shall include the cost of furnishing all the aggregate, the mixing, loading (F.O.B. Trucks) and all labor and equipment necessary to complete the work.

Payment will be made under:

Item No.	Item	Pay Unit
E402.20100015	Stockpile Patching Material (Regular Mix)	Ton
E402.20210015	Stockpile Patching Material (Modified Mix – with any approved Bituminous material)	Ton
E402.20220015	Stockpile Patching Material (Modified Mix – with QPR or MAC-V only)	Ton
E402.20230015	Stockpile Patching Material (Modified Mix – with UPM only)	Ton
E402.20400015	Stockpile Patching Material (Fiber Reinforced Mix)	Ton

SECTION 404 – WARM MIX ASPHALT (WMA) PAVEMENTS

Section 404 of the NYSDOT Standard Specifications shall apply except as modified herein.

Performance Grade Binder (PG 64V-22)

Requirements of this note apply to all items indicated as outlined in the *Superpave Hot Mix Asphalt Design Criteria* table.

PG Binder
Use polymer or Terminal Blend Crumb Rubber modified **PG 64V-22** (Very High) meeting the requirements of AASHTO M 332, *Standard Specifications for Performance Graded Asphalt Binder using Multiple Stress Creep Recovery (MSCR),* for the production of hot mix asphalt mixtures for this project. In addition, the binder grade must also meet the **elastomeric** properties as indicated by one of the following equations for $\%R_{3.2}$:

1. For $J_{nr3.2} \geq 0.1$, $\%R_{3.2} > 29.371 * J_{nr3.2}^{-0.2633}$
2. For $J_{nr3.2} < 0.1$, $\%R_{3.2} > 55$

   Where: $R_{3.2}$ is % recovery at 3.2 kPa
   $J_{nr3.2}$ is the average non-recoverable creep compliance at 3.2 kPa.

When terminal blend CRM PG binder is used, the following shall apply:

- Crumb rubber particles shall be finer than #30 sieve size.
- The CRM PG binder shall be storage-stable and homogeneous.
- The Dynamic Shear Rheometer (DSR) shall be set at 2-mm gap.
- The CMR PG binder shall be 99% free of particles retained on the 600 µm sieve as tested in accordance with Section 5.4 of M 322.

Use of polyphosphoric acid (PPA) to modify the PG binder properties is prohibited for mixtures under this contract. This prohibition also applies to the use of PPA as a cross-linking agent for polymer modification.

Mix Design
The mixture designs must be developed in accordance with the criteria specified in the WMA items that are appropriate for an Estimated Traffic Level as noted in *Superpave Hot Mix Asphalt Design Criteria* table.

Note: The PG binder for this contract will be modified with polymer or CRM additives to meet the requirements stated above. Handling of the WMA shall be discussed at the pre-paving meetings.

The Contractor should be aware that this is a performance-related specification in which the Contractor is responsible for compaction of the pavement within a specified density range. The Contractor must be prepared to select, operate, and control the paving and compaction equipment, to monitor the results, and to make necessary adjustments (without direction from the Engineer) to achieve the specified density results.

BASIS OF PAYMENT. The unit price bid for the pavement courses shall include the cost of all material, labor and equipment necessary to complete furnish and load the WMA onto the purchaser's trucks at the bidder's plant. No installation or delivery is included. The tonnage to be paid shall be within the specified range when indicated.

SECTION 404 – WARM MIX ASPHALT (WMA) PAVEMENTS

Payment will be made under:

Item Number	Item	Pay Unit
E404.018901	Truing & Leveling F9, WMA, 80 Series Compaction	Ton
E404.058901	Shim Course F9, WMA	Ton
E404.06820101	6.3 F2/F3 Top Course WMA, 80 Series Compaction F.O.B. plant price under 499 ton per day	Ton
E404.06820102	6.3 F2/F3 Top Course WMA, 80 Series Compaction F.O.B. plant price over 500 ton per day	Ton
E404.09720101	9.5 F2/F3 Top Course WMA, 70 Series Compaction F.O.B. plant price over 500 ton per day (PG64S-22 <0.3 M ESAL)	Ton
E404.09720102	9.5 F2/F3 Polymer-Modified WMA, 70 Series Compaction F.O.B. plant price over 500 ton per day (PG64V-22 <30M ESAL)	Ton
E404.09820101	9.5 F2/F3 Top Course WMA, 80 Series Compaction F.O.B. plant price under 499 ton per day (PG64S-22 <0.3 M ESAL)	Ton
E404.09820102	9.5 F2/F3 Top Course WMA, 80 Series Compaction F.O.B. plant price over 500 ton per day (PG64S-22 <0.3 M ESAL)	Ton
E404.09820103	9.5 F2/F3 Polymer-Modified WMA, 80 Series Compaction F.O.B. plant price under 499 ton per day (PG64V-22 <30M ESAL)	Ton
E404.09820104	9.5 F2/F3 Polymer-Modified WMA, 80 Series Compaction F.O.B. plant price over 500 ton per day (PG64V-22 <30M ESAL)	Ton
E404.12720101	12.5 F2/F3 Top Course WMA, 70 Series Compaction F.O.B. plant price over 500 ton per day (PG64S-22 <0.3 M ESAL)	Ton
E404.12720102	12.5 F2/F3 Polymer-Modified WMA, 70 Series Compaction F.O.B. plant price over 500 ton per day (PG64V-22 <30M ESAL)	Ton
E404.12820101	12.5 F2/F3 Top Course WMA, 80 Series Compaction F.O.B. plant price under 499 ton per day (PG64S-22 <0.3 M ESAL)	Ton
E404.12820102	12.5 F2/F3 Top Course WMA, 80 Series Compaction F.O.B. plant price over 500 ton per day (PG64S-22 <0.3 M ESAL)	Ton
E404.12820103	12.5 F2/F3 Polymer-Modified WMA, 80 Series Compaction F.O.B. plant price under 499 ton per day (PG64V-22 <30M ESAL)	Ton
E404.12820104	12.5 F2/F3 Polymer-Modified WMA, 80 Series Compaction F.O.B. plant price over 500 ton per day (PG64V-22 <30M ESAL)	Ton

SECTION 404 – WARM MIX ASPHALT (WMA) PAVEMENTS

Item Number	Item	Pay Unit
E404.19790101	19 F9 Binder Course WMA, 70 Series Compaction F.O.B. plant price over 500 ton per day (PG64S-22 <0.3 M ESAL)	Ton
E404.19790102	19 F9 Polymer-Modified Binder Course WMA, 70 Series Compaction F.O.B. plant price over 500 ton per day (PG64V-22 <30M ESAL)	Ton
E404.19890101	19 F9 Binder Course WMA, 80 Series Compaction F.O.B. plant price under 499 ton per day (PG64S-22 <0.3 M ESAL)	Ton
E404.19890102	19 F9 Binder Course WMA, 80 Series Compaction F.O.B. plant over 500 ton per day (PG64S-22 <0.3 M ESAL)	Ton
E404.19890103	19 F9 Polymer-Modified Binder Course WMA, 80 Series Compaction F.O.B. plant price under 499 ton per day (PG64V-22 <30M ESAL)	Ton
E404.19890104	19 F9 Polymer-Modified Binder Course WMA, 80 Series Compaction F.O.B. plant price over 500 ton per day (PG64V-22 <30M ESAL)	Ton
E404.25790101	25 F9 Binder Course WMA, 70 Series Compaction F.O.B. plant over 500 ton per day (PG64S-22 <0.3 M ESAL)	Ton
E404.25790102	25 F9 Polymer-Modified Binder Course WMA, 70 Series Compaction F.O.B. plant price over 500 ton per day (PG64V-22 <30M ESAL)	Ton
E404.25890101	25 F9 Binder Course WMA, 80 Series Compaction F.O.B. plant price under 499 ton per day (PG64S-22 <0.3 M ESAL)	Ton
E404.25890102	25 F9 Binder Course WMA, 80 Series Compaction F.O.B. plant price over 500 ton per day (PG64S-22 <0.3 M ESAL)	Ton
E404.25890103	25 F9 Polymer-Modified Binder Course WMA, 80 Series Compaction F.O.B. plant price under 499 ton per day (PG64V-22 <30M ESAL)	Ton
E404.25890104	25 F9 Polymer-Modified Binder Course WMA, 80 Series Compaction F.O.B. plant price over 500 ton per day (PG64V-22 <30M ESAL)	Ton
E404.37790101	37.5 F9 Base Course WMA, 70 Series Compaction F.O.B. plant price over 500 ton per day (PG64S-22 <0.3 M ESAL)	Ton
E404.37790102	37.5 F9 Polymer-Modified Base Course WMA, 70 Series Compaction F.O.B. plant price over 500 ton per day (PG64V-22 <30M ESAL)	Ton

SECTION 404 – WARM MIX ASPHALT (WMA) PAVEMENTS

Item Number	Item	Pay Unit
E404.37890101	37.5 F9 Base Course WMA, 80 Series Compaction F.O.B. plant price under 499 ton per day (PG64S-22 <0.3 M ESAL)	Ton
E404.37890102	37.5 F9 Base Course WMA, 80 Series Compaction F.O.B. plant price over 500 ton per day (PG64S-22 <0.3 M ESAL)	Ton
E404.37890103	37.5 F9 Polymer-Modified Base Course WMA, 80 Series Compaction F.O.B. plant price under 499 ton per day (PG64V-22 <30M ESAL)	Ton
E404.37890104	37.5 F9 Polymer-Modified Base Course WMA, 80 Series Compaction F.O.B. plant price over 500 ton per day (PG64V-22 <30M ESAL)	Ton

SECTION 407 – TACK COAT

Section 407 of the NYSDOT Standard Specifications and Special Specification for Item 407.01120007 shall apply.

Payment will be made under:

Item No.	Item	Pay Unit
407.0102	Diluted Tack Coat	Gallon
407.0103	Straight Tack Coat	Gallon
407.01120007	Fog Seal	Gallon

SECTION 410 - BITUMINOUS SURFACE TREATMENT – SINGLE COURSE CHIP SEAL

Section 410 of the NYSDOT Standard Specifications shall apply, except as modified herein.

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.

CONSTRUCTION DETAILS.

QUALITY ASSURANCE

The Contractor 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.

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 vehicular 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.TAS.

   A product such as Seal Master, 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.

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

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 degrees 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	0.15
2nd Coat	100	20	400	2-3	0.10

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.

BASIS OF PAYMENT. The unit price bid per square yard for chip seal shall include the cost of all labor, materials and equipment necessary to perform the work. Pavement cleaning, pavement marking removal, work zone traffic control and pilot vehicles will be paid for separately.

Payment will be made under:

Item No.	Item	Pay Unit
E410.01	Bituminous Surface Treatment – Single Course (Asphalt Sealer) (Under 5,000 SY Two Coat)	Square Yard
E410.02	Bituminous Surface Treatment – Single Course (Asphalt Sealer) (5,001 to 10,000 SY Two Coat)	Square Yard
E410.03	Bituminous Surface Treatment – Single Course (Asphalt Sealer) (10,001 to 25,000 SY Two Coat)	Square Yard
E410.04	Bituminous Surface Treatment – Single Course (Asphalt Sealer) (Over 25,000 SY Two Coat)	Square Yard
410.10	Chip Seal (1A)	Square Yard
410.20	Chip Seal (1ST)	Square Yard
410.30	Bituminous Material (Chip Seal)	Gallons
410.40	Bituminous Material (Fog Seal)	Gallons
410.50	Cover Sand	Square Yard
410.60	Pick Up Broom or Vacuum Sweeper	Each

SECTION 412 – CRACK SEALING ASPHALT PAVEMENTS

Section 412 of the NYSDOT Standard Specifications shall apply, except as modified herein.

DESCRIPTION.

The work in this section shall include work required for crack and joint sealing and filling for asphalt pavements.

Clean and seal only primary cracks along their entire length at locations shown in the contract documents or where directed by the Engineer. Do not treat secondary radial cracks. In this specification, the word crack also means joint. Primary cracks are defined as those greater than or equal to 1/8 inch and less than or equal to 1 inch wide.

MATERIALS.

Crack Sealing. Use a sealant meeting the requirements of Section 705-02, Highway Joint Sealants, and ASTM D6690 Type II. The sealant in the manufacture's original sealed container shall be legible marked with the following information, and provide to the Owner upon request:

a. Manufacturer's name.
b. Trade name of sealant.
c. Manufacturer's batch or lot number.
d. ASTM D6690, Type II.
e. Minimum application temperature.
f. Maximum (or Safe) heating temperature.

Provide the Engineer with a copy of the manufacturer's recommendations pertaining to heating and application of the sealant.

Crack Filling. Use a PG binder meeting the requirements of PG 64S-22 as specified in Section 702, PG Binders for Paving and Fibers. Acceptance for use is contingent upon certification of compliance to these specification requirements by the primary source and subsequent suppliers.

Fibers

Acceptance of the fibers is based on the manufacturer certification that the fibers meet the following:

a. Type of Fiber: Polyester
b. Tensile Strength: 480 MPa min.
c. Specific Gravity: 1.32-1.40
d. Melt Temperature: 475°F min.
e. Elongation: 33% ± 9%
f. Length of Fiber: 1/4 inch ± 1/32 inch

Legibly mark containers with the following information:

a. Manufacturer's Name
b. Trade Name of Fiber
c. Type of Fiber

Composition of PG Binder and Fiber Mixture

Mix a minimum of 5.0 %, by weight, of fibers with PG binder.

Mixing Temperatures
Mix the PG binder and fiber at the temperature recommended by the fiber manufacturer. The mixing temperature is not to exceed 325°F. Prior to commencing work, provide the Engineer with a copy of the manufacturer's recommendations pertaining to heating and application of the filler.

CONSTRUCTION DETAILS.

General
If the owner is also performing pavement repairs under a separate item, ensure that all pavement repairs that border pavement cracks have been completed prior to starting work.

Furnish all equipment that is necessary for cleaning and sealing the pavement cracks.

Crack Preparation
Prepare cracks for sealing on the same day that they are to be sealed.

Use a hot air lance to thoroughly clean and dry cracks of dust, dirt, foreign material, sand and any other extraneous materials to a minimum depth of 1/2 inch immediately prior to sealing. Use compressed air with a minimum of 85 psi. Do not burn, scorch or ignite the adjoining pavement when using a hot air lance.

Install suitable traps or devices on the compressed air equipment to prevent moisture and oil from contaminating the crack surfaces. Maintain these devices and see that they are functioning properly.

Protect the public from potentially objectionable and/or hazardous airborne debris.

Filler/Sealant Melting
Heat and melt the sealant in a melter constructed either as a double boiler filled with a heat transfer medium between the inner and outer shells, or with internal tubes or coils carrying the sealant through a heated oil bath and into a heated double wall hopper. The melter will be equipped with separate thermometers to indicate the temperature of the heat transfer medium and the sealant material, positive temperature controls and a mechanical agitator or a recirculating pump to ensure a homogeneous blend of the sealant. Maintain the sealant at the pouring temperature ± 10 °F, as indicated on the material packaging.

Check the discharge temperature of the sealant with a non-contact infrared thermometer. Discharge the sealant at a temperature between the manufacturer's recommended pouring and safe heating temperatures indicated on the material packaging. Submit an alternate method for measuring the discharge temperature to the Engineer for approval, if desired.

Sealing is not permitted if the melter and discharge temperatures do not meet the

requirements described above.

Equip the discharge hose with a thermostatically controlled heating apparatus or insulate it to maintain the proper sealant pouring temperature. Holster the discharge hose to the melter if it is not thermostatically heat controlled. Circulate the sealant from the discharge hose into the melter to maintain the proper sealant pouring temperature.

Do not use sealant material heated beyond the safe heating temperature.

If the manufacturer's recommendations allow the sealant to be reheated or heated in excess of six hours, recharge the melter with fresh material amounting to at least 20 percent of the volume of the material remaining in the melter.

Filling/Sealing

Sealing is to be done when ambient air temperature is at or above 40°F.

Seal the crack by placing the applicator wand in or directly over the crack opening and carefully discharging the sealant. Strike-off the sealant flush with the pavement surface using a squeegee or sealing shoe pressed firmly against the pavement. Only a narrow thin film of material measuring from 1 to 2 inches wide and 1/16 inch thick is allowed on the pavement surface after sealing the crack. If the sealant sinks into the crack more than 3/8 inch below the pavement surface, clean it with high pressure air and reseal as instructed above. Properly sealed cracks shall be watertight.

For filling, overfill the joint by placing the applicator wand in or directly over the recess and carefully discharging the filler/sealer. Strike off the joint using a neoprene type “V” shaped squeegee or sealing shoe that is capable of conforming to the pavement surface. Form a film of material 4 inches wide and 1/16 to 1/8 inch thick, with tapered edges, centered over the joint. The distance between the filler/sealer applicator wand and the squeegee/sealing shoe shall not exceed 2 feet. Properly filled/sealed joints shall be watertight.

A low pressure, light spray of water may be used to accelerate cooling of the sealant. Blotting the sealant with fine aggregate is not allowed. Remove and dispose of sealant that is in excess of the specified thin film dimensions or that has not bonded to both sides of the crack.

To avoid tracking, do not allow traffic on the sealed cracks until the sealant has cured sufficiently. Clean sealed cracks damaged by traffic with high pressure air and reseal them to meet the specified thin film amount at no additional cost to the Owner.

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.

If the purchasing agency is providing a laborer, the vehicle for transporting the operator, additional material and towing the unit to the job site will also be provided by the purchasing agency.

The Contractor will supply supervision and maintain traffic control at the work site for all options. A deduction item shall be used if the purchasing agency is providing the traffic control.

METHOD OF MEASUREMENT. Price per gallon of bituminous materials at the application temperature, including heating, hauling, and application at point in Erie County.

Traffic control shall be the responsibility of the Contractor and shall follow NYSDOT Manual of Uniform Traffic Control Devices (MUTCD) as determined by the purchasing Municipality.

Option 1 – 2 Man Crew with ASTM D6690 Type II. Contractor shall supply operator and laborer to apply sealer. Municipality shall supply laborer to clean crack with air wand.

Option 2 – 3 Man Crew with ASTM D6690 Type II. Contractor shall supply operator and laborers to apply sealer and clean cracks with air wand.

Option 3 – 2 Man Crew with PG 64S-22. Contractor shall supply operator and laborer to apply sealer. Municipality shall supply laborer to clean crack with air wand.

Option 4 – 3 Man Crew with PG 64S-22. Contractor shall supply operator and laborers to apply sealer and clean cracks with air wand.

M&PT Deduction – The Municipality shall provide Maintenance and Protection of Traffic

BASIS OF PAYMENT. Price per gallon of bituminous materials installed at the application temperature, including heating, hauling, and application at point in Erie County.

Price bid for liquid bituminous materials in this specification shall be subject to New York State Price Adjustments, Section 698. The base price of asphalt as of November 2021 ($570.00) per US ton. The asphalt price adjustment conversion factor for Crack Sealing shall be 0.0027 t PGB/gal and for Crack Filling shall be 0.0043 t PGB/gal.

Payment will be made under:

Item No.	Item	Pay Unit
E412.11	Crack Sealing, Option 1 (2 Man Crew, Type II)	Gallon
E412.12	Crack Sealing, Option 2 (3 Man Crew, Type II)	Gallon
E412.13	Crack Sealing, Option 3 (2 Man Crew, PG 64S-22)	Gallon
E412.14	Crack Sealing, Option 4 (3 Man Crew, PG 64S-22)	Gallon
E412.15	Deduction for Municipality supplied M&PT	Gallon

SECTION 413 – MICRO-SURFACING

All Specification Section references are to the NYSDOT Standard Specifications.

DESCRIPTION:

This work shall consist of applying a proportioned mixture of polymer modified asphalt emulsion, aggregate, mineral filler, water and other additives to a paved surface.

MATERIALS:

Asphalt Emulsion: §702 - Bituminous Materials, use item 702-4601P.

Fog Seal – Use material meeting the requirements of §702, Table 702-7, Diluted Tack Coat, or material approved by the Director of the Materials Bureau.

Aggregates: Use material meeting the requirements of §703-02, Coarse Aggregate, with the following modifications.

A. Sand Equivalency. Minimum sand equivalency is 65%, as determined by AASHTO T 176, “Plastic Fines in Graded Aggregates and Soils by Use of the Sand Equivalent Test.” Material not meeting the minimum sand equivalent requirement may be used if it is classified as non-plastic according to AASHTO T 89, “Determining the Liquid Limit of Soils” and AASHTO T 90, “Determining the Plastic Limit and Plasticity Index of Soils.”

B. Type F1 Conditions. Use aggregate containing at least 90.0% acid insoluble residue in the plus and minus No. 30 size fractions.

C. Type F2 Conditions. Use aggregate meeting one of the following requirements:

1. Limestone, dolomite, or blend of the two containing at least 20.0% acid insoluble residue in the plus and minus No. 30 size fractions.
2. Gravel or blend of a natural or manufactured, limestone, dolomite, gravel, sandstone, granite, chert, traprock, ore tailings, slag, or other similar materials, having at least 25.0% acid insoluble residue in the plus and minus No. 30 size fractions.

D. Type F3 Conditions. Use aggregate meeting one of the following requirements:

1. Limestone or a blend of limestone and dolomite containing at least 20.0% acid insoluble residue in the plus and minus No. 30 size fractions.
2. Dolomite.
3. Gravel or blend of a natural or manufactured, limestone, dolomite, gravel, sandstone, granite, chert, traprock, ore tailings, slag, or other similar materials, having at least 25.0% acid insoluble residue in the plus and minus No. 30 size fractions.

E. Stockpile. Build an aggregate stockpile at a location approved by the Engineer. When blending multiple aggregates, use automated proportioning and blending equipment to produce a uniformly graded stockpile. Screen the aggregate at the stockpile, prior to delivering it to the micro-surfacing equipment.

Use aggregate meeting the gradation requirements listed in §703-02, Table 703-5, Sizes of Crushed Gravel, Stone, and Slag for Slurry with the following exceptions: the range for the No. 100 sieve on the 2MS designation is 10-22% passing; and the range for the #200 sieve on the 2MS and 3MS designation is 5-15%.

The aggregate stockpile gradation shall not deviate from the mix design gradation by more than the tolerances given in Table 1 - Maximum Stockpile Tolerance. The mix design gradation value plus the stockpile tolerance cannot exceed the mix type general gradation limits.

TABLE 1 - MAXIMUM STOCKPILE TOLERANCE

Sieve (in)	3/8	No. 4	No. 8	No. 16	No. 30	No. 50	No. 100	No. 200
Stockpile Tolerance	-	± 5.0%	± 5.0%	± 5.0%	± 5.0%	± 4.0%	± 3.0%	± 2.0%

Water: §712-01, Water.

Mineral Filler: §703-08, Mineral Filler.

Mix Design: Employ a Department approved laboratory to develop a job mix formula, following the procedure outlined in ASTM D 3910, Standard Practices for Design, Testing, and Construction of Slurry Seal that meets the requirements listed in Table 2 - Proportional Requirements and Table 3 - Physical Requirements, and Table 4 - Gradation Requirements. All materials used to develop the mixture design must be representative of the materials to be used on the project. The mixture design must clearly list the proportions of mineral aggregate, mineral filler, water, additive(s), percent asphalt emulsion based on the dry weight of aggregate, and design set and cure times. The mix design shall be submitted at least 14 days before the beginning of work to the Engineer in Charge, the Regional Materials Engineer and the Director of the Materials Bureau. Mixture designs are valid until 3rd Saturday in September of the year in which they are submitted.

TABLE 2 - PROPORTIONAL REQUIREMENTS	
Constituent	**Proportional Requirement**
Residual Asphalt	5.5 to 10.5% (by dry mass of aggregate).
Mineral Filler	0.0 to 3.0% by dry mass of aggregate.
Water	As required to produce proper mixture consistency.
Field Control Additive	As required to control the emulsion's set properties or increase adhesion, but must be part of the mixture design and compatible with all other components.

TABLE 3 - PHYSICAL REQUIREMENTS		
Property	**Test Method**	**Requirement**
Wet Cohesion	ISSA TB 139; 30 minutes ISSA TB 139; 60 minutes	12 kg-cm, minimum 20 kg-cm, minimum
Wet Track Abrasion Loss	ASTM D 3910; 1 hour soak ASTM D 3910; 6 day soak	538 g/m^2, maximum 807 g/m^2, maximum
Mix Time	ISSA TB 113	Controllable to 120 seconds
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/m^2, maximum
Lateral Displacement	ISSA TB 147A	5.0% maximum
Specific Gravity after 1000 cycles of 125 lbs.	ISSA TB 147A	2.10 maximum

TABLE 4 - GRADATION REQUIREMENTS	
Mixture Type	**Aggregate Gradation**
Type II	2MS[(1)]
Type III	3MS[(1)]

[(1)] § 703-02 Material Requirements, Table 703-5 Sizes of Crushed Gravel, Stone, and Slag for Slurry.

Material Sampling and Testing:

A. Aggregate Stockpile

1. Contractor Testing. The contractor shall perform and submit the following tests to the Regional Materials Engineer.

a. Take three samples, according to Materials Method 5, Plant Inspector's Manual for Bituminous Concrete Mix Production. Each sample must contain material from each face of the stockpile.
b. Test samples in accordance with AASHTO T 11, Materials Finer than No. 200 Sieve in Mineral Aggregates by Washing, and AASHTO T 27, Sieve Analysis of Fine and Coarse Aggregates. Test results shall be based on the average of three tests.
c. Sample and test the aggregate in accordance with Appendix B of the Materials Method 28, “Friction Aggregate Control and Test Procedures,”, Table B1 – Minimum Testing Frequencies for Slurry Surfacing Aggregates.

2. Department Testing and Approval. The Regional Materials Engineer will review the Contractor's submission for specification compliance. The Regional Materials Engineer will

base final approval of the stockpile on the Contractors submission or Department sampling and testing. Re-approval is required if additional material is added to the stockpile.

a. Gradation - Test results shall be the average of three tests. If the percent passing is outside the gradation limits for any sieve, the stockpile will be rejected.
b. Friction Requirements - Samples shall meet appropriate friction values. All micro-surfacing previously placed with material from a stockpile rejected for noncarbonate or acid insoluble residue content will be rejected.

B. Emulsion. Asphalt emulsion shall be sampled according to Materials Method 702-2, "Asphalt Emulsion – Quality Assurance."

CONSTRUCTION DETAILS:

Weather and Seasonal Limitations: The requirements of §402-3.01 Weather and Seasonal Limitations apply, except as modified herein. Do not place micro-surfacing in the rain, fog, or if the air temperature is expected to fall below freezing within 24 hours after application. Application shall not occur unless pavement and ambient temperatures are above 50ºF and rising. Stop micro-surfacing if the surface or air temperature drops below 50ºF. No work will be performed after the third Saturday in September.

Equipment: Equipment must be designed and manufactured specifically for mixing and placing micro-surfacing. The equipment must be capable of accurately proportioning the constituent materials, thoroughly mixing those materials, and placing the micro-surfacing in conformance with this specification.

Calibrate each mixing unit according to Materials Procedure 09-01. Calibrations must be performed using the aggregate sources listed in the mix design. Calibrations are valid for 90 days. Submit a copy of the equipment calibration to the Engineer prior to the start of work. The emulsion, aggregate and mineral filler counters must be accessible to the Engineer and inspectors. Adjust the material delivery settings on the micro-surfacing equipment to produce the mix design. Recalibrate equipment to adjust for bulking effect of aggregate reported on mix design.

A pneumatic tire roller meeting the requirements of §402, shall be used.

Surface Preparation:

1. Ensure that pavement markings have been abraded in accordance with contract documents.
2. Remove all debris and standing water.
3. Cover all manhole covers, water boxes, catch basins, and other such utility structures within the area being paved with plastic, building felt, or other material approved by the Engineer. Remove the covers each day.
4. If directed by the engineer, dampen the pavement surface with water or apply a fog seal to the pavement surface before applying micro-surfacing. If prior to or during the preconstruction meeting, it is determined that the road surface requires a fog seal application, it shall be paid for in accordance with the appropriate pay item.

Mixture Consistency: Produce a homogeneous mixture, without lumps, balls, unmixed aggregate, segregation, excess water, or excess emulsion. The maximum allowable adjustment of the mineral filler is 1.0%. Report all mixture adjustments to the Engineer before they are made.

Application: Micro-surfacing is placed in multiple lifts; use at least two applications consisting of a scratch course and finish course for the finished product. When necessary, a rut filling course is also specified and paid for separately. Do not apply scratch course to the shoulder unless otherwise directed.

1. Scratch Course. Use a steel strike off on the spreader box in order to level the pavement surface. The scratch course surface shall be constructed to a ¼ inch tolerance. Measure the tolerance using a 10-foot straight edge or string line placed transversely to the center line of the pavement. Variations exceeding ¼ inch shall be satisfactorily corrected or resurfaced at no additional cost to the Department as ordered by the Engineer.

2. Finish Course. Apply the micro-surfacing to the pavement evenly across the entire width of the spreader box to produce a smooth riding surface with no streaks, excess buildup, thin or uncovered areas. The finish course surface shall be constructed to a ¼ inch tolerance. Measure the tolerance using a 10 foot straight edge or string line placed transversely to the center line of the pavement. Variations exceeding ¼ inch shall be satisfactorily corrected or resurfaced at no additional cost to the Department as ordered by the Engineer.

3. Rut Filling. Use a rut box to fill wheel rutting. Allow rut-filled sections to cure for a minimum of two hours after rolling. Application rate limits are given in Table 5 - Application Limits.

Application rates for rut filling operations are found in Table 6 - Rut Filling Application Rate.

TABLE 5 - APPLICATION LIMITS		
Gradation	**Course**	**Application Rate (lb/yd²)**
Type II	Scratch Finish	15 maximum 15-20
Type III	Scratch Finish	20 maximum 20-30

TABLE 6 - RUT FILLING APPLICATION RATE	
Rut Depth	**Application Rate (lbs/yd²)**
½" to ¾"	20 – 30
¾" to 1"	25 – 35
1" to 1-¼"	28 – 38

Coverage: Do not use hand tools to expand the width of application wider than the spreader box, except as described under Hand Finishing below.

Joints: Minimize the number of joints. Construct joints such that no gap is present between adjacent applications. Place longitudinal joints at the edges of traffic lanes, adjacent to where pavement markings will be located. Other longitudinal joint arrangements require the Engineer's approval. Measure the difference in grade across joints by laying a 10 foot straight edge centered on the joint perpendicular to the direction of the joint. Joint overlap and grade difference requirements are given in Table 7 - Joint Requirements.

TABLE 7 - JOINT REQUIREMENTS		
Requirement	**Minimum (in.)**	**Maximum (in.)**
Difference in Grade	-	¼
Longitudinal Joint Overlap	2	6
Transverse Joint Overlap	2	12

Variable-Width Passes: Apply no more than one variable-width pass. Variable-width passes will not be permitted as the last pass unless approved by the Engineer.

Hand Finishing: Use hand held squeegees to finish areas which cannot be reached with the spreader box, and, when necessary, to produce straight lines along curbs, shoulders, and through intersections. Apply the same type of finish to the surface as is applied by the spreader box.

Excess Material: Remove all excess material in areas such as driveways, gutters, intersections, etc. each day.

Rolling: The mat shall be rolled with a pneumatic tire roller. A minimum of 3 passes of the pneumatic tire roller shall be required. One pass is defined as one movement of the roller over any point of the pavement in either direction. The rolling of the surface shall not cause the stone to stick to the wheels of the roller.

Curing: Allow each coat to cure sufficiently to resist damage from the micro-surfacing equipment, before applying the next coat. Protect the micro-surfacing from traffic until the mixture has cured sufficiently to resist damage. The time required will vary based on the mix

design and environmental conditions. Repair damage from micro-surfacing equipment or traffic to the Engineer's satisfaction.

Milling for Pavement Markings: Mill recesses for pavement markings as required by contract documents.

Quality Control Reports: The contractor shall submit a signed report daily with the following information:

Quality Control Reports	
Gradation	Daily[1]
Moisture Content Aggregate	Daily
Gate Setting	Daily[2]
Area Paved	Daily
Counter Reading	Daily
Field Control (Type/Amount)	Daily[2]
Filler (Type/Amount)	Daily[2]
Water Rate	Daily[2]
Water Content	Daily[1,3]
Air Temperature (AM/PM)	Daily

[1] These tests will be performed on samples that are representative of that day's production. If control test results are not complete at the end of the day, the contractor will be allowed to submit the data at a later date, not to exceed 7 days. The contractor shall provide a split of their daily sample to the Engineer.

[2] These parameters may change throughout the day. Record the amount and location of any change on the report. Record the amount and location of any change on the report.

[3] Water content will be determined by taking a sample of mixed material and drying to a constant weight.

METHOD OF MEASUREMENT:
Micro-surfacing shall be measured by the total tons of aggregate, mineral filler and asphalt emulsion used according to Materials Procedure 09-01, "Micro-surfacing and Slurry Guidelines."

Fog seal shall be measured by the number of 60° F gallons actually incorporated in the work.

The following formula will be used to calculate material quantity at 60° F:

$$Volume_{60°F} = Volume_{D} \times [1 - (\Delta T \times 0.00025)]$$

Where:

ΔT = Delivered Temperature (° F) – 60

$Volume_{D}$ = Quantity Delivered (gallons)

BASIS OF PAYMENT:
The unit price bid per ton of Micro-surfacing shall be FOB and include the materials and equipment necessary to perform the work. All necessary pavement cleaning, joint sealing, crack filling, pavement markings removal, milling for pavement markings and utility grade adjustments will be paid for under their appropriate items.

Payment will be made under:

Item No.	Item	Pay Unit
E413.02020118	Micro-Surfacing (Under 4,000 ADT) Type II	Ton
E413.0202011801	Micro-Surfacing (Over 4,000 ADT) Type II	Ton
E413.03020118	Micro-Surfacing (Under 4,000 ADT) Type III	Ton
E413.0302011801	Micro-Surfacing (Over 4,000 ADT) Type II	Ton
E413.04030118	Micro-Surfacing Rut Filling	Ton
E413.1007	Transport, deliver, and apply with Contractor Equipment Under 25 ton per day	Ton per Day
E413.1008	Transport, deliver, and apply with Contractor Equipment 26 to 100 ton per day	Ton per Day
E413.1009	Transport, deliver, and apply with Contractor Equipment 101 to 300 ton per day	Ton per Day
E413.1010	Transport, deliver, and apply with Contractor Equipment 301 to 500 ton per day	Ton per Day
E413.1011	Maintenance and Protection of Traffic	SY

ITEM E410.1006 - EFlex

Description: A cationic, water-based asphalt emulsion product used primarily as for micro-surfacing treatment. Polymers shall be introduced into the asphalt prior to emulsification.

Properties: Boiling Point: 212°F
Appearance: Brown to Black Liquid
Flammability: Non-flammable
Density: 8.3 – 8.5 lbs/gal
Specific Gravity: 1.01
Solubility: Slightly soluble
Odor: Asphalt-like

Specification:

	Specification Test Procedure (AASTO)	Min	Max
Asphalt Base Properties:			
Original DSR, kPa (G*/sin d, 10 rad./sec) @ 76°C	T315	1.00	
Emulsion Properties:			
Viscosity, Saybolt-Furol, @ 122°F, SFS	T59	15	150
Sieve Test, %	T59		0.1
Residue by Evaporation, %	T59	62	
Residue Properties From Low Temperature Evaporation		**PP72-11, Procedure B**	
MSCR @ 64°C, Recovery @ 3.2 kPa, %	TP70	75	
Jnr @ 3.2/kPa	TP70		0.50

Handling:
Protect emulsion from freezing
Avoid overheating
Avoid excessive pumping with high shear pumps
Storage & Application
Storage Temperature (°F) 50-120
Application Temperature (°F) 50-120

While all statements, technical information, and recommendations contained herein are based on information our company believes to be reliable, nothing contained herein shall constitute any warranty, express or implied, with respect to the products and/or services described herein and any such warranties are expressly disclaimed. We recommend that the prospective purchaser or user independently determine the suitability of our product(s) for their intended

use. No statement, information or recommendation with respect to our products, whether contained herein or otherwise communicated, shall be legally binding upon us unless expressly set forth in a written agreement between us and the purchaser/user.

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.

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.

Payment will be made under:

Item No.	**Item**	**Pay Unit**
E413.1006	Eflex	Ton

SECTION 414 – QUICK-SET SLURRY

All Specification Section references are to the NYSDOT Standard Specifications.

DESCRIPTION:
This work shall consist of applying a proportioned mixture of asphalt emulsion, aggregate, mineral filler and water to a paved surface. Use quick-set slurry only on highways with 2 or 3 lanes and design year two-way AADTs under 4000.

MATERIALS:
Asphalt Emulsion: §702 - Bituminous Materials, use item 702-4601.

Aggregates: Use material meeting the requirements of §703-02, Coarse Aggregate, with the following modifications.

A. Sand Equivalency. Minimum sand equivalency is 45%, as determined by AASHTO T 176, “Plastic Fines in Graded Aggregates and Soils by Use of the Sand Equivalent Test.” Material not meeting the minimum sand equivalent requirement may be used if it is classified as non-plastic according to AASHTO T 89, “Determining the Liquid Limit of Soils” and AASHTO T 90, “Determining the Plastic Limit and Plasticity Index of Soils.”

B. Friction Requirements. Use aggregate meeting one of the following requirements:

1. Limestone or a blend of limestone and dolomite containing at least 20.0% acid insoluble residue in the plus and minus No. 30 size fractions.
2. Dolomite.
3. Gravel or blend of a natural or manufactured, limestone, dolomite, gravel, sandstone, granite, chert, traprock, ore tailings, slag, or other similar materials, having at least 25.0% acid insoluble residue in the plus and minus No. 30 size fractions.

C. Stockpile. Build an aggregate stockpile at a location approved by the Engineer. When blending multiple aggregates, use automated proportioning and blending equipment to produce a uniformly graded stockpile. Screen the aggregate at the stockpile, prior to delivering it to the quick-set slurry equipment.

Use aggregate meeting the gradation requirements listed in §703-02, Table 703-5, Sizes of Crushed Gravel, Stone, and Slag for Slurry with the following exception: the range for the No. 100 sieve on the 2MS designation will be 10-22% passing.

The aggregate stockpile gradation shall not deviate from the mix design gradation by more than the tolerances given in Table 1 - Maximum Stockpile Tolerance. The mix design gradation value plus the stockpile tolerance cannot exceed the mix type general gradation limits.

TABLE 1 - MAXIMUM STOCKPILE TOLERANCE

Sieve (in)	3/8	No. 4	No. 8	No. 16	No. 30	No. 50	No. 100	No. 200
Stockpile Tolerance	-	± 5.0%	± 5.0%	± 5.0%	± 5.0%	± 4.0%	± 3.0%	± 2.0%

Water: §712-01, Water.

Mineral Filler: §703-08, Mineral Filler.

Mix Design: Employ a Department approved laboratory to develop a job mix formula, following the procedure outlined in ASTM D 3910, Standard Practices for Design, Testing, and Construction of Slurry Seal that meets the requirements listed in Table 2 - Proportional

Requirements and Table 3 - Physical Requirements, and Table 4 - Gradation Requirements. All materials used to develop the mixture design must be representative of the materials to be used on the project. The mixture design must clearly list the proportions of mineral aggregate, mineral filler, water, additive(s), percent asphalt emulsion based on the dry weight of aggregate, and design set and cure times. The mix design shall be submitted at least 14 days before the beginning of work to the Engineer in Charge, the Regional Materials Engineer and the Director of the Materials Bureau. Mixture designs are valid until 3rd Saturday in September of the year in which they are submitted.

TABLE 2 - PROPORTIONAL REQUIREMENTS

Constituent	Proportional Requirement
Residual Asphalt	Type II, 7.5 to 13.5%; Type III, 6.5 to 12.0% (by dry mass of aggregate).
Mineral Filler	0.0 to 2.0% by dry mass of aggregate.
Water	As required to produce proper mixture consistency.
Field Control Additive	As required to control the emulsion's set properties or increase adhesion, but must be part of the mixture design and compatible with all other components.

TABLE 3 - PHYSICAL REQUIREMENTS

Property	Test Method	Requirement
Consistency	ASTM D 3910	2 to 3 cm
Mix Time	ISSA TB 113	Controllable to 180 second
Set Time	ASTM D 3910	1 hour, maximum
Cure Time	ASTM D 3910	24 hour, maximum
Wet Track Abrasion Loss	ASTM D 3910; 1 hour soak	807 g/m^2, maximum
Excess Asphalt by LWT Sand Adhesion	ISSA TB 109	538 g/m^2, maximum
Wet Cohesion (quick traffic systems)	ISSA TB 139; 30 minutes ISSA TB 139; 60 minutes	12 kg-cm, minimum 20 kg-cm, minimum

TABLE 4 - GRADATION REQUIREMENTS

Mixture Type	Aggregate Gradation
Type II	2MS[(1)]
Type III	3MS[(1)]

[(1)] § 703-02 Material Requirements, Table 703-5 Sizes of Crushed Gravel, Stone, and Slag for Slurry.

Material Sampling and Testing:

A. Aggregate Stockpile

1. Contractor Testing. The Contractor shall perform and submit the following tests to the Regional Materials Engineer:

a. Take three samples, according to Materials Method 5, Plant Inspector's Manual for Bituminous Concrete Mix Production. Each sample must contain material from each face of the stockpile.
b. Test samples in accordance with AASHTO T 11, Materials Finer than No. 200 Sieve in Mineral Aggregates by Washing, and AASHTO T 27, Sieve Analysis of Fine and Coarse Aggregates. Test results shall be based on the average of three tests.
c. Sample and test the aggregate in accordance with Appendix B of the Materials Method 28, “Friction Aggregate Control and Test Procedures,” Table B1 – Minimum Testing Frequencies for Slurry Surfacing Aggregates.

2. Department Testing and Approval. The Regional Materials Engineer will review the Contractor's submission. If the submission meets the requirements of the specification, the Regional Materials Engineer will sample and test the stockpile. The final approval of the stockpile will be based on the results of the Department's sampling and testing. Stockpile approval is valid until new material is added to the stockpile.

a. Gradation - Test results shall be the average of three tests. If the percent passing is outside the gradation limits for any sieve, the stockpile will be rejected.
b. Friction Requirements - Samples shall meet appropriate friction values. All quick-set slurry previously placed with material from a stockpile rejected for non-carbonate or acid insoluble residue content will be rejected.

B. Emulsion. Asphalt emulsion shall be sampled according to Materials Method 702-2, "Asphalt Emulsion – Quality Assurance."

CONSTRUCTION DETAILS:

Weather and Seasonal Limitations: The requirements of §402-3.01 Weather and Seasonal Limitations apply, except as modified herein. Do not place quick-set slurry in the rain, fog, or if the air temperature is expected to fall below freezing within 24 hours after application. Application shall not occur unless pavement and ambient temperatures are above 50°F. Stop the quick-set slurry application if the surface or air temperature drops below 50°F. No work will be performed after the third Saturday in September.

Equipment: Equipment must be designed and manufactured specifically for mixing and placing quick-set slurry or micro-surfacing. The equipment must be capable of accurately proportioning the constituent materials, thoroughly mixing those materials, and placing the quick-set slurry in conformance with this specification.

Calibrate each mixing unit according to Materials Procedure 09-01. Calibrations must be performed using the aggregate sources listed in the mix design. Calibrations are valid for 90 days. Submit a copy of the equipment calibration to the Engineer prior to the start of work.

The emulsion, aggregate and mineral filler counters must be accessible to the Engineer and inspectors. Adjust the material delivery settings on the quick-set slurry equipment to produce the mix design.

Surface Preparation:

A. Ensure that pavement markings have been abraded in accordance with contract documents.
B. Remove all debris and standing water.
C. Cover all manhole covers, water boxes, catch basins, and other such utility structures within the area being paved with plastic, building felt, or other material approved by the Engineer. Remove the covers each day.

Mixture Consistency: Produce a homogeneous mixture, without lumps, balls, unmixed aggregate, segregation, excess water, or excess emulsion. The maximum allowable adjustment of the mineral filler is 1.0%. Report all mixture adjustments to the Engineer before they are made.

Application: Apply the quick-set slurry to the pavement evenly across the entire width of the spreader box to produce a smooth riding surface with no streaks, excess buildup, thin or uncovered areas.

Application rate limits are given in Table 5 - Application Rate

TABLE 5 - APPLICATION RATE	
Gradation	Application Rate (lb/yd2)
Type II	14-20
Type III	18-24

Coverage: Do not use hand tools to expand the width of application wider than the spreader box, except as described under Hand Finishing below.

Joints: Minimize the number of joints. Construct joints such that no gap is present between adjacent applications. Place longitudinal joints at the edges of traffic lanes, adjacent to where pavement markings will be located. Other longitudinal joint arrangements require the Engineer's approval. Measure the difference in grade across joints by laying a 10 foot straight edge centered on the joint perpendicular to the direction of the joint. Joint overlap and grade difference requirements are given in Table 6 - Joint Requirements.

TABLE 6 - JOINT REQUIREMENTS		
Requirement	Minimum (in.)	Maximum (in.)
Difference in Grade	-	1/4
Longitudinal Joint Overlap	2	6
Transverse Joint Overlap	2	12

Variable-Width Passes. Variable width passes will not be permitted unless approved by the Engineer.

Hand Finishing. Use hand held squeegees to finish areas which cannot be reached with the spreader box, and, when necessary, to produce straight lines along curbs, shoulders, and through intersections. Apply the same type of finish to the surface as is applied by the spreader box.

Excess Material. Remove all excess material in areas such as driveways, gutters, intersections, etc. each day.

Curing. Protect the quick-set slurry from traffic until the mixture has cured sufficiently to resist damage. The time required will vary based on the mix design and environmental conditions. Repair damage from quick-set slurry equipment or traffic to the Engineer's satisfaction.

METHOD OF MEASUREMENT:
Quick-set slurry shall be measured by the total tons of aggregate, mineral filler and asphalt emulsion used according to Materials Procedure 09-01, "Micro-surfacing and Slurry Guidelines."

BASIS OF PAYMENT:
The unit price bid per ton of quick-set slurry shall include the cost of all materials and equipment necessary to perform the work. All necessary pavement cleaning, joint sealing, crack filling,

pavement markings removal and utility grade adjustments will be paid for under their appropriate items.

Payment will be made under:

Item No.	Item Pay	Unit
Item E414.02030118	Quick-set slurry, Type II, F3	Ton
Item E414.03030118	Quick-set slurry, Type III, F3	Ton

SECTION 415 – PAVER PLACED SURFACE TREATMENT

415.0X0F0218 PAVER PLACED SURFACE TREATMENT

DESCRIPTION

This work shall consist of providing and placing ITEM 415.0X0F0218 - PAVER PLACED SURFACE TREATMENT – CONVENTIONAL in accordance with the contract documents and as directed by the Engineer. Paver Placed Surface Treatment consists of a polymer modified asphalt emulsion coat followed immediately with a thin hot mix asphalt wearing course.

MATERIALS

Mix Designs: Formulate a job mix formula that satisfies the design limits listed in Table 1-Mixture Requirements and submit it to the Regional Materials Engineer for approval. The use of recycled asphalt pavement in these mixes is prohibited

TABLE 1 - MIXTURE REQUIREMENTS(1)

	Type A		Type B		Type C	
Sieve Sizes (in)	Design Limits (% Passing)	Production Tolerance (%)	Design Limits (% Passing)	Production Tolerance (%)	Design Limits (%) Passing	Production Tolerance (%)
3/4					100	
1/2			100		85 - 100	± 4
3/8	100		85 - 100	± 4	60 - 90	± 4
1/4	85 - 100	± 4	30 - 55	± 4	30 – 55	± 4
No. 4	40 - 80	± 3	24 - 45	± 3	24 – 45	± 3
No. 8	21 - 45	± 3	21 - 37	± 3	21 - 37	± 3
No. 16	16 - 32	± 3	16 - 26	± 3	16 - 26	± 3
No. 30	12 - 25	± 2	12 - 20	± 2	12 - 20	± 2
No. 50	8 - 16	± 2	8 - 16	± 2	8 - 16	± 2
No. 100	5 – 10	± 2	5 – 10	± 2	5 – 10	± 2
No. 200	5 – 7	± 2	5 – 7	± 2	5 – 7	± 2
% PG Binder	4.9 - 5.4		4.8 - 5.2		4.8 - 5.2	

(1) All aggregate percentages are based on total mass of aggregate.

Aggregate: §703-02 except as modified herein. Use coarse aggregate with a minimum coarse aggregate angularity (CAA) of 90% one fractured face and 85% two fractured faces.

1. Coarse Aggregate Type F1 Conditions.

a. Sandstone, granite, chert, traprock, ore tailings, slag or other similar non-carbonate materials.
b. Gravel, a natural, or a manufactured blend of the following types of materials: limestone, dolomite, gravel, sandstone, granite, chert, traprock, ore tailings, slag, or other similar materials meeting the following requirements:

Type A Mixes – Noncarbonate plus No. 8 particles must comprise a minimum of 30.0% of the total aggregate (by weight with adjustments to equivalent volumes for materials of different specific gravities). Additionally, a minimum of 90.0% of plus No. 4 particles must be noncarbonate.

Type B Mixes – Noncarbonate plus 1/8 inch particles must comprise a minimum of 30.0% of the total aggregate (by weight with adjustments to equivalent volumes for materials of different specific gravities). Additionally, a minimum of 90.0% of plus No. 4 particles must be noncarbonate.

Type C Mixes – Noncarbonate plus 1/8 inch particles must comprise a minimum of 30.0% of the total aggregate (by weight with adjustments to equivalent volumes for materials of different specific gravities). Additionally, a minimum of 90.0% of plus 3/8 inch particles must be noncarbonate.

2. Coarse Aggregate Type F2 Conditions.

a. Limestone, dolomite, or a blend of the two having an acid insoluble residue content of not less than 20.0%.
b. Sandstone, granite, chert, traprock, ore tailings, slag or other similar non-carbonate materials.
c. Gravel, or a natural, or manufactured blend of the following types of materials: limestone, dolomite, gravel, sandstone, granite, chert, traprock, ore tailings, slag, or other similar materials, meeting the following requirements:

Type A Mixes – Noncarbonate plus No. 8 particles must comprise a minimum of 10.0% of the total aggregate (by weight with adjustments to equivalent volumes for materials of different specific gravities). Additionally, a minimum of 20.0% of plus No. 4 particles must be noncarbonate.

Type B Mixes – Noncarbonate plus 1/8 inch particles must comprise a minimum of 10.0% of the total aggregate (by weight with adjustments to equivalent volumes for materials of different specific gravities). Additionally, a minimum of 20.0% of plus No. 4 particles must be noncarbonate.

Type C Mixes – Noncarbonate plus 1/8 inch particles must comprise a minimum of 10.0% of the total aggregate (by weight with adjustments to equivalent volumes for materials of different specific gravities). Additionally, a minimum of 20.0% of plus 3/8 inch particles must be noncarbonate.

3. Coarse Aggregate Type F3 Conditions.

a. Limestone or a blend of limestone and dolomite having an acid insoluble residue content of not less than 20.0%.
b. Dolomite.
c. Sandstone, granite, chert, traprock, ore tailings, slag or other similar non-carbonate materials.
d. Gravel, a natural, or a manufactured blend of the following types of materials: limestone, dolomite, gravel, sandstone, granite, chert, traprock, ore tailings, slag, or other similar materials, meeting the following requirements:

Type A Mixes – Noncarbonate plus No. 8 particles must comprise a minimum of 10.0% of the total aggregate (by weight with adjustments to equivalent volumes for materials of different specific gravities). Additionally, a minimum of 20.0% of plus No. 4 particles must be noncarbonate.

Type B Mixes – Noncarbonate plus 1/8 inch particles must comprise a minimum of 10.0% of the total aggregate (by weight with adjustments to equivalent volumes for materials of different specific gravities). Additionally, a minimum of 20.0% of plus No. 4 inch particles must be noncarbonate.

Type C Mixes – Noncarbonate plus 1/8 inch particles must comprise a minimum of 10.0% of the total aggregate (by weight with adjustments to equivalent volumes for materials of different specific gravities). Additionally, a minimum of 20.0% of plus 3/8 inch particles must be noncarbonate.

4. Additional Coarse Aggregate Requirements. Coarse aggregate must also meet the requirements listed in Table 2 - Coarse Aggregate Properties.

TABLE 2 - COARSE AGGREGATE PROPERTIES

Property	Method	Requirement
Maximum Flakiness Index	NFP 18-561	20
Maximum Flakiness Coefficient (G/E)(1)	NFP 18-561	1.58
Maximum percent passing No. 30, %	AASHTO T 11, T 27	2

(1) Where G is the smallest square opening the particle can pass through and E is the smallest slot the particle can pass through.

5. Fine Aggregate. Use 100% screenings, free from deleterious materials and manufactured from sources of stone or slag meeting the requirements of §703-02, Coarse Aggregate, having a minimum sand equivalent of 60%, as determined by AASHTO T 176, “Plastic Fines in Graded Aggregates and Soils by Use of the Sand Equivalent Test.”

Mineral Filler: § 703-08, Mineral Filler.

Asphalt Binder: The Performance Graded Binder (PG Binder) grades are listed in Table 3, PG Binder Selection. Appropriate binder grade shall be selected based on the project location. The PG Binder shall meet the requirements of AASHTO M 332, Standard Specification for Performance Graded Asphalt Binder using Multiple Stress Creep Recovery (MSCR).

Table 3 - PG Binder Selection

Location	Location by Counties	PG Binder Grades[1] (Material Designation)
Upstate	All Other Counties Not Listed Under Downstate	64S-22 (702-64S22)
Downstate	Orange, Putnam, Rockland, Westchester, Nassau, Suffolk Counties and City of New York	64H-22 (702-64H22)

Notes:
1. Use these grades unless directed otherwise by the contract documents.

In addition, the PG Binder shall meet the following requirements:

Upstate. Use of polyphosphoric acid (PPA) to modify PG binder properties is prohibited. This prohibition also applies to the use of PPA as a cross-linking agent for polymer modification.

Downstate. Polyphosphoric (PPA) is the only type of acid allowed when PG binders are modified using acid. The use of PPA modified PG binder is prohibited for mixtures containing limestone, limestone as an aggregate blend component, limestone as a constituent in crushed gravel aggregate, or recycled asphalt pavement (RAP) that includes any limestone. This prohibition also applies to the use of PPA as a cross-linking agent for polymer modification.

Other PG Binder grades may be used with a prior approval by the Director of the Materials Bureau.

Polymer Modified Asphalt Emulsion: §702 - Bituminous Materials, 702- 4001P.

EQUIPMENT:

1. Paving. Use a self-priming paver capable of spraying the polymer modified asphalt emulsion, applying the hot mix asphalt overlay and smoothing the surface of the mat in one pass. The self-priming paver must be equipped with a receiving hopper, feed conveyor, emulsion storage tank, metered high-pressure emulsion spray bar, and a variable width, heated screed. The screed must have the ability to be crowned at the center both positively and negatively and have vertically adjustable extensions to accommodate the desired pavement profile.

2. Compaction. Use steel wheeled double drum rollers weighing at least 10 tons, equipped with functioning water systems and scrapers to prevent material from adhering to the roller drums.

3. Hauling. Use vehicles that meet § 402-3.03, Hauling Equipment, to transport the hot mix asphalt wearing course.

CONSTRUCTION DETAILS:

Hot Mix Production: The requirements of §401-3, Construction Details apply with the following modifications. If a test value for any sieve varies from the target value by more than the production tolerance given in Table 1 - Mixture Requirements, the Regional Materials Engineer will evaluate the material represented by that test to determine acceptability. A delivery ticket meeting the requirements of §401-4, Method of Measurement shall accompany each vehicle supplying Hot Mix Asphalt.

Surface Preparation: Perform all surface preparation prior to applying the wearing course.

1. Thoroughly clean the entire area to be overlaid. The surface of the area to be overlaid must be free of dirt, oil, and other foreign materials. A damp surface is acceptable if favorable weather conditions are expected during paving operations.

2. Cover all manhole covers, water boxes, catch basins, and other such utility structures within the area to be paved with plastic, building felt, or other material approved by the Engineer. Reference each for location and adjustment after paving. Remove the covers each day.

3. Abrade pavement markings in accordance with contract documents.

Joint Adhesive. Apply joint adhesive to all pavement edges in accordance with Section 418Asphalt Pavement Joint Adhesive prior to placing the asphalt mixture in order to provide bonding with the newly laid pavement.

Application: The requirements of § 402-3.01, Weather and Seasonal Limitations apply.

1. Apply the polymer modified asphalt emulsion at a temperature of 140 - 175ºF. Provide a uniform application across the entire width to be overlaid, at a rate of 0.15 - 0.25 gallons/square yard. Continuously monitor the spray rate.
2. No equipment shall come in contact with the polymer modified asphalt emulsion before the hot mix asphalt wearing course is applied.
3. Immediately after applying the polymer modified asphalt emulsion, apply the hot mix asphalt overlay across the full width of the emulsion at a temperature of 290 - 325ºF.
4. Apply the hot mix asphalt at a rate within the appropriate application range, listed in Table 4 – Wearing Course Application Ranges. The finished treatment has a minimum thickness of 1/2 inch for Type A, and 5/8 inch for Type B and Type C.
5. Paver Placed Surface Treatment shall not be applied to freshly placed concrete surfaces. Concrete surfaces must cure for a minimum of 90 days before being overlaid.

TABLE 4 - WEARING COURSE APPLICATION RANGES

Type	Minimum (lb/yd^2)	Maximum (lb/yd^2)
A	60	70
B	65	75
C	70	80

Compaction: Begin compaction immediately after application of the wearing course. Use a minimum of two static passes. Avoid using vibratory compaction. The roller(s) will not be allowed to stop on the freshly placed wearing course. Use an adequate number of rollers to complete compaction before the pavement temperature falls below 185°F. Protect the wearing course from traffic until the rolling operation is complete and the material has cooled sufficiently to resist damage.

Paver and Equipment Cleaning: The requirement of § 402-3.12, Paver and Equipment Cleaning apply.

Coring: The Engineer will require four cores from each section of compacted paver placed surface treatment applied below the appropriate minimum application rate listed in Table 4. The Engineer will randomly locate the four core locations. The Engineer will determine the thickness of the paver placed surface treatment and reject sections not meeting the required minimum thickness.

The Engineer may require four cores from each section of compacted paver placed surface treatment exceeding the appropriate maximum application rate, listed in Table 4, to determine the thickness of the paver placed surface treatment. The Engineer may stop paving operations immediately if the over application of the paver placed surface treatment will create problems, such as, but not limited to, reducing overhead clearance, curb reveal or guiderail height. The Engineer and Contractor will agree upon and document a maximum application rate and

maximum thickness to prevent problems created by over applying the paver placed surface treatment. The Engineer will reject any additional paver placed surface treatment sections determined to exceed the maximum agreed upon application rate and thickness.

Coring is not required for sections paved within the appropriate application range, listed in Table 4 - Wearing Course Application Ranges.

All labor, materials and equipment associated with required pavement coring, including maintenance and protection of traffic and filling core holes, will be done at the Contractor's expense.

METHOD OF MEASUREMENT
This work will be measured as the number of tons of Paver Placed Surface Treatment satisfactorily placed.

BASIS OF PAYMENT
Allowable **Deductions** per square yard if municipality elects to supplement operation with their equipment and labor.

Municipality provides and operates equipment – Item E415.04010218
Municipality transports material from plant to equipment – Item E415.04020218
Municipality provides Maintenance and Protection of Traffic – Item E415.04030218

Payment will be made under:

Item No.	Item	Pay Unit
E415.01010218	Paver Placed Surface Treatment Conventional Type A, F2 5,000 to 15,000 SY	Square Yards
E415.01020218	Paver Placed Surface Treatment Conventional Type A, F2 15,001 to 30,000 SY	Square Yards
E415.01030218	Paver Placed Surface Treatment Conventional Type A, F2 over 30,000 SY	Square Yards
E415.02010218	Paver Placed Surface Treatment Conventional Type B, F2 5,000 to 15,000 SY	Square Yards
E415.02020218	Paver Placed Surface Treatment Conventional Type B, F2 15,001 to 30,000 SY	Square Yards
E415.02030218	Paver Placed Surface Treatment Conventional Type B, F2 over 30,000 SY	Square Yards

SECTION 415 – PAVER PLACED SURFACE TREATMENT

Item No.	Item	Pay Unit
E415.03010218	Paver Placed Surface Treatment Conventional Type C, F1 over 30,000 SY	Square Yards
E415.03020218	Paver Placed Surface Treatment Conventional Type C, F2 over 30,000 SY	Square Yards
E415.03030218	Paver Placed Surface Treatment Conventional Type C, F3 over 30,000 SY	Square Yards
E415.04010218	Municipality provides and operates equipment	Square Yards
E415.04020218	Municipality transports material from plant to equipment	Square Yards
E415.04030218	Municipality provides Maintenance and Protection of Traffic (deduction)	Square Yard
E415.04040218	Warm Mix Additive usage	Square Yard
E415.04050218	Milling of rebates for 2’ wide	Foot
E415.04060218	Abrading of Pavement Lines/Stripes (4” wide)	Foot
E415.04070218	Abrading of Pavement Symbols	Each

SECTION 415 – PAVER PLACED SURFACE TREATMENT

415.1X0F0218 PAVER PLACED SURFACE TREATMENT - MODIFIED

DESCRIPTION

This work shall consist of providing and placing ITEM 415.1X0F0218 – PAVER PLACED SURFACE TREATMENT – MODIFIED in accordance with the contract documents and as directed by the Engineer. Paver Placed Surface Treatment – Modified consists of a polymer modified asphalt emulsion coat followed immediately with a thin hot mix asphalt wearing course.

MATERIALS

Mix Designs: Formulate a job mix formula that satisfies the design limits listed in Table 1-Mixture Requirements and submit it to the Regional Materials Engineer for approval. The use of recycled asphalt pavement in these mixes is prohibited.

TABLE 1 - MIXTURE REQUIREMENTS(1)

	Type A		Type B		Type C	
Sieve Sizes (in)	Design Limits (% Passing)	Production Tolerance (%)	Design Limits (% Passing)	Production Tolerance (%)	Design Limits (%) Passing	Production Tolerance (%)
3/4					100	
1/2			100		85 - 100	± 4
3/8	100		85 - 100	± 4	60 - 90	± 4
1/4	85 - 100	± 4	30 - 55	± 4	30 – 55	± 4
No. 4	40 - 80	± 3	24 - 45	± 3	24 – 45	± 3
No. 8	21 - 45	± 3	21 - 37	± 3	21 - 37	± 3
No. 16	16 - 32	± 3	16 - 26	± 3	16 - 26	± 3
No. 30	12 - 25	± 2	12 - 20	± 2	12 - 20	± 2
No. 50	8 - 16	± 2	8 - 16	± 2	8 - 16	± 2
No. 100	5 – 10	± 2	5 – 10	± 2	5 – 10	± 2
No. 200	5 – 7	± 2	5 – 7	± 2	5 – 7	± 2
% PG Binder	4.9 – 5.4		4.8 – 5.2		4.8 – 5.2	

(1) All aggregate percentages are based on total mass of aggregate.

Aggregate: §703-02 except as modified herein. Use coarse aggregate with a minimum coarse aggregate angularity (CAA) of 90% one fractured face and 85% two fractured faces.

1. Coarse Aggregate Type F1 Conditions.

a. Sandstone, granite, chert, traprock, ore tailings, slag or other similar non-carbonate materials.
b. Gravel, a natural, or a manufactured blend of the following types of materials: limestone, dolomite, gravel, sandstone, granite, chert, traprock, ore tailings, slag, or other similar materials meeting the following requirements:

Type A Mixes – Noncarbonate plus No. 8 particles must comprise a minimum of 30.0% of the total aggregate (by weight with adjustments to equivalent volumes

for materials of different specific gravities). Additionally, a minimum of 90.0% of plus No. 4 particles must be noncarbonate.

Type B Mixes – Noncarbonate plus 1/8 inch particles must comprise a minimum of 30.0% of the total aggregate (by weight with adjustments to equivalent volumes for materials of different specific gravities). Additionally, a minimum of 90.0% of plus No. 4 particles must be noncarbonate.

Type C Mixes – Noncarbonate plus 1/8 inch particles must comprise a minimum of 30.0% of the total aggregate (by weight with adjustments to equivalent volumes for materials of different specific gravities). Additionally, a minimum of 90.0% of plus 3/8 inch particles must be noncarbonate.

2. Coarse Aggregate Type F2 Conditions.

a. Limestone, dolomite, or a blend of the two having an acid insoluble residue content of not less than 20.0%.
b. Sandstone, granite, chert, traprock, ore tailings, slag or other similar non-carbonate materials.
c. Gravel, or a natural, or manufactured blend of the following types of materials: limestone, dolomite, gravel, sandstone, granite, chert, traprock, ore tailings, slag, or other similar materials, meeting the following requirements:

Type A Mixes – Noncarbonate plus No. 8 particles must comprise a minimum of 30.0% of the total aggregate (by weight with adjustments to equivalent volumes for materials of different specific gravities). Additionally, a minimum of 90.0% of plus No. 4 particles must be noncarbonate.

Type B Mixes – Noncarbonate plus 1/8 inch particles must comprise a minimum of 10.0% of the total aggregate (by weight with adjustments to equivalent volumes for materials of different specific gravities). Additionally, a minimum of 20.0% of plus No. 4 particles must be noncarbonate.

Type C Mixes – Noncarbonate plus 1/8 inch particles must comprise a minimum of 10.0% of the total aggregate (by weight with adjustments to equivalent volumes for materials of different specific gravities). Additionally, a minimum of 20.0% of plus 3/8 inch particles must be noncarbonate.

3. Coarse Aggregate Type F3 Conditions.

a. Limestone or a blend of limestone and dolomite having an acid insoluble residue content of not less than 20.0%.
b. Dolomite.
c. Sandstone, granite, chert, traprock, ore tailings, slag or other similar non-carbonate materials.
d. Gravel, a natural, or a manufactured blend of the following types of materials: limestone, dolomite, gravel, sandstone, granite, chert, traprock, ore tailings, slag, or other similar materials, meeting the following requirements:

Type A Mixes – Noncarbonate plus No. 8 particles must comprise a minimum of 10.0% of the total aggregate (by weight with adjustments to equivalent volumes

for materials of different specific gravities). Additionally, a minimum of 20.0% of plus No. 4 particles must be noncarbonate.

Type B Mixes – Noncarbonate plus 1/8 inch particles must comprise a minimum of 10.0% of the total aggregate (by weight with adjustments to equivalent volumes for materials of different specific gravities). Additionally, a minimum of 20.0% of plus No. 4 inch particles must be noncarbonate.

Type C Mixes – Noncarbonate plus 1/8 inch particles must comprise a minimum of 10.0% of the total aggregate (by weight with adjustments to equivalent volumes for materials of different specific gravities). Additionally, a minimum of 20.0% of plus 3/8 inch particles must be noncarbonate.

4. Additional Coarse Aggregate Requirements. Coarse aggregate must also meet the requirements listed in Table 2 - Coarse Aggregate Properties.

TABLE 2 - COARSE AGGREGATE PROPERTIES

Property	Method	Requirement
Maximum Flakiness Index	NFP 18-561	20
Maximum Flakiness Coefficient (G/E)(1)	NFP 18-561	1.58
Maximum percent passing No. 30, %	AASHTO T 11, T 27	2

(1) Where G is the smallest square opening the particle can pass through and E is the smallest slot the particle can pass through.

5. Fine Aggregate. Use 100% screenings, free from deleterious materials and manufactured from sources of stone or slag meeting the requirements of §703-02, Coarse Aggregate, having a minimum sand equivalent of 60%, as determined by AASHTO T 176, “Plastic Fines in Graded Aggregates and Soils by Use of the Sand Equivalent Test.”

Mineral Filler: § 703-08, Mineral Filler.

Performance Graded Binder: The Performance Graded Binder (PG Binder) grades are listed in Table 3, PG Binder Selection. Appropriate binder grade shall be selected based on the project location. The PG binder shall be modified with either elastomeric polymer or terminal blend crumb rubber for the production of HMA mixture. The modified PG Binder shall meet the requirements of AASHTO M 332, Standard Specification for Performance Graded Asphalt Binder using Multiple Stress Creep Recovery (MSCR). In addition, the binder grade must also meet the elastomeric properties as indicated by one of the following:

For $J_{nr3.2} \geq 0.1$, $Z = \%R_{3.2} - 29.371 * J_{nr3.2}^{-0.2633}$
And Z must be greater than 0

For $J_{nr3.2} < 0.1$, $\%R_{3.2}$ must be greater than 55%

Table 3 - PG Binder Selection

Location	Location by Counties	PG Binder Grades (Material Designation)
Upstate[1]	All Other Counties Not Listed Under Downstate	64V-22 (702-64V22)
Downstate	Orange, Putnam, Rockland, Westchester, Nassau, Suffolk Counties and City of New York	64E-22 (702-64E22)

NOTES: For high volume roadways in Upstate Counties, PG 64E-22 may be specified with the concurrence of the Regional Materials Engineer. "High Volume" is defined as 2 or 3 lane highways with design year two-way AADT over 8,000, or for more than three lanes, with two-way AADT over 13,000.

When terminal blend CRM PG binder is used, the following shall apply:

- Crumb rubber particles shall be finer than #30 sieve size.
- The CRM PG binder shall be storage-stable and homogeneous.
- The Dynamic Shear Rheometer (DSR) shall be set at 2-mm gap.
- The CRM PG binder shall be 99% free of particles retained on the 600µm sieve as tested in accordance with Section 5.4 of MP 19.

In addition, the PG Binder shall meet the following requirements:

Upstate. Use of polyphosphoric acid (PPA) to modify PG binder properties is prohibited. This prohibition also applies to the use of PPA as a cross-linking agent for polymer modification.

Downstate. Polyphosphoric (PPA) is the only type of acid allowed when PG binders are modified using acid. The use of PPA modified PG binder is prohibited for mixtures containing limestone, limestone as an aggregate blend component, limestone as a constituent in crushed gravel aggregate, or recycled asphalt pavement (RAP) that includes any limestone. This prohibition also applies to the use of PPA as a cross-linking agent for polymer modification.

Other modified PG Binder grades may be used with a prior approval by the Director of the Materials Bureau.

Polymer Modified Asphalt Emulsion: §702 - Bituminous Materials, 702- 4001P.

EQUIPMENT:

1. **Paving.** Use a self-priming paver capable of spraying the polymer modified asphalt emulsion, applying the hot mix asphalt overlay and smoothing the surface of the mat in one pass. The self-priming paver must be equipped with a receiving hopper, feed conveyor, emulsion storage tank, metered high-pressure emulsion spray bar, and a variable width, heated screed. The screed must have the ability to be crowned at the center both positively and negatively and have vertically adjustable extensions to accommodate the desired pavement profile.

2. **Compaction.** Use steel wheeled double drum rollers weighing at least 10 tons, equipped with functioning water systems and scrapers to prevent material from adhering to the roller drums.
3. **Hauling.** Use vehicles that meet § 402-3.03, Hauling Equipment, to transport the hot mix asphalt wearing course.

CONSTRUCTION DETAILS:

Hot Mix Production: The requirements of §401-3, Construction Details apply with the following modifications. If a test value for any sieve varies from the target value by more than the production tolerance given in Table 1 - Mixture Requirements, the Regional Materials Engineer will evaluate the material represented by that test to determine acceptability.

A delivery ticket meeting the requirements of §401-4, Method of Measurement shall accompany each vehicle supplying Hot Mix Asphalt.

Surface Preparation: Perform all surface preparation prior to applying the wearing course.

1. Thoroughly clean the entire area to be overlaid. The surface of the area to be overlaid must be free of dirt, oil, and other foreign materials. A damp surface is acceptable if favorable weather conditions are expected during paving operations.
2. Cover all manhole covers, water boxes, catch basins, and other such utility structures within the area to be paved with plastic, building felt, or other material approved by the Engineer. Reference each for location and adjustment after paving. Remove the covers each day.
3. Abrade pavement markings in accordance with contract documents.

Joint Adhesive. Apply joint adhesive to all pavement edges in accordance with Section 418 Asphalt Pavement Joint Adhesive prior to placing the asphalt mixture in order to provide bonding with the newly laid pavement.

Application: The requirements of § 402-3.01, Weather and Seasonal Limitations apply.

1. Apply the polymer modified asphalt emulsion at a temperature of 140 - 175ºF. Provide a uniform application across the entire width to be overlaid, at a rate of 0.15 - 0.25 gallons/square yard. Continuously monitor the spray rate.
2. No equipment shall come in contact with the polymer modified asphalt emulsion before the hot mix asphalt wearing course is applied.
3. Immediately after applying the polymer modified asphalt emulsion, apply the hot mix asphalt overlay across the full width of the emulsion at a temperature of 290 - 325ºF.
4. Apply the hot mix asphalt at a rate within the appropriate application range, listed in Table 4 – Wearing Course Application Ranges. The finished treatment has a minimum thickness of 1/2 inch for Type A, and 5/8 inch for Type B and Type C.
5. Modified Paver Placed Surface Treatment shall not be applied to freshly placed concrete surfaces. Concrete surfaces must cure for a minimum of 90 days before being overlaid.

TABLE 4 - WEARING COURSE APPLICATION RANGES

Type	Minimum (lb/yd^2)	Maximum (lb/yd^2)
A	60	70
B	65	75
C	70	80

Compaction: Begin compaction immediately after application of the wearing course. Use a minimum of two static passes. Avoid using vibratory compaction. The roller(s) will not be allowed to stop on the freshly placed wearing course. Use an adequate number of rollers to complete compaction before the pavement temperature falls below 185°F. Protect the wearing course from traffic until the rolling operation is complete and the material has cooled sufficiently to resist damage.

Paver and Equipment Cleaning: The requirement of § 402-3.12, Paver and Equipment Cleaning apply.

Coring: The Engineer will require four cores from each section of compacted paver placed surface treatment applied below the appropriate minimum application rate listed in Table 4. The Engineer will randomly locate the four core locations. The Engineer will determine the thickness of the paver placed surface treatment and reject sections not meeting the required minimum thickness. The Engineer may require four cores from each section of compacted paver placed surface treatment exceeding the appropriate maximum application rate, listed in Table 4, to determine the thickness of the paver placed surface treatment.

The Engineer may stop paving operations immediately if the over application of the paver placed surface treatment will create problems, such as, but not limited to, reducing overhead clearance, curb reveal or guiderail height. The Engineer and Contractor will agree upon and document a maximum application rate and maximum thickness to prevent problems created by over applying the paver placed surface treatment. The Engineer will reject any additional paver placed surface treatment sections determined to exceed the maximum agreed upon application rate and thickness.

Coring is not required for sections paved within the appropriate application range, listed in Table 4 - Wearing Course Application Ranges.

All labor, materials and equipment associated with required pavement coring, including maintenance and protection of traffic and filling core holes, will be done at the Contractor's expense.

METHOD OF MEASUREMENT
This work will be measured as the number of tons of Paver Placed Surface Treatment – Modified satisfactorily placed.

BASIS OF PAYMENT
Allowable **Deductions** per square yard if municipality elects to supplement operation with their equipment and labor.

Municipality provides and operates equipment – Item E415.14010218

Municipality transports material from plant to equipment – Item E415.14020218
Municipality provides Maintenance and Protection of Traffic – Item E415.14030218

Payment will be made under:

Item No.	Item	Pay Unit
E415.11010218	Paver Placed Surface Treatment Modified Type A, F2 5,000 to 15,000 SY	Square Yard
E415.11020218	Paver Placed Surface Treatment Modified Type A, F2 15,001 to 30,000 SY	Square Yard
E415.11030218	Paver Placed Surface Treatment Modified Type A, F2 over 30,000 SY	Square Yard
E415.12010218	Paver Placed Surface Treatment Modified Type B, F2 5,000 to 15,000 SY	Square Yard
E415.12020218	Paver Placed Surface Treatment Modified Type B, F2 15,001 to 30,000 SY	Square Yard
E415.12030218	Paver Placed Surface Treatment Modified Type B, F2 over 30,000 SY	Square Yard
E415.13010218	Paver Placed Surface Treatment Modified Type C, F2 5,000 to 15,000 SY	Square Yard
E415.13020218	Paver Placed Surface Treatment Modified Type C, F2 15,001 to 30,000 SY	Square Yard
E415.13030218	Paver Placed Surface Treatment Modified Type C, F2 over 30,000 SY	Square Yard
E415.14010218	Municipality provides and operates equipment	Square Yard
E415.14020218	Municipality transports material from plant to equipment	Square Yard
E415.14030218	Municipality provides Maintenance and Protection of Traffic (deduction)	Square Yard
E415.14040218	Warm Mix Additive usage	Square Yard

SECTION 416 – COLD RECYCLING

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.

BASIS OF PAYMENT:

Payment will be made under:

Item No.	Item	Pay Unit
E416.993001	Cold In-Place Recycling of Bituminous Pavement, Type II (Under 7,500 SY at 1 – 3” depth)	Square Yard
E416.993002	Cold In-Place Recycling of Bituminous Pavement, Type II (Under 7,500 SY, each additional 1” over 3”)	Square Yard
E416.993003	Cold In-Place Recycling of Bituminous Pavement, Type II (Over 7,500 SY at 1 – 3” depth)	Square Yard
E416.993004	Cold In-Place Recycling of Bituminous Pavement, Type II (Over 7,500 SY, each additional 1” over 3”)	Square Yard
E416.993005	HFMS-2	Gallon
E416.993006	HFMS-2 with Polymer	Gallon
E416.993007	HFMS-2 with Rejuvenator	Gallon
E416.993008	HFFA-1	Gallon
E416.993009	HFFA-2	Gallon
E416.9930010	Maintenance & Protection of Traffic	Square Yard
E416.9930011	Aggregate delivered to Contractor’s Equipment	Ton
E416.9930012	Hauling Trucks (if Required)	Hour
E416.9930013	Fog Seal Material – delivered and applied	Gallon

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.

Cold In-Place Recycling of Bituminous Pavement – Full Depth reclamation Type III Pulverize ONLY
The low bid for each respective depth of cut will be determined from line E403.994006 and E403.994007, which is the sum of the square yard price for pulverizing (E403.994003 or E403.994004) plus the cost of an application of Calcium Chloride Thirty-three (33%) percent solution at the rate of one gallon per square yard (E403.994005).

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.

Cold In-Place Recycling of Bituminous Pavement – Full Depth reclamation Type III with Emulsified Asphalt
The low bid for each respective depth of cut will be determined from line E403.9940014 and E403.9940015, which is the sum of the square yard price for pulverizing (E403.9940011 or E403.9940012) plus the cost of an application of Emulsified Asphalt at the rate of one gallon per square yard (E403.9940013).

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.

Payment will be made under:

Item No.	Item	Pay Unit
E416.994001	Cold In-Place Recycling of Bituminous Pavement, Type III Pulverize ONLY – Under 6”	Square Yard
E416.994002	Cold In-Place Recycling of Bituminous Pavement, Type III Pulverize ONLY – Over 6”	Square Yard
E416.994003	Cold In-Place Recycling of Bituminous Pavement, Type III Pulverize ONLY – 33% Calcium Chloride Solution, Under 6”	Square Yard
E416.994004	Cold In-Place Recycling of Bituminous Pavement, Type III Pulverize ONLY – 33% Calcium Chloride Solution, Over 6”	Square Yard

E416.994005	33% Calcium Chloride Solution - delivered and added to the mix	Gallon
E416.994006	Cold In-Place Recycling of Bituminous Pavement, Type III Pulverize ONLY – Under 6” with 1 Gallon of 33% Calcium Chloride Solution delivered and added to the mix	Square Yard
E416.994007	Cold In-Place Recycling of Bituminous Pavement, Type III Pulverize ONLY – Over 6” with 1 Gallon of 33% Calcium Chloride Solution delivered and added to the mix	Square Yard
E416.994008	Reduction for Municipality Grading and Rolling, Under 6” Pulverize ONLY –	Square Yard
E416.994009	Reduction for Municipality Grading and Rolling, Over 6” Pulverize ONLY –	Square Yard
E416.9940010	Virgin Aggregate: Pulverize ONLY	Ton
E416.9940011	Cold In-Place Recycling of Bituminous Pavement, Type III Emulsified Asphalt – Under 6”	Square Yard
E416.9940012	Cold In-Place Recycling of Bituminous Pavement, Type III Emulsified Asphalt – Over 6”	Square Yard
E416.9940013	Emulsified Asphalt delivered and added to the mix	Gallon
E416.9940014	Cold In-Place Recycling of Bituminous Pavement, Type III - Under 6” with 1 gallon of Emulsified Asphalt, delivered and added to the mix	Square Yard
E416.9940015	Cold In-Place Recycling of Bituminous Pavement, Type III - Over 6” with 1 gallon of Emulsified Asphalt, delivered and added to the mix over 6”	Square Yard
E416.9940016	Reduction for Municipality Grading and Rolling, Under 6” Emulsified Asphalt	Square Yard
E416.9940017	Reduction for Municipality Grading and Rolling, Over 6” Emulsified Asphalt	Square Yard

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.

SECTION 416 – COLD RECYCLING

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

Payment will be made under:

Item No.	Item	Pay Unit
E416.995001	Cold In-Place Recycling of Bituminous Pavement, Central Plant Recycling with High Float (Under 7,500 SY at 1 – 3” depth)	Square Yard
E416.995002	Cold In-Place Recycling of Bituminous Pavement, Central Plant Recycling with High Float (Under 7,500 SY, each additional 1”)	Square Yard
E416.995003	Cold In-Place Recycling of Bituminous Pavement, Central Plant Recycling with High Float (Over 7,500 SY at 1 – 3” depth)	SY
E416.995004	Cold In-Place Recycling of Bituminous Pavement, Central Plant Recycling with High Float (Over 7,500 SY, each additional 1”)	Square Yard
E416.995005	HFRA-1 (Includes pug mill and operator)	Gallon
E416.995006	HFRA-2 (Includes pug mill and operator)	Gallon
E416.995007	Paver with Operator	Day

E416.995008	Paver with Paving Crew	Day
E416.995009	Vibratory with operator	Day
E416.9950010	Structure for Adjusting Manholes (only applies to recycle project)	Structure
E407.0100012	Fog Seal (delivered and applied) Bid in Section 407	Gallon

SECTION 417 – HEATER SCARIFICATION OF HOT MIX ASPHALT (HMA) PAVEMENT

Section 417 of the NYSDOT Standard Specifications shall apply, except as modified herein.

CONSTRUCTION DETAILS.

Weather Limitations. Heater scarification is allowed only when the surface temperature is 45°F or above.

Surface Preparation. Remove mastic patches greater than 5 square feet. Remove other mastic patches as directed by the Engineer.

METHOD OF MEASUREMENT

Payment will be made under:

Item No.	Item	Pay Unit
E417.01	Heater Scarification	SY
E417.0101	Recycling Agent	Gallon

SECTION 490 - COLD MILLING

Section 490 of the NYSDOT Standard Specifications shall apply, except as modified herein.

DESCRIPTION.

Cold Micro-Milling. This work shall consist of the milling, shaping and removal of portions of existing surfaces by a cold micro-milling process, utilizing equipment and procedures meeting the requirements in this specification. The work shall consist of production cold micro-milling of Hot Mix Asphalt (HMA) pavement.

MATERIALS

Micro-Milling Equipment. The micro-milling machine shall be capable of removing travel lanes, including ramps, using a minimum of 12-foot wide milling drum. Milling shall be performed using a down cut drum. The Contractor shall be knowledgeable of equipment capabilities and is advised that the texture specified may not be obtainable at high production speeds. The drum shall have maximum tooth spacing of 0.20 inches (5 mm) and have a minimum of 3 wraps of teeth. The carbide cutting teeth shall be uniform in diameter with a uniform length, with a $\pm$0.02 inch tolerance. The tooth holder blocks shall be uniform and not cause variations in the cut radius greater than $\pm$0.02 inches. Small areas, tapered lanes, etc., may be milled by a smaller machine acceptable to the Engineer.

Disposal of Material. Material removed during the milling process, including foreign debris within or on the pavement, shall be in accordance with the following guidelines:

- Option A – All milled material shall be loaded onto the Owner's vehicle(s).
- Option B – All milled material shall be loaded onto the Contractor's trucks and shall become the property of the contractor.
- Option C – All milled material shall be loaded onto the Contractor's trucks and shall become property of the Contractor. All loose material shall be swept up by the Contractor with a mechanical broom. All pavement areas along curbs, manholes, drop inlets, etc. is the responsibility of the Owner.
- Option D – All milled material shall be loaded onto the Contractor's trucks and shall become property of the Contractor. All loose material shall be swept up by the Contractor with a mechanical broom. All pavement areas along curbs, manholes, drop inlets, etc. is the responsibility of the Contractor.

All materials removed by Micro-Milling shall be in accordance with Option D above.

CONSTRUCTION DETAILS.

Cold Micro-Milling.
The advancing ground speed of the milling operations shall be a function of the RPMs of the milling drum such that the full uniform texture pattern is achieved. The speed of milling operations, in feet per minute, shall be limited to 2/3 times the drum RPMs. Any proposal to advance faster that this speed shall be discussed with the Engineer and proven on a test strip, and result in no repeated inconsistencies in texture during production milling. If these

inconsistencies are present, the machine speed will be reduced to the recommended speed as stated above.

The milled area shall include the left lane/shoulder joint, the right lane/shoulder joint and everything in between. The cut shall be no deeper than ¾" or ½ the thickness of the existing overlay, whichever is less. It shall also be no deeper than necessary to texture the low points of wheel ruts.

The entire surface shall be textured, and the surface shall be substantially free from waves or irregularities, and shall not vary from a 10-foot straight edge by more than 1/8 inch. There can be occasional exceptions as determined by the engineer where the bottom of a wheel path and other low point defects may not be textured in order to maintain acceptable profile. The texture produced for the finished pavement shall be a uniform surface with longitudinal striations.

On the first day of milling, the texture and consistency of profile and cross slope of this test section will be evaluated by the Purchasing Agency. If the contractor proposes to mill at higher speeds than this specification allows, a test strip must be constructed to demonstrate the texture achieved will meet the specification limits.

Loading Options. The material removed during the milling process shall follow the Disposal of Materials indicated above.

Responsibilities.

It shall be the responsibility of the Owner to:

- Provide Maintenance and Protection of Traffic.
- Locate, mark, and be responsible for all utilities located within the right-of-way to be removed.
- Supply all water necessary for the operations.

It shall be the responsibility of the Contractor to:

- Provide equipment specified with all necessary teeth, fuel, and a minimum of two (2) skilled and experienced operators.

METHOD OF MEASUREMENT.

Cold Micro-Milling. The quantity shall be measured as the number of square yards of pavement surface micro-milled in accordance with this specification. In no case will a deduction in area be made for minor unmilled areas due to catch basins, manholes, transverse joints, or minor low areas in pavements from the measured surface area that has been milled. Minor unmilled or low areas are those areas of 10 square yards or less.

BASIS OF PAYMENT:
The unit price bid per square yard shall include the cost of all labor including a minimum of two (2) skilled and experienced operators; and equipment necessary to complete the milling, including the removal of pavement by other means, the removal and disposal of milled material, the removal and hauling of milled material to a designated storage area when indicated in the

contract documents and cleaning the resultant surface after milling. No payment will be made for additional cleaning that may be necessary just prior to placement of any overlaying pavement courses or tack coats. The cost of providing tack coats, overlay courses, and temporary pavement wedges around drainage structures, manholes, valve boxes, bridge abutments and beginning and ends of milled pavement shall be paid for separately.

Payment will be made under:

Item No.	Item	Pay Unit
E490.1001	Production Cold Milling of Bituminous Concrete Option A – Under 7,000 SY at 1” to 4” depth	SY
E490.1002	Production Cold Milling of Bituminous Concrete Option A – Under 7,000 SY, each additional 1” over 4”	SY
E490.1003	Production Cold Milling of Bituminous Concrete Option A – 7,000 to 14,000 SY at 1” to 4” depth	SY
E490.1004	Production Cold Milling of Bituminous Concrete Option A – 7,000 to 14,000 SY, each additional 1” over 4”	SY
E490.1005	Production Cold Milling of Bituminous Concrete Option A – Over 14,000 SY at 1” to 4” depth	SY
E490.1006	Production Cold Milling of Bituminous Concrete Option A – Over 14,000 SY, each additional 1” over 4”	SY
E490.1007	Production Cold Milling of Bituminous Concrete Option B – Under 7,000 SY at 1” to 4” depth	SY
E490.1008	Production Cold Milling of Bituminous Concrete Option B – Under 7,000 SY, each additional 1” over 4”	SY
E490.1009	Production Cold Milling of Bituminous Concrete Option B – 7,000 to 14,000 SY at 1” to 4” depth	SY
E490.1010	Production Cold Milling of Bituminous Concrete Option B – 7,000 to 14,000 SY, each additional 1” over 4”	SY
E490.1011	Production Cold Milling of Bituminous Concrete Option B – Over 14,000 SY at 1” to 4” depth	SY
E490.1012	Production Cold Milling of Bituminous Concrete Option B – Over 14,000 SY, each additional 1” over 4”	SY
E490.1013	Production Cold Milling of Bituminous Concrete Option C – Under 7,000 SY at 1” to 4” depth	SY
E490.1014	Production Cold Milling of Bituminous Concrete Option C – Under 7,000 SY, each additional 1” over 4”	SY
E490.1015	Production Cold Milling of Bituminous Concrete Option C – 7,000 to 14,000 SY at 1” to 4” depth	SY
E490.1016	Production Cold Milling of Bituminous Concrete Option C – 7,000 to14,000 SY, each additional 1” over 4”	SY
E490.1017	Production Cold Milling of Bituminous Concrete Option C – Over 14,000 SY at 1” to 4” depth	SY
E490.1018	Production Cold Milling of Bituminous Concrete Option C – Over 14,000 SY, each additional 1” over 4”	SY
E490.1019	Production Cold Milling of Bituminous Concrete Option D – Under 7,000 SY at 1” to 4” depth	SY

E490.1020	Production Cold Milling of Bituminous Concrete Option D – Under 7,000 SY, each additional 1” over 4”	SY
E490.1021	Production Cold Milling of Bituminous Concrete Option D – 7,000 to 14,000 SY at 1” to 4” depth	SY
E490.1022	Production Cold Milling of Bituminous Concrete Option D – 7,000 to14,000 SY, each additional 1” over 4”	SY
E490.1023	Production Cold Milling of Bituminous Concrete Option D – Over 14,000 SY at 1” to 4” depth	SY
E490.1024	Production Cold Milling of Bituminous Concrete Option D – Over 14,000 SY, each additional 1” over 4”	SY
E490.3001	Miscellaneous Cold Milling of Bituminous Concrete Under 250 SY at 0” to 5” depth (4’ wide)	SY
E490.3002	Miscellaneous Cold Milling of Bituminous Concrete Under 250 SY at 5” to 10” depth (4’ wide)	SY
E490.3003	Miscellaneous Cold Milling of Bituminous Concrete 250 - 500 SY at 0” to 5” depth (4’ wide)	SY
E490.3004	Miscellaneous Cold Milling of Bituminous Concrete 250 - 500 SY at 5” to 10” depth (4’ wide)	SY
E490.3005	Miscellaneous Cold Milling of Bituminous Concrete Over 500 SY at 0” to 5” depth (4’ wide)	SY
E490.3006	Miscellaneous Cold Milling of Bituminous Concrete Over 500 SY at 5” to 10” depth (4’ wide)	SY
E490.3007	Miscellaneous Cold Milling of Bituminous Concrete Under 250 SY at 0” to 5” depth (7’ wide)	SY
E490.3008	Miscellaneous Cold Milling of Bituminous Concrete Under 250 SY at 5” to 10” depth (7’ wide)	SY
E490.3009	Miscellaneous Cold Milling of Bituminous Concrete 250 - 500 SY at 0” to 5” depth (7’ wide)	SY
E490.3010	Miscellaneous Cold Milling of Bituminous Concrete 250 - 500 SY at 5” to 10” depth (7’ wide)	SY
E490.3011	Miscellaneous Cold Milling of Bituminous Concrete Over 500 SY at 0” to 5” depth (7’ wide)	SY
E490.3012	Miscellaneous Cold Milling of Bituminous Concrete Over 500 SY at 5” to 10” depth (7’ wide)	SY
E490.7050	Cold Micro-Milling (Under 5,000 SY)	SY
E490.7060	Cold Micro-Milling (5,001 to 10,000 SY)	SY
E490.7070	Cold Micro-Milling (10,001 to 20,000 SY)	SY
E490.7080	Cold Micro-Milling (Over 20,000 SY)	SY
E490.7090	Cold Micro-Milling – Maximum, Per Day	LS
E490.7095	Mobilization	LS

SECTION 555 – STRUCTURAL CONCRETE

Section 555 of the NYSDOT Standard Specifications shall apply, except as modified herein.

MATERIALS

All cement used shall be Portland Cement, Type 1 or 2 as specified in Section 701-01 Portland Cement.

CONSTRUCTION DETAILS

For Concrete Design Mix Guidelines, refer to 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.

Accelerator Treatment shall be Non-Chloride.

When requested, an approved Retarding Admixture shall be added in accordance with the manufacturer's recommendations.

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.

METHOD OF MEASUREMENT

Concrete for Structures. The quantity of concrete will be the number of cubic yards of concrete ordered and delivered to any location within Erie County.

Retarder Treatment. The quantity of retarder treatment shall be that per cubic yard of concrete per hour of retardation for the mix design used. It shall not be based on the volume of the actual retarder treatment admixture.

Accelerator Treatment. The quantity of accelerator treatment shall be that per cubic yard of concrete for the specified percentage of the cement weight (100 Weight of cement). It shall not be based on the volume of the actual retarder treatment admixture.

Heating Materials. The quantity for heating materials will be the number of cubic yards of concrete heated by the specified means.

Short Load Charges. The work will be the lump sum cost for concrete loads which are designated as short loads as specified.

Environmental Compliance Charge. The quantity for environmental compliance shall be based on the number of cubic yards of concrete which are in environmental compliance.

Waiting Time. Waiting time shall be measured in as the time in minutes per cubic yard of concrete at the project site in excess of 8 minutes from arrival. Waiting time shall not include travel time to or from the supplier's plant, regardless of distance. Waiting time shall not include time to discharge the concrete from the truck.

Additional Stops. The quantity for additional stops shall be the number of stops in excess of a single delivery location.

Conveyor Truck Rental. The quantity for the rental of a conveyor truck shall be the number of hours on site of the conveyor truck. The quantity measured shall not include transportation time to or from the project site. Transportation time between multiple locations will be included.

Conveyor Cleaning Charge. The work will be the lump sum cost for cleaning the conveyor after usage.

BASIS OF PAYMENT

Concrete for Structures. The unit price bid per cubic yard shall include the cost of furnishing all labor, materials, and equipment necessary to deliver the concrete to the project site. The cost does not include the installation of falsework, forms, finishing, curing, or repairs.

Retarder Treatment. The unit price bid shall include the cost of all labor, materials, and equipment necessary for the addition of the retarder treatment to the concrete mix.

Accelerator Treatment. The unit price bid shall include the cost of all labor, materials, and equipment necessary for the addition of the accelerator treatment to the concrete mix.

Heating Materials. The unit price bid shall include the cost of all labor, materials, and equipment necessary for the heating of the concrete mix or materials.

Short Load Charge. The lump sum price bid shall include the cost of all labor, materials, and equipment necessary for delivery of the concrete for the specified short load volume.

Environmental Compliance Charge. The unit price bid shall include the cost of all labor, materials, and equipment necessary for the environmental compliance of the concrete.

Waiting Time. The unit price bid shall include the cost of any waiting time for personnel and equipment at the project site which is in excess of 8 minutes from arrival on site.

Additional Stops. The unit price bid shall include the cost of all labor, materials, and equipment necessary for delivery of the concrete for at multiple stops.

Conveyor Truck Rental. The unit price bid shall include the cost of all labor, materials, and equipment necessary for the use of a conveyor truck.

Conveyor Cleaning Charge. The lump sum price bid shall include the cost of all labor, materials, and equipment necessary for cleaning of the conveyor.

SECTION 555 – STRUCTURAL CONCRETE

Payment will be made under:

Item No.	Item	Pay Unit
E555.0105	Concrete for Structures, Class A	Cubic Yard
E555.05	Concrete for Structures, Class F	Cubic Yard
E555.10	Concrete for Structures, Class D	Cubic Yard
E555.2001	Retarder Treatment, Class A Concrete	Cubic Yard per Hour
E555.2002	Retarder Treatment, Class F Concrete	Cubic Yard per Hour
E555.2101	Accelerator Treatment, Class A, 1%	Cubic Yard
E555.2102	Accelerator Treatment, Class A, 2%	Cubic Yard
E555.2103	Accelerator Treatment, Class F 1%	Cubic Yard
E555.2104	Accelerator Treatment, Class F, 2%	Cubic Yard
E555.2201	Heating Materials – Concrete, Hot Water	Cubic Yard
E555.2202	Heating Materials – Concrete, Steam	Cubic Yard
E555.2301	Short Load Charge, (1 CY to 1 ¾ CY)	Cubic Yard
E555.2302	Short Load Charge, (2 CY to 2 ¾ CY)	Cubic Yard
E555.2303	Short Load Charge, (3 CY to 3 ¾ CY)	Cubic Yard
E555.2304	Short Load Charge, (4 CY to 4 ¾ CY)	Cubic Yard
E555.2305	Short Load Charge, (5 CY to 5 ¾ CY)	Cubic Yard
E555.2306	Short Load Charge, (6 CY to 6 ¾ CY)	Cubic Yard
E555.2307	Short Load Charge, (7 CY and greater)	Cubic Yard
E555.24	Environmental Compliance Charge	Cubic Yard
E555.2601	Waiting Time	Cubic Yard per Minute
E555.2602	Additional Stops	Each
E555.2801	Conveyor Truck Rental	Hour
E555.2802	Conveyor Cleaning Charge	Lump Sum

SECTION 556 – REINFORCING STEEL FOR CONCRETE STRUCTURES

Section 556 of the NYSDOT Standard Specifications shall apply, except as modified herein.

METHOD OF MEASUREMENT:

Steel Fabric Reinforcement. The quantity of steel fabric reinforcement will be measured as the number square yard of the given reinforcement size furnished and delivered to the designated site. No installation is included.

BASIS OF PAYMENT:

Steel Fabric Reinforcement. The unit price bid shall include the cost of furnishing materials and delivery to the designated site

Payment will be made under:

Item No.	**Item**	**Pay Unit**
E556.010101	Uncoated Steel Fabric Reinforcement for Structures – 6x6 W2.9/W2.9 (6x6 6/6)	Square Yard
E556.010102	Uncoated Steel Fabric Reinforcement for Structures – 6x6 W1.4/W1.4 (6x6 10/10)	Square Yard

SECTION 568 – BRIDGE RAILING

Section 568 of the NYSDOT Standard Specifications and Special Specification for Item 568.70020002 shall apply.

Payment will be made under:

Item No.	Item	Pay Unit
568.50	Steel Bridge Railing (Two-Rail)	Foot
568.51	Steel Bridge Railing (Four-Rail)	Foot
568.52	Steel Bridge Railing (Five-Rail)	Foot
568.53	Steel Bridge Railing (Two-Rail) with Handrail	Foot
568.54	Steel Bridge Railing (Three-Rail)	Foot
568.70	Transition Bridge Railing	Foot
568.70020002	Resetting Transition Bridge Railing	Foot

SECTION 587 – BRIDGE RAILING RECONSTRUCTION

Section 587 of the NYSDOT Standard Specifications and Special Specifications for Items 587.05010015 and 587.75000002 shall apply.

Payment will be made under:

Item No.	Item	Pay Unit
587.01	Bridge Railing Removal and Disposal	Foot
587.05010015	Bridge Steel Bridge Railing Replacement Clamp	Each
587.1001	Box Beam Bridge Rail, One Rail	Foot
587.1002	Box Beam Bridge Rail, Two Rail	Foot
587.20	Thrie Beam Bridge Rail – Attachment to Existing Bridge Rail	Foot
587.21	Thrie Beam Bridge Rail – New Post Installation Mounted on Concrete Surfaces	Foot
587.22	Thrie Beam Bridge Rail – New Post Installation Mounted on Steel Surfaces	Foot
587.75000002	Remove and Replace Bridge Rail Tube	Foot

SECTION 603 – CULVERT AND STORM DRAINS

Section 603 of the NYSDOT Standard Specifications shall apply, except as modified herein.

MATERIALS:

Pipe specified as Polymer coated shall also meet the following requirements:

Corrugated steel pipe and pipe arches shall be pre-coated with P.V.C. plastiscol paint as per AASHTO M-246. Fabrication of the pipe and pipe arch shall be as per AASHTO M-245 and shall have 10 mils of coating on the interior of the pipe and 3 mils on the exterior (AASHTO M-246 Type B).

PVC (POLYVINYL CHLORIDE) GRAVITY SEWER PIPE AND FITTINGS:

A. Pipe:

1. For pipe diameters 4” thru 15", the polyvinyl chloride (PVC) pipe and fittings shall be manufactured in accordance with the latest ASTM Specifications D-333 "Type PSP Poly (Vinyl Chloride) (PVC) Sewer Pipe and Fittings or ASTM Specification D-3034 "Type PSM Poly (Vinyl Chloride) (PVC) Sewer Pipe and Fittings".
2. For pipe diameters 18" thru 27", the pipe manufacturer shall satisfy the requirements of the latest ASTM Specification F-679, Type I.
3. All pipe shall be SDR-35 or thicker wall and the PVC Compound shall meet the requirements of the latest ASTM Specification D-1784.
4. Pipe in compliance with these standards shall be clearly marked with pipe size (nominal), cell classification, SDR number, PVC Sewer Pipe, and ASTM Designation.

B. Joints

1. The joint shall provide a permanent seal against exfiltration or infiltration. The joining technique will be with elastomeric gasket.
2. Elastomeric Gasket Joints - The critical sealing dimensions of the bell, spigot, and gasket shall be in accordance with the manufacturer's standard dimensions and tolerances. The elastomeric compound shall comply in all respects with the physical requirements specified in ASTM F477-76. The gasket shall provide an adequate compressive force against the sealing surfaces of the bell and spigot so as to effect a positive seal under all combinations of the joint tolerances. The gasket shall be the only element depended upon to make the joint tolerances. The gasket shall be the only element depended upon to make the joint flexible and water tight. The gasket material shall be oil and gasoline resistant.

C. Fittings

1. All PVC wyes, tees and elbows shall be manufactured in classes suitable for the class of pipe as specified above.

FLEXIBLE SEWER LINE REPAIR COUPLINGS/DONUTS:

A. Couplings

Shall be made of tough, elastomeric plastic, which shall provide strength while being resilient and unaffected by soil conditions. Couplings shall be resistant to chemicals and normal sewer gases. Couplings shall be leakproof, rootproof, and seal against infiltration and exfiltration. Couplings shall be fastened in place by the use of (2) #35 adjustable stainless steel clamps which can be installed with a screwdriver or a socket wrench.

B. Donuts

Shall be elastomeric donut-shaped rings for compression sealing of sewer pipe joints, utilizing the bell end of an existing sewer pipe.

METHOD OF MEASUREMENT:

For all corrugated pipe, it shall include connecting bands and bolts, and in addition to the nominal length ordered, will include the additional lengths as follows:

1. Round Corrugated Pipe

   A. 54" diameter and less, an additional 1 foot of pipe.
   B. 60" diameter and above, an additional 2 feet of pipe.

2. For Pipe - Arch Corrugated Pipe

   A. 64” x 43” pipe arches and smaller, an additional 1 foot of pipe.
   B. 71" x 47” pipe arches and larger, an additional 2 feet of pipe.

Bell ends for pipe shall be measured in the same fashion as the pipe of the same material type.

All Tees, Elbows, Couplings, and Donuts shall be measured as the number of units provided.

Pipe designated as a fixed length shall be supplied at the specified length and measures as the number of units of pipe provided at that length. No partial length sections will be paid for.

BASIS OF PAYMENT:

The unit price bid for all items shall include all labor, materials, and equipment needed to furnish and deliver the product to any site within Erie County, unless otherwise noted. Pipe designated as pick up only shall include all labor, materials, and equipment needed to furnish the item, and load onto the purchaser’s truck for pickup. Installation of the pipe is not included with any item. The unit price bid for corrugated pipe or pipe arches shall be based on the nominal length only, not the additional length specified above.

Payment will be made under

Item No.	Item	Pay Unit
E603.051016	Corrugated Steel Pipe (2-2/3 in. x ½ in. Corrugations) 12-inch, 16 Gauge	Foot
E603.051116	Corrugated Steel Pipe (2-2/3 in. x ½ in. Corrugations) 15-inch, 16 Gauge	Foot
E603.051216	Corrugated Steel Pipe (2-2/3 in. x ½ in. Corrugations) 18-inch, 16 Gauge	Foot
E603.051316	Corrugated Steel Pipe (2-2/3 in. x ½ in. Corrugations) 21-inch, 16 Gauge	Foot
E603.051414	Corrugated Steel Pipe (2-2/3 in. x ½ in. Corrugations) 24-inch, 14 Gauge	Foot
E603.051614	Corrugated Steel Pipe (2-2/3 in. x ½ in. Corrugations) 30-inch, 14 Gauge	Foot
E603.051814	Corrugated Steel Pipe (2-2/3 in. x ½ in. Corrugations) 36-inch, 14 Gauge	Foot
E603.051912	Corrugated Steel Pipe (2-2/3 in. x ½ in. Corrugations) 42-inch, 12 Gauge	Foot
E603.052012	Corrugated Steel Pipe (2-2/3 in. x ½ in. Corrugations) 48-inch, 12 Gauge	Foot

SECTION 603 – CULVERT AND STORM DRAINS

Item No.	Item	Pay Unit
E603.052112	Corrugated Steel Pipe (2-2/3 in. x ½ in. Corrugations) 54-inch, 12 Gauge	Foot
E603.052210	Corrugated Steel Pipe (2-2/3 in. x ½ in. Corrugations) 60-inch, 10 Gauge	Foot
E603.052310	Corrugated Steel Pipe (2-2/3 in. x ½ in. Corrugations) 66-inch, 10 Gauge	Foot
E603.052410	Corrugated Steel Pipe (2-2/3 in. x ½ in. Corrugations) 72-inch, 10 Gauge	Foot
E603.081116	Corrugated Steel Pipe Arch - (2-2/3 in. x ½ in.) 17”x13”, 16 Gauge	Foot
E603.081216	Corrugated Steel Pipe Arch - (2-2/3 in. x ½ in.) 21”x15”, 16 Gauge	Foot
E603.081316	Corrugated Steel Pipe Arch - (2-2/3 in. x ½ in.) 24”x18”, 16 Gauge	Foot
E603.081414	Corrugated Steel Pipe Arch - (2-2/3 in. x ½ in.) 28”x20”, 14 Gauge	Foot
E603.081614	Corrugated Steel Pipe Arch - (2-2/3 in. x ½ in.) 35”x24”, 14 Gauge	Foot
E603.081812	Corrugated Steel Pipe Arch - (2-2/3 in. x ½ in.) 42”x49”, 12 Gauge	Foot
E603.081912	Corrugated Steel Pipe Arch - (2-2/3 in. x ½ in.) 49”x33”, 12 Gauge	Foot
E603.082010	Corrugated Steel Pipe Arch - (2-2/3 in. x ½ in.) 57”x38”, 10 Gauge	Foot
E603.082012	Corrugated Steel Pipe Arch - (2-2/3 in. x ½ in.) 57”x38”, 12 Gauge	Foot
E603.082110	Corrugated Steel Pipe Arch - (2-2/3 in. x ½ in.) 64”x43”, 10 Gauge	Foot
E603.082112	Corrugated Steel Pipe Arch - (2-2/3 in. x ½ in.) 64”x43”, 12 Gauge	Foot
E603.082208	Corrugated Steel Pipe Arch - (2-2/3 in. x ½ in.) 71”x47”, 8 Gauge	Foot
E603.082210	Corrugated Steel Pipe Arch - (2-2/3 in. x ½ in.) 71”x47”, 10 Gauge	Foot
E603.171016	Galvanized Steel End Section – (2 2/3 in. x ½ in.) 12” Diameter, 16 Gauge	Each
E603.171116	Galvanized Steel End Section – (2 2/3 in. x ½ in.) 15” Diameter, 16 Gauge	Each
E603.171216	Galvanized Steel End Section – (2 2/3 in. x ½ in.) 18” Diameter, 16 Gauge	Each
E603.171316	Galvanized Steel End Section – (2 2/3 in. x ½ in.) 21” Diameter, 16 Gauge	Each
E603.171416	Galvanized Steel End Section – (2 2/3 in. x ½ in.) 24” Diameter, 16 Gauge	Each
E603.171614	Galvanized Steel End Section – (2 2/3 in. x ½ in.) 30” Diameter, 14 Gauge	Each
E603.171814	Galvanized Steel End Section – (2 2/3 in. x ½ in.) 36” Diameter, 14 Gauge	Each
E603.171912	Galvanized Steel End Section – (2 2/3 in. x ½ in.) 42” Diameter, 12 Gauge	Each
E603.172012	Galvanized Steel End Section – (2 2/3 in. x ½ in.) 48” Diameter, 12 Gauge	Each

SECTION 603 – CULVERT AND STORM DRAINS

Item No.	Item	Pay Unit
E603.172112	Galvanized Steel End Section – (2 2/3 in. x ½ in.) 54” Diameter, 12 Gauge	Each
E603.172210	Galvanized Steel End Section – (2 2/3 in. x ½ in.) 60” Diameter, 10 Gauge	Each
E603.172212	Galvanized Steel End Section – (2 2/3 in. x ½ in.) 60” Diameter, 12 Gauge	Each
E603.172310	Galvanized Steel End Section – (2 2/3 in. x ½ in.) 66” Diameter, 10 Gauge	Each
E603.172312	Galvanized Steel End Section – (2 2/3 in. x ½ in.) 66” Diameter, 12 Gauge	Each
E603.172410	Galvanized Steel End Section – (2 2/3 in. x ½ in.) 72” Diameter, 10 Gauge	Each
E603.172412	Galvanized Steel End Section – (2 2/3 in. x ½ in.) 72” Diameter, 12 Gauge	Each
E603.172510	Galvanized Steel End Section – (2 2/3 in. x ½ in.) 78” Diameter, 10 Gauge	Each
E603.172512	Galvanized Steel End Section – (2 2/3 in. x ½ in.) 78” Diameter, 12 Gauge	Each
E603.172610	Galvanized Steel End Section – (2 2/3 in. x ½ in.) 84” Diameter, 10 Gauge	Each
E603.172612	Galvanized Steel End Section – (2 2/3 in. x ½ in.) 84” Diameter, 12 Gauge	Each
E603.181116	Galvanized Steel End Section – (2 2/3 in. x ½ in.) 17” x13”, 16 Gauge	Each
E603.181216	Galvanized Steel End Section – (2 2/3 in. x ½ in.) 21” x 15”, 16 Gauge	Each
E603.181316	Galvanized Steel End Section – (2 2/3 in. x ½ in.) 24” x18”, 16 Gauge	Each
E603.181414	Galvanized Steel End Section – (2 2/3 in. x ½ in.) 28” x 20”, 14 Gauge	Each
E603.181416	Galvanized Steel End Section – (2 2/3 in. x ½ in.) 28” x 20”, 16 Gauge	Each
E603.181614	Galvanized Steel End Section – (2 2/3 in. x ½ in.) 35” x24”, 14 Gauge	Each
E603.181812	Galvanized Steel End Section – (2 2/3 in. x ½ in.) 42” x 29”, 12 Gauge	Each
E603.181814	Galvanized Steel End Section – (2 2/3 in. x ½ in.) 42” x 29”, 14 Gauge	Each
E603.181912	Galvanized Steel End Section – (2 2/3 in. x ½ in.) 49” x 33”, 12 Gauge	Each
E603.182012	Galvanized Steel End Section – (2 2/3 in. x ½ in.) 57” x 38”, 12 Gauge	Each
E603.182112	Galvanized Steel End Section – (2 2/3 in. x ½ in.) 64” x 43”, 12 Gauge	Each
E603.182210	Galvanized Steel End Section – (2 2/3 in. x ½ in.) 71” x 47”, 10 Gauge	Each
E603.19030616	Galvanized Steel End Section – (2 2/3 in. x ½ in.) 6” diameter, 16 Gauge Elbow	Each
E603.19031216	Galvanized Steel End Section – (2 2/3 in. x ½ in.) 12” diameter, 16 Gauge Elbow	Each
E603.19031516	Galvanized Steel End Section – (2 2/3 in. x ½ in.) 15” diameter, 16 Gauge Elbow	Each

SECTION 603 – CULVERT AND STORM DRAINS

Item No.	Item	Pay Unit
E603.19031816	Galvanized Steel End Section – (2 2/3 in. x ½ in.) 18” diameter, 16 Gauge Elbow	Each
E603.19032414	Galvanized Steel End Section – (2 2/3 in. x ½ in.) 24” diameter, 14 Gauge Elbow	Each
E603.19040616	Galvanized Steel End Section – (2 2/3 in. x ½ in.) 6” diameter, 16 Gauge Tee	Each
E603.19041216	Galvanized Steel End Section – (2 2/3 in. x ½ in.) 12” diameter, 16 Gauge Tee	Each
E603.19041516	Galvanized Steel End Section – (2 2/3 in. x ½ in.) 15” diameter, 16 Gauge Tee	Each
E603.19041816	Galvanized Steel End Section – (2 2/3 in. x ½ in.) 18” diameter, 16 Gauge Tee	Each
E603.19042414	Galvanized Steel End Section – (2 2/3 in. x ½ in.) 24” diameter, 14 Gauge Tee	Each
E603.301004	PVC to Clay, 4” diameter	Each
E603.301006	PVC to Clay, 6” diameter	Each
E603.301008	PVC to Clay, 8” diameter	Each
E603.301010	PVC to Clay,10” diameter	Each
E603.301012	PVC to Clay, 12” diameter	Each
E603.301015	PVC to Clay, 15” diameter	Each
E603.301018	PVC to Clay, 18” diameter	Each
E603.302004	PVC to PVC, 4” diameter	Each
E603.302006	PVC to PVC, 6” diameter	Each
E603.302008	PVC to PVC 8” diameter	Each
E603.302010	PVC to PVC,10” diameter	Each
E603.302012	PVC to PVC, 12” diameter	Each
E603.302015	PVC to PVC, 15” diameter	Each
E603.302018	PVC to PVC, 18” diameter	Each
E603.303004	PVC to ACP, 4” diameter	Each
E603.303006	PVC to ACP, 6” diameter	Each
E603.303008	PVC to ACP 8” diameter	Each
E603.303010	PVC to ACP,10” diameter	Each
E603.303012	PVC to ACP, 12” diameter	Each
E603.303015	PVC to ACP, 15” diameter	Each
E603.303018	PVC to ACP, 18” diameter	Each
E603.304004	PVC to RCP, 4” diameter	Each
E603.304006	PVC to RCP, 6” diameter	Each
E603.304008	PVC to RCP 8” diameter	Each
E603.304010	PVC to RCP,10” diameter	Each
E603.304012	PVC to RCP, 12” diameter	Each
E603.304015	PVC to RCP, 15” diameter	Each
E603.304018	PVC to RCP, 18” diameter	Each
E603.4001	4" Saddle Flexible Tee Tap	Each
E603.4002	6" Saddle Flexible Tee Tap	Each
E603.4003	4" DR-18 Pipe	Foot

SECTION 603 – CULVERT AND STORM DRAINS

Item No.	Item	Pay Unit
E603.610101	Reinforced Concrete Pipe Class IV -- 12” diameter (Pick Up)	Foot
E603.610201	Reinforced Concrete Pipe Class IV – 15” diameter (Pick Up)	Foot
E603.610301	Reinforced Concrete Pipe Class IV – 18” diameter (Pick Up)	Foot
E603.610401	Reinforced Concrete Pipe Class IV – 21” diameter (Pick Up)	Foot
E603.610501	Reinforced Concrete Pipe Class IV – 24” diameter (Pick Up)	Foot
E603.610701	Reinforced Concrete Pipe Class IV – 30” diameter (Pick Up)	Foot
E603.610901	Reinforced Concrete Pipe Class IV – 36” diameter (Pick Up)	Foot
E603.610102	Reinforced Concrete Pipe Class IV – 12” diameter (Delivered)	Foot
E603.610202	Reinforced Concrete Pipe Class IV – 15” diameter (Delivered)	Foot
E603.610302	Reinforced Concrete Pipe Class IV – 18” diameter (Delivered)	Foot
E603.610402	Reinforced Concrete Pipe Class IV – 21” diameter (Delivered)	Foot
E603.610502	Reinforced Concrete Pipe Class IV – 24” diameter (Delivered)	Foot
E603.610702	Reinforced Concrete Pipe Class IV – 30” diameter (Delivered)	Foot
E603.610902	Reinforced Concrete Pipe Class IV – 36” diameter (Delivered)	Foot
E603.801016	Corrugated Steel Pipe (2-2/3 in. x ½ in. Corrugations) 12-inch, 16 Gauge, Polymer Coated	Foot
E603.801116	Corrugated Steel Pipe (2-2/3 in. x ½ in. Corrugations) 15-inch, 16 Gauge, Polymer Coated	Foot
E603.801216	Corrugated Steel Pipe (2-2/3 in. x ½ in. Corrugations) 18-inch, 16 Gauge, Polymer Coated	Foot
E603.801316	Corrugated Steel Pipe (2-2/3 in. x ½ in. Corrugations) 21-inch, 16 Gauge, Polymer Coated	Foot
E603.801414	Corrugated Steel Pipe (2-2/3 in. x ½ in. Corrugations) 24-inch, 14 Gauge, Polymer Coated	Foot
E603.801614	Corrugated Steel Pipe (2-2/3 in. x ½ in. Corrugations) 30-inch, 14 Gauge, Polymer Coated	Foot
E603.801814	Corrugated Steel Pipe (2-2/3 in. x ½ in. Corrugations) 36-inch, 14 Gauge, Polymer Coated	Foot
E603.801912	Corrugated Steel Pipe (2-2/3 in. x ½ in. Corrugations) 42-inch, 12 Gauge, Polymer Coated	Foot
E603.802012	Corrugated Steel Pipe (2-2/3 in. x ½ in. Corrugations) 48-inch, 12 Gauge, Polymer Coated	Foot
E603.802112	Corrugated Steel Pipe (2-2/3 in. x ½ in. Corrugations) 54-inch, 12 Gauge, Polymer Coated	Foot
E603.802212	Corrugated Steel Pipe (2-2/3 in. x ½ in. Corrugations) 60-inch, 12 Gauge, Polymer Coated	Foot
E603.802310	Corrugated Steel Pipe (2-2/3 in. x ½ in. Corrugations) 66-inch, 10 Gauge, Polymer Coated	Foot
E603.802410	Corrugated Steel Pipe (2-2/3 in. x ½ in. Corrugations) 72-inch, 10 Gauge, Polymer Coated	Foot

Item No.	Item	Pay Unit
E603.821116	Corrugated Steel Pipe Arch - (2-2/3 in. x ½ in.) 17”x13”, 16 Gauge, Polymer Coated	Foot
E603.821216	Corrugated Steel Pipe Arch - (2-2/3 in. x ½ in.) 21”x15”, 16 Gauge, Polymer Coated	Foot
E603.821316	Corrugated Steel Pipe Arch - (2-2/3 in. x ½ in.) 24”x18”, 16 Gauge, Polymer Coated	Foot
E603.821414	Corrugated Steel Pipe Arch - (2-2/3 in. x ½ in.) 28”x20”, 14 Gauge, Polymer Coated	Foot
E603.821614	Corrugated Steel Pipe Arch - (2-2/3 in. x ½ in.) 35”x24”, 14 Gauge, Polymer Coated	Foot
E603.821812	Corrugated Steel Pipe Arch - (2-2/3 in. x ½ in.) 42”x49”, 12 Gauge, Polymer Coated	Foot
E603.821912	Corrugated Steel Pipe Arch - (2-2/3 in. x ½ in.) 49”x33”, 12 Gauge, Polymer Coated	Foot
E603.822010	Corrugated Steel Pipe Arch - (2-2/3 in. x ½ in.) 57”x38”, 10 Gauge, Polymer Coated	Foot
E603.822012	Corrugated Steel Pipe Arch - (2-2/3 in. x ½ in.) 57”x38”, 12 Gauge, Polymer Coated	Foot
E603.822110	Corrugated Steel Pipe Arch - (2-2/3 in. x ½ in.) 64”x43”, 10 Gauge, Polymer Coated	Foot
E603.822112	Corrugated Steel Pipe Arch - (2-2/3 in. x ½ in.) 64”x43”, 12 Gauge, Polymer Coated	Foot
E603.822208	Corrugated Steel Pipe Arch - (2-2/3 in. x ½ in.) 71”x47”, 8 Gauge, Polymer Coated	Foot
E603.822210	Corrugated Steel Pipe Arch - (2-2/3 in. x ½ in.) 71”x47”, 10 Gauge, Polymer Coated	Foot
E603.981201	Smooth Interior Corrugated Polyethylene Pipe - 12” diameter	Foot
E603.981202	Smooth Interior Corrugated Polyethylene Pipe – Bell End	Foot
E603.981203	Smooth Interior Corrugated Polyethylene Pipe – Couplings	Each
E603.981204	Smooth Interior Corrugated Polyethylene Pipe – Tee	Each
E603.981501	Smooth Interior Corrugated Polyethylene Pipe - 15” diameter	Foot
E603.981502	Smooth Interior Corrugated Polyethylene Pipe – Bell End	Foot
E603.981503	Smooth Interior Corrugated Polyethylene Pipe – Couplings	Each
E603.981504	Smooth Interior Corrugated Polyethylene Pipe – Tee	Each
E603.981801	Smooth Interior Corrugated Polyethylene Pipe - 18” diameter	Foot
E603.981802	Smooth Interior Corrugated Polyethylene Pipe – Bell End	Foot
E603.981803	Smooth Interior Corrugated Polyethylene Pipe – Couplings	Each
E603.981804	Smooth Interior Corrugated Polyethylene Pipe – Tee	Each
E603.982401	Smooth Interior Corrugated Polyethylene Pipe - 24” diameter	Foot
E603.982402	Smooth Interior Corrugated Polyethylene Pipe – Bell End	Foot
E603.982403	Smooth Interior Corrugated Polyethylene Pipe – Couplings	Each
E603.982404	Smooth Interior Corrugated Polyethylene Pipe – Tee	Each
E603.983001	Smooth Interior Corrugated Polyethylene Pipe - 30” diameter	Foot
E603.983002	Smooth Interior Corrugated Polyethylene Pipe – Bell End	Foot
E603.983003	Smooth Interior Corrugated Polyethylene Pipe – Couplings	Each
E603.983004	Smooth Interior Corrugated Polyethylene Pipe – Tee	Each
E603.983601	Smooth Interior Corrugated Polyethylene Pipe - 36” diameter	Foot
E603.983602	Smooth Interior Corrugated Polyethylene Pipe – Bell End	Foot

SECTION 603 – CULVERT AND STORM DRAINS

Item No.	Item	Pay Unit
E603.983603	Smooth Interior Corrugated Polyethylene Pipe – Couplings	Each
E603.983604	Smooth Interior Corrugated Polyethylene Pipe – Tee	Each
E603.984201	Smooth Interior Corrugated Polyethylene Pipe - 42” diameter	Foot
E603.984202	Smooth Interior Corrugated Polyethylene Pipe – Bell End	Foot
E603.984203	Smooth Interior Corrugated Polyethylene Pipe – Couplings	Each
E603.984204	Smooth Interior Corrugated Polyethylene Pipe – Tee	Each
E603.984801	Smooth Interior Corrugated Polyethylene Pipe - 48” diameter	Foot
E603.984802	Smooth Interior Corrugated Polyethylene Pipe – Bell End	Foot
E603.984803	Smooth Interior Corrugated Polyethylene Pipe – Couplings	Each
E603.984804	Smooth Interior Corrugated Polyethylene Pipe – Tee	Each
E603.98501	8” Round Plastic Grate	Each
E603.98502	12” Round Plastic Grate	Each
E603.98503	15” Round Plastic Grate	Each
E603.98504	18” Round Plastic Grate	Each
E603.990504	PVC Pipe, 4” diameter – 14’ in Length	Each
E603.990506	PVC Pipe, 6” diameter – 14’ in Length	Each
E603.990508	PVC Pipe, 8” diameter – 14’ in Length	Each
E603.990510	PVC Pipe, 10” diameter – 14’ in Length	Each
E603.990512	PVC Pipe, 12” diameter – 14’ in Length	Each
E603.990515	PVC Pipe, 15” diameter – 14’ in Length	Each
E603.990518	PVC Pipe, 18” diameter – 14’ in Length	Each
E603.990521	PVC Pipe, 21” diameter – 14’ in Length	Each
E603.991104	PVC Fittings, 22 ½° Street ELL, 4” diameter	Each
E603.991106	PVC Fittings, 22 ½° Street ELL, 6” diameter	Each
E603.991108	PVC Fittings, 22 ½° Street ELL, 8” diameter	Each
E603.991110	PVC Fittings, 22 ½° Street ELL, 10” diameter	Each
E603.991112	PVC Fittings, 22 ½° Street ELL, 12” diameter	Each
E603.991115	PVC Fittings, 22 ½° Street ELL, 15” diameter	Each
E603.991204	PVC Fittings, 22 ½° Bell-to-Bell, 4” diameter	Each
E603.991206	PVC Fittings, 22 ½° Bell-to-Bell, 6” diameter	Each
E603.991208	PVC Fittings, 22 ½° Bell-to-Bell, 8” diameter	Each
E603.991210	PVC Fittings, 22 ½° Bell-to-Bell, 10” diameter	Each
E603.991212	PVC Fittings, 22 ½° Bell-to-Bell, 12” diameter	Each
E603.991215	PVC Fittings, 22 ½° Bell-to-Bell, 15” diameter	Each
E603.991218	PVC Fittings, 22 ½° Bell-to-Bell, 18” diameter	Each
E603.991221	PVC Fittings, 22 ½° Bell-to-Bell, 21” diameter	Each
E603.991304	PVC Fittings, 45° Street ELL, 4” diameter	Each
E603.991306	PVC Fittings, 45° Street ELL, 6” diameter	Each
E603.991308	PVC Fittings, 45° Street ELL, 8” diameter	Each
E603.991310	PVC Fittings, 45° Street ELL, 10” diameter	Each
E603.991312	PVC Fittings, 45° Street ELL, 12” diameter	Each
E603.991315	PVC Fittings, 45° Street ELL, 15” diameter	Each
E603.991404	PVC Fittings, 45° Bell-to-Bell, 4” diameter	Each
E603.991406	PVC Fittings, 45° Bell-to-Bell, 6” diameter	Each
E603.991408	PVC Fittings, 45° Bell-to-Bell, 8” diameter	Each
E603.991410	PVC Fittings, 45° Bell-to-Bell, 10” diameter	Each
E603.991412	PVC Fittings, 45° Bell-to-Bell, 12” diameter	Each

SECTION 603 – CULVERT AND STORM DRAINS

Item No.	Item	Pay Unit
E603.991415	PVC Fittings, 45° Bell-to-Bell, 15” diameter	Each
E603.991504	PVC Fittings, Wye, 4” diameter	Each
E603.991506	PVC Fittings, Wye, 6” diameter	Each
E603.991508	PVC Fittings, Wye, 8” diameter	Each
E603.991510	PVC Fittings, Wye, 10” diameter	Each
E603.991512	PVC Fittings, Wye, 12” diameter	Each
E603.991515	PVC Fittings, Wye, 15” diameter	Each
E603.991606	PVC Fittings, Wye x 6”, 6” diameter	Each
E603.991608	PVC Fittings, Wye x 6”, 8” diameter	Each
E603.991610	PVC Fittings, Wye x 6”, 10” diameter	Each
E603.991612	PVC Fittings, Wye x 6”, 12” diameter	Each
E603.991615	PVC Fittings, Wye x 6”, 15” diameter	Each
E603.9920	6” Male x 4” Female Reducer	Each
E603.9921	6” Cast Iron Threaded Cleanout Adaptor with Brass Cleanout Cap	Each
E603.9922	Pipe Lubricant	Quart

SECTION 604 – DRAINAGE STRUCTURES

Section 604 of the NYSDOT Standard Specifications shall apply, except as modified herein.

DESCRIPTION. This work shall include all labor, materials and equipment required to manufacture and deliver the indicated size of catch basin, riser or adjustment ring.

MATERIALS.

Precast Concrete Manholes and Riser Rings.

A. Manhole Base. Precast manhole bases shall be monolithic reinforced concrete, and shall comply with the latest ASTM Specification C-478 *"Precast Reinforced Concrete Manhole Sections".*

The bottom floor of the monolithic precast base shall have a minimum thickness of eight (8) inches and shall project no less than six (6) inches beyond the outside the outside walls of the monolithic precast base to form a flange or annular footing intended to resist uplift.

The lowest edges of holes or cutouts for line and branch sewers shall be no less than six (6) inches above the inside surface of the floor or footing of the monolithic precast base.

No penetrating lifting holes will be allowed.

B. Manhole Barrel, Cone, Reducer, and Flat Top. All precast concrete manholes, barrels, and reducers shall be constructed in accordance with the latest ASTM Specification C-478 *"Precast Reinforced Concrete Manhole Sections",* with the following exceptions:

The manhole barrel walls shall be:

- Five (5) inches thick for a four (4) foot diameter manhole
- Six (6) inches thick for a five (5) foot diameter manhole
- Seven (7) inches thick for a six (6) foot diameter manhole.

The upper section of the precast manhole shall be an eccentric cone design having either a 24" diameter inside or a 32" inside diameter top opening with an 8" (width) top bearing surface.

Precast cones shall have a minimum height of two feet, six inches (2'-6") and a maximum height of four (4) feet.

Flat Top slabs shall be a minimum of eight (8) inches thick and shall be capable of supporting a HS-25 loading. The flat top slab shall have either a 24" diameter inside or a 32" inside diameter top opening with and 8" (width) top bearing surface.

No penetrating lifting holes will be allowed.

C. Joints. The manhole barrel and cone joints shall concrete with a confined o-ring, neoprene gasket in accordance with ASTM Specification C-443.

D. Manhole Steps. Manhole steps shall be forged aluminum or steel reinforced co-polymer polypropylene, and shall be placed in the forms while the manhole sections are being cast or securely grouted in place after casting, and shall be in accordance with Erie County Department of Environment & Planning, Division of Sewerage Management Standard Detail 17 as shown on the last page.

E. Manhole Inlet/Outlet. All manhole penetrations for connection of inlet or outlet branch sewers shall be either machine cut or cast in place.

At each point where a sewer line or branch sewer is to be connected to the monolithic precast bases or manhole barrels, a seal assembly shall be supplied to seal the annular space between the pipe and hole. This seal assembly shall consist of rubber gaskets or links which can be mechanically compressed to form watertight barriers. Such sealing assemblies shall be: RESSEAL consisting of rubber gasket, cast iron compression flange, *"Press-Wedge I"* gasket or *"Watertight Pipe to Manhole rubber Boot Assembly"* stainless steel band clamps as manufactured by Press Seal Gasket Corporation, Fort Wayne, Indiana; Cor-Ten-ten bolt assembly manufactured by the scales Manufacturing Corporation of Newburgh, New York; LINK-SEAL consisting of solid synthetic rubber links connected to each other with heavy, elongated washers, bolts and nuts, as manufactured by Thunderline Corporation of Wayne, Michigan, or equal.

F. Manhole Adjusting Rings. Manhole adjusting rings shall be reinforced precast concrete, using 4000 PSI concrete, and shall be constructed in accordance with the latest ASTM Specification C-47S.

The difference between inside diameter and outside diameter of the adjusting rings (bearing surface) shall be a minimum of eight (8) inches.

The above listed units are to be of semi-steel, seat machined so that the component parts will not rock when in place. They are to be for recess 1-1/2" deep.

METHOD OF MEASUREMENT. Payment shall be made for each unit delivered to the location directed by the municipality. No installation shall be required.

BASIS OF PAYMENT.

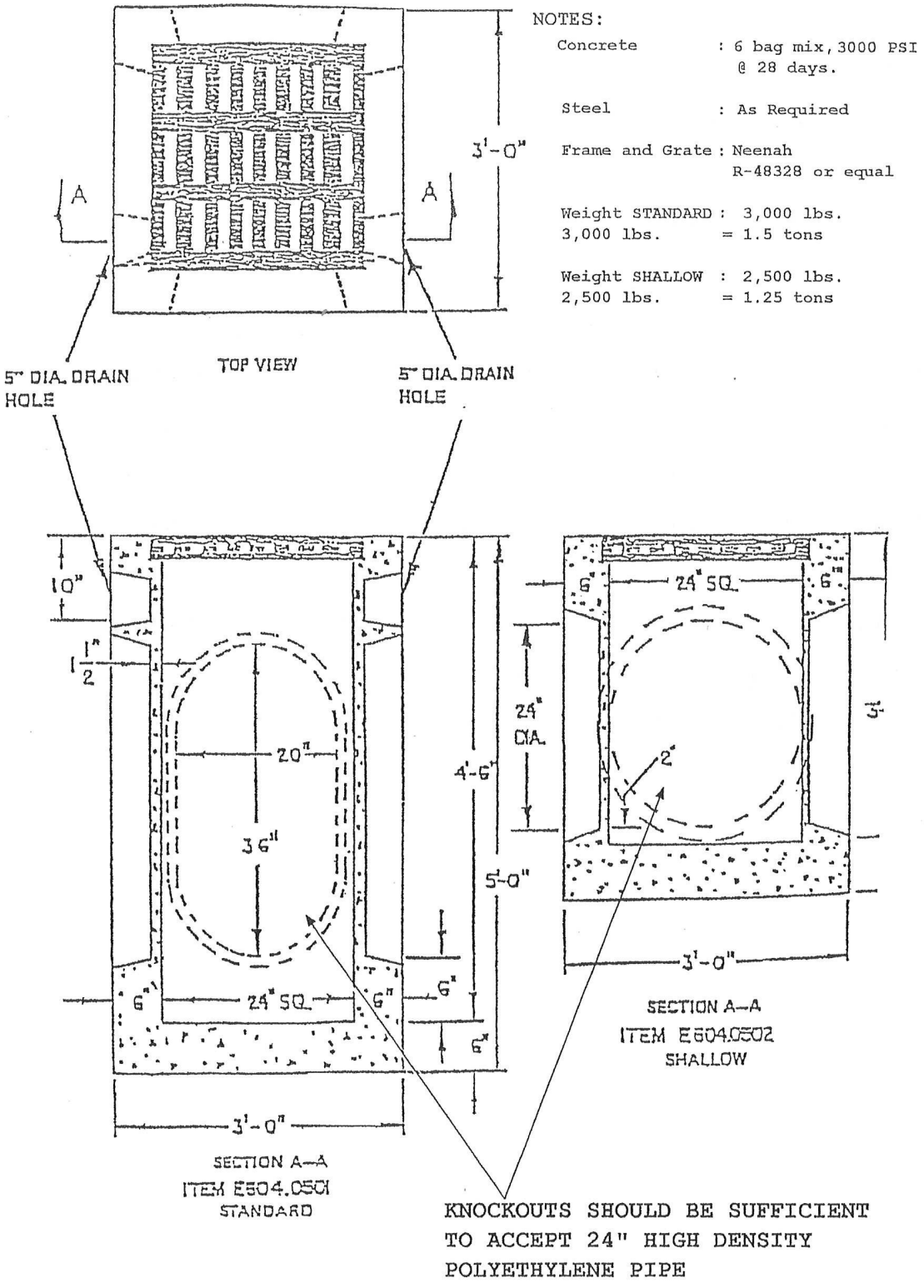
Payment will be made under the following items:

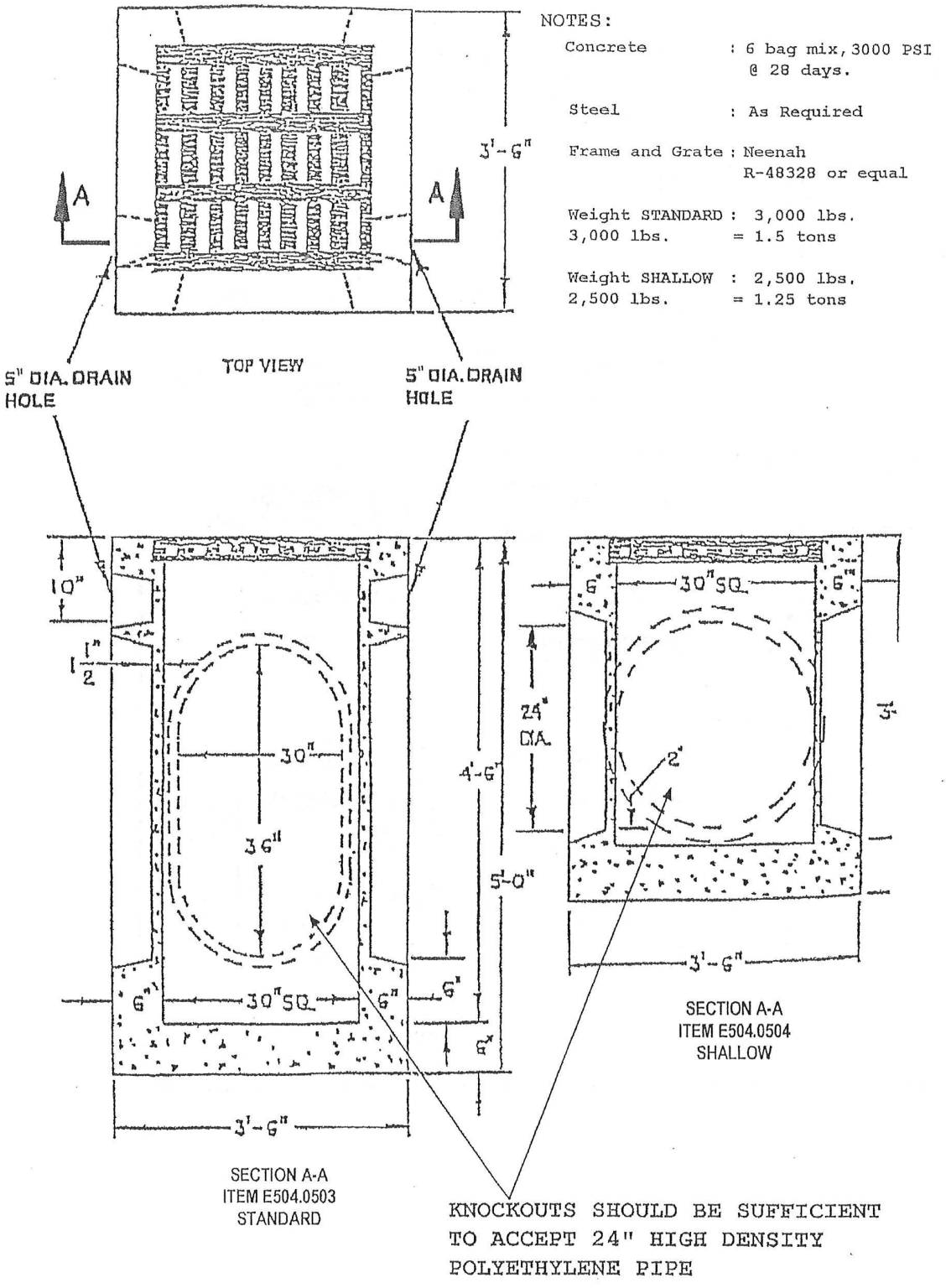
Item No.	Item	Pay Unit
E604.0501	Drainage Structures, 24" SQ x 24" DP Precast Catch Basin	EA
E604.050101 EA	Drainage Structures 24” SQ X 30” DP Precast Catch Basin	
E604.0502	Drainage Structures, 24" SQ x 36" DP Precast Catch Basin	EA
E604.050201 EA	Drainage Structures, 24”SQ X 42” DP Precast Catch Basin	
E604.0503	Drainage Structures, 24" SQ x 48" DP Precast Catch Basin	EA
E604.0504	Drainage Structures, 24" SQ x 54" DP Precast Catch Basin	EA
E604.0505	Drainage Structures, 24" SQ x 66" DP Precast Catch Basin	EA
E604.0506	Drainage Structures, 24" SQ x 72" DP Precast Catch Basin	EA
E604.0507	Drainage Structures, 30" SQ x 36" DP Precast Catch Basin	EA
E604.0508	Drainage Structures, 30" SQ x 54" DP Precast Catch Basin	EA
E604.0509	Drainage Structures, 30" SQ x 66" DP Precast Catch Basin	EA
E604.0510	Drainage Structures, 30" SQ x 72" DP Precast Catch Basin	EA
E604.0511	Drainage Structures, 36" SQ x 42" DP Precast Catch Basin	EA

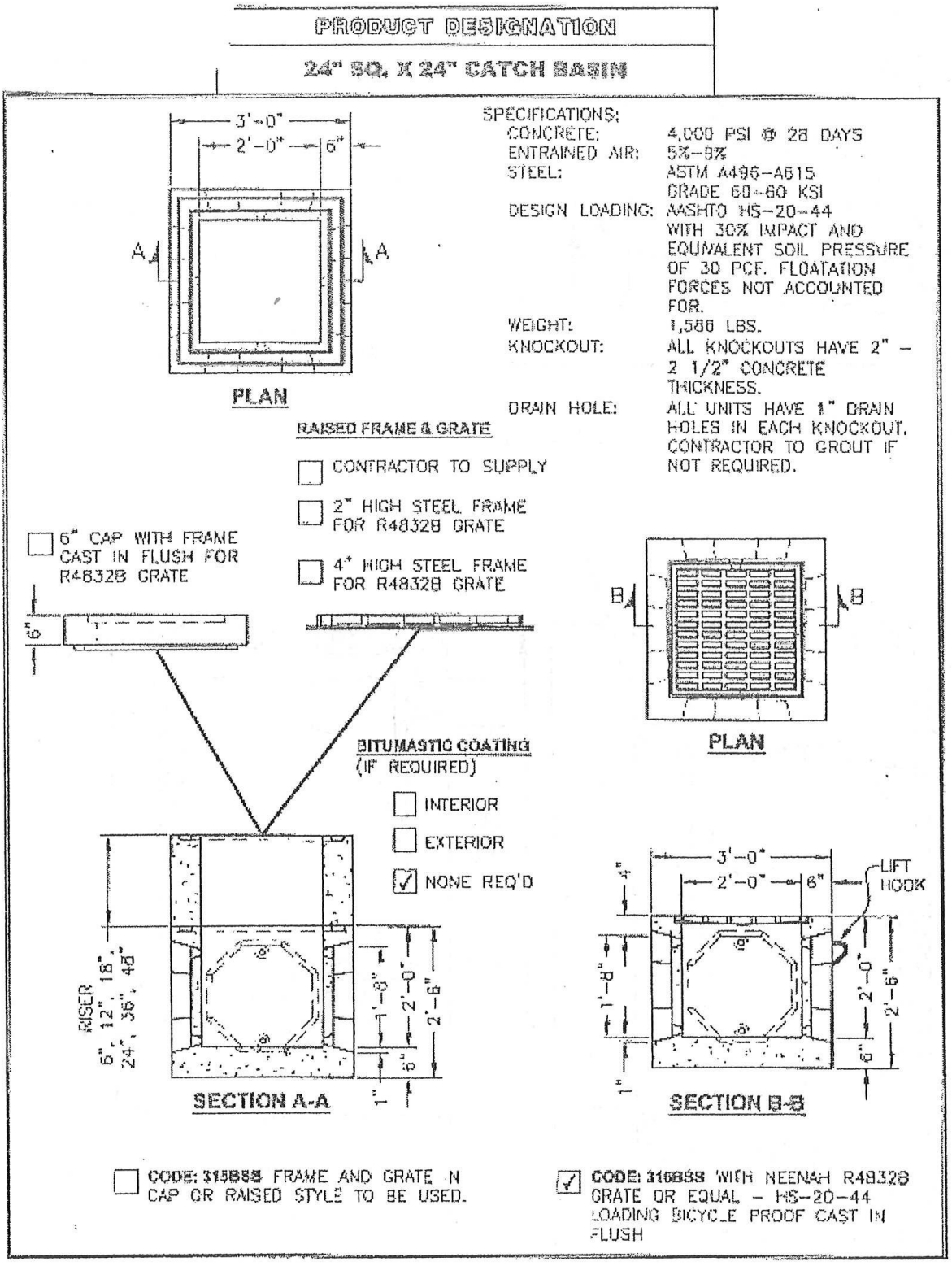
Item No.	Item	Pay Unit
E604.0512	Drainage Structures, 36" SQ x 54" DP Precast Catch Basin	EA
E604.0701	Round Manhole Adjusting Devices, 24" Diameter, 1-1/4" Rise	EA
E604.0702	Round Manhole Adjusting Devices, 24" Diameter, 1-1/2" Rise	EA
E604.0703	Round Manhole Adjusting Devices, 24" Diameter, 1-3/4" Rise	EA
E604.0704	Round Manhole Adjusting Devices, 24" Diameter, 2" Rise	EA
E604.0705	Round Manhole Adjusting Devices, 24" Diameter, 2-1/4" Rise	EA
E604.0706	Round Manhole Adjusting Devices, 24" Diameter, 2-3/4" Rise	EA
E604.0707	Round Manhole Adjusting Devices, 24" Diameter, 3" Rise	EA
E604.0708	Round Manhole Adjusting Devices, 24" Diameter, 3-1/4" Rise	EA
E604.0709	Round Manhole Adjusting Devices, 24" Diameter, 3-1/2" Rise	EA
E604.0710	Round Manhole Adjusting Devices, 24" Diameter, 3-3/4" Rise	EA
E604.0711	Round Manhole Adjusting Devices, 24" Diameter, 4" Rise	EA
E604.0712	Round Manhole Adjusting Devices, 24" Diameter, 4-1/4" Rise	EA
E604.0713	Round Manhole Adjusting Devices, 24" Diameter, 4-1/2" Rise	EA
E604.0714	Round Manhole Adjusting Devices, 24" Diameter, 4-3/4" Rise	EA
E604.0715	Round Manhole Adjusting Devices, 24" Diameter, 5" Rise	EA
E604.0801	Rectangular Adjusting Devices, 13"x18" Receiver Grate, 1-1/4" Rise	EA
E604.0802	Rectangular Adjusting Devices, 13"x18" Receiver Grate, 1-1/2" Rise	EA
E604.0803	Rectangular Adjusting Devices, 13"x18" Receiver Grate, 1-3/4" Rise	EA
E604.0804	Rectangular Adjusting Devices, 13"x18" Receiver Grate, 2" Rise	EA
E604.0805	Rectangular Adjusting Devices, 13"x18" Receiver Grate, 2-1/4" Rise	EA
E604.0806	Rectangular Adjusting Devices, 13"x18" Receiver Grate, 2-3/4" Rise	EA
E604.0807	Rectangular Adjusting Devices, 13"x18" Receiver Grate, 3" Rise	EA
E604.0808	Rectangular Adjusting Devices, 13"x18" Receiver Grate, 3-1/4" Rise	EA
E604.0809	Rectangular Adjusting Devices, 13"x18" Receiver Grate, 3-1/2" Rise	EA
E604.0810	Rectangular Adjusting Devices, 13"x18" Receiver Grate, 3-3/4" Rise	EA
E604.0811	Rectangular Adjusting Devices, 13"x18" Receiver Grate, 4" Rise	EA
E604.0812	Rectangular Adjusting Devices, 13"x18" Receiver Grate, 4-1/4" Rise	EA
E604.0813	Rectangular Adjusting Devices, 13"x18" Receiver Grate, 4-1/2" Rise	EA
E604.0814	Rectangular Adjusting Devices, 13"x18" Receiver Grate, 4-3/4" Rise	EA
E604.0815	Rectangular Adjusting Devices, 13"x18" Receiver Grate, 5" Rise	EA
E604.0901	Drainage Structures 4” Riser 36” Outside SQ X 24” Inside SQ W/26”X 26” Frame	EA
E604.0902	Drainage Structures 6” Riser 36” Outside SQ X 24” Inside SQ W/26”X 26” Frame	EA
E604.0903	Drainage Structures 8” Riser36” Outside SQ X 24” Inside SQ W/26”X 26” Frame	EA
E604.0904	Drainage Structures 10” Riser 36” Outside SQ X 24” Inside SQ W/26”X 26” Frame	EA
E604.0905	Drainage Structures 12” Riser 36” Outside SQ X 24” Inside SQ W/26”X 26” Frame	EA
E604.0906	Drainage Structures 4” Riser 36” Outside SQ X 16” Inside SQ W/18”X 18” Frame	EA
E604.0907	Drainage Structures 6” Riser 36” Outside SQ X 16” Inside SQ W/18”X 18” Frame	EA
E604.0908	Drainage Structures 8” Riser 36” Outside SQ X 16” Inside SQ W/18”X 18” Frame	EA
E604.0909	Drainage Structures 10” Riser 36” Outside SQ X 16” Inside SQ W/18”X 18” Frame	EA

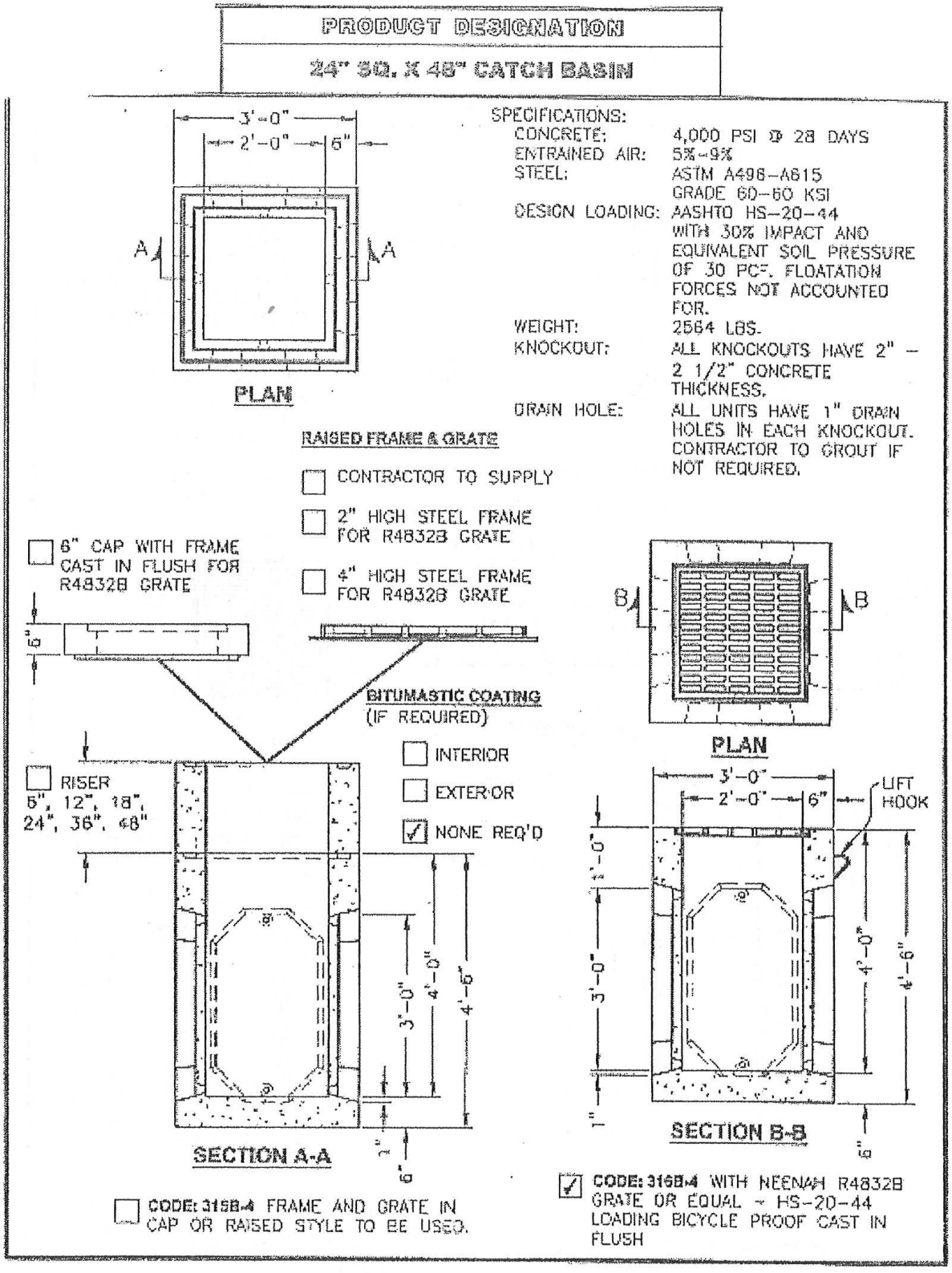
Item No.	Item	Pay Unit
E604.0910	Drainage Structures 12” Riser 36” Outside SQ X 16” Inside SQ W/18”X 18” Frame	EA
E604.1011	Manhole Adjusting Rings 24" Inside Dia. X 40" Outside Dia. - 1"	EA
E604.1012	Manhole Adjusting Rings 24" Inside Dia. X 40" Outside Dia. - 2"	EA
E604.1013	Manhole Adjusting Rings 24" Inside Dia. X 40" Outside Dia. - 3"	EA
E604.1014	Manhole Adjusting Rings 24" Inside Dia. X 40" Outside Dia. - 4"	EA
E604.1015	Manhole Adjusting Rings 24" Inside Dia. X 40" Outside Dia. - 5"	EA
E604.1016	Manhole Adjusting Rings 24" Inside Dia. X 40" Outside Dia. - 6"	EA
E604.1017	Manhole Adjusting Rings 24" Inside Dia. X 40" Outside Dia. - 1/2" Taper	EA
E604.1018	Manhole Adjusting Rings 24" Inside Dia. X 40" Outside Dia. - 2/3" Taper	EA
E604.101901	Manhole Adjusting Rings 32” Inside Dia x 48” Outside Dia - 1”	EA
E604.101902	Manhole Adjusting Rings 32” Inside Dia x 48” Outside Dia - 2”	EA
E604.101903	Manhole Adjusting Rings 32” Inside Dia x 48” Outside Dia - 3”	EA
E604.101904	Manhole Adjusting Rings 32” Inside Dia x 48” Outside Dia - 4”	EA
E604.101905	Manhole Adjusting Rings 32” Inside Dia x 48” Outside Dia - 5”	EA
E604.101906	Manhole Adjusting Rings 32” Inside Dia x 48” Outside Dia - 6”	EA
E604.1021	Manhole Adjusting Rings 36" Inside Dia. X 52" Outside Dia. - 1"	EA
E604.1022	Manhole Adjusting Rings 36" Inside Dia. X 52" Outside Dia - 2"	EA
E604.1023	Manhole Adjusting Rings 36" Inside Dia. X 52" Outside Dia - 3"	EA
E604.1024	Manhole Adjusting Rings 36" Inside Dia. X 52" Outside Dia - 4"	EA
E604.1025	Manhole Adjusting Rings 36" Inside Dia. X 52" Outside Dia - 5"	EA
E604.1026	Manhole Adjusting Rings 36" Inside Dia. X 52" Outside Dia - 6"	EA
E604.1027	Manhole Adjusting Rings 36" Inside Dia. X 52" Outside Dia - 1/2" Taper	EA
E604.1028	Manhole Adjusting Rings 36" Inside Dia. X 52" Outside Dia - 2/3" Taper	EA
E604.4012	Precast Concrete Manhole Bases 48" Inside Diameter - 2'	EA
E604.4013	Precast Concrete Manhole Bases 48" Inside Diameter - 3'	EA
E604.4014	Precast Concrete Manhole Bases 48" Inside Diameter - 4'	EA
E604.4015	Precast Concrete Manhole Bases 48" Inside Diameter - 5'	EA
E604.4022	Precast Concrete Manhole Bases 60" Inside Diameter - 2'	EA
E604.4023	Precast Concrete Manhole Bases 60" Inside Diameter - 3'	EA
E604.4024	Precast Concrete Manhole Bases 60" Inside Diameter - 4'	EA
E604.4025	Precast Concrete Manhole Bases 60" Inside Diameter - 5'	EA
E604.4032	Precast Concrete Manhole Bases 72" Inside Diameter - 2'	EA
E604.4033	Precast Concrete Manhole Bases 72" Inside Diameter - 3'	EA
E604.4034	Precast Concrete Manhole Bases 72" Inside Diameter - 4'	EA
E604.4035	Precast Concrete Manhole Bases 72" Inside Diameter - 5'	EA
E604.4111	Precast Concrete Barrel Riser Section 48" Inside Diameter - 1'	EA
E604.4112	Precast Concrete Barrel Riser Section 48" Inside Diameter - 2'	EA
E604.4113	Precast Concrete Barrel Riser Section 48" Inside Diameter - 3'	EA
E604.4114	Precast Concrete Barrel Riser Section 48" Inside Diameter - 4'	EA
E604.4121	Precast Concrete Barrel Riser Section 60" Inside Diameter - 1'	EA
E604.4122	Precast Concrete Barrel Riser Section 60" Inside Diameter - 2'	EA
E604.4123	Precast Concrete Barrel Riser Section 60" Inside Diameter - 3'	EA
E604.4124	Precast Concrete Barrel Riser Section 60" Inside Diameter - 4'	EA
E604.4131	Precast Concrete Barrel Riser Section 72" Inside Diameter - 1'	EA
E604.4132	Precast Concrete Barrel Riser Section 72" Inside Diameter - 2'	EA
E604.4133	Precast Concrete Barrel Riser Section 72" Inside Diameter - 3'	EA
E604.4134	Precast Concrete Barrel Riser Section 72" Inside Diameter - 4'	EA
E604.4211	Precast Concrete Top Sections 1' Flat Top - 48" Diameter	EA

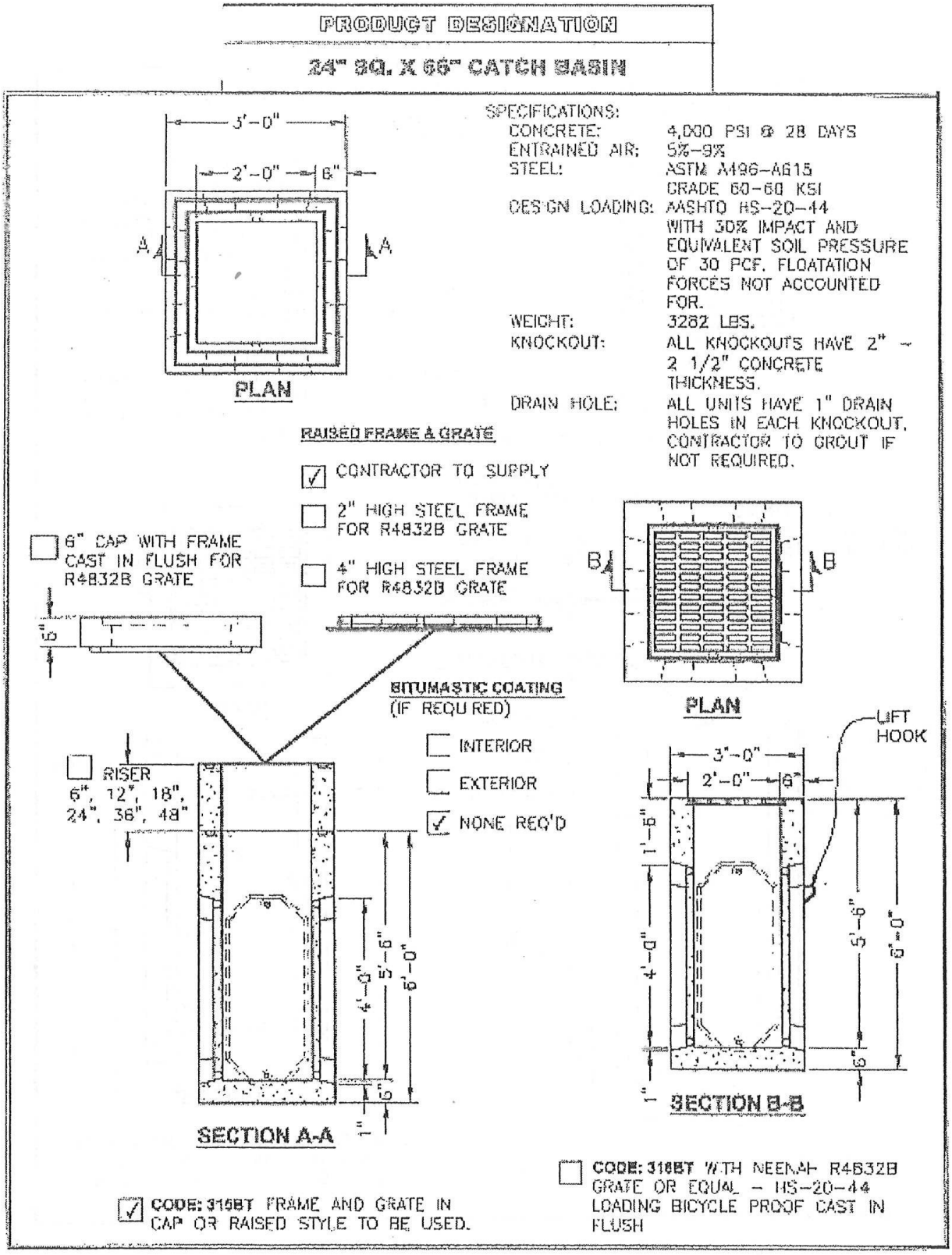
Item No.	Item	Pay Unit
E604.4212	Precast Concrete Top Sections 1' Flat Top - 60" Diameter	EA
E604.4213	Precast Concrete Top Sections 1' Flat Top - 72" Diameter	EA
E604.4221	Precast Concrete Top Sections 2' Flat Top - 48" Diameter	EA
E604.4222	Precast Concrete Top Sections 2' Flat Top - 60" Diameter	EA
E604.4223	Precast Concrete Top Sections 2' Flat Top - 72" Diameter	EA
E604.4231	Precast Concrete Top Sections 3' Concentric Cone - 48" Diameter	EA
E604.4232	Precast Concrete Top Sections 3' Concentric Cone - 60" Diameter	EA
E604.4241	Precast Concrete Top Sections 4' Concentric Cone - 48" Diameter	EA
E604.4242	Precast Concrete Top Sections 4' Concentric Cone - 60" Diameter	EA
E604.4251	Precast Concrete Top Sections Manhole "O" Rings - 48" Diameter	EA
E604.4252	Precast Concrete Top Sections Manhole "O" Rings - 60" Diameter	EA
E604.4253	Precast Concrete Top Sections Manhole "O" Rings - 72" Diameter	EA
E604.4308	Precast Concrete Pipe Outlet, Boot & Installation - 8"	EA
E604.4310	Precast Concrete Pipe Outlet, Boot & Installation - 10"	EA
E604.4312	Precast Concrete Pipe Outlet, Boot & Installation - 12"	EA
E604.4315	Precast Concrete Pipe Outlet, Boot & Installation - 15"	EA

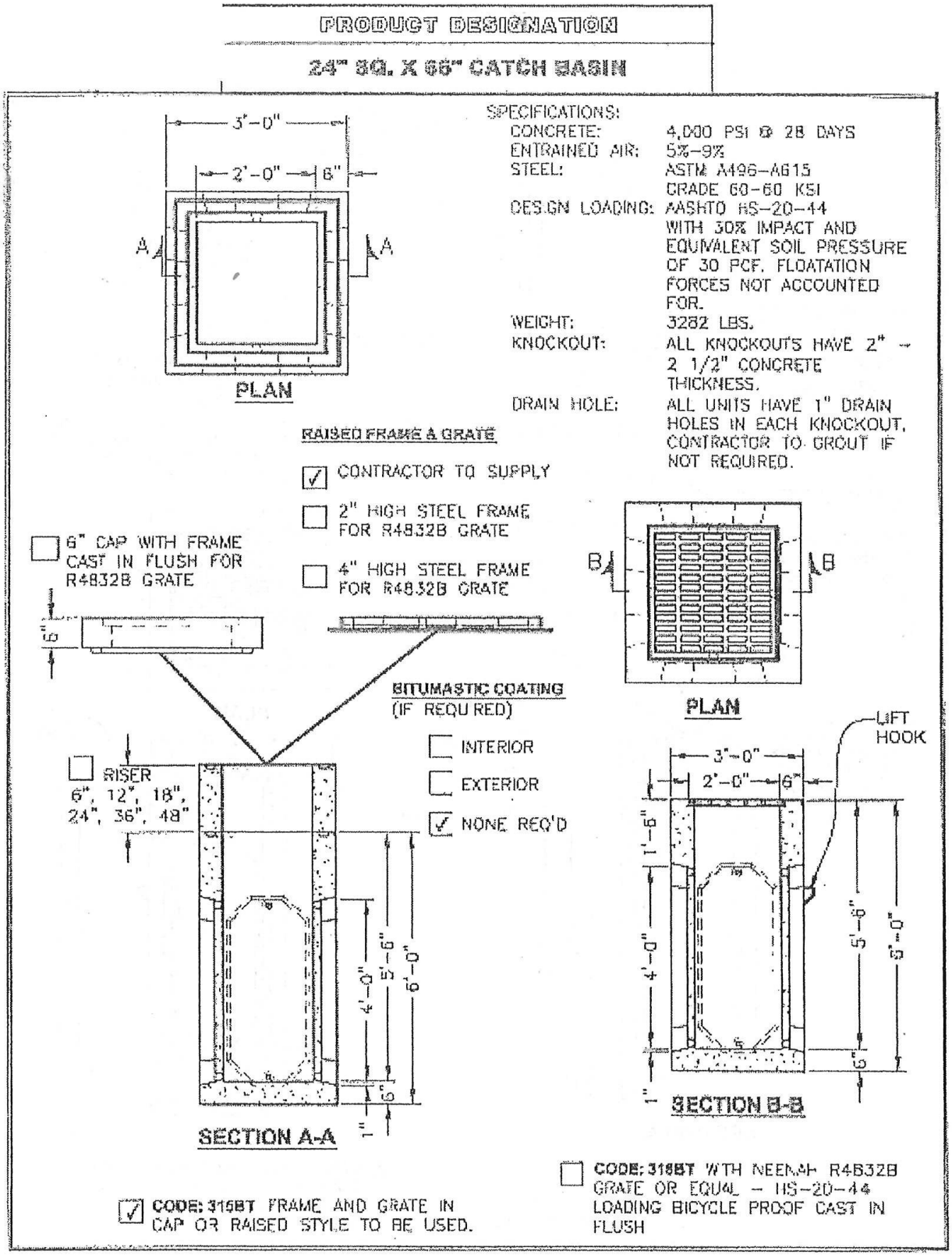

NOTES:
Concrete : 6 bag mix, 3000 PSI @ 28 days.
Steel : As Required
Frame and Grate : Neenah R-48328 or equal
Weight STANDARD : 3,000 lbs.
3,000 lbs. = 1.5 tons
Weight SHALLOW : 2,500 lbs.
2,500 lbs. = 1.25 tons
3'-0"
A
A
TOP VIEW
5" DIA. DRAIN HOLE
5" DIA. DRAIN HOLE
10"
1 1/2"
20"
36"
4'-6"
5'-0"
6"
24" SQ.
6"
6"
6"
3'-0"
SECTION A–A
ITEM E604.0501
STANDARD
24" DIA.
2"
3'-0"
SECTION A–A
ITEM E604.0502
SHALLOW
KNOCKOUTS SHOULD BE SUFFICIENT TO ACCEPT 24" HIGH DENSITY POLYETHYLENE PIPE

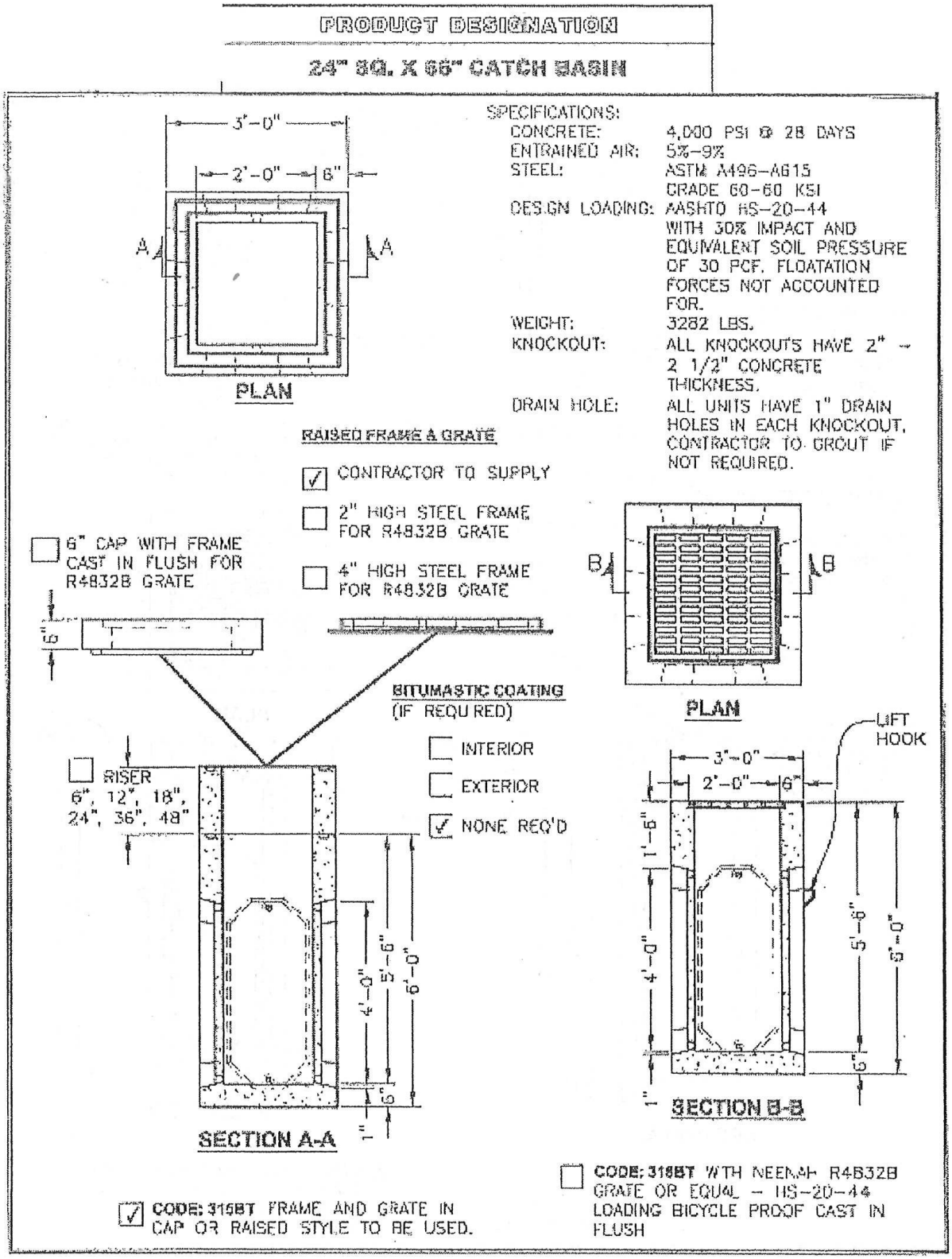

NOTES:
Concrete : 6 bag mix, 3000 PSI @ 28 days.
Steel : As Required
Frame and Grate : Neenah R-48328 or equal
Weight STANDARD : 3,000 lbs. 3,000 lbs. = 1.5 tons
Weight SHALLOW : 2,500 lbs. 2,500 lbs. = 1.25 tons
3'-6"
A
A
TOP VIEW
5" DIA. DRAIN HOLE
5" DIA. DRAIN HOLE
10"
1 1/2"
30"
36"
4'-6"
5'-0"
6"
30"SQ
6"
6"
6"
3'-6"
SECTION A-A
ITEM E504.0503
STANDARD
24" DIA.
2"
3'-
SECTION A-A
ITEM E504.0504
SHALLOW
KNOCKOUTS SHOULD BE SUFFICIENT TO ACCEPT 24" HIGH DENSITY POLYETHYLENE PIPE

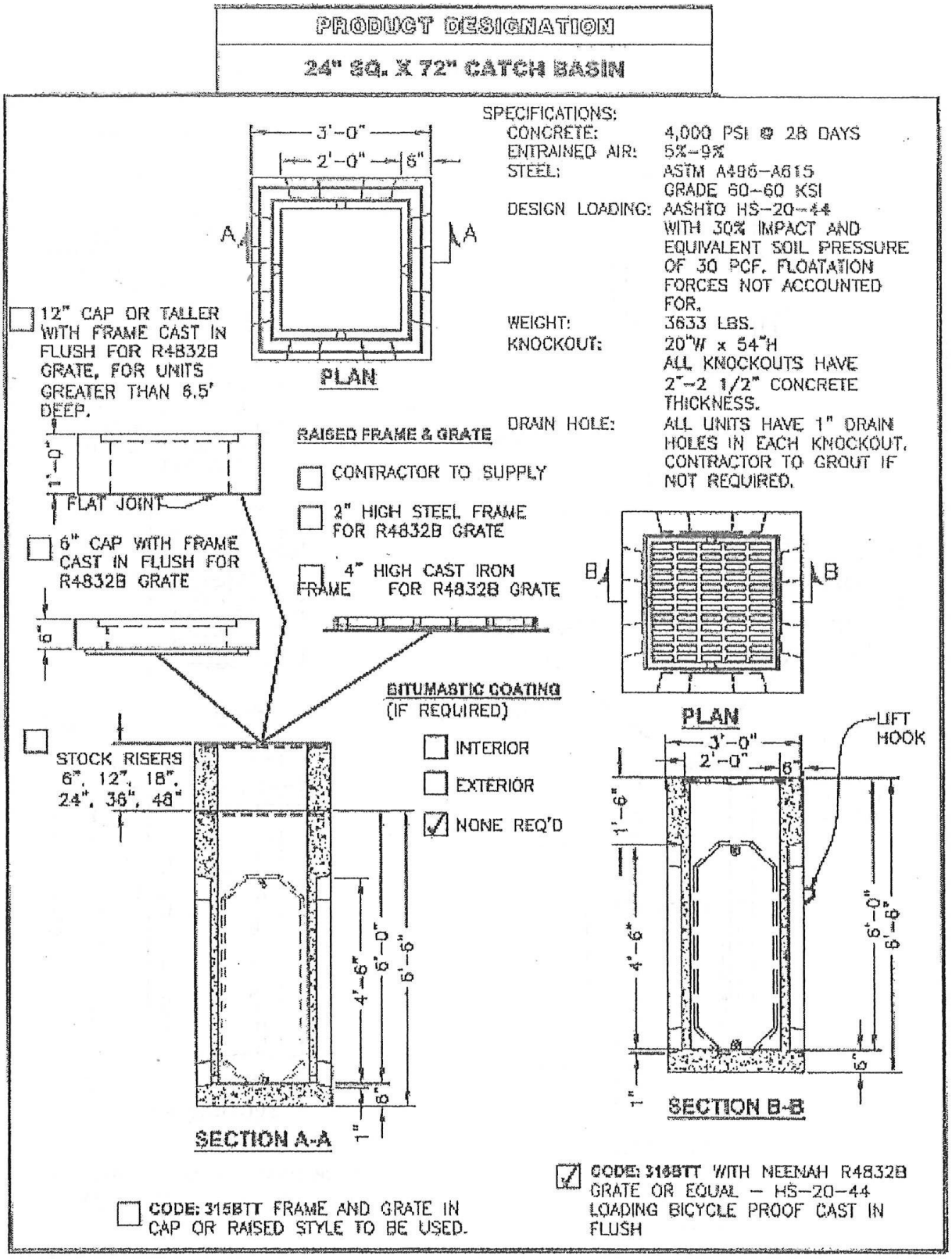

PRODUCT DESIGNATION
24" SQ. X 24" CATCH BASIN
3'-0"
2'-0"
6"
A
A
PLAN
SPECIFICATIONS:
CONCRETE: 4,000 PSI @ 28 DAYS
ENTRAINED AIR: 5%-9%
STEEL: ASTM A496-A615 GRADE 60-60 KSI
DESIGN LOADING: AASHTO HS-20-44 WITH 30% IMPACT AND EQUIVALENT SOIL PRESSURE OF 30 PCF. FLOATATION FORCES NOT ACCOUNTED FOR.
WEIGHT: 1,586 LBS.
KNOCKOUT: ALL KNOCKOUTS HAVE 2" - 2 1/2" CONCRETE THICKNESS.
DRAIN HOLE: ALL UNITS HAVE 1" DRAIN HOLES IN EACH KNOCKOUT. CONTRACTOR TO GROUT IF NOT REQUIRED.
RAISED FRAME & GRATE
CONTRACTOR TO SUPPLY
2" HIGH STEEL FRAME FOR R4832B GRATE
4" HIGH STEEL FRAME FOR R4832B GRATE
6" CAP WITH FRAME CAST IN FLUSH FOR R4832B GRATE
6"
B
B
PLAN
BITUMASTIC COATING (IF REQUIRED)
INTERIOR
EXTERIOR
NONE REQ'D
RISER 6", 12", 18", 24", 36", 48"
1'-3"
2'-0"
2'-6"
6"
1"
SECTION A-A
3'-0"
2'-0"
6"
LIFT HOOK
4"
1'-8"
2'-0"
2'-6"
6"
1"
SECTION B-B
CODE: 315BSS FRAME AND GRATE N CAP OR RAISED STYLE TO BE USED.
CODE: 315BSS WITH NEENAH R4832B GRATE OR EQUAL - HS-20-44 LOADING BICYCLE PROOF CAST IN FLUSH

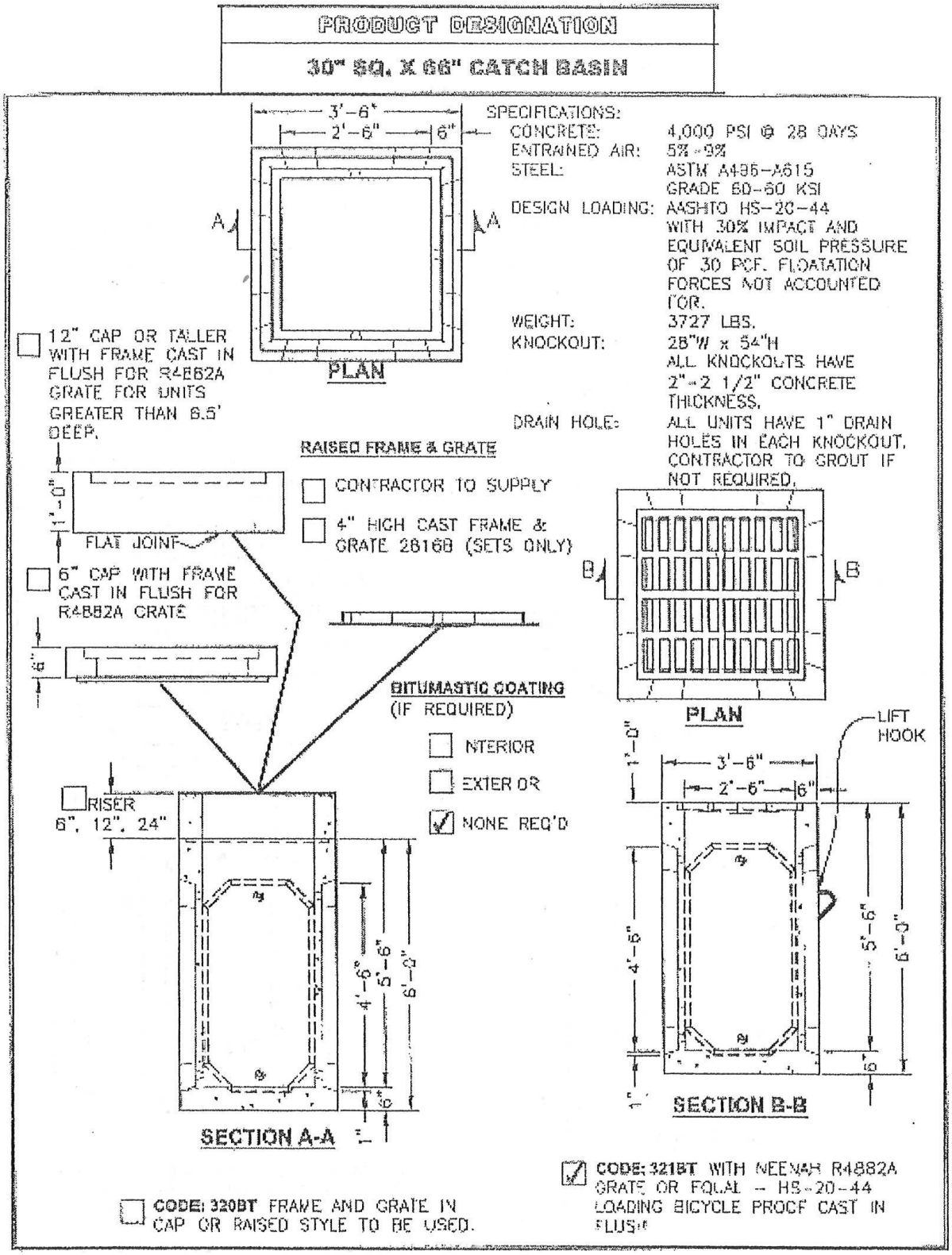

PRODUCT DESIGNATION
24" SQ. X 48" CATCH BASIN
3'-0"
2'-0"
6"
A
A
PLAN
SPECIFICATIONS:
CONCRETE: 4,000 PSI @ 28 DAYS
ENTRAINED AIR: 5%-9%
STEEL: ASTM A496-A615 GRADE 60-60 KSI
DESIGN LOADING: AASHTO HS-20-44 WITH 30% IMPACT AND EQUIVALENT SOIL PRESSURE OF 30 PCF. FLOATATION FORCES NOT ACCOUNTED FOR.
WEIGHT: 2564 LBS.
KNOCKOUT: ALL KNOCKOUTS HAVE 2" - 2 1/2" CONCRETE THICKNESS.
DRAIN HOLE: ALL UNITS HAVE 1" DRAIN HOLES IN EACH KNOCKOUT. CONTRACTOR TO GROUT IF NOT REQUIRED.
RAISED FRAME & GRATE
CONTRACTOR TO SUPPLY
2" HIGH STEEL FRAME FOR R4832B GRATE
4" HIGH STEEL FRAME FOR R4832B GRATE
6" CAP WITH FRAME CAST IN FLUSH FOR R4832B GRATE
6"
BITUMASTIC COATING (IF REQUIRED)
INTERIOR
EXTERIOR
NONE REQ'D
RISER 6", 12", 18", 24", 36", 48"
3'-0"
4'-0"
4'-6"
2"
6"
SECTION A-A
CODE: 3158-4 FRAME AND GRATE IN CAP OR RAISED STYLE TO BE USED.
B
B
PLAN
3'-0"
2'-0"
6"
LIFT HOOK
1'-0"
3'-0"
1"
4'-0"
4'-6"
6"
SECTION B-B
CODE: 3158-4 WITH NEENAH R4832B GRATE OR EQUAL - HS-20-44 LOADING BICYCLE PROOF CAST IN FLUSH


PRODUCT DESIGNATION
24" SQ. X 66" CATCH BASIN
3'-0"
2'-0"
6"
A
A
PLAN
SPECIFICATIONS:
CONCRETE: 4,000 PSI @ 28 DAYS
ENTRAINED AIR: 5%-9%
STEEL: ASTM A496-A615 GRADE 60-60 KSI
DESIGN LOADING: AASHTO HS-20-44 WITH 30% IMPACT AND EQUIVALENT SOIL PRESSURE OF 30 PCF. FLOATATION FORCES NOT ACCOUNTED FOR.
WEIGHT: 3282 LBS.
KNOCKOUT: ALL KNOCKOUTS HAVE 2" - 2 1/2" CONCRETE THICKNESS.
DRAIN HOLE: ALL UNITS HAVE 1" DRAIN HOLES IN EACH KNOCKOUT. CONTRACTOR TO GROUT IF NOT REQUIRED.
RAISED FRAME & GRATE
CONTRACTOR TO SUPPLY
2" HIGH STEEL FRAME FOR R4832B GRATE
4" HIGH STEEL FRAME FOR R4832B GRATE
6" CAP WITH FRAME CAST IN FLUSH FOR R4832B GRATE
6"
B
B
PLAN
BITUMASTIC COATING (IF REQUIRED)
INTERIOR
EXTERIOR
NONE REQ'D
RISER 6", 12", 18", 24", 36", 48"
4'-0"
5'-6"
6'-0"
1"
SECTION A-A
LIFT HOOK
3'-0"
2'-0"
6"
1'-6"
4'-0"
5'-6"
6'-0"
6"
1"
SECTION B-B
CODE: 316BT FRAME AND GRATE IN CAP OR RAISED STYLE TO BE USED.
CODE: 316BT WITH NEENAH R4632B GRATE OR EQUAL - HS-20-44 LOADING BICYCLE PROOF CAST IN FLUSH

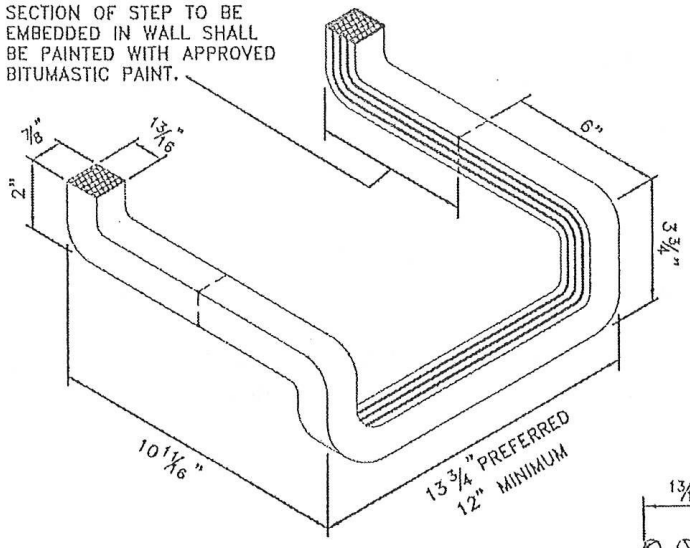

PRODUCT DESIGNATION
24" SQ. X 66" CATCH BASIN
3'-0"
2'-0"
6"
A
A
PLAN
SPECIFICATIONS:
CONCRETE: 4,000 PSI @ 28 DAYS
ENTRAINED AIR: 5%-9%
STEEL: ASTM A496-A615 GRADE 60-60 KSI
DESIGN LOADING: AASHTO HS-20-44 WITH 30% IMPACT AND EQUIVALENT SOIL PRESSURE OF 30 PCF. FLOATATION FORCES NOT ACCOUNTED FOR.
WEIGHT: 3282 LBS.
KNOCKOUT: ALL KNOCKOUTS HAVE 2" - 2 1/2" CONCRETE THICKNESS.
DRAIN HOLE: ALL UNITS HAVE 1" DRAIN HOLES IN EACH KNOCKOUT. CONTRACTOR TO GROUT IF NOT REQUIRED.
RAISED FRAME & GRATE
CONTRACTOR TO SUPPLY
2" HIGH STEEL FRAME FOR R4832B GRATE
4" HIGH STEEL FRAME FOR R4832B GRATE
6" CAP WITH FRAME CAST IN FLUSH FOR R4832B GRATE
6"
BITUMASTIC COATING (IF REQUIRED)
INTERIOR
EXTERIOR
NONE REQ'D
RISER 6", 12", 18", 24", 36", 48"
4'-0"
5'-6"
6'-0"
1"
SECTION A-A
B
B
PLAN
LIFT HOOK
3'-0"
2'-0"
6"
1'-6"
4'-0"
5'-6"
6'-0"
1"
SECTION B-B
CODE: 315BT FRAME AND GRATE IN CAP OR RAISED STYLE TO BE USED.
CODE: 315BT WITH NEENAH R4832B GRATE OR EQUAL - HS-20-44 LOADING BICYCLE PROOF CAST IN FLUSH


PRODUCT DESIGNATION
24" SQ. X 66" CATCH BASIN
3'-0"
2'-0"
6"
A
A
PLAN
SPECIFICATIONS:
CONCRETE: 4,000 PSI @ 28 DAYS
ENTRAINED AIR: 5%-9%
STEEL: ASTM A496-A615 GRADE 60-60 KSI
DESIGN LOADING: AASHTO HS-20-44 WITH 30% IMPACT AND EQUIVALENT SOIL PRESSURE OF 30 PCF. FLOATATION FORCES NOT ACCOUNTED FOR.
WEIGHT: 3282 LBS.
KNOCKOUT: ALL KNOCKOUTS HAVE 2" - 2 1/2" CONCRETE THICKNESS.
DRAIN HOLE: ALL UNITS HAVE 1" DRAIN HOLES IN EACH KNOCKOUT. CONTRACTOR TO GROUT IF NOT REQUIRED.
RAISED FRAME & GRATE
☑ CONTRACTOR TO SUPPLY
☐ 2" HIGH STEEL FRAME FOR R4832B GRATE
☐ 4" HIGH STEEL FRAME FOR R4832B GRATE
☐ 6" CAP WITH FRAME CAST IN FLUSH FOR R4832B GRATE
6"
B
B
PLAN
BITUMASTIC COATING (IF REQUIRED)
☐ INTERIOR
☐ EXTERIOR
☑ NONE REQ'D
☐ RISER 6", 12", 18", 24", 36", 48"
4'-0"
5'-6"
6'-0"
6"
1"
SECTION A-A
LIFT HOOK
3'-0"
2'-0"
6"
1'-6"
4'-0"
5'-6"
6'-0"
6"
1"
SECTION B-B
☑ CODE: 315BT FRAME AND GRATE IN CAP OR RAISED STYLE TO BE USED.
☐ CODE: 315BT WITH NEENAH R4B32B GRATE OR EQUAL - HS-20-44 LOADING BICYCLE PROOF CAST IN FLUSH


PRODUCT DESIGNATION
24" SQ. X 72" CATCH BASIN
SPECIFICATIONS:
CONCRETE: 4,000 PSI @ 28 DAYS
ENTRAINED AIR: 5%–9%
STEEL: ASTM A496–A615 GRADE 60–60 KSI
DESIGN LOADING: AASHTO HS–20–44 WITH 30% IMPACT AND EQUIVALENT SOIL PRESSURE OF 30 PCF. FLOATATION FORCES NOT ACCOUNTED FOR.
WEIGHT: 3633 LBS.
KNOCKOUT: 20"W x 54"H ALL KNOCKOUTS HAVE 2"–2 1/2" CONCRETE THICKNESS.
DRAIN HOLE: ALL UNITS HAVE 1" DRAIN HOLES IN EACH KNOCKOUT. CONTRACTOR TO GROUT IF NOT REQUIRED.
3'–0"
2'–0"
6"
A
A
PLAN
12" CAP OR TALLER WITH FRAME CAST IN FLUSH FOR R4832B GRATE, FOR UNITS GREATER THAN 6.5' DEEP.
1'–0"
FLAT JOINT
6" CAP WITH FRAME CAST IN FLUSH FOR R4832B GRATE
6"
RAISED FRAME & GRATE
CONTRACTOR TO SUPPLY
2" HIGH STEEL FRAME FOR R4832B GRATE
4" HIGH CAST IRON FRAME FOR R4832B GRATE
BITUMASTIC COATING (IF REQUIRED)
INTERIOR
EXTERIOR
NONE REQ'D
STOCK RISERS 6", 12", 18", 24", 36", 48"
4'–6"
6'–0"
6'–6"
6"
1"
SECTION A-A
B
B
PLAN
LIFT HOOK
3'–0"
2'–0"
6"
1'–6"
4'–6"
6'–0"
6'–6"
6"
1"
SECTION B-B
CODE: 315BTT FRAME AND GRATE IN CAP OR RAISED STYLE TO BE USED.
CODE: 315BTT WITH NEENAH R4832B GRATE OR EQUAL – HS–20–44 LOADING BICYCLE PROOF CAST IN FLUSH


PRODUCT DESIGNATION
30" SQ. X 66" CATCH BASIN
3'-6"
2'-6"
6"
A
A
PLAN
SPECIFICATIONS:
CONCRETE: 4,000 PSI @ 28 DAYS
ENTRAINED AIR: 5% - 9%
STEEL: ASTM A496-A615 GRADE 60-60 KSI
DESIGN LOADING: AASHTO HS-20-44 WITH 30% IMPACT AND EQUIVALENT SOIL PRESSURE OF 30 PCF. FLOATATION FORCES NOT ACCOUNTED FOR.
WEIGHT: 3727 LBS.
KNOCKOUT: 28"W x 54"H ALL KNOCKOUTS HAVE 2"-2 1/2" CONCRETE THICKNESS.
DRAIN HOLE: ALL UNITS HAVE 1" DRAIN HOLES IN EACH KNOCKOUT. CONTRACTOR TO GROUT IF NOT REQUIRED.
12" CAP OR TALLER WITH FRAME CAST IN FLUSH FOR R4882A GRATE FOR UNITS GREATER THAN 6.5' DEEP.
RAISED FRAME & GRATE
CONTRACTOR TO SUPPLY
4" HIGH CAST FRAME & GRATE 2818B (SETS ONLY)
1'-0"
FLAT JOINT
6" CAP WITH FRAME CAST IN FLUSH FOR R4882A GRATE
6"
BITUMASTIC COATING (IF REQUIRED)
INTERIOR
EXTERIOR
NONE REQ'D
RISER 6", 12", 24"
4'-6"
5'-6"
6'-0"
SECTION A-A
B
B
PLAN
LIFT HOOK
1'-0"
3'-6"
2'-6"
6"
4'-6"
5'-6"
6'-0"
SECTION B-B
CODE: 320BT FRAME AND GRATE IN CAP OR RAISED STYLE TO BE USED.
CODE: 321BT WITH NEENAH R4882A GRATE OR EQUAL - HS-20-44 LOADING BICYCLE PROOF CAST IN FLUSH

STANDARD MANHOLE STEP



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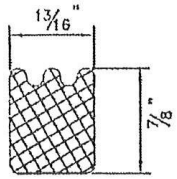
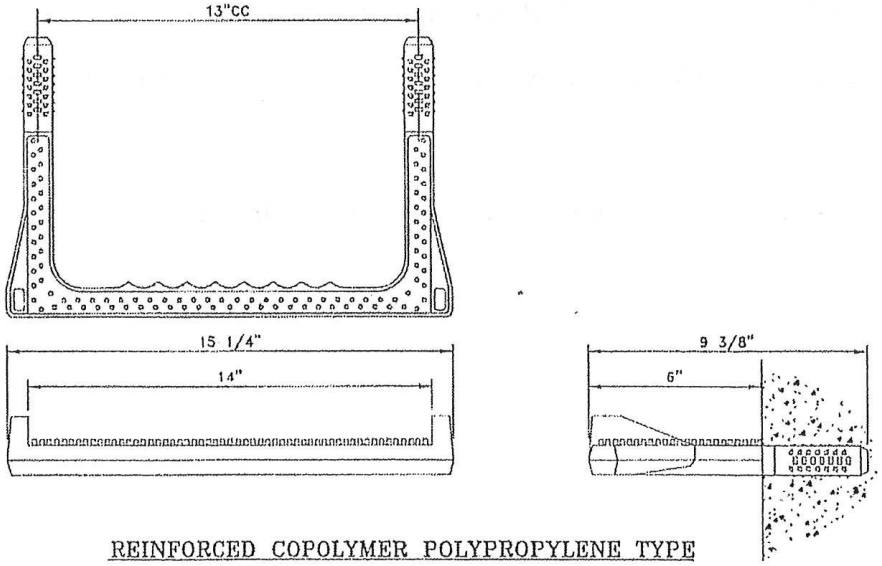


TYPICAL SECTION

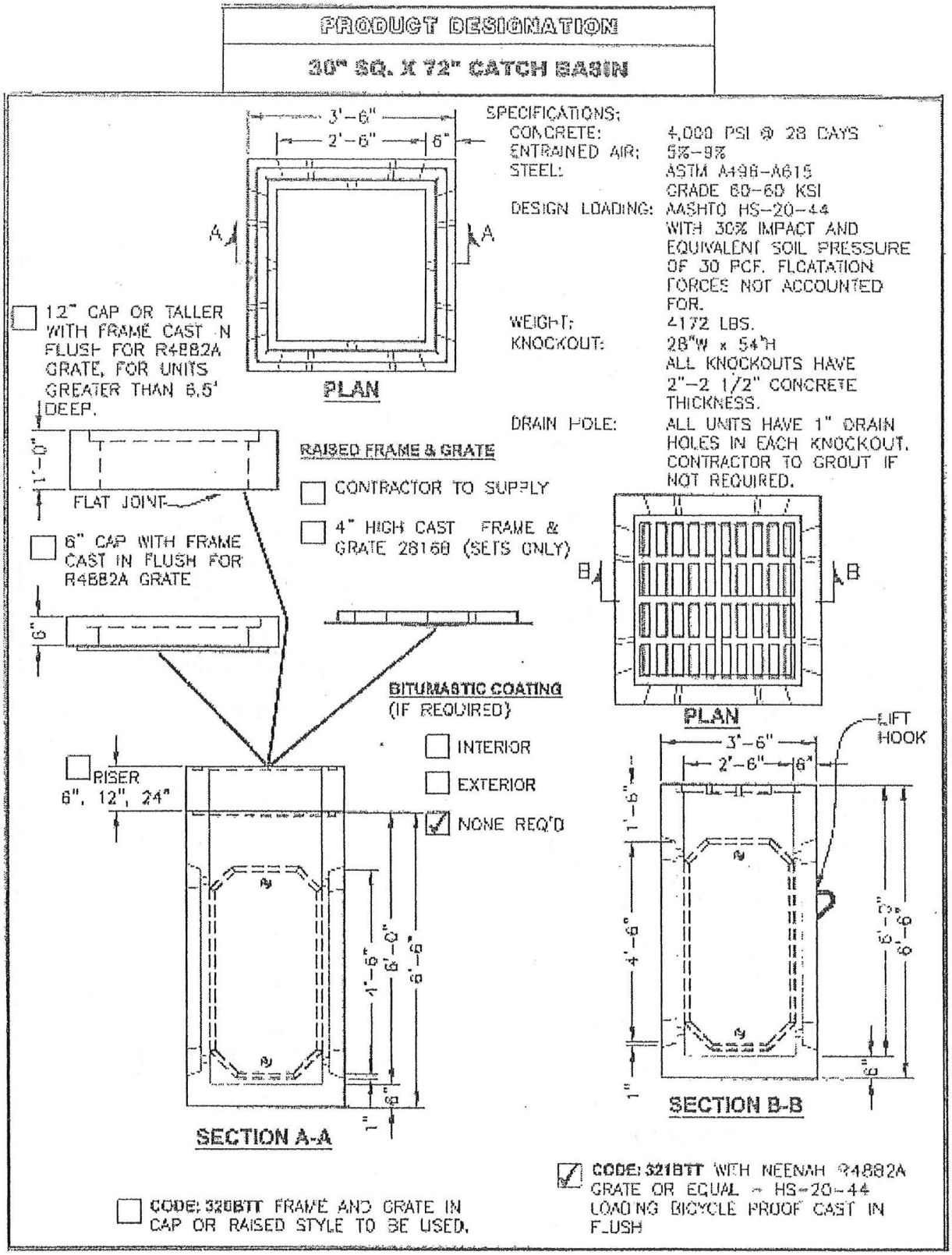
NOTES:

1. MANHOLE STEPS SHALL BE OF FORGED ALUMINUM ALLOY.
2. AN ACCEPTABLE ALTERNATE IS THE STEEL REINFORCED COPOLYMER POLYPROPYLENE MANHOLE STEP.
3. THE STEPS SHALL BE EMBEDDED IN THE WALLS OF THE CONCRETE PIPE BARREL WHILE THE PIPE IS BEING CAST OR SECURELY GROUTED IN PLACE AFTER CASTING.



REINFORCED COPOLYMER POLYPROPYLENE TYPE

ERIE COUNTY **DEPT. OF ENVIRONMENT & PLANNING** **DIVISION OF SEWERAGE MANAGEMENT**	**Rev. 1** 12/9/96	ADDED REINFORCED COLPOLYMER TYPE STEP	**STD.DETAIL** 17
	Rev. 2		
	File: d-17	**Date:** 3/1/91	


PRODUCT DESIGNATION
30" SQ. X 72" CATCH BASIN
3'-6"
2'-6"
6"
A
A
PLAN
SPECIFICATIONS:
CONCRETE: 4,000 PSI @ 28 DAYS
ENTRAINED AIR: 5%-9%
STEEL: ASTM A496-A615 GRADE 60-60 KSI
DESIGN LOADING: AASHTO HS-20-44 WITH 30% IMPACT AND EQUIVALENT SOIL PRESSURE OF 30 PCF. FLOATATION FORCES NOT ACCOUNTED FOR.
WEIGHT: 4172 LBS.
KNOCKOUT: 28"W x 54"H ALL KNOCKOUTS HAVE 2"-2 1/2" CONCRETE THICKNESS.
DRAIN HOLE: ALL UNITS HAVE 1" DRAIN HOLES IN EACH KNOCKOUT. CONTRACTOR TO GROUT IF NOT REQUIRED.
12" CAP OR TALLER WITH FRAME CAST IN FLUSH FOR R4882A GRATE, FOR UNITS GREATER THAN 6.5' DEEP.
1'-0"
FLAT JOINT
RAISED FRAME & GRATE
CONTRACTOR TO SUPPLY
4" HIGH CAST FRAME & GRATE 28160 (SETS ONLY)
6" CAP WITH FRAME CAST IN FLUSH FOR R4882A GRATE
6"
BITUMASTIC COATING (IF REQUIRED)
INTERIOR
EXTERIOR
NONE REQ'D
RISER 6", 12", 24"
1'-6"
6'-0"
6'-6"
1"
SECTION A-A
B
B
PLAN
LIFT HOOK
3'-6"
2'-6"
6"
1'-6"
4'-6"
6'-0"
6'-6"
1"
SECTION B-B
CODE: 320BTT FRAME AND GRATE IN CAP OR RAISED STYLE TO BE USED.
CODE: 321BTT WITH NEENAH R4882A GRATE OR EQUAL - HS-20-44 LOADING BICYCLE PROOF CAST IN FLUSH

SECTION 605 – UNDERDRAINS

Section 605 of the NYSDOT Standard Specifications and Special Specification 605.9810XX18 shall apply, except as modified herein.

METHOD OF MEASUREMENT:

Corrugated Polyethylene Underdrain Tubing and Pipe Couplings. The quantity measured shall be the number of couplings furnished and delivered.

BASIS OF PAYMENT:

General. The unit price bid shall include the cost of all materials furnished and delivered only. Installation is not included. All materials shall be delivered to location designated by the ordering agency.

Payment will be made under:

Item No.	Item	Pay Unit
E605.1501	Perforated Corrugated Polyethylene Underdrain Tubing, 4-in. dia.	Foot
E605.150101	Perforated Corrugated Polyethylene Underdrain Tubing, Coupling, 4-in. dia.	Each
E605.1502	Perforated Corrugated Polyethylene Underdrain Tubing, 6-in. dia.	Foot
E605.150201	Perforated Corrugated Polyethylene Underdrain Tubing, Coupling, 6-in. dia.	Each
E605.1503	Perforated Corrugated Polyethylene Underdrain Tubing, 8-in. dia.	Foot
E605.150301	Perforated Corrugated Polyethylene Underdrain Tubing, Coupling, 8-in. dia.	Each
E605.1504	Perforated Corrugated Polyethylene Underdrain Tubing, 10-in. dia.	Foot
E605.150401	Perforated Corrugated Polyethylene Underdrain Tubing, Coupling, 10-in. dia.	Each
E605.981012	Smooth Interior Perforated Corrugated Polyethylene Underdrain Pipe 12-in.	Foot
E605.981112	Smooth Interior Perforated Corrugated Polyethylene Underdrain Pipe – Coupling, 12-in.	Each
E605.981015	Smooth Interior Perforated Corrugated Polyethylene Underdrain Pipe, 15-in.	Foot
E605.981115	Smooth Interior Perforated Corrugated Polyethylene Underdrain Pipe – Coupling, 15-in.	Each
E605.981018	Smooth Interior Perforated Corrugated Polyethylene Underdrain Pipe, 18-in.	Foot
E605.981118	Smooth Interior Perforated Corrugated Polyethylene Underdrain Pipe – Coupling, 18-in.	Each
E605.981024	Smooth Interior Perforated Corrugated Polyethylene Underdrain Pipe, 24-in.	Foot
E605.981124	Smooth Interior Perforated Corrugated Polyethylene Underdrain Pipe – Coupling, 24-in.	Each

SECTION 606 – GUIDE RAILING, MEDIAN BARRIER, AND CONCRETE BARRIER

Section 606 of the NYSDOT Standard Specifications and the NYSDOT Standard Sheets for Section 606 shall apply, except as modified herein.

Contractors are advised to bid on all guide rail and related items including but not limited to Guide Rail Removal, Windrow excavation and disposal and paving of mowing strips.

The final award for the Guide Railing will be based on those bids that provide the lowest cost for total assembled unit. For example, should one bidder's cost for end assemblies be higher but the railing bid lower, resulting in the lowest total cost, that firm may receive the bid for both items, as a total assembled unit.

All guide rail items listed herein are intended to be used for repair at various locations or installations at one or more locations on road reconstruction projects twelve months of the year. Contact the Erie County Highway Division with any questions regarding materials or detail.

CONSTRUCTION DETAILS:

Heavy Post Blocked-Out Corrugated Beam Guide Railing. The NYSDOT Standard Specifications shall apply, with NYSDOT Standard Sheets 606-43.

I-Beam Posts for Existing Corrugated Beam Guide Railing. The NYSDOT Standard Specifications shall apply, with NYSDOT Standard Sheets 606-07.

I-Beam Posts for Existing Heavy Post Blocked-Out (Mod.) Corrugated Beam Guide Railing. The NYSDOT Standard Specifications shall apply, with NYSDOT Standard Sheets 606-09.

Guide Rail Removal: Under this item the Contractor shall remove and dispose of guide rail and posts of all types.

Asphalt Concrete Mowing Strips for Guide Rail: Under this item the Contractor shall furnish and install 2 inches of Type 3 Fine Binder (meeting the requirements of NYSDOT Standard Section 402), 3 feet wide centered under the proposed guide rail. Binder will be placed on a prepared earth subgrade. Removal of topsoil and grading of the earth subgrade in accordance with NYSDOT Standard Section 206 is included in this item. Payment will be made per ton installed.

Maintenance and Protection of Traffic for Guide Rail Operations. Under this item the Contractor shall maintain and protect traffic from the time operations begin until the new guide rail installation is complete and accepted. Signs, lights, barrels and barricades shall be furnished installed, moved and removed as required. Payment will be made per lineal foot of guide rail installation.

METHOD OF MEASUREMENT:

Box Beam or Corrugated Beam Guide Railing – Furnish Only. The quantity measured for payment shall be the same as for the installed railing, but will not include installation. It shall include all posts and hardware needed for the installation of the provided length of railing, and shall include delivery.

I-Beam Posts – Furnish Only. The quantity measured for payment shall be the same as in the NYSDOT Standard Specifications, but will not include installation. It shall include all hardware such as nuts, bolts, and washers needed for connection to the railing, and shall include delivery.

I-Beam Posts - Installation Only. I-beam posts for existing highway barrier will be measured by the actual number of posts installed. All posts, railing, and hardware shall be provided by others and paid for under a different item. All posts shall be provided at the project site, but may require the contractor to move the posts to the installation location.

Guide Rail Removal: The quantity measured for payment shall be the same as for installation of the railing type removed, and shall include all posts and hardware.

Asphalt Concrete Mowing Strips for Guide Rail: The quantity measured for payment shall be the number of tons of asphalt installed.

Maintenance and Protection of Traffic for Guide Rail Operations. The quantity measured will be based on the length of railing to be installed or removed, for which this item is needed.

BASIS OF PAYMENT:

Box Beam or Corrugated Beam Guide Railing – Furnished and Installed – Length Range Specified. The NYSDOT Standard Specification shall apply, except that the length to be paid shall be within the specified range.

Box Beam or Corrugated Beam Guide Railing – Furnish Only. The unit price bid per foot shall include the cost of all labor, equipment, and material necessary to furnish and deliver the material to any point within Erie County, but does not include installation. The payment will be determined using the payment factors for the various typical post spacings listed in NYSDOT Standard Specification Table 606-02. Payment will be the sum of the products obtained by multiplying the unit price bid for a rail or median barrier by the payment factors listed in Table 606-2 for the relevant post spacings and multiplying each of those products by the length of rail having that given post spacing.

End Assemblies – Furnish Only. The unit price bid per foot shall include the cost of all labor, equipment, and material necessary to furnish and deliver the material to any point within Erie County, but does not include installation.

I-Beam Posts – Furnish Only. The unit price bid per each shall include the cost of all labor, equipment, and material necessary to furnish and deliver the material to any point within Erie County, but does not include installation.

I-Beam Posts - Installation Only. The unit price bid per each shall include the cost of all labor, equipment, and material necessary to install and connect the posts at existing railing locations. The post itself will be provided by others or paid under other items of work. Removal of damaged posts and hardware is included in other items of work. When posts are driven through asphalt concrete or bituminous treated material, any repairs to damaged paved or treated areas shall be at the Contractor's expense.

SECTION 606 – GUIDE RAILING, MEDIAN BARRIER, AND CONCRETE BARRIER

Resetting Box Beam or Corrugated Beam Guide Railing (New Posts) – Furnished and Installed – Length Range Specified. The NYSDOT Standard Specification shall apply, except that the length to be paid shall be within the specified range.

Resetting HPBO Corrugated Beam Guide Railing – Installation only, Posts and Block-Outs Furnished by others – Length Range Specified. The NYSDOT Standard Specification shall apply, except that the posts and block outs shall be provided by the Owner, and the length to be paid shall be within the specified range. All hardware for the connections shall be included in the unit price bid.

Resetting Heavy Post Blocked-Out Corrugated Beam Guide Railing and Median Barrier (New 12" Blockouts). The bid price per foot shall include all heavy posts, blockouts, and hardware required for a 6'-3" post spacing. If the post spacing is not 6'-3" then the payment factors in Table 606-2 will apply.

Guide Rail Removal: The unit price bid for removal shall include the cost of all labor, equipment, and material to remove and dispose of the existing guide railing.

Asphalt Concrete Mowing Strips for Guide Rail: The unit price bid for removal shall include the cost of all labor, equipment, and material to remove the topsoil, grade the subgrade, and install the asphalt mowing strip.

Maintenance and Protection of Traffic for Guide Rail Operations. The unit price bid for removal shall include the cost of all labor, equipment, and material to for Maintenance and Protection of Traffic during Guide Rail Operations.

Payment shall be made under:

Item No.	Item	Pay Unit
E606.10A	Box Beam Guide Railing (Furnished & Installed) 1' - 100'	Foot
E606.10B	Box Beam Guide Railing (Furnished & Installed) 101' - 500'	Foot
E606.10C	Box Beam Guide Railing (Furnished & Installed) 501' - 1000'	Foot
E606.10D	Box Beam Guide Railing (Furnished & Installed) over 1000'	Foot
E606.10F	Box Beam Guide Railing (Furnish Only)	Foot
606.100002	Box Beam Guide Railing (Shop Bent or Shop Mitered) (Furnished and Installed)	Foot
E606.100002F	Box Beam Guide Railing (Shop Bent or Shop Mitered) (Furnish Only)	Foot
E606.11A	Box Beam Median Barrier (Furnished & Installed) 1' - 100'	Foot
E606.11B	Box Beam Median Barrier (Furnished & Installed) 101' - 500'	Foot
E606.11C	Box Beam Median Barrier (Furnished & Installed) 501' - 1000'	Foot
E606.11D	Box Beam Median Barrier (Furnished & Installed) over 1000'	Foot
606.120101	Box Beam End Piece	Each
606.120102	Box Beam Guide Railing End Assembly Type I (Furnish & Install)	Each
E606.120102F	Box Beam Guide Railing End Assembly Type I (Furnish Only)	Each
606.120201	Box Beam Guide Railing End Assembly Type IIA (Furnish & Install)	Each

Item No.	Item	Pay Unit
E606.120201F	Box Beam Guide Railing End Assembly Type IIA (Furnish Only)	Each
606.1203	Box Beam End Assembly Type III	Each
E606.18A	Weak-Post, Corrugated Beam Guide Rail (Furnished & Installed) 1' - 100'	Foot
E606.18B	Weak-Post, Corrugated Beam Guide Rail (Furnished & Installed) 101' - 500'	Foot
E606.18C	Weak-Post, Corrugated Beam Guide Rail (Furnished & Installed) 501' - 1000'	Foot
E606.18D	Weak-Post, Corrugated Beam Guide Rail (Furnished & Installed) over 1000'	Foot
E606.18F	Weak-Post, Corrugated Beam Guide Rail (Furnish Only)	Foot
606.22	Anchorage Units for Corrugated Beam Guide Railing (Furnished & Installed)	Each
606.23	Anchorage Units for Corrugated Beam Guide Railing (Driveways, Walkways and Other Openings) (Furnished & Installed)	Each
606.26	Corrugated Beam Guide Railing End Terminal (Energy- Absorbing) (Furnish & Install)	Each
606.27	HPBO (Mod.) Corrugated Beam Guide Railing End Terminal (Energy-Absorbing)	Each
E606.2701A	HPBO (Mod.) Corrugated Beam Guide Railing (Furnished & Installed) 1’ - 100’	Foot
E606.2701B	HPBO (Mod.) Corrugated Beam Guide Railing (Furnished & Installed) 101’ - 500’	Foot
E606.2701C	HPBO (Mod.) Corrugated Beam Guide Railing (Furnished & Installed) 501’ - 1000’	Foot
E606.2701D	HPBO (Mod.) Corrugated Beam Guide Railing (Furnished & Installed) over 1000’	Foot
606.270101	HPBO (Mod.) Corrugated Beam Guide Railing Shop Curved	Foot
606.2703	Anchorage Units for HPBO (Mod.) Corrugated Beam Guide Railing	Each
606.2704	Anchorage Units for HPBO (Mod.) Corrugated Beam Guide Railing Buried in Back Slope	Each
E606.32A	Heavy Post Blocked-Out Corrugated Beam Guide Railing (Furnished & Installed) 1’-100’	Foot
E606.32B	Heavy Post Blocked-Out Corrugated Beam Guide Railing (Furnished & Installed) 101’-500’	Foot
E606.32C	Heavy Post Blocked-Out Corrugated Beam Guide Railing (Furnished & Installed) 501’-1,000’	Foot
E606.32D	Heavy Post Blocked-Out Corrugated Beam Guide Railing (Furnished & Installed) over 1000’	Foot
606.4805	I-Beam Posts for Existing Corrugated Beam Guide Railing (Furnished and Installed)	Each
E606.480501	I-Beam Posts for Existing Corrugated Beam Guide Railing (Furnish Only)	Each

Item No.	Item	Pay Unit
E606.480502	I-Beam Post Installations for Corrugated Beam Guide Railing (Installation only)	Each
606.4818	I-Beam Posts for Existing HPBO (Mod.) Corrugated Beam Guide Railing (Furnish & Install)	Each
E606.5148A	Resetting Corrugated Beam Guide Railing (New Posts) 1'-100'	Foot
E606.5148B	Resetting Corrugated Beam Guide Railing (New Posts) 101'-500'	Foot
E606.5148C	Resetting Corrugated Beam Guide Railing (New Posts) over 500’	Foot
E606.5348A	Resetting Box Beam Guide Railing (New Posts) 1'-100'	Foot
E606.5348B	Resetting Box Beam Guide Railing (New Posts) 101'-500'	Foot
E606.5348C	Resetting Box Beam Guide Railing (New Posts) over 500’	Foot
E606.5501A	Resetting HPBO Corrugated Beam Guide Railing (New 12” Blockouts) 1’-100’	Foot
E606.5501B	Resetting HPBO Corrugated Beam Guide Railing (New 12” Blockouts) 101’-500’	Foot
E606.5501C	Resetting HPBO Corrugated Beam Guide Railing (New 12” Blockouts) 501’-1,000’	Foot
E606.5501D	Resetting HPBO Corrugated Beam Guide Railing (New 12” Blockouts) over 1,000’	Foot
E606.550101	Resetting HPBO Corrugated Beam Guide Railing (Heavy Posts and Blockouts Furnished by Others)	Foot
E606.5601	Resetting HPBO Corrugated Beam Median Barrier (New 12” Blockouts)	Foot
E606.560101	Resetting HPBO Corrugated Beam Median Barrier (New 12” Blockouts) (Furnished by others)	Foot
606.5910	Resetting Anchorage Units for Corrugated Beam Guide Railing or Median Barrier	Each
606.86	Guide Rail Transition Corrugated Beam to Thrie Beam	Each
606.8701	Corrugated Beam Guide Railing Transition Assembly to Two Rail Steel Bridge Railing	Each
606.8702	Corrugated Beam Guide Railing Transition Assembly to Four Rail Steel Bridge Railing	Each
606.8703	Corrugated Beam Guide Railing Transition Assembly to Discontinuous Steel Bridge Railing	Each
606.8704	Corrugated Beam Guide Railing Transition Assembly to Concrete Parapets or Concrete Barrier	Each
606.8801	Transition from Box Beam Guide Rail to Jersey-shaped Concrete Barrier (One- or Two-Way Operation)	Each
606.8802	Transition from Jersey-shaped Concrete Barrier to Box Beam Guide Rail (One Way - Trailing End of Barrier)	Each
606.8901	Transition: HPBO (Mod.) Corrugated Guide Railing to Box Beam Guide Railing	Each

Item No.	Item	Pay Unit
606.8902	Transition: HPBO (Mod.) Corrugated Guide Railing to Weak Post Corrugated Beam Guide Railing	Each
E606.9905	Guiderail Removal	Foot
E606.9906	Asphalt Concrete Mowing Strips	Ton
E606.9909	Maintenance & Protection of Traffic	Foot

SECTION 608 – SIDEWALKS, DRIVEWAYS, BICYCLE PATHS AND VEGETATION CONTROL STRIPS

Section 608 of the NYSDOT Standard Specifications and Special Specification 608.0105NN09 shall apply, except as modified herein

METHOD OF MEASUREMENT:

Concrete Sidewalks and Driveways. Payment shall be made for the total cubic yards of concrete delivered. No installation will be required.

Concrete Curb Ramps. Item 608.0105NN09 shall apply.

Hot Mix Asphalt (HMA) Sidewalks, Driveways, Bicycle Paths and Vegetation Control Strips. Payment shall be made for the total tons delivered to the location directed. Price bid shall include all labor, materials, equipment and transportation costs required to deliver the materials only. No placement is required.

BASIS OF PAYMENT:

Concrete Sidewalks and Driveways. Unit price bid shall include all labor, materials, equipment and transportation costs required to deliver the materials within the indicated Maintenance District.

For all installed items, the unit price per each shall include all necessary Work Zone Traffic Control in conformance with MUTCD guidance.

Payment shall be made under:

Item No.	Item	Pay Unit
E608.010101	Concrete Sidewalks and Driveways - Clarence District	CY
E608.010102	Concrete Sidewalks and Driveways - Harlem District	CY
E608.010103	Concrete Sidewalks and Driveways - Hamburg District	CY
E608.010104	Concrete Sidewalks and Driveways - East Aurora District	CY
E608.010105	Concrete Sidewalks and Driveways - East Concord District	CY
E608.01050009	Curb Ramp as shown in project details	Each
E608.01050109	Curb Ramp Configuration Type 1	Each
E608.01050209	Curb Ramp Configuration Type 2	Each
E608.01050309	Curb Ramp Configuration Type 3	Each
E608.01050409	Curb Ramp Configuration Type 4	Each
E608.01050509	Curb Ramp Configuration Type 5	Each
E608.01050609	Curb Ramp Configuration Type 6	Each
E608.01050709	Curb Ramp Configuration Type 7	Each
E608.01050809	Curb Ramp Configuration Type 8	Each
E608.01050909	Curb Ramp Configuration Type 9	Each
E608.01051009	Curb Ramp Configuration Type 10	Each
E608.01051109	Curb Ramp Configuration Type 11	Each
E608.01051209	Curb Ramp Configuration Type 12	Each
E608.01051309	Curb Ramp Configuration Type 13	Each
E608.01051409	Curb Ramp Configuration Type 14	Each
E608.020102	Hot Mix Asphalt (HMA) Sidewalks, Driveways, Bicycle Paths, and Vegetation Control Strips	Ton
608.20	Surface Applied Detectable Warning Units	SY
608.21	Embedded Detectable Warning Units	SY

SECTION 609 – CURB AND CURB & GUTTER

Section 609 of the NYSDOT Standard Specifications and Special Specification 609.35000001 shall apply, except as modified herein.

Concrete Curb Type BB: A minimum of three hundred (300) linear feet per job site shall be installed. The curb shape shall be as per the detail for Item E609.03 Concrete Curb Type BB.

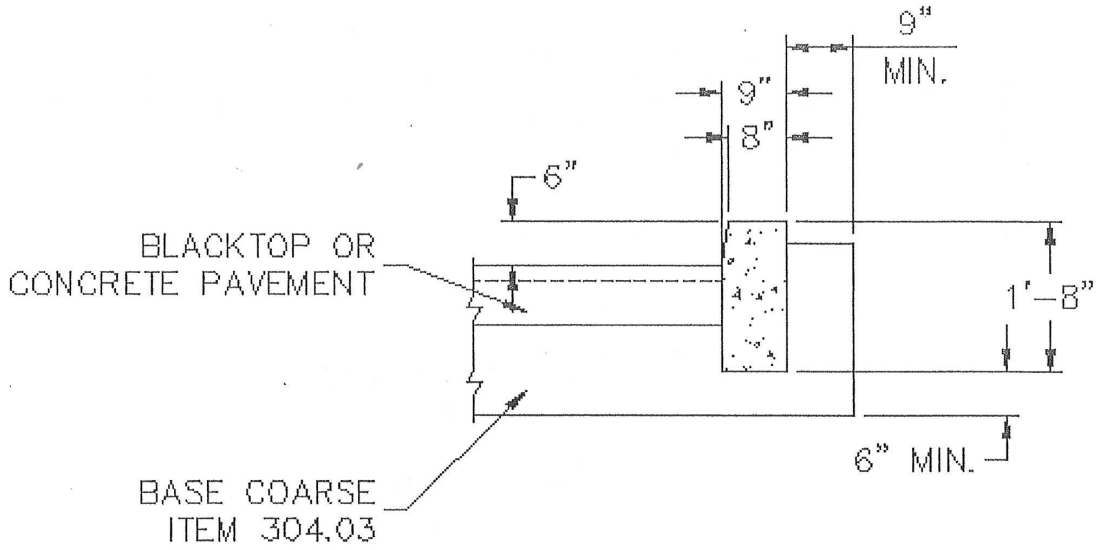
Concrete Gutter: A minimum of two hundred (200) linear feet per job site shall be installed. The gutter shape shall be as per the detail for Item E609.05 or E609.06

Concrete Curb and Gutter Type BB: A minimum of two hundred (200) linear feet per job site shall be installed. The curb and gutter shape shall be as per the detail for Item E609.05 Concrete Curb and Gutter Type BB.

Repair Existing Concrete Curb: Item 609.35000001 shall apply, as modified by detail for Item E609.25 Concrete Curb Repair

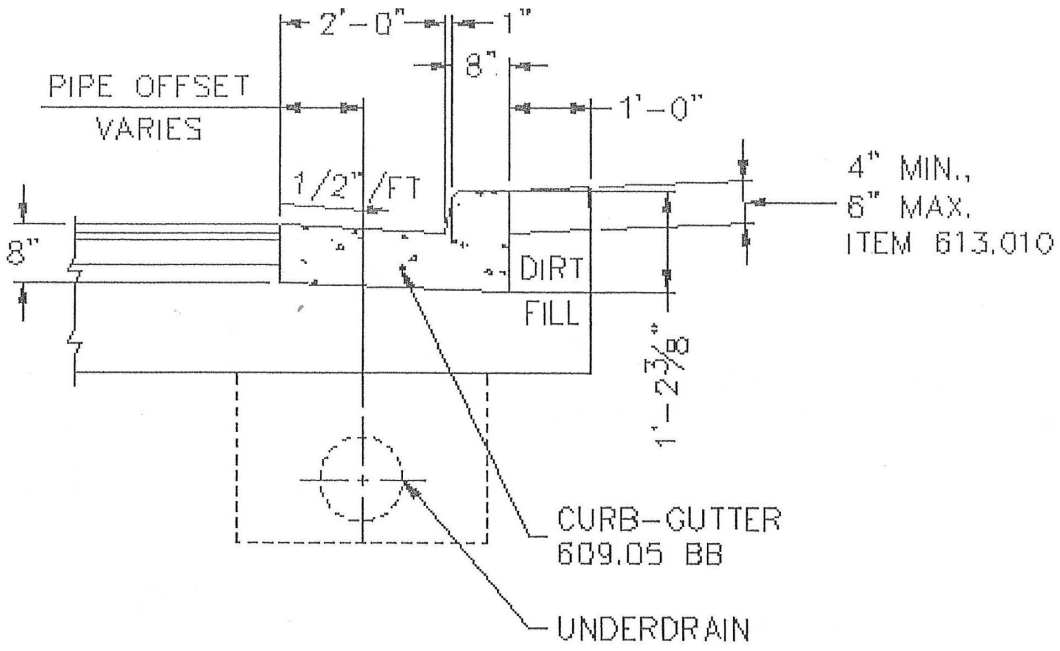
Payment shall be made under:

Item No.	Item	Pay Unit
E609.03	Concrete Curb Type BB	Foot
E609.04	Concrete Gutter Type BB	Foot
E609.05	Concrete Curb and Gutter Type BB	Foot
E609.06	Erie County Concrete Gutter	Foot
E609.25	Concrete Curb Repair	Foot

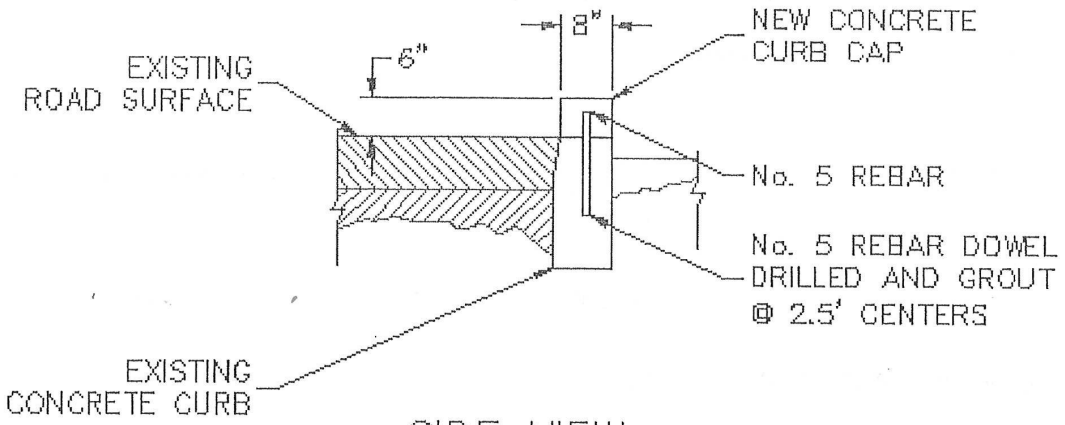


CONCRETE CURB
TYPE "BB"
NOT TO SCALE

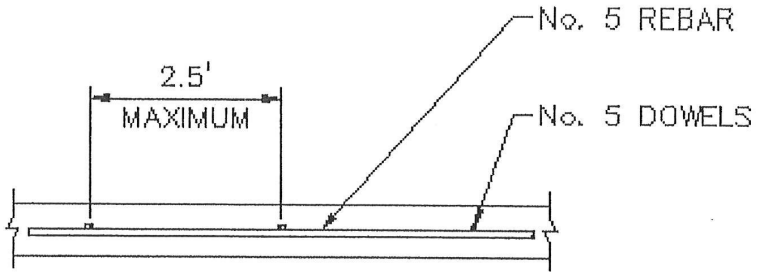
ITEM E609.03 CONCRETE CURB TYPE BB



ITEM E609.05 CONCRETE CURB AND GUTTER TYPE BB



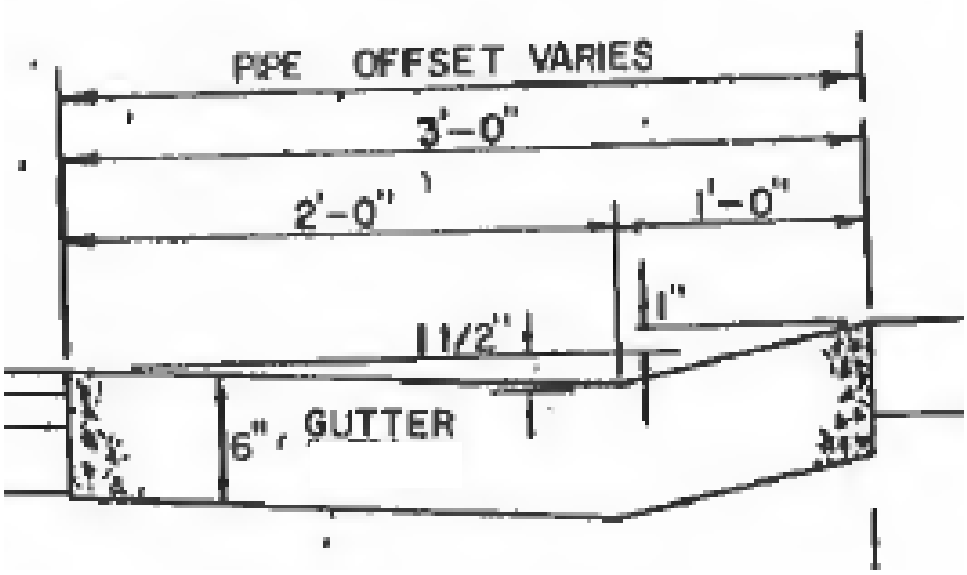
SIDE VIEW
NOT TO SCALE



TOP VIEW
NOT TO SCALE

THE UNIT PRICE BID PER LINEAR FOOT SHALL INCLUDE THE COST OF ALL LABOR, MATERIALS AND EQUIPMENT NECESSARY TO PERFORM THE WORK TO THE SATISFACTION OF THE ENGINEER, EXCEPT EXISTING CONCRETE CURB CAP TO BE REMOVED BY OTHERS.

ITEM E609.25 - CONCRETE CURB REPAIR



Item E609.06 – Erie County Concrete Gutter

SECTION 610 – GROUND VEGETATION – PREPARATION, ESTABLISHMENT AND MANAGEMENT

Section 610 of the NYSDOT Standard Specifications shall apply, except as modified herein.

DESCRIPTION.

Mowing. The Contractor shall provide all labor, equipment and material necessary to mow that area adjacent to the edge of pavement; the limit of this work area to be established by the Engineer.

CONSTRUCTION.

Mowing. Roadside vegetation to be cut to a final height as specified by the Owner, but not greater than 5 inches. Mowing may require work over guiderail, along ditch slopes, road shoulder and other areas depending on topography.

Equipment shall consist of but not be limited to tractor mounted "Brush-Hog" with rear or side extended booms and/or tractor side mounted "Sickle-Bar" type mowers.

Operations shall continue and be repeated, if necessary, until results are acceptable to the Engineer, provided that new growth has not occurred between mowings.

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 mowed.

All equipment on all tractor/mowers shall be in full compliance with the latest edition of the New York State Vehicle and Traffic Law and shall be equipped with all necessary warning lights, a combination of rotary lights and strobes mounted front and rear of the 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. Tractor/mower cabs shall also be equipped with two-way radios or mobile phones.

METHOD OF MEASUREMENT

Topsoil. Topsoil shall be measured in cubic yards.

Delivery of Topsoil. Delivery will be by truck load from the plant or pit to the job site.

Mowing. The quantity to be measured shall be the number of miles of roadway adjacent areas that are mowed. Measurement shall be made along edge of pavement. Additional quantity will be measured when the width of the mowing is greater than 10’ wide.

BASIS OF PAYMENT

Topsoil. The unit price bid shall include the cost of all labor, materials and equipment necessary to furnish and load the topsoil into trucks (either Erie County trucks or others).

SECTION 610 – GROUND VEGETATION – PREPARATION, ESTABLISHMENT AND MANAGEMENT

Delivery of Topsoil. The unit price bid for delivery of topsoil shall include the cost of supplying all equipment, labor and material necessary to end dump topsoil at a location designated within Erie County.

Mowing. The unit price bid shall include the cost of all labor, materials and equipment necessary to complete the work.

Payment will be made under:

Item No.	Item	Pay Unit
E610.1402	Topsoil – Roadside	CY
E610.140201	Delivery of Topsoil - Roadside (0 to 10 miles)	LS
E610.140202	Delivery of Topsoil - Roadside (11 to 20 miles)	LS
E610.140203	Delivery of Topsoil - Roadside (21 to 30 miles)	LS
E610.140204	Delivery of Topsoil - Roadside (Over 30 miles)	LS
E610.1403	Topsoil - Lawns	CY
E610.140301	Delivery of Topsoil - Lawns (0 to 10 miles)	LS
E610.140302	Delivery of Topsoil - Lawns (11 to 20 miles)	LS
E610.140303	Delivery of Topsoil - Lawns (21 to 30 miles)	LS
E610.140304	Delivery of Topsoil - Lawns (Over 30 miles)	LS
610.1601	Turf Establishment - Roadside	SY
610.1602	Turf Establishment - Lawns	SY
610.17	Wildflower Seeding	SY
E610.21	Mowing	Mile

SECTION 614 – PRUNING, IMPROVING AND REMOVING EXISTING VEGETATION

Section 614 of the NYSDOT Standard Specifications shall apply, except as modified herein.

Tree Topping: The work shall consist of topping and limbing as directed by the Engineer. All trees to be topped and limbed will be designated by the Engineer. The tree shall be cut to a height of two feet below all power, telephone and cable T.V. lines.

The Contractor will make available an aerial bucket, two (2) qualified tree climbers and related equipment necessary to satisfactorily complete the work.

The Owner shall provide all traffic control.

All wood, brush, and other debris resulting from the work shall be disposed of by the Owner's personnel.

Tree Trimming and Brush Chipping: The work shall consist of trimming and limbing as directed by the Engineer. All trees to be trimmed and limbed will be designated by the Engineer.

The Contractor will make available an aerial bucket, two (2) qualified tree climbers, chipper, container truck and related equipment necessary to satisfactorily complete the work.

The Owner shall provide all traffic control.

All wood, brush, and other debris resulting from the work shall be disposed of by Contractor and will not be disposed of on the Owner's property unless specifically instructed to do so by the owner.

Tree Removal: The work shall consist of complete removal of trees as designated by the Engineer.

The Contractor will make available an aerial bucket, two (2) qualified tree climbers, chipper, container truck, log hauler and related equipment necessary to satisfactorily complete the work.

All wood, brush, and other debris resulting from the work shall be disposed of by Contractor and will not be disposed of on the Owner's property.

Final disposition of the tree stumps will be directed by the Engineer and consist of either cut flush or ground to a depth of six inches below grade. Cut flush will be as close to the surrounding surface as possible. Ground stumps will be 6" below surrounding surface leaving all ground material on site.

Liability: The contractor shall protect and shall be liable for injuries to all plants, curbs, pavements, structures, utility lines and other features on the Highway right of way and adjacent property. Replacement and restoration shall be as approved by the Engineer.

METHOD OF MEASUREMENT

Tree Topping: Tree topping shall be measured by the number of crew hours spent to

satisfactorily complete the work.

Tree Trimming and Brush Chipping: Tree trimming shall be measured by the number of crew hours spent to satisfactorily complete the work.

E614-5 -BASIS OF PAYMENT

Tree Trimming, Brush Chipping, Topping and Removal: Payment for work will be based on the unit price bid, which payment shall constitute full compensation for all labor, materials, equipment and incidentals necessary to complete the work as specified.

Payment will be made under:

Item No.	Item	Pay Unit
E614.0201	Tree Topping	Hour
E614.0202	Tree Trimming and Brush Chipping	Hour
614.060102	Tree Removal over 4" to 6" Diam. Breast Height, Stumps Cut Flush	EA
614.060202	Tree Removal over 6" to 12" Diam. Breast Height, Stumps Cut Flush	EA
614.060302	Tree Removal over 12" to 18" Diam. Breast Height, Stumps Cut Flush	EA
614.060402	Tree Removal over 18" to 24" Diam. Breast Height, Stumps Cut Flush	EA
614.060502	Tree Removal over 24" to 36" Diam. Breast Height, Stumps Cut Flush	EA
614.060602	Tree Removal over 36" to 48" Diam. Breast Height, Stumps Cut Flush	EA
614.060702	Tree Removal over 48" to 60" Diam. Breast Height, Stumps Cut Flush	EA
614.060802	Tree Removal over 60" to 72" Diam. Breast Height, Stumps Cut Flush	EA
E614.060105	Tree Removal over 4" to 6" Diam. Breast Height, Stumps Ground	EA
E614.060205	Tree Removal over 6" to 12" Diam. Breast Height, Stumps Ground	EA
E614.060305	Tree Removal over 12" to 18" Diam. Breast Height, Stumps Ground	EA
E614.060405	Tree Removal over 18" to 24" Diam. Breast Height, Stumps Ground	EA
E614.060505	Tree Removal over 24" to 36" Diam. Breast Height, Stumps Ground	EA
E614.060605	Tree Removal over 36" to 48" Diam. Breast Height, Stumps Ground	EA
E614.060705	Tree Removal over 48" to 60" Diam. Breast Height, Stumps Ground	EA
E614.060805	Tree Removal over 60" to 72" Diam. Breast Height, Stumps Ground	EA

Item No.	Item	Pay Unit
614.0701	Pre-Existing Stump Removal up to 24" diameter at 6 inches above grade	EA
614.0702	Pre-Existing Stump Removal over 24" to 48" diameter at 6 inches above grade	EA
614.0703	Pre-Existing Stump Removal over 48" diameter at 6 inches above grade	EA

SECTION 619 – WORK ZONE TRAFFIC CONTROL

Section 619 of the NYSDOT Standard Specifications shall apply, except as modified herein.

MATERIALS

The Manual on Uniform Traffic Control Devices (MUTCD) as defined in NYSDOT Standard Specification 101-02 shall apply to all traffic control and channelization devices.

A. **Temporary Concrete Barrier**. Temporary concrete barrier shall be in conformance with NYSDOT Standard Specification 619 and NYSDOT Standard Sheets 619-01. Each section of barrier provided for purchase shall include one (1) connection key.

B. **Temporary Pavement Markings**. All temporary pavement markings shall use Traffic Paint.

C. **Drums with Bases.** Drums with bases used for road user warning or channelization shall meet the requirements of NYSDOT Standard Specification Section 729-01. All drums and bases shall be in new condition.

D. **Cones.** Cones shall meet the requirements of NYSDOT Standard Specification Section 729-02 for Tall Cones (approximately 36" in height). All cones shall be made of All cones shall be in new condition.

E. **Type III Barricades.** Type III barricades shall meet the requirements of NYSDOT Standard Specification Section 729-08. Barricades shall have a minimum of 270 square inches of retroreflective area facing road users.

   Barricade Foot – Perforated (Unistrut or Equal). Material to be of 14 gauge 1.75 to 2 inch galvanized steel square stock. The length of the barricade foot shall be 5 feet long. The perforated riser shall be 6 inches tall and be perforated on all four sides. Material fabricated to be telescopic to each other.

   Plastic Barricade Board. Material to be of 1 inch thick extruded hollow core high density polyethylene with internal walls for strength and durability. The boards shall meet all of the requirements for the Type III barricade rails as identified above, as well as the NYSDOT Standard Specifications

F. **Water Filled Barrier**. The water filled barrier shall be orange and 72 inches long by 32 inches tall by 18 inches wide and molded from linear low density polyethylene. The water filled barrier must be NCHRP-350-TL-1 tested and passed as a barrier. Barrier must be able to be connected together with galvanized steel T-pins passing through a double wall knuckle which minimizes breakage at hinge points. Wall shall be able to pivot up to 30 degrees when connected. Water filled barrier to have one 8 inch diameter fill hole for quick fill and a twist lock cap for closure. The drain plug shall be offset to protect against cracking or breaking and have course buttress threads for quick removal and attachment. Water barrier must have molded through holes to provide easy movement.

G. **Chip Seal Marker**. Material to be 4 inch wide and 2 inch tall polyurethane markers with butyl pad for adhesion to road surface. The markers shall two-way reflective strips with a stapled clear plastic cover to protect the marker and reflective sheeting during chip seal operations.

H. **Portable VMS** shall meet the requirements of Item 619.111211, except it shall be provided for the rental period designated.

I. **Temporary Impact Attenuator** shall meet the requirements of Item 619.1802, except it shall be provided for the rental period designated.

METHOD OF MEASUREMENT

Chip seal markers shall be bid in lots of 500 markers.

Drums with bases shall be bid in both per each and in lots of 100 drums.

Cones shall be bid in both per each and in lots of 250 cones.

Type III Barricades and Warning Lights shall be bid in both per each and in lots of 12 barricades.

The cost per linear foot of temporary concrete barrier shall include both full height sections and tapered end sections.

Rental items shall be paid per day, week, or month as indicated. A day shall be considered a 24 hour period, a week shall be 7 days, and a month shall be 28 calendar days.

BASIS OF PAYMENT

The price bid for Temporary Pavement Markings shall include installation.

The price bid for all other items shall include all materials delivered but not installed.

No payment will be made for damage caused by vehicle accidents, vandalism, or any other similar causes.

All materials to be delivered to the project site or maintenance barn. Rental items shall include both delivery and pick up.

Payment shall be made under:

Item No.	Item	Pay Unit
E619.0401	Type III Construction Barricade	Each
E619.040101	Type III Construction Barricade (Lot of 12 Barricades)	Lot
E619.0402	Type III Construction Barricade, with Warning Light	Each
E619.040201	Type III Construction Barricade, with Warning Light (Lot of 12)	Lot
E619.0403	Type III Construction Barricade – Foot for Barricade	Each
E619.0404	Type III Construction Barricade – 4 Foot Plastic Barricade Board	Each
E619.0405	Type III Construction Barricade Rental	Day
E619.0406	Type III Construction Barricade Rental	Week
E619.0407	Type III Construction Barricade Rental	Month
E619.0408	Warning Light for Type III Barricade (Light only)	Each
E619.040801	Warning Light for Type III Barricade (Light only, Lot of 12)	Lot

E619.090101	Temporary Pavement Markings (0 feet to 5,000 feet)	Foot
E619.090102	Temporary Pavement Markings (5,000 feet to 10,000 feet)	Foot
E619.090103	Temporary Pavement Markings (Over 10,000 feet)	Foot
E619.090111	Chip Seal Marker Two-Way Reflective – Yellow (Lot of 500)	Lot
E619.11121101	Portable, Variable Message Sign (PVMS) (LED)	Day
E619.11121102	Portable, Variable Message Sign (PVMS) (LED)	Week
E619.11121103	Portable, Variable Message Sign (PVMS) (LED)	Month
E619.170101	Temporary Concrete Barrier 10 Ft. Length, Standard Section	Each
E619.170102	Temporary Concrete Barrier 20 Ft. Length, Standard Section	Each
E619.170103	Temporary Concrete Barrier 20 Ft. Length, Tapered End Section	Each
E619.170104	Temporary Concrete Barrier Rental (Unpinned) (10 Lin Ft. Length)	Day
E619.170105	Temporary Concrete Barrier Rental (Unpinned) (10 Lin Ft. Length)	Week
E619.170106	Temporary Concrete Barrier Rental (Unpinned) (10 Lin Ft. Length)	Month
E619.170201	Temporary Concrete Barrier with Warning Lights Rental (Unpinned) (10 Lin Ft. Length)	Day
E619.170202	Temporary Concrete Barrier with Warning Lights Rental (Unpinned) (10 Lin Ft. Length)	Week
E619.170203	Temporary Concrete Barrier with Warning Lights Rental (Unpinned) (10 Lin Ft. Length)	Month
E619.1703	Pins for Temporary Concrete Barrier	Foot
E619.180201	Temporary Impact Attenuator - Redirective (Test Level 2) Rental	Day
E619.180202	Temporary Impact Attenuator - Redirective (Test Level 2) Rental	Week
E619.180203	Temporary Impact Attenuator - Redirective (Test Level 2) Rental	Month
E619.1901	Drums with Bases	Each
E619.190101	Drums with Bases (Lot of 100)	Lot
E619.1902	Cones	Each
E619.190201	Cones (Lot of 250)	Lot
E619.1903	Water Filled Barrier	Each
E619.27	Mailboxes	Each

SECTION 620 – BANK AND CHANNEL PROTECTION

Section 620 of the NYSDOT Standard Specifications shall apply, except as modified herein.

METHOD OF MEASUREMENT

Bedding Material. The quantity is the number of tons of material furnished, and loaded FOB onto the purchaser's trucks at the bidder's plant or pit. No delivery or installation is included in this item.

BASIS OF PAYMENT

Bedding Material. The unit price bid shall include the costs of furnishing all labor, material, and equipment necessary to load the materials onto the purchaser's trucks.

Payment will be made under:

Item No.	Item	Pay Unit
E620.0801	Bedding Material, Type 1 (Material Only)	Ton
E620.0802	Bedding Material, Type 2 (Material Only)	Ton

SECTION 621 - CLEANING CULVERTS, DRAINAGE STRUCTURES AND EXISTING ROADSIDE SECTIONS

Section 621 of the NYSDOT Standard Specifications shall apply, except as modified herein.

CONSTRUCTION DETAILS:

Oil & Water Separator – Maintenance/Cleaning: Erie County highway maintenance facilities have oil and water separators, needing vacuuming, cleaning and maintenance services performed on a regular basis. These maintenance services are to include the following:

1. Removing/vacuuming oils and solids from the separator
2. Dispose of all materials from the separator and cleaning operations.

These separators are located underground, outside a highway building and accessible through manhole covers.

Prior to servicing a specific oil water separator, the contractor shall provide the facility with an estimate of the number of hours and quantity of materials to be removed. The lowest bidder to be determined on the sum of items required for the work to be performed.

METHOD OF MEASUREMENT

Oil & Water Separator – Maintenance/Cleaning:

Vacuum Service. The Vacuum Service Fee will be measured on a Lump Sum basis.

Pumping. The quantity for pumping shall be the number of hours required to perform the pumping operations, to the nearest 0.25 hours.

Disposal. The quantity for disposal shall be the number of gallons of material removed, which need to be disposed of.

Recovery (Testing). The Recovery (Testing) Fee will be measured on a Lump Sum basis.

BASIS OF PAYMENT

Oil & Water Separator – Maintenance/Cleaning:

Vacuum Service. The lump sum price bid shall include the cost of furnishing all labor, materials, and equipment necessary to complete the work.

Pumping. The unit price bid shall include the cost of furnishing all labor, materials, and equipment necessary to complete the work.

Disposal. The unit price bid shall include the cost of furnishing all labor, materials, and equipment necessary to dispose of the materials removed. It shall include the cost of all transportation and disposal fees.

Recovery (Testing). The lump sum price bid shall include the cost of furnishing all labor, materials, and equipment necessary to test the recovered materials, prior to disposal.

Oil & Water Separator – Maintenance/Cleaning

Payment will be made under:

Item No.	Item	Pay Unit
621.01	Cleaning Culverts with Span of 50 in. or Less	Foot
621.02	Cleaning Culverts with Span of More than 50 in.	Foot
621.03	Cleaning Closed Drainage Systems	Foot

SECTION 621 - CLEANING CULVERTS, DRAINAGE STRUCTURES AND EXISTING ROADSIDE SECTIONS

621.04	Cleaning Drainage Structures	Each
621.05	Clean, Grade and Shape Existing Roadside Section	Foot
E621.1001	Oil & Water Separator Maintenance/Cleaning, Vacuum Service Fee	Lump Sum
E621.1002	Oil & Water Separator Maintenance/Cleaning Pumping Fee	Hourly
E621.1003	Oil & Water Separator Maintenance/Cleaning Disposal Fee	Gallon
E621.1004	Oil & Water Separator Maintenance/Cleaning Recovery Fee (Testing)	Lump Sum

SECTION 627 - CUTTING PAVEMENT

Special Specification 627.50140008 shall apply.

Payment will be made under:

Item No.	Item	Pay Unit
627.50140008	Cutting Pavement	Foot

SECTION 635 – CLEANING AND PREPARATION OF PAVEMENT SURFACES FOR PAVEMENT MARKINGS

Section 635 of the NYSDOT Standard Specifications shall apply, except as modified herein.

BASIS OF PAYMENT

Cleaning and Preparation of Pavement Surfaces - Lines – Length Range Specified. The NYSDOT Standard Specification shall apply, except that the length to be paid shall be within the specified range.

Payment will be made under:

Item No.	Item	Pay Unit
E635.010301	Cleaning and Preparation of Pavement Surfaces – Lines (0 feet to 5,000 feet)	Feet
E635.010302	Cleaning and Preparation of Pavement Surfaces – Lines (5,000 feet to 10,000 feet)	Feet
E635.010303	Cleaning and Preparation of Pavement Surfaces – Lines (over 10,000 feet)	Feet
635.0203	Cleaning and Preparation of Pavement Surfaces – Letters	Each
635.0303	Cleaning and Preparation of Pavement Surfaces – Symbols	Each

SECTION 636 – EMERGENCY REPAIRS AND AS DIRECTED MAINTENANCE AND REPAIR WORK

DESCRIPTION.

Emergency Repairs: Highway and Bridge. Under these pay items the contractor will be compensated for overhead and profit in the cost of the work performed under a force account. The purpose of this pay item is to establish a percentage that will be multiplied against the cost of force account to calculate the amount due the contractor for overhead and profit. The response time to start work will be **two (2)** working days from written notification by the Owner. NYSDOT Standard Specifications Sections 109-05B and 109-05C will be used as guidance for record keeping. Please refer to Item 13 in the "Notice to Bidders Specifications and Proposal Form" at the beginning of this document.

As Directed Maintenance and Repair Work. Under these pay items the contractor will be compensated for overhead and profit in the cost of the work performed under a force account. The purpose of this pay item is to establish a percentage that will be multiplied against the cost of force account to calculate the amount due the contractor for overhead and profit. The response time to start work will be **ten (10)** working days from written notification by the Owner. NYSDOT Standard Specifications Sections 109-05B and 109-05C will be used as guidance for record keeping. Please refer to Item 13 in the "Notice to Bidders Specifications and Proposal Form" at the beginning of this document.

Bridge Maintenance and Repair Work. This item will be used to perform maintenance work or repairs to bridges and culverts that is not of an emergency nature, but which have been flagged or had a maintenance request issued after an inspection. Examples of this work are: Bridge Joint Replacement, Structural Steel Repairs, Concrete Repairs, Bridge Railing Repairs or Replacement. This is not an all-inclusive list.

Portland Cement Concrete Pavement Maintenance and Repair Work. This item will be used to perform maintenance work or repairs to concrete pavement that is not of an emergency nature, but which has had a maintenance request issued after an inspection.

Guide Railing Maintenance and Repair Work. This item will be used to perform maintenance work or repairs to highway and bridge railing that is not of an emergency nature, but which has been impacted, is deteriorating, or has been deemed as in need of repairs by the District Maintenance Engineer or Traffic Safety Engineer, and for which there is not an appropriate bid item elsewhere to perform the work.

Sign Maintenance and Repair Work. This item will be used to perform maintenance work or repairs to signs and sign supports that are not of an emergency nature, but which have been damaged or have been deemed as in need of repairs by the District Maintenance Engineer or Traffic Safety Engineer, but are beyond the capabilities of the Highway Department capabilities to repair.

MATERIALS.

The materials and methods used for the repair shall meet the requirements of the NYSDOT Standard Specifications for the work directed to be performed.

SECTION 636 – EMERGENCY REPAIRS AND AS DIRECTED MAINTENANCE AND REPAIR WORK

Engineering Services, if required, shall be **Qualification Based Selection (QBS)**. The Engineer will be selected jointly by the Contractor and the Owner.

The contractor will be required to submit to the Owner the name of the project Superintendent with his qualifications and relevant experience for the work being performed. A minimum of 5 year experience in managing and completing project of this nature shall be required. This shall be submitted to the Owner in writing prior to the Owner assigning work. The Owner reserves the right to reject a superintendent or bidder who does not meet their needs.

CONSTRUCTION DETAILS.

Construction detail requirements shall be determined at the time the "scope of work" is defined by the Owner, Department or Engineer.

METHOD OF MEASUREMENT.

Emergency Repairs: Highway and Bridge. Under this item the contractor is to enter as the bid, a percentage for overhead and profit which will be multiplied against the actual cost of force account to determine the amount due the contractor for a **two (2)** day response.

As Directed Maintenance and Repair Work. Under this item the contractor is to enter as the bid, a percentage for overhead and profit which will be multiplied against the actual cost of force account to determine the amount due the contractor for a **ten (10)** day response.

BASIS OF PAYMENT.

The actual overhead and profit payment will be determined by multiplying the contractor's bid percentage against the cost of force account. NYSDOT Force Account Forms will be used to report the value of this work. Please refer to Item 13 in the “Notice to Bidders Specifications and Proposal Form” at the beginning of this document. The maximum bid for this item is limited to 20%.

An additional amount of overhead and profit on subcontractor’s work services and fees will be 5%. This item does not require that the subcontractor accept the prime contractor overhead and profit rate, but does limit them to a maximum of 20% markup.

Payment will be made under:

Item No.	Item	Pay Unit
E636.0101	Emergency Repair: Highway	Percent
E636.0102	Emergency Repair: Bridge	Percent
E636.0103	As Directed: Bridge Maintenance and Repair Work	Percent
E636.0104	As Directed: Portland Cement Concrete Pavement Maintenance and Repair Work	Percent
E636.0105	As Directed: Guide Railing Maintenance and Repair Work	Percent
E636.0106	As Directed: Sign Maintenance and Repair Work	Percent

SECTION 640 – REFLECTORIZED PAVEMENT MARKING PAINTS

Section 640 of the NYSDOT Standard Specifications shall apply, except as modified herein.

MATERIALS

Traffic Paint. Traffic Paint shall conform to Section 727-09 and shall be waterborne.

Glass beads. Glass beads shall conform to Section 727-05 for use with Traffic Paint.

METHOD OF MEASUREMENT

Traffic Paint. Traffic Paint shall be measured in the number of full 275 gallon totes of paint delivered.

Glass beads. Glass beads shall be measured as the number of pounds of beads delivered with the ranges specified in the item.

BASIS OF PAYMENT

The unit price bid shall include the cost of furnishing all labor, materials, and equipment needed to satisfactorily furnish and deliver the item. No installation is included.

Payment will be made under:

Item No.	Item	Pay Unit
E640.1001	Traffic Paint White (275 Gallon Tote)	Each
E640.1101	Traffic Paint Yellow (275 Gallon Tote)	Each
E640.3001	Glass Beads with Moisture Resistant Coating (10,000 pounds to 21,950 pounds)	Pounds
E640.3002	Glass Beads with Moisture Resistant Coating (22,000 pounds to 43,950 pounds)	Pounds
E640.3003	Glass Beads with Moisture Resistant Coating (over 40,000 pounds)	Pounds

SECTION 645 – SIGNS

Section 645 of the NYSDOT Standard Specifications shall apply, except as modified herein.

MATERIALS.

Bidders shall be full line suppliers. Products bid shall be compatible with this Erie County Department of Public Work's sign shop handling, application and screening procedures. Incomplete bid(s) documents and/or incompatible products shall not be considered for award.

Delivery shall be no later than 45 days after receipt of the order.

General. Sheeting shall consist of rolls of good materials to be used in the manufacturer of standard traffic signs.

Reflective Sheeting for Signs. Reflective sheeting materials used on sign panels shall conform to the requirements ASTM D4956 as well as Section 645 and Section 730-05 *Reflective Sheeting* of the NYSDOT Standard Specifications.

ASTM Sheeting for Permanent Signing. This specification covers flexible white or colored, wide angle retroreflective sheeting, (hereinafter called sheeting), tape and related processing materials designed to enhance nighttime visibility of traffic control signs and objects. The sheeting shall have a pre-coated adhesive protected by an easily removable liner.

MATERIAL PREQUALIFICATION

All materials (sheeting, process colors, overlay films) shall be considered for use only when the material is included on the NYSDOT "Approved List" for Materials and Equipment.

ITEMS INCLUDED

1. Process Colors

    a. The manufacturer of the sheeting shall manufacture and offer process colors in standard traffic colors, clears and thinners recommended for the sheeting to meet the performance requirements of this specification. The sheeting manufacturer shall further be responsible for technical assistance in the use of these colors in accordance with Section 4, below.
    b. The process colors shall be a single line of traffic colors which: may be applied before and after sheeting is applied to a substrate; require no component premixing; and will air dry for packing in 3 hours or less and requires no clear coating.
    c. The sheeting manufacturer shall, upon request, provide custom color match formulas from the color series within 7 days at no charge to Erie County Department of Public Works.

2. Slip Sheet. Slip sheet paper recommended by the sheeting manufacturer for surface protection during heat vacuum application or for use in packaging, storing or shipping shall be furnished at no additional charge. Slip sheet paper shall be supplied in rolls by the manufacturer, in at least equal square footage and in the same widths as the sheeting supplied.

3. Temperature Indicators: The manufacturer at no additional charge shall furnish expendable temperature indicators recommended by the sheeting manufacturer for control and calibration of proper application temperature.
4. Washers: Washers recommended by the sheeting manufacturer to protect the sign surface from damage by bolts or other fasteners shall be furnished by the manufacturer at no additional charge.

TECHNICAL ASSISTANCE REQUIREMENT

The manufacturer supplying the retroreflective sheeting requirements shall provide at no charge the services of a qualified technician for instruction and training at the primary sign manufacturing facility designated by Erie County Department of Public Works. This instruction shall be provided bi-annually and at the request of Erie County Department of Public Works. Instruction shall include but not be limited to training films, material application, equipment operation, silk screening techniques, packaging, storage, and other proven sign shop practices as they apply to the reflective sheeting supplied by the manufacturer, and to assure that the resulting signs can comply with the applicable specifications.

Additional on-site technical assistance by the manufacturer supplying the retroreflective sheeting shall be provided at each of the sign shops. This assistance shall be provided annually and at the request of Erie County Department of Public Works.

The sheeting manufacturer shall, without additional cost to Erie County Department of Public Works, provide the sign shops with competent technical service and product information, including service on screen printing problems with the inks furnished or recommended by the manufacturer for their sheeting. The manufacturer supplying the retroreflective sheeting shall provide technical assistance for their recommended sheeting application equipment. The manufacturer shall certify that trained personnel will be available on 72-hour notice to render such service to facilitate the manufacturer of finished signs. "Service" is understood to mean the capability of calibration and troubleshooting, as well as the training and retraining of personnel as required. In addition, a manufacturer's representative shall be available on site within 24-hour notice to assess and advise on any manufacturing difficulty that arises.

Galvanized Sign Post – Perforated (Unistrut or Equal). Material to be of square stock perforated four sides. Holes at 3/8” diameter at 1” on centers, 12 gauge. Material fabricated to be telescopic to each other. All material to be delivered. Sign posts shall be subject to Steel Price Adjustments as defined in Section 698. The cost basis and Preliminary Producer Price Index (PPI) shall be based on December 2021 data, which are $1477/ton and 447.7 respecitively.

Drive Rivets. Material to be 3/8” diameter anti-theft hardware for use with square galvanized sign posts. The rivet shall be made of an aluminum shell and steel pin.

Nylon Washers. Material to be 3/8” diameter white nylon washer for use with square galvanized sign posts.

Square Tube Fittings. Material to be fittings with 3/8” diameter holes for use with square galvanized sign posts.

Type I Engineer Grade Retro-Reflective Sheeting. Colors available are white, red, green, blue, black, brown, yellow and orange, as required by the buyer. Sizes available are ½” x 50 yds. to 48" x 100 yds. Square or rectangular sheets available at no additional charge. Material must be included on the NYSDOT “Approved List” for Materials and Equipment.

Type III High Intensity Grade Retro-Reflective Sheeting. Class 2 Pressure-Sensitive Adhesive, Non-Perforated or Perforated. Colors available are white, red, green, blue, brown, yellow and orange, as required by the buyer. Sizes available are ¾” x 50 yds. to 48" x 100 yds. Square or rectangular sheets are available at no additional charge. Material must be included on the NYSDOT “Approved List” for Materials and Equipment.

Type III High Intensity Grade Retro-Reflective Orange/White Barricade Sheeting. Pressure Sensitive Adhesive, Left or Right, 4" or 6" diagonal strips in width as required by the buyer, from 8" x 50 yds to 48" x 100 yds. Material must be included on the NYSDOT “Approved List” for Materials and Equipment.

Type XI Grade Retro-Reflective Sheeting, Pressure-Sensitive Adhesive, Non-Perforated. Colors available are white, red, green, blue, yellow, orange, fluorescent yellow, and fluorescent yellow-green, as required by the buyer. Sizes available are 3/4" x 50 yds to 48" x 100 yds. Square or rectangular sheets are available at no additional charge. Material must be included on the NYSDOT “Approved List” for Materials and Equipment.

Slip Sheeting. Slip sheet paper, as recommended by the sheeting manufacturer, for surface protection during heat vacuum application or for use in packaging, storing or shipping. Slip sheet paper shall be supplied in rolls by the manufacturer.

Overlay Film. Protective overlay film with pressure sensitive adhesive for application over retroreflective base sheeting. Various colors available. Widths available are 24”, 30”, 36”, and 48”.

Cast Film. Cast-PVC film in various colors. Widths available are 15” 24”, 30”, 36”, and 48”.

Finished Sign Faces to be Used in the Manufacture of Standard Traffic Signs. All materials used to manufacture faces must have three (3) years NTPEP outdoor weathering. Pricing must be included on any equipment or parts of equipment that are listed.

Items designated as Type III shall be Intensity Grade Class 1 and 2 Retro-Reflective imagined sign faces. Sizes available from 8" to 48". Sheeting material must be manufactured by 3M and included on the NYSDOT “Approved List” for Materials and Equipment.

Items designated as Type XII shall be Grade Retro-Reflective imagined sign faces or Grade Fluorescent Yellow, Yellow-Green and Orange Retro-Reflective imagined sign faces, as indicated. Sizes available from 8" to 48". Sheeting material must be manufactured by 3M and included on the NYSDOT “Approved List” for Materials and Equipment.

Adhesive Backed Cast Vinyl. Vinyl shall include a solvent-based permanent adhesive and be compatible with eco-solvent inks. Widths available are 30” and 54”.

Magnetic Sheeting. Flexible magnetic sheeting shall be compatible with eco-solvent inks. Material shall be suitable for use as temporary vehicle signage and markings. Widths available are 24” and 40”,

Cast Laminate Films. Available in a gloss finish and designed to protect and extend the life of printed graphics. Available in various sizes and finishes.

Inks and Supplies For Use With Roland Pro 4 XR-640 Printer/Cutter. Eco-solvent inks and corresponding cleaning solutions. All materials must be compatible with a Roland Pro 4 XR-640 printer/cutter.

Pole Mounted Sign Support System (Band Mounted). The NYSDOT Standard Specifications for Item 645.85 shall apply, but less installation. Item E645.85 shall include furnishing and delivering a complete band mounting assembly, including hardware.

Transfer Tape. Pre-mask Application Transfer Tape. Sizes available are 6”, 8”, 10”, 12”, and 14”.

Squeegee. Squeegee for vinyl, film, graphics, tape, and silk screen application. Sizes available are 4”, 6”, and 12”.

METHOD OF MEASUREMENT

All items shall be for furnishing and delivery of the item to any location within the County, including tailgate delivery. Installation will not be included. Providing technical advice/services and material certifications shall be included.

Where items are specified to be paid for as a Lot, the quantity will be measured as the number of full lots of the specified quantity furnished and delivered.

Sign Posts and Plates. The work will be measured as the number of sign posts delivered.

Rivets. The work shall be measured as the number of lots (package of 100 rivets) delivered.

Nylon Washers. The work shall be measured as the number of lots (package of 100 washers) delivered.

Square Tube Fittings. The work shall be measured as the number of lots (package of 25 fittings) delivered.

Sheeting, Films, Screened Face, Vinyl, and Transfer Tape. The work will be measured as the number of square feet of material delivered.

Ink, Swab Kits, and Squeegee. The work will be measured as the number of each item delivered.

BASIS OF PAYMENT

The unit price bid shall include the cost of furnishing all labor, materials, and equipment necessary to furnish and deliver the items.

Payment shall be made under:

Item No.	Item	Pay Unit
E645.0201	Galvanized Sign Post Perforated - 12 GA, 1 1/4" x 1 1/4" x 12'	EA
E645.0202	Galvanized Sign Post Perforated - 12 GA, 1 1/2" x 1 1/2" x 12'	EA
E645.0203	Galvanized Sign Post Perforated - 12 GA, 1 3/4" x 1 3/4" x 9'	EA
E645.0204	Galvanized Sign Post Perforated - 12 GA, 1 3/4" x 1 3/4" x 10'	EA
E645.0205	Galvanized Sign Post Perforated - 12 GA, 1 3/4" x 1 3/4" x 11'	EA
E645.0206	Galvanized Sign Post Perforated - 12 GA, 1 3/4" x 1 3/4" x 12'	EA
E645.0207	Galvanized Sign Post Perforated - 12 GA, 2" x 2" x 3'	EA
E645.0208	Galvanized Sign Post Perforated - 12 GA, 2" x 2" x 4'	EA
E645.0209	Galvanized Sign Post Perforated - 12 GA, 2" x 2" x 12'	EA
E645.0210	Galvanized Sign Post Perforated - 12 GA, 2 1/4" x 2 1/4" x 12'	EA
E645.0220	Galvanized Sign Post Perforated - 12 GA, 24" Braces	EA
E645.0221	Galvanized Sign Post Perforated - 12 GA, 28" Braces	EA
E645.0222	Galvanized Sign Post Perforated - 12 GA, 32" Braces	EA
E645.0230	3/8” Aluminum Shell/Steel Pin Anti-Theft Drive Rivets (Lot of 100)	Lot
E645.0231	3/8” White Nylon Washer (Lot of 100)	Lot
E645.0232	Square Tube Fitting - T-Shaped Bracket (Lot of 25)	Lot
E645.0233	Square Tube Fitting - L-Shaped Bracket (Lot of 25)	Lot
E645.0234	Square Tube Fitting - 3 Hole Straight Splice Plate (Lot of 25)	Lot
E645.4001	Type I Engineer Grade Retro-Reflective Sheeting – Pressure Sensitive, White	SF
E645.4002	Type I Engineer Grade Retro-Reflective Sheeting – Pressure Sensitive, Red	SF
E645.4003	Type I Engineer Grade Retro-Reflective Sheeting – Pressure Sensitive, Green	SF
E645.4004	Type I Engineer Grade Retro-Reflective Sheeting – Pressure Sensitive, Blue	SF
E645.4005	Type I Engineer Grade Retro-Reflective Sheeting – Pressure Sensitive, Black	SF
E645.4006	Type I Engineer Grade Retro-Reflective Sheeting – Pressure Sensitive, Brown	SF
E645.4007	Type I Engineer Grade Retro-Reflective Sheeting – Pressure Sensitive, Yellow	SF
E645.4008	Type I Engineer Grade Retro-Reflective Sheeting – Pressure Sensitive, Orange	SF
E645.4101	Type I Engineer Grade Retro-Reflective Sheeting – Non-Perforated for Use in Electronic Plotters, White	SF
E645.4102	Type I Engineer Grade Retro-Reflective Sheeting – Non-Perforated for Use in Electronic Plotters, Red	SF
E645.4103	Type I Engineer Grade Retro-Reflective Sheeting –	

	Non-Perforated for Use in Electronic Plotters, Green	SF
E645.4104	Type I Engineer Grade Retro-Reflective Sheeting – Non-Perforated for Use in Electronic Plotters, Blue	SF
E645.4105	Type I Engineer Grade Retro-Reflective Sheeting – Non-Perforated for Use in Electronic Plotters, Black	SF
E645.4106	Type I Engineer Grade Retro-Reflective Sheeting – Non-Perforated for Use in Electronic Plotters, Brown	SF
E645.4107	Type I Engineer Grade Retro-Reflective Sheeting – Non-Perforated for Use in Electronic Plotters, Yellow	SF
E645.4108	Type I Engineer Grade Retro-Reflective Sheeting – Non-Perforated for Use in Electronic Plotters, Orange	SF
E645.4201	Type I Engineer Grade Retro-Reflective Sheeting – Perforated for Use in Electronic Plotters, White	SF
E645.4202	Type I Engineer Grade Retro-Reflective Sheeting – Perforated for Use in Electronic Plotters, Red	SF
E645.4203	Type I Engineer Grade Retro-Reflective Sheeting – Perforated for Use in Electronic Plotters, Green	SF
E645.4204	Type I Engineer Grade Retro-Reflective Sheeting – Perforated for Use in Electronic Plotters, Blue	SF
E645.4205	Type I Engineer Grade Retro-Reflective Sheeting – Perforated for Use in Electronic Plotters, Black	SF
E645.4206	Type I Engineer Grade Retro-Reflective Sheeting – Perforated for Use in Electronic Plotters, Brown	SF
E645.4207	Type I Engineer Grade Retro-Reflective Sheeting – Perforated for Use in Electronic Plotters, Yellow	SF
E645.4208	Type I Engineer Grade Retro-Reflective Sheeting – Perforated for Use in Electronic Plotters, Orange	SF
E645.4301	Type III High Intensity Grade Retro-Reflective Sheeting, Pressure-Sensitive Adhesive, White	SF
E645.4302	Type III High Intensity Grade Retro-Reflective Sheeting, Pressure-Sensitive Adhesive, Red	SF
E645.4303	Type III High Intensity Grade Retro-Reflective Sheeting, Pressure-Sensitive Adhesive, Green	SF
E645.4304	Type III High Intensity Grade Retro-Reflective Sheeting, Pressure-Sensitive Adhesive, Blue	SF
E645.4305	Type III High Intensity Grade Retro-Reflective Sheeting, Pressure-Sensitive Adhesive, Brown	SF
E645.4306	Type III High Intensity Grade Retro-Reflective Sheeting, Pressure-Sensitive Adhesive, Yellow	SF
E645.4307	Type III High Intensity Grade Retro-Reflective Sheeting, Pressure-Sensitive Adhesive, Orange	SF
E645.4401	Type III High Intensity Grade Retro-Reflective Sheeting, Perforated for Use in Electronic Plotter, White	SF
E645.4402	Type III High Intensity Grade Retro-Reflective Sheeting, Perforated for Use in Electronic Plotter, Red	SF
E645.4403	Type III High Intensity Grade Retro-Reflective Sheeting, Perforated for Use in Electronic Plotter, Green	SF
E645.4404	Type III High Intensity Grade Retro-Reflective Sheeting,	

	Perforated for Use in Electronic Plotter, Blue	SF
E645.4405	Type III High Intensity Grade Retro-Reflective Sheeting, Perforated for Use in Electronic Plotter, Brown	SF
E645.4406	Type III High Intensity Grade Retro-Reflective Sheeting, Perforated for Use in Electronic Plotter, Yellow	SF
E645.4407	Type III High Intensity Grade Retro-Reflective Sheeting, Perforated for Use in Electronic Plotter, Orange	SF
E645.4501	Type III High Intensity Grade Retro-Reflective Orange/White Barricade Sheeting, Pressure-Sensitive Adhesive	SF
E645.4601	Type XI Grade Retro-Reflective Sheeting, Pressure-Sensitive Adhesive, White	SF
E645.4602	Type XI Grade Retro-Reflective Sheeting, Pressure-Sensitive Adhesive, Red	SF
E645.4603	Type XI Grade Retro-Reflective Sheeting, Pressure-Sensitive Adhesive, Green	SF
E645.4604	Type XI Grade Retro-Reflective Sheeting, Pressure-Sensitive Adhesive, Blue	SF
E645.4605	Type XI Grade Retro-Reflective Sheeting, Pressure-Sensitive Adhesive, Yellow	SF
E645.4606	Type XI Grade Retro-Reflective Sheeting, Pressure-Sensitive Adhesive, Orange	SF
E645.4607	Type XI Grade Retro-Reflective Sheeting, Pressure-Sensitive Adhesive, Fluorescent Yellow	SF
E645.4608	Type XI Grade Retro-Reflective Sheeting, Pressure-Sensitive Adhesive, Fluorescent Yellow-Green	SF
E645.4701	Slip Sheeting	SF
E645.4801	Acrylic Overlay Films - Red	SF
E645.4802	Acrylic Overlay Films - Blue	SF
E645.4803	Acrylic Overlay Films - Green	SF
E645.4804	Acrylic Overlay Films - Black	SF
E645.4805	Acrylic Overlay Films - Brown	SF
E645.4806	Acrylic Overlay Films – Thinner	SF
E645.4811	Vinyl Overlay Films - Red	SF
E645.4812	Vinyl Overlay Films - Blue	SF
E645.4813	Vinyl Overlay Films - Green	SF
E645.4814	Vinyl Overlay Films - Black	SF
E645.4815	Vinyl Overlay Films - Brown	SF
E645.4901	2 Mil High Performance Cast Film - Red	SF
E645.4902	2 Mil High Performance Cast Film - Blue	SF
E645.4903	2 Mil High Performance Cast Film - Green	SF
E645.4904	2 Mil High Performance Cast Film - Black	SF
E645.4905	2 Mil High Performance Cast Film - Brown	SF
E645.4906	2 Mil High Performance Cast Film - Yellow	SF
E645.4907	2 Mil High Performance Cast Film - Orange	SF

E645.4911	3 Mil Intermediate Cast Film - Red	SF
E645.4912	3 Mil Intermediate Cast Film - Blue	SF
E645.4913	3 Mil Intermediate Cast Film - Green	SF
E645.4914	3 Mil Intermediate Cast Film - Black	SF
E645.4915	3 Mil Intermediate Cast Film - Brown	SF
E645.4916	3 Mil Intermediate Cast Film - Yellow	SF
E645.4917	3 Mil Intermediate Cast Film - Orange	SF
E645.4921	Fluorescent Cast Film - Orange	SF
E645.4922	Fluorescent Cast Film - Yellow	SF
E645.4923	Fluorescent Cast Film - Yellow-Green	SF
E645.501101	Type III One Color Screened Faces, 0-1 Sq. Ft.	SF
E645.501102	Type III One Color Screened Faces, 1-4 Sq. Ft.	SF
E645.501103	Type III One Color Screened Faces, 4+ Sq. Ft.	SF
E645.511101	Type III Two Color Screened Faces, 0-1 Sq. Ft.	SF
E645.511102	Type III Two Color Screened Faces, 1-4 Sq. Ft.	SF
E645.511103	Type III Two Color Screened Faces, 4+ Sq. Ft.	SF
E645.521101	Type III Three Color Screened Faces, 0-1 Sq. Ft.	SF
E645.521102	Type III Three Color Screened Faces, 1-4 Sq. Ft.	SF
E645.521103	Type III Three Color Screened Faces, 4+ Sq. Ft.	SF
E645.531101	Type XI One Color Screened Faces, 0-1 Sq. Ft.	SF
E645.531102	Type XI One Color Screened Faces, 1-4 Sq. Ft.	SF
E645.531103	Type XI One Color Screened Faces, 4+ Sq. Ft.	SF
E645.541101	Type XI Two Color Screened Faces, 0-1 Sq. Ft.	SF
E645.541102	Type XI Two Color Screened Faces, 1-4 Sq. Ft.	SF
E645.541103	Type XI Two Color Screened Faces, 4+ Sq. Ft.	SF
E645.551101	Type XI Three Color Screened Faces, 0-1 Sq. Ft.	SF
E645.551102	Type XI Three Color Screened Faces, 1-4 Sq. Ft.	SF
E645.551103	Type XI Three Color Screened Faces, 4+ Sq. Ft.	SF
E645.561101	Type XI One Fluorescent Color Screened Faces 0-1 Sq. Ft.	SF
E645.561102	Type XI One Fluorescent Color Screened Faces 1-4 Sq. Ft.	SF
E645.561103	Type XI One Fluorescent Color Screened Faces 4+ Sq. Ft.	SF
E645.571101	Type XI Two Fluorescent Color Screened Faces 0-1 Sq. Ft.	SF
E645.571102	Type XI Two Fluorescent Color Screened Faces 1-4 Sq. Ft.	SF
E645.571103	Type XI Two Fluorescent Color Screened Faces 4+ Sq. Ft.	SF
E645.581101	Type XI Three Fluorescent Color Screened Faces 0-1 Sq. Ft.	SF
E645.581102	Type XI Three Fluorescent Color Screened Faces 1-4 Sq. Ft.	SF
E645.581103	Type XI Three Fluorescent Color Screened Faces 4+ Sq. Ft.	SF
E645.6301	2 Mil Adhesive Backed Cast Vinyl – Gloss White	SF
E645.6401	2 Mil Adhesive Backed Cast Vinyl – Vehicle Wrap Air Release –	

	Gloss White	SF
E645.6402	2.25 Mil Adhesive Backed Cast Vinyl – Vehicle Wrap Air Release – Gloss White	SF
E645.6411	Print Wrap Film (3M Scotchlite Film 780mC-10R)	SF
E645.6412	Print Wrap Film - White (3M Film IJ180mC-10)	SF
E645.6421	Reflective Graphic Film (3M Scotchlite Film IJ5100R)	SF
E645.6431	Removable Reflective Graphic Film with Pressure-Activated Adhesive (3M Scotchlite Film IJ680CR)	SF
E645.6441	Overlaminate – Optically Clear (3M Scotchcal 8914)	SF
E645.6442	Overlaminate – Gloss (3M Scotchcal 8518)	SF
E645.6451	Cast Floor Overlaminate – Clear Luster (3M Scotchcal 3645)	SF
E645.6461	30 Mil Printable Magnetic Sheeting – Matte White	SF
E645.6501	2 Mil Cast Laminate Film – Gloss	SF
E645.650101	2 Mil Cast Laminate Film – Gloss – Optically Clear (Orafol)	SF
E645.6502	2 Mil Cast Laminate Film – Matte	SF
E645.7001	Roland EcoSol Max2 Ink Cartridge 440 CC – Black	EA
E645.7002	Roland EcoSol Max2 Ink Cartridge 440 CC – Light Black	EA
E645.7003	Roland EcoSol Max2 Ink Cartridge 440 CC – Cyan	EA
E645.7004	Roland EcoSol Max2 Ink Cartridge 440 CC – Light Cyan	EA
E645.7005	Roland EcoSol Max2 Ink Cartridge 440 CC – Magenta	EA
E645.7006	Roland EcoSol Max2 Ink Cartridge 440 CC – Light Magenta	EA
E645.7007	Roland EcoSol Max2 Ink Cartridge 440 CC – Yellow	EA
E645.7008	Roland EcoSol Max2 Ink Cartridge 440 CC – Cleaning Solution	EA
E645.7101	Roland Cleaning Solution for EcoSol Max Ink – 500 ML	EA
E645.7102	Round Tip Printer Cleaning Swab Kit – 5” Long (50 Pack)	EA
E645.85	Pole Mounted Sign Support System (Band Mounted)	EA
E645.900106	Pre-mask Application Transfer Tape - 6” wide (clear tape)	SF
E645.900108	Pre-mask Application Transfer Tape - 8” wide (clear tape)	SF
E645.900110	Pre-mask Application Transfer Tape - 10” wide (clear tape)	SF
E645.900112	Pre-mask Application Transfer Tape - 12” wide (clear tape)	SF
E645.900114	Pre-mask Application Transfer Tape - 14” wide (clear tape)	SF
E645.900206	Pre-mask Application Transfer Tape - 6” wide (paper tape)	SF
E645.900208	Pre-mask Application Transfer Tape - 8” wide (paper tape)	SF
E645.900210	Pre-mask Application Transfer Tape - 10” wide (paper tape)	SF
E645.900212	Pre-mask Application Transfer Tape - 12” wide (paper tape)	SF
E645.900214	Pre-mask Application Transfer Tape - 14” wide (paper tape)	SF
E645.900301	Conform Application Tape with RLA Standard Liner (FDC 4075RLA)	SF
E645.9104	Plastic Squeegee - 4”	EA
E645.9106	Plastic Squeegee - 6”	EA
E645.9112	Plastic Squeegee - 12”	EA

SECTION 646 – DELINEATORS, REFERENCE MARKERS AND SNOWPLOWING MARKERS

Section 646 of the NYSDOT Standard Specifications and Special Specification 646.01010002 shall apply, except as modified herein.

DESCRIPTION.

Flexible Delineator. Flexible Delineators shall consist of flexible, self-righting snowplow marker delineators. The green delineator posts shall be 7 or 8 feet in height, as specified. A 3-inch wide green retro-reflective band shall be located at the top of the delineator post. An additional 3-inch wide green retro-reflective band shall be located approximately 1 inch below the first band, as specified. The posts and retro-reflective sheeting shall be in conformance with NYSDOT Section 646. This item shall include all necessary base, anchor, and hardware.

Steel U Channel. Steel U Channel shall be 1.1 or 2.0 pound per foot, as specified, green baked enamel with a tapered driving end. The Steel U Channel shall be as specified in the item description.

Steel Post and U Channel shall be subject to Steel Price Adjustments as defined in Section 698. The cost basis and Preliminary Producer Price Index (PPI) shall be based on December 2021 data, which are $1477/ton and 447.7 respectively.

METHOD OF MEASUREMENT

Where items are specified to be paid for as a Lot, the quantity will be measured as the number of full lots of the specified quantity furnished and delivered.

BASIS OF PAYMENT.

Transverse Rumble Strip. This item shall be paid for in accordance with the Special Specification and shall include installation.

The unit price bid shall for all other items shall include the cost of all materials, equipment, and labor necessary to furnish and deliver the items only. No installation is included.

Payment shall be made under:

Item No.	Item	Pay Unit
646.01010002	Transverse Rumble Strip (TRS)	Foot
E646.21	Reference Marker Panel	Each
E646.22	Delineator, Snowplowing Marker, Supplementary Snowplowing Marker Panels	Each
E646.31	Steel Post, 1.1 lb/ft	Each
E646.3101	Steel Post, 1.1 lb/ft (Lot of 100)	Lot
E646.32	Steel Post, 2.0 lb/ft	Each
E646.3201	Steel Post, 2.0 lb/ft (Lot of 100)	Lot
E646.40	Flexible Delineator, Single Unit, One Way on Flexible Post	Each
E646.400711	Flexible Snowplow Marker, 7 feet, 1 reflective band	Each

E646.400712	Flexible Snowplow Marker, 7 feet, 1 reflective band (Lot of 100)	Lot
E646.400721	Flexible Snowplow Marker, 7 feet, 2 reflective bands	Each
E646.400722	Flexible Snowplow Marker, 7 feet, 2 reflective bands (Lot of 100)	Lot
E646.400811	Flexible Snowplow Marker, 8 feet, 1 reflective band	Each
E646.400812	Flexible Snowplow Marker, 8 feet, 1 reflective band (Lot of 100)	Lot
E646.400821	Flexible Snowplow Marker, 8 feet, 2 reflective bands	Each
E646.400822	Flexible Snowplow Marker, 8 feet, 2 reflective bands (Lot of 100)	Lot
E646.41	Flexible Delineator, Single Unit, Back to Back, on Flexible Post	Each
E646.42	Flexible Delineator, Double Unit on Flexible Post	Each
E646.600601	Steel U Channel, 1.1 lb/ft, 6 feet	Each
E646.600602	Steel U Channel, 1.1 lb/ft, 6 feet (Lot of 100)	Lot
E646.600801	Steel U Channel, 1.1 lb/ft, 8 feet	Each
E646.600802	Steel U Channel, 1.1 lb/ft, 8 feet (Lot of 100)	Lot
E646.700301	Steel U Channel, 2.0 lb/ft, 3.5 feet	Each
E646.700302	Steel U Channel, 2.0 lb/ft, 3.5 feet (Lot of 100)	Lot
E646.700701	Steel U Channel, 2.0 lb/ft, 7 feet	Each
E646.700702	Steel U Channel, 2.0 lb/ft, 7 feet (Lot of 100)	Lot
E646.700801	Steel U Channel, 2.0 lb/ft, 8 feet	Each
E646.700802	Steel U Channel, 2.0 lb/ft, 8 feet (Lot of 100)	Lot
E646.701001	Steel U Channel, 2.0 lb/ft, 10 feet	Each
E646.701002	Steel U Channel, 2.0 lb/ft, 10 feet (Lot of 100)	Lot

SECTION 647 – REMOVING, STORING, AND RELOCATING SIGNS, SIGN PANEL ASSEMBLIES, SIGN SUPPORTS, AND FOUNDATIONS

Section 647 of the NYSDOT Standard Specifications shall apply, except as modified herein.

DESCRIPTION.

Removal and Dispose of Cantilever Overhead Sign Panel(s), Structure, and Foundation. The NYSDOT Standard Specifications for Item 647.20 shall apply. The unit price per each shall include all necessary Work Zone Traffic Control in conformance with Manual on Uniform Traffic Control Devices guidance.

BASIS OF PAYMENT. The unit price bid shall include the cost of all labor, materials and equipment necessary to satisfactorily complete the work.

Payment shall be made under:

Item No.	Item	Pay Unit
E647.20	Removal and Dispose of Cantilever Overhead Sign Panel(s), Structure, and Foundation	Each

SECTION 648 – SUBSURFACE EXPLORATIONS

Section 648 of the NYSDOT Standard Specifications shall apply, except as modified herein.

CONSTRUCTION DETAILS

Assume that all boring locations will be easily accessible.

Payment will be made under:

Item No.	Item	Pay Unit
648.06	Drill Hole, 4 inch diameter 0 to 50 feet Depth Range	Foot
648.11	Split Barrel Sample	Each
648.12	Thin-walled Tube Sample	Each
648.17	Furnishing Equipment for Making Borings	Each
648.21	Grouting 2 ½ inch Bore Hole	Foot
648.22	Grouting 4 inch Bore Hole	Foot

SECTION 649 – AUDIBLE ROADWAY DELINEATORS

Section 649 of the NYSDOT Standard Specifications shall apply.

Payment will be made under:

Item No.	Item	Pay Unit
649.01	Milled-In Audible Roadway Delineators (MIARDS)	Foot
649.11	Centerline Audible Roadway Delineators (CARDS)	Foot
649.21	Secondary Highway Audible Roadway Delineators (SHARDS)	Foot

SECTION 655 – FRAMES, GRATES AND COVERS

Section 655 of the NYSDOT Standard Specifications shall apply, except as modified herein.

DESCRIPTION.

Welded Frames. As per NYSDOT Standard Sheet 655-07.

Cast Iron Frames, Grates and Curb Boxes. As per NYSDOT Standard Sheet 655-06 and 655-07.

Reticuline Type Grates. As shown on NYSDOT Standard Sheet 644-04

Parallel Bar Type Grates and Frames. As shown on NYSDOT Standard Sheet 655-02.

Miscellaneous Castings. Various standard design casting of manholes, manhole covers, curb receivers, boxes and grating.

MATERIALS

Cast Iron Manhole Frame and Cover. Material to be AASHTO M105 Class 30B or Class 35B cast iron.

Cast Iron Manhole Paving (Adjusting) Rings. Material shall be AASHTO M105 Class 30B or Class 35B cast iron. Each ring shall incorporate three (3) set screws to secure ring to manhole frame.

CONSTRUCTION.

Cast Iron Manhole Frame and Cover. Unit must withstand H-20 loading. Frames and covers shall have machined bearing surfaces. Covers shall have (4) equally spaced ¾" vent holes. Covers to be lettered ECSD SANITARY (or STORM - as specified) in 2" HIGH X *1/8"* deep letters.

No commercial "Brand Name" lettering will be allowed on the exposed surface cover.

Dimensions and design of standard frames and covers shall be in accordance with ERIE COUNTY Department of Environment & Planning Division of Sewerage Management Standard Detail #13 (see following pages).

Dimensions and design of Water Tight frames and covers shall be in accordance with ERIE COUNTY Department of Environment & Planning Division of Sewerage Management Standard Detail #16 (see following pages).

METHOD OF MEASUREMENT.

Cast Iron Frame and Grate. Weights as listed on Standard Sheets will be used in making payments for grates and frames.

Reticuline Type Grates and Frames. Areas as listed on Standard Sheet No. M655-1 OR2 will be used in making payments for grates and frames.

Parallel Bar Type Grates and Frames. Weights as listed on Standard Sheet No. M655-8R2 will be used in making payment for Grates and Frames.

655-5 BASIS OF PAYMENT.

Cast Iron Frame and Grate. Price per pound for F.O.B. any point in Erie County.

Reticuline Type Grates and Frames. Price per square foot for F.O.B. any point in Erie County.

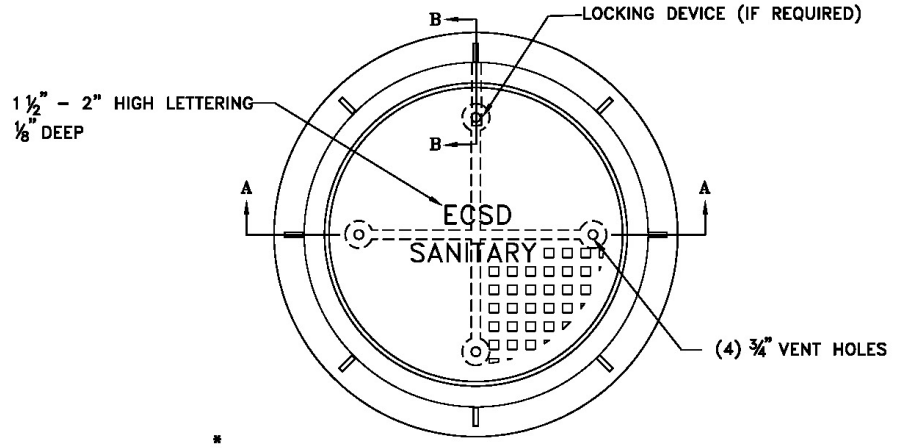
Parallel Bar Type Grates and Frames. Price per pound for F.O.B. any point in Erie County.

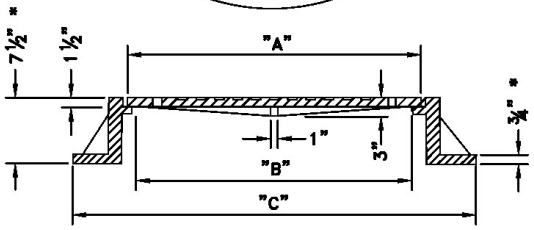
Payment shall be made under:

Item No.	Item	Pay Unit
E655.0106	Cast Iron Frame and Grate, 6 in. Dia.	LB
E655.0108	Cast Iron Frame and Grate, 8 in. Dia.	LB
E655.0110	Cast Iron Frame and Grate, 10 in. Dia.	LB
E655.0112	Cast Iron Frame and Grate, 12 in. Dia.	LB
E655.0115	Cast Iron Frame and Grate, 15 in. Dia.	LB
E655.0118	Cast Iron Frame and Grate, 18 in. Dia.	LB
E655.0124	Cast Iron Frame and Grate, 24 in. Dia.	LB
E655.0130	Cast Iron Frame and Grate, 30 in. Dia.	LB
E655.0136	Cast Iron Frame and Grate, 36 in. Dia.	LB
E655.0201	Frames, Grates and Covers - Reticuline Type Grates and Frames	SF
E655.0501	Frames, Grates and Covers - Parallel Bar Type Grates and Frames	LB
E655.9901	Misc. Castings Weighing 100 lbs or less	LB
E655.9902	Misc. Castings Weighing 101 to 200 lbs	LB
E655.9903	Misc. Castings Weighing over 200 lbs	LB
E655.1001	Cast Iron Manhole Frames and Cover	Each
E655.1002	Cast Iron Manhole Frames and Cover	Each
E655.1003	Cast Iron Manhole Frames and Cover	Each
E655.1004	Cast Iron Manhole Frames and Cover	Each
E655.1005	Cast Iron Manhole Frames and Cover	Each
E655.1006	Cast Iron Manhole Frames and Cover	Each
E655.1007	Cast Iron Manhole Frames and Cover	Each
E655.1008	Cast Iron Manhole Frames and Cover	Each

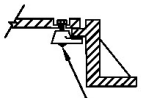
STANDARD FRAME AND COVER

(DECEMBER 2013)





SECTION A–A



B–B

LOCKING DEVICE IF REQUIRED

TABLE				
PIPE SIZE	DIMENSION "A"	DIMENSION "B"	DIMENSION "C"	WEIGHT OF COVER
8" THRU 18"	24"	22 1/4"	35"(MAX.)	150 LB. ± 5%
OVER 18"	32"	30"	46"(MAX.)	200 LB. ± 5%

STANDARD FRAME AND COVER NOTES

1. MATERIAL: ASTM A48 CLASS 30B CAST IRON CONFORMING TO AASHTO DESIGNATION M105–06.
2. UNIT MUST WITHSTAND H–20 WHEEL LOADING, AND CONFORM TO AASHTO DESIGNATION M306–10.
3. ALL DIMENSIONS ARE TO BE CONSIDERED MINIMUM WITH THE EXCEPTION OF THE COVER, WHICH MUST CONFORM EXACTLY TO MAINTAIN INTERCHANGEABILITY WITHIN THE COUNTY.
4. COATING NOT REQUIRED.
5. FRAMES AND COVERS SHALL HAVE MACHINED BEARING SURFACES.
6. LOCKING DEVICE MUST BE SITUATED TO ALLOW EASY REMOVAL OF COVER.
7. NO LETTERING OTHER THAN ECSD SANITARY WILL BE ALLOWED ON THE EXPOSED SURFACE OF THE COVER.
8. * 1/2" FLANGE THICKNESS AND 7" HEIGHT ACCEPTABLE IF CLASS 35 CAST IRON MATERIAL PROVIDED.

ERIE COUNTY
DEPT. OF ENVIRONMENT & PLANNING
DIVISION OF SEWERAGE MANAGEMENT

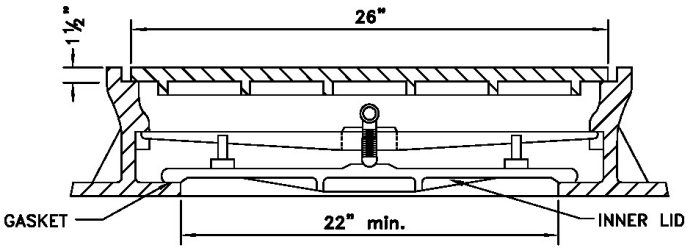
Rev. 1	4/9/96	REV'D PIPE SIZE TO OVER 18"
Rev. 2	12/9/96	REV'D <18" DIMENSIONS
Rev. 3	5/5/03	REV'D FRAME & LOCKS
Rev. 4	6/28/06	ADDED WEIGHTS TO TABLE
Rev. 5	12/26/13	REVISED NOTES 1 & 2 TO REFERENCE AASHTO STANDARDS AND ADDED NOTE 8

File: d–13 **Date:** 3/1/91

STD.DETAIL 13

WATER TIGHT FRAME AND COVER

(DECEMBER 2013)



WATER TIGHT FRAME AND COVER NOTES

1. MATERIAL: ASTM A48 CLASS 30B CAST IRON CONFORMING TO AASHTO DESIGNATION M105–06.
2. UNIT MUST WITHSTAND H–20 WHEEL LOADING, AND CONFORM TO AASHTO DESIGNATION M306–10.
3. ALL DIMENSIONS ARE TO BE CONSIDERED MINIMUM WITH THE EXCEPTION OF THE COVER, WHICH MUST CONFORM EXACTLY TO MAINTAIN INTERCHANGEABILITY WITHIN THE COUNTY.
4. WATER TIGHT MANHOLE UNITS SHALL HAVE 4" STEEL VENT PIPE ASSEMBLY AS PER MANHOLE VENT DETAIL.
4. FRAMES AND COVERS SHALL HAVE MECHANICAL BEARING SURFACES.
6. COVERS SHALL BE SOLID WITH NON–PENETRATING PICKHOLES.
7. NO COMMERCIAL "BRAND NAME" LETTERING WILL BE ALLOWED ON THE EXPOSED SURFACE OF THE COVER.
8. COVER TO BEAR THE INSCRIPTION "ECSD SANITARY", EXCEPT FOR PRIVATE SYSTEMS.
9. THE FRAME SHALL BE PROVIDED WITH 6 HOLES ON FLANGE TO ACCEPT 1/2" ø ANCHOR BOLTS.

ERIE COUNTY DEPT. OF ENVIRONMENT & PLANNING DIVISION OF SEWERAGE MANAGEMENT	Rev. 1	2/7/94 ADDED NOTES 7 AND 8	STD.DETAIL 16
	Rev. 2	6/05 ADDED NOTE 9	
	Rev. 3	12/26/13 REVISED NOTES 1 & 2 TO REFERENCE AASHTO STANDARDS	
	File: d–16	Date: 3/1/91	

SECTION 685 – EPOXY REFLECTORIZED PAVEMENT MARKINGS

Section 685 of the NYSDOT Standard Specifications and Special Specification 685.14010003 shall apply, except as modified herein.

BASIS OF PAYMENT

Stripes – Length Range Specified. The NYSDOT Standard Specification shall apply, except that the length to be paid shall be within the specified range.

Payment will be made under:

Item No.	Item	Pay Unit
E685.1101	White Epoxy Reflectorized Pavement Stripes - 20 mils (0 ft to 5,000 ft)	Feet
E685.1102	White Epoxy Reflectorized Pavement Stripes - 20 mils (5,000 ft to 10,000 ft)	Feet
E685.1103	White Epoxy Reflectorized Pavement Stripes - 20 mils (Over 10,000 ft)	Feet
E685.1201	Yellow Epoxy Reflectorized Pavement Stripes - 20 mils (0 ft to 5,000 ft)	Feet
E685.1202	Yellow Epoxy Reflectorized Pavement Stripes - 20 mils (5,000 ft to 10,000 ft)	Feet
E685.1203	Yellow Epoxy Reflectorized Pavement Stripes - 20 mils (Over 10,000 ft)	Feet
685.13	White Epoxy Reflectorized Pavement Letters - 20 mils	Each
685.14	White Epoxy Reflectorized Pavement Symbols - 20 mils	Each
685.14010003	White Epoxy Reflectorized Railroad Grade Crossing Symbols - 20 mils	Each

SECTION 688 – PREFORMED REFLECTORIZED PAVEMENT MARKINGS

Section 688 of the NYSDOT Standard Specifications shall apply, except as modified herein.

BASIS OF PAYMENT

The unit price bid for all items designated as Furnish only shall include all labor, materials, and equipment needed to furnish and deliver the product to any site within Erie County. Installation of the pavement markings is not included with any item designated as Furnish Only.

Payment will be made under:

Item No.	Item	Pay Unit
688.01	White Preformed Reflectorized Pavement Stripes (Furnished and Installed)	Feet
E688.01	White Preformed Reflectorized Pavement Stripes (Furnish Only)	Feet
688.02	Yellow Preformed Reflectorized Pavement Stripes (Furnished and Installed)	Feet
E688.02	Yellow Preformed Reflectorized Pavement Stripes (Furnish Only)	Feet
688.03	White Preformed Reflectorized Pavement Letters (Furnished and Installed)	Each
E688.03	White Preformed Reflectorized Pavement Letters (Furnish Only)	Each
688.04	White Preformed Reflectorized Pavement Symbols (Furnished and Installed)	Each
E688.04	White Preformed Reflectorized Pavement Symbols (Furnish Only)	Each

SECTION 701 - HYDRAULIC CEMENTS

All hydraulic cements shall meet the requirements of the New York State Department of Transportation (NYSDOT) Materials Bureau.

The materials shall meet the requirements of listed Section of the NYSDOT Standard Specifications

Portland Cement, Type I or II	701-01
Masonry Cement	701-02
Concrete Repair Material	701-12

Unit bid prices shall include all costs to transport and deliver the materials to the directed location.

Payment will be made under:

Item No.	Item	Pay Unit
E701.01	Portland Cement, Type I or II, 94-lb bag	Each
E701.02	Masonry Cement, Type M, 75-lb bag	Each
E701.03	Masonry Cement, Type S, 75-lb bag	Each
E701.04	Concrete Repair Material, Quikrete Crack Resistant or Equal, 80-lb bag	Each
E701.05	Pre-packed Mortar, 80-lb bag	Each

SECTION 702 – BITUMINOUS MATERIAL

DESCRIPTION.

Section 702 of the NYSDOT Standard Specifications shall apply, except as modified herein.

Fiber Reinforced Bituminous Membrane Surface Treatment

A. Weather and Seasonal Limitations. The fiber reinforced bituminous membrane surface treatment may be applied on a dry or damp surface, but should not be laid where there is standing water or on a wet surface. Application should only be undertaken when the surface temperature is at least 50°F, and rising, subject to site inspection. Greater initial traffic speed control may be required in certain circumstances, for example when the surface temperature is low.

The fiber reinforced bituminous membrane surface treatment shall be placed normally in New York during the period May 1st to the third Saturday in September. Application outside of these times is permissible only with the approval of the contractor and local Engineer.

B. Equipment. The following equipment shall be required:

1. Bituminous Material Distributor. The liquid bituminous fiber applicator is used that could be mounted on a vehicle for applying a surface treatment of bituminous binder reinforced with glass fibers. The applicator shall comprise an open bottomed spray bar housing, a fan or blower producing a down draft in the housing, and at least one spray bar mounted on the housing and adapted to extend transversely in the direction of movement of the vehicle on which the applicator is mounted. A number of nozzles spaced longitudinally along the spray bar for spraying binder material, means for controlling the nozzles, and a number of sources for dispensing cut glass fiber through the open bottomed housing to the surface of the binder material previously sprayed shall also be included.

The applicator shall have been calibrated within the previous 12 months for transverse and longitudinal distribution application rates according to ASTM D2995, Practice for Determining Application Rate of Bituminous Applicator or other suitable method. The bituminous fiber applicator shall be equipped, maintained, and operated so that the bituminous materials can be applied at controlled rates from 0.1 l/m^2 (0.022gal/SY) to 2.5 l/m^2 (0.56gal/SY). The fiber is applied at controlled rates from nominally 30 to 120g/m^2 (approx. 1-4oz/SY). These applications shall be such that a uniform first layer of asphalt emulsion is applied followed by uniform layer of glass fibers that is chopped in-place and covered with a uniform second layer of asphalt emulsion.

2. Self-propelled aggregate spreader. Aggregate spreader shall be a self-propelled unit capable of uniformly spreading the aggregate at the required rate on a minimum width of 150mm (6”) wider than the width of the lane to be treated. The spreader shall meet the approval of the Engineer and be calibrated similar to the test method used in ASTM D2995, within the previous 12 months, for transverse and longitudinal distribution.

3. Pneumatic tire roller. The Engineer will require a sufficient number of pneumatic tire rollers to permit the initial rolling of the aggregate to occur within 5 minutes of the application of the fiber reinforced bituminous membrane surface treatment. The pneumatic roller shall be self-propelled and have oscillating wheels with smooth tread tires and will have a minimum ballasted weight of 9 metric tons or 10 US tons. The tire pressure for all wheels shall be uniform within 2psi. The rollers shall be operated at a maximum speed of 5 mph. To prevent pick-up of the aggregate on the tires, the tires shall be kept moistened with water mixed with small quantities of detergent or other material approved by the Engineer. In no case shall a solvent having an effect upon the fiber reinforced bituminous membrane surface treatment be used.

4. Static steel-wheel rollers. Shall be self-propelled and be either 9 to 11 metric ton tandem three-axle type or 7 to 9 ton tandem two-axle type. This shall be used particularly when a SAMI application is specified for the fiber reinforced bituminous membrane surface treatment

following the pneumatic tire roller. The aim is to crush the aggregate and blend the surface prior to the application of the new overlay.

5. Self-propelled Rotary Power Broom. A self-propelled rotary power broom shall so be designed, equipped, maintained and operated so that the pavement surface can be swept clean. The broom shall have an adjustment to control downward pressure. The power broom shall meet the approval of the Engineer. In the case where a SAMI is being overlaid the same or following day a Vacuum sweeper shall be used only.

C. Determination of the Quantities of Materials to be applied in conjunction with the Engineer the Contractor will decide upon the appropriate rates of asphalt emulsion and fiber for and during the job. Typical rates of application for the asphalt emulsion range from 1.8-2.7L/m^2 (0.4-0.6 Gal/SY) and fiber application rates from 30-120g/m^2 (approx. 1-4oz/SY).

1. For SAM applications the aggregate shall be of 6mm, 10mm or 12.5mm maximum size and be added at rates as per conventional chip sealing operations – typically (11-13 kg/m^2 ---- approx. 19-26 lb/SY).
2. For SAMI applications only the 6mm maximum size aggregate is used at typically (6-8 kg/m^2 --- 10-15 lb/SY) to blend in the surface if it is to be overlaid within a few weeks. Otherwise higher aggregate application rates are employed and approved with the local engineer.

D. Preparation of Surface. A self-propelled power broom shall be used to clear any loose material from the surface to be treated immediately prior to the application of the fiber reinforced bituminous membrane surface treatment. Any surface-defects such, as potholes shall be repaired prior to commencement of works. Manhole covers, drop inlets, catch basins, curbs and any structure within the roadway area shall be protected against the fiber reinforced bituminous membrane surface treatment. Any cracks greater than W' shall be pre-treated with approved hot or cold polymer modified bituminous crack filler. Information on suitable crack fillers for use in conjunction with the fiber reinforced bituminous membrane surface treatment can be given by the license holder.

E. Application of the fiber reinforced bituminous membrane surface treatment. Fibers and bituminous materials shall be applied by means of pressure distributor in a uniform, continuous spread over the section to be treated and within the temperature range, sandwiching the in-place chopped fibers between the two layers of asphalt emulsion. The quantities of fibers and bituminous materials shall be decided between the Engineer and Contractor dependent on the job site. The distributor shall be moving forward at the proper application speed at the time the spray bar and fiber chopper bars are opened. If any skipped areas or deficiencies occur, the operation shall be immediately stopped. Junctions of spreads shall be carefully made to assure a smooth riding surface and the deficient areas corrected in a manner approved by the Engineer. Overlaps of the membrane shall be made up to 6".

The fiber reinforced bituminous membrane surface treatment shall not be applied more than 150 ft, in advance of the self-propelled chip spreader. Under no circumstances shall operations proceed in such a manner that the fiber reinforced bituminous membrane surface treatment will be allowed to chill, set-up, dry or otherwise impair retention of the cover aggregate. Traffic will not be allowed to run on, the unprotected fiber reinforced bituminous membrane surface treatment. The distributor, when not spreading, shall be parked so that the spray bar or mechanism will not drip on the surface of the traveled way.

F. Application of the Cover Aggregate. Immediately following the application of the fiber reinforced bituminous membrane surface treatment, cover aggregate shall be spread at the rate agreed between the Engineer and Contractor. Spreading shall be accomplished in such a

manner that the tires of the aggregate spreader at no time contact the uncovered and newly applied fiber reinforced bituminous membrane surface treatment. Immediately after the cover aggregate is spread, any deficient areas shall be covered by additional material. Pneumatic tire rolling shall begin immediately. The initial pass shall be completed within 5 minutes of the application of the fiber reinforced bituminous membrane surface treatment and shall be continued until three complete passes are obtained within 30 minutes of the application of the fiber reinforced bituminous membrane surface treatment. Pneumatic tire rollers shall come to a complete stop prior to a change in direction. For overlaps the first pass of aggregate and the space uncovered shall be up to 6". Upon the return pass the aggregate coverage shall be complete and over by up to 6" to insure full coverage of the membrane.

G. Opening to Traffic. "Loose Stone" signs meeting requirements of MUTCD shall be posted at 1 mile, intervals throughout the length of the project. These signs shall be erected before treatment commences and removed after contract is accepted. Unless otherwise specified, the highway shall be kept open to traffic at all times. Traffic shall be discontinued on the lane being surface treated; and as soon as the final layer is applied and rolled, controlled traffic may be permitted thereon. "Loose Stone" signs meeting requirements of MUTCD shall be posted at 1 mile, intervals throughout the length of the project. Traffic shall be maintained at a speed not to exceed 15 mph for a period of four hours after placement of the fiber reinforced bituminous membrane surface treatment using two-way radio-equipped patrol vehicles in accordance with the maintenance and protection of traffic details shown on the plans. All patrol vehicles shall be equipped with signs meeting the requirements of the MUTCD. Immediately after completion of the fiber reinforced bituminous membrane surface treatment, the section shall be posted for speed limit of 30 mph, for a period of three days. The signs should be posted at 0.5 mile intervals and signs showing other speed limitations should be covered for this period. All construction signs shall meet the requirements of the MUTCD.

METHOD OF MEASUREMENT

Liquid Membrane Polymer ("LMP"). The amount of material used shall be measured as the number of gallons applied to the roadway.

Fiber Reinforced Bituminous Membrane Surface Treatment. Fiber reinforced bituminous membrane surface treatment will be measured by the number of square meters of compacted material in place making no deductions for minor untreated areas such as catch basins and manholes.

BASIS OF PAYMENT

Liquid Membrane Polymer ("LMP"). 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.

Synthetic Pavement ("SP-III"). The unit price bid per gallon shall include the cost of furnishing materials and all labor and equipment necessary to complete the work.

Fiber Reinforced Bituminous Membrane Surface Treatment. The unit price bid per square yard per day, plus the addition of any items the Agency requires the Contractor to furnish. The following items will be performed by the Agency, unless otherwise directed:

- Manhole covers, water valves, catch basins, and other drainage structures shall be

clearly referenced for location and adjustment.
- Thermoplastic traffic markings shall be removed.
- All vegetation at the edge of the pavement shall be removed.
- Compaction with operator.
- Furnish aggregate delivered to the Chip-Spreader.
- Furnish Chip-Spreader.
- Maintenance and Protection of Traffic.
- Furnish self propelled Power Broom or Vacuum.

Asphalt Emulsion: The work performed as described in Measurement will be paid for at the unit price bid per square yard for "Slurry Sealed Pavement Surface". Measurement and payment will be limited to longitudinal length and width of which there is definite texture present. The payment per square yard shall include aggregate, emulsion equipment, and necessary labor to complete the work as specified.
For Mixing Liquid Bituminous Material in Portable Pugmill and Placement with a Paver. Additional charge per gallon to any delivered and applied item shall include a pugmill with an operator and an approved paver with operator at any location within Erie County. Mixing equipment shall conform to NYSDOT Standard Specification Section 302-3.02

Price Adjustments. The price escalation clause that applies to CRS-1p / CRS-2p under the liquid portion of this bid shall also apply to Fiber Reinforced Bituminous Membrane Surface Treatment. The price adjustment per gallon shall be multiplied by a factor 0.4 to calculate the price adjustment per square yard.

Formula:

$$\text{Price Adj. Per SY} = \frac{\text{New Avg. FOB Terminal Price} - \text{Base Avg. Terminal Price}}{235} \times \text{Total Allowable Petroleum \%} \times 0.4$$

For purposes of this contract, the **1 November 2021** **Base Average** F.O.B. Terminal Price for Asphalt Cement shall be used. The price is **$570.00** **per U.S. Ton**.

Price Adjustment for Liquid Bituminous Material. Price adjustments will be based on the New York State Office of General Services Formula as follows:

1. Price adjustments allowed will be based on the **1 November 2021** average of the F.O.B. terminal price per ton of AC-10 or AC-20 asphalt cement (base average F.O.B. terminal price), at the following locations.

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

The average F.O.B. terminal price per ton for **1 November 2021** is **$570.00** per 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.

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.

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 2022. 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, 2022) following the adjustment date.

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

   "Price Adjustment (per gallon) Equals (New Average F.O.B. Terminal Price Minus Base Average Terminal Price) Divided by 235 Times Total Allowable Petroleum %.

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.

Base Average F.O.B. Terminal Price. The average F.O.B. terminal price of AC-1 0 or AC-20 asphalt cement as of **1 November 2021**.

Total Allowable Petroleum. The percentage of total allowable petroleum for each item is as follows:

Price Adjustments will not be allowed for materials which do not have an asphalt cement base.

EXAMPLE:

$$\frac{\$175.00 \cdot \$145.00}{235} \times 0.66 = +\$0.84 \text{ per Gal/on}$$

Item 702-3101
Base Avg. Price =$145.00
New Avg. Price =$175.00
TOTAL Allowable petroleum = 66%

Positive Price Adjustment number shall be added to original per gallon Bid Price. Negative Price Adjustment number shall be subtracted from original per Gallon 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 than $0.01 per gallon from the original bid price. In these instances a purchasing memorandum will not be issued and prices will revert back to the original prices.

5. If at any time after March 2022 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 (10) days written notice mailed to the contractor to terminate any contract resulting from this bid opening.

Payment will be made under:

Item No.	Item	Pay Unit
E702.0401	Paving Asphalt (AC 15) Delivered & Applied	GAL
E702.0402	Paving Asphalt (AC 15) F.O.B. Plant	GAL
E702.0501	Paving Asphalt (AC 20) Delivered & Applied	GAL
E702.0502	Paving Asphalt (AC 20) F.O.B. Plant	GAL
E702.0701	Misc. Asphalt Cement (18-60) Joint/Crack Filler Packaged in Paper Containers - Delivered & Applied	GAL
E702.0702	Misc. Asphalt Cement (18-60) Joint/Crack Filler Packaged in Paper Containers - F.O.B. Plant	GAL
E702.3001	Asphalt Emulsion (RS-1) - Delivered & Applied	GAL
E702.300101	Asphalt Emulsion (RS-1) - F.O.B. Plant	GAL
E702.3101	Asphalt Emulsion (RS-2) - Delivered & Applied	GAL
E702.310101	Asphalt Emulsion (RS-2) - F.O.B. Plant	GAL
E702.3102	Asphalt Emulsion (HFRS-2) - Delivered & Applied	GAL
E702.310201	Asphalt Emulsion (HFRS-2) - F.O.B. Plant	GAL
E702.3102p	Asphalt Emulsion (HFRS-2P) - Delivered & Applied	GAL
E702.310201p	Asphalt Emulsion (HFRS-2P) - F.O.B. Plant	GAL
E702.3201	Asphalt Emulsion (MS-2) - Delivered & Applied	GAL
E702.320101	Asphalt Emulsion (MS-2) – F.O.B. Plant	GAL
E702.3301	Asphalt Emulsion (HFMS-2) - Delivered & Applied	GAL
E702.330101	Asphalt Emulsion (HFMS-2) – F.O.B. Plant	GAL
E702.3401	Asphalt Emulsion (HFMS-2H) - Delivered & Applied	GAL
E702.340101	Asphalt Emulsion (HFMS-2H) - F.O.B. Plant	GAL
E702.3501	Asphalt Emulsion (SS-1) - Delivered & Applied	GAL
E702.350101	Asphalt Emulsion (SS-1) - F.O.B. Plant	GAL
E702.3601	Asphalt Emulsion (SS-IH) - Delivered & Applied	GAL
E702.360101	Asphalt Emulsion (SS-IH) - F.O.B. Plant	GAL
E702.4001	Catonic Asphalt Emulsion (CRS-1) - Delivered & Applied	GAL
E702.400101	Cationic Asphalt Emulsion (CRS-1) - F.O.B. Plant	GAL

Item No.	Item	Pay Unit

E702.4101	Cationic Asphalt Emulsion (CRS-2) - Delivered & Applied	GAL
E702.410101	Cationic Asphalt Emulsion (CRS-2) - F.O.B. Plant	GAL
E702.4101p	Cationic Asphalt Emulsion (CRS-2P) - Delivered & Applied	GAL
E702.410101p	Cationic Asphalt Emulsion (CRS-2P) - F.O.B. Plant	GAL
E702.4201	Cationic Asphalt Emulsion (CMS-2) - Delivered & Applied	GAL
E702.420101	Cationic Asphalt Emulsion (CMS-2) - F.O.B. Plant	GAL
E702.4301	Cationic Asphalt Emulsion (CMS-2H) - Delivered & Applied	GAL
E702.430101	Cationic Asphalt Emulsion (CMS-2H) - F.O.B. Plant	GAL
E702.4401	Cationic Asphalt Emulsion (CSS-1) - Delivered & Applied	GAL
E702.440101	Cationic Asphalt Emulsion (CSS-1) - F.O.B. Plant	GAL
E702.4501	Cationic Asphalt Emulsion (CSS-IH) - Delivered & Applied	GAL
E702.450101	Cationic Asphalt Emulsion (CSS-IH) - F.O.B. Plant	GAL
E702.9901	Asphalt Emulsion Tack Coat (Minimum 500 Gallons per Delivery) - Delivered & Applied	GAL
E702.9902	Asphalt Emulsion Tack Coat (Minimum 500 Gallons per Order) - F.O.B. Plant	GAL
E702.9903	Waiting Time for Asphalt Emulsion Tack Coat Application (Per Hour after First Hour on Project)	Hour
E702.9904	Hand Spray Patching - Additional Charge per Gallon to any Delivered & Applied 702 Item	GAL
E702.9905	Bar Spray Patching - Additional Charge per Gallon to any Delivered & Applied 702 Item	GAL
E702.9906	Additional Cost for Spray Patch Tank Rental	GAL
E702.9907	Additional Cost for Self Propelled Stone Spreader for Full Width Surface Treatment	GAL
E702.9908	Additional Cost for Self Propelled Stone Spreader for Bar Spray Patching	GAL
E702.9909	Additional Cost for Self Propelled Stone Spreader Maximum Charge per Day	DAY
E702.99010	Mixing in Portable Pugmill (MS-2)	GAL
E702.99011	Mixing in Portable Pugmill (HFMS-2)	GAL
E702.99012	Mixing in Portable Pugmill (HFMS-2GH)	GAL
E702.99013	Additional Cost for Mixing in Traveling Plant Mixer (MS-2)	GAL
E702.99014	Additional Cost for Mixing in Traveling Plant Mixer (HFMS-2)	GAL
E702.99015	Additional Cost for Mixing in Traveling Plant Mixer (CMS-2)	GAL
E702.99016	Additional Cost for Mixing in Traveling Plant Mixer (CMS-2H)	GAL
E702.99017	Additional Cost for Mixing in Traveling Plant Mixer with Shoulder Attachment (MS-2)	GAL
E702.99018	Additional Cost for Mixing in Traveling Plant Mixer with Shoulder Attachment (HFMS-2)	GAL
E702.99019	Additional Cost for Mixing in Traveling Plant Mixer with Shoulder Attachment (CMS-2)	GAL
E702.99020	Additional Cost for Mixing in Traveling Plant Mixer with Shoulder Attachment (CMS-2H)	GAL
E702.99021	Additional Cost for Mixing in Traveling Plant Mixer with Shoulder Attachment – Minimum Charge	DAY
E702.99022	Additional Cost for Mixing in Traveling Plant Mixer with Shoulder Attachment - Maximum Charge	DAY
E702.99023	Fiber Reinforced Bituminous Membrane Surface Treatment (1 - 5,000 SY/Day) Fiber Mat Type A	SY

Item No.	**Item**	**Pay Unit**

E702.99024	Fiber Reinforced Bituminous Membrane Surface Treatment (1 - 5,000 SY/Day) Fiber Seal Type B	SY
E702.99025	Fiber Reinforced Bituminous Membrane Surface Treatment (1 - 5,000 SY/Day) Option A	SY
E702.99026	Fiber Reinforced Bituminous Membrane Surface Treatment (1 - 5,000 SY/Day) Option B	SY
E702.99027	Fiber Reinforced Bituminous Membrane Surface Treatment (1 - 5,000 SY/Day) Option C	SY
E702.99028	Fiber Reinforced Bituminous Membrane Surface Treatment (1 - 5,000 SY/Day) Option D	SY
E702.99029	Fiber Reinforced Bituminous Membrane Surface Treatment (1 - 5,000 SY/Day) Option E	SY
E702.99030	Fiber Reinforced Bituminous Membrane Surface Treatment (1 - 5,000 SY/Day) Option F	SY
E702.99031	Fiber Reinforced Bituminous Membrane Surface Treatment (5,001 - 10,000 SY/Day) Fiber Mat Type A	SY
E702.99032	Fiber Reinforced Bituminous Membrane Surface Treatment (5,001 - 10,000 SY/Day) Fiber Seal Type B	SY
E702.99033	Fiber Reinforced Bituminous Membrane Surface Treatment (5,001 - 10,000 SY/Day) Option A	SY
E702.99034	Fiber Reinforced Bituminous Membrane Surface Treatment (5,001 - 10,000 SY/Day) Option B	SY
E702.99035	Fiber Reinforced Bituminous Membrane Surface Treatment (5,001 - 10,000 SY/Day) Option C	SY
E702.99036	Fiber Reinforced Bituminous Membrane Surface Treatment (5,001 - 10,000 SY/Day) Option D	SY
E702.99037	Fiber Reinforced Bituminous Membrane Surface Treatment (5,001 - 10,000 SY/Day) Option E	SY
E702.99038	Fiber Reinforced Bituminous Membrane Surface Treatment (5,001- 10,000 SY/Day) Option F	SY
E702.99039	Fiber Reinforced Bituminous Membrane Surface Treatment (10,001 - 20,000 SY/Day) Fiber Mat Type A	SY
E702.99040	Fiber Reinforced Bituminous Membrane Surface Treatment (10,001 - 20,000 SY/Day) Fiber Seal Type B	SY
E702.99041	Fiber Reinforced Bituminous Membrane Surface Treatment (10,001 - 20,000 SY/Day) Option A	SY
E702.99042	Fiber Reinforced Bituminous Membrane Surface Treatment (10,001 - 20,000 SY/Day) Option B	SY
E702.99043	Fiber Reinforced Bituminous Membrane Surface Treatment (10,001 - 20,000 SY/Day) Option C	SY
E702.99044	Fiber Reinforced Bituminous Membrane Surface Treatment (10,001 - 20,000 SY/Day) Option D	SY
E702.99045	Fiber Reinforced Bituminous Membrane Surface Treatment (10,001 - 20,000 SY/Day) Option E	SY
E702.99046	Fiber Reinforced Bituminous Membrane Surface Treatment (10,001 - 20,000 SY/Day) Option F	SY
E702.99047	Fiber Reinforced Bituminous Membrane Surface Treatment (20,001 - 40,000 SY/Day) Fiber Mat Type A	SY
E702.99048	Fiber Reinforced Bituminous Membrane Surface Treatment (20,001 - 40,000 SY/Day) Fiber Seal Type B	SY

Item No.	**Item**	**Pay Unit**

E702.99049	Fiber Reinforced Bituminous Membrane Surface Treatment (20,001 - 40,000 SY/Day) Option A	SY
E702.99050	Fiber Reinforced Bituminous Membrane Surface Treatment (20,001 - 40,000 SY/Day) Option B	SY
E702.99051	Fiber Reinforced Bituminous Membrane Surface Treatment (20,001 - 40,000 SY/Day) Option C	SY
E702.99052	Fiber Reinforced Bituminous Membrane Surface Treatment (20,001 - 40,000 SY/Day) Option D	SY
E702.99053	Fiber Reinforced Bituminous Membrane Surface Treatment (20,001 - 40,000 SY/Day) Option E	SY
E702.99054	Fiber Reinforced Bituminous Membrane Surface Treatment (20,001 - 40,000 SY/Day) Option F	SY
E702.99055	Fiber Reinforced Bituminous Membrane Surface Treatment (40,001 + SY/Day) Fiber Mat Type A	SY
E702.99056	Fiber Reinforced Bituminous Membrane Surface Treatment (40,001 + SY/Day) Fiber Seal Type B	SY
E702.99057	Fiber Reinforced Bituminous Membrane Surface Treatment (40,001 + SY/Day) Option A	SY
E702.99058	Fiber Reinforced Bituminous Membrane Surface Treatment (40,001 + SY/Day) Option B	SY
E702.99059	Fiber Reinforced Bituminous Membrane Surface Treatment (40,001 + SY/Day) Option C	SY
E702.99060	Fiber Reinforced Bituminous Membrane Surface Treatment (40,001 + SY/Day) Option D	SY
E702.99061	Fiber Reinforced Bituminous Membrane Surface Treatment (40,001 + SY/Day) Option E	SY
E702.99062	Fiber Reinforced Bituminous Membrane Surface Treatment (40,001 + SY/Day) Option F	SY

SECTION 703 – AGGREGATES

All aggregates shall meet the requirements of the New York State Department of Transportation (NYSDOT) Materials Bureau. A New York State Department of Environmental Conservation (NYSDEC) Mine and Land reclamation permit number and a NYSDOT Source Number must be provided to the Owner prior to Contractor's acceptance of the Owner's purchase order. If vendor does not have a source number, sampling and testing documentation/verification that material meets or exceeds NYSDOT specifications must be provided to the Owner prior to Contractor's acceptance of the Owner's purchase order.

Unless otherwise noted, the materials shall meet the requirements of listed Section of the NYSDOT Standard Specifications..

Crushed Stone/Crushed Bedrock	703-0201
Crushed Gravel	703-0202
Screened Gravel	703-0203
(Screened Gravel shall meet the requirements of NYSDOT Standard Specifications dated September 1, 2020)	
Mortar Sand	703-03
Concrete Sand	703-07
Underdrain Filter	733-20
Subbase Course	733-04
Recycled Portland Cement Concrete	733-07
Reclaimed Asphalt Pavement for Earthwork and Subbase	733-06

The unit price bid shall include the costs of furnishing all labor, material, and equipment necessary to load the material onto trucks at the bidder's plant. Cost for transportation shall be paid under a separate item.

Payment will be made under:

Item No.	**Item**	**Pay Unit**
E703.01	Crushed Stone, Screenings (Table 703-4)	Ton
E703.02	Crushed Stone, Type 1 (Table 405-1)	Ton
E703.03	Crushed Stone, Type 2 (Table 405-1)	Ton
E703.04	Crushed Stone, Type 3 (Table 405-1)	Ton
E703.05	Crushed Stone, #1 (Table 703-4)	Ton
E703.06	Crushed Stone, #1A (Table 703-4)	Ton
E703.07	Crushed Stone, #1ST (Table 703-4)	Ton
E703.08	Crushed Stone, #2 (Table 703-4)	Ton
E703.09	Crushed Stone, #1 & #2 Mixed (Table 703-4)	Ton
E703.10	Crushed Stone, #3 or #4A Mixed (Table 703-4)	Ton
E703.11	Crushed Stone, #4 or #3 & #4 Mixed (Table 703-4)	Ton
E703.13	Crushed Stone, 1" Crusher Run - Subbase Course (733-04)	Ton
E703.14	Crushed Stone, 2" Crusher Run - Subbase Course (733-04, Type 2)	Ton
E703.15	Crushed Stone, 3" Crusher Run - Subbase Course (733-04, Type 4)	Ton
E703.16	Crushed Stone, 4" Crusher Run - Subbase Course (733-04, Type 3)	Ton
E703.17	Crushed Stone Fill, Fine (Table 733-21A)	Ton
E703.18	Crushed Stone Fill, Light (Table 733-21A)	Ton
E703.19	Crushed Stone Fill, Medium (Table 733-21A)	Ton
E703.20	Crushed Stone Fill, Heavy (Table 733-21A)	Ton
E703.21	Crushed Stone, Dry Rip Rap (Table 733-22A)	Ton
E703.22	Dimensional Stone – Custom, based on Customer Inspection	Ton
E703.23	Crushed Gravel, Type 1 (Table 405-1)	Ton

SECTION 703 – AGGREGATES

Item No.	Item	Pay Unit
E703.24	Crushed Gravel, Type 2 (Table 405-1)	Ton
E703.25	Crushed Gravel, #1 (Table 703-4)	Ton
E703.26	Crushed Gravel, #1A (Table 703-4)	Ton
E703.27	Crushed Gravel, #1ST (Table 703-4)	Ton
E703.28	Crushed Gravel, #2 (Table 703-4)	Ton
E703.29	Crushed Gravel, #1 & #2 Mixed (Table 703-4)	Ton
E703.30	Crushed Gravel, 1” Crusher Run - Subbase Course (733-04)	Ton
E703.31	Crushed Gravel, 2” Crusher Run – Subbase Course (733-04 Type 4)	Ton
E703.32	Crushed Gravel, 3” Crusher Run – Subbase Course (733-04 Type 4)	Ton
E703.33	Crushed Gravel, 1" Crusher Run Hard Heads Subbase Course (733-04)	Ton
E703.34	Crushed Gravel, 2" Crusher Run Hard Heads Subbase Course (733-04 Type 2 EQ.)	Ton
E703.36	Screened Gravel, #1 (Table 703-4)	Ton
E703.37	Screened Gravel, #1A (Table 703-4)	Ton
E703.39	Screened Gravel, #2 (Table 703-4)	Ton
E703.40	Screened Gravel, #1 & #2 Mixed (Table 703-4)	Ton
E703.41	Screened Gravel, Bank Run – Bank Run Gravel	Ton
E703.42	Screened Gravel, 1” Screened	Ton
E703.43	Screened Gravel, 2” Screened (Table 733-4A)	Ton
E703.44	Screened Gravel, 3” Screened (Table 733-4A)	Ton
E703.45	Screened Gravel, 4” Screened Select Fill (Table 733-11A)	Ton
E703.50	Mortar Sand	Ton
E703.51	Concrete Sand	Ton
E703.52	Recycled Concrete Aggregate, 1-inch	Ton
E703.53	Recycled Concrete Aggregate, 2-inch	Ton
E703.54	Sidewalk Blend (60-40 blend of #1 and Concrete Sand)	Ton
E703.55	Reclaimed Asphalt Pavement for Earthwork and Subbase -5/8”	Ton
E703.56	Reclaimed Asphalt Pavement for Earthwork and Subbase -2”	Ton
E703.57	Reclaimed Asphalt Pavement for Earthwork & Subbase -unprocessed	Ton
E703.60	Underdrain Filter, Type 1 – Table 733-20A	Ton
E703.61	Underdrain Filter, Type 2 – Table 733-20A	Ton

SECTION 704 – MASONRY MATERIALS

DESCRIPTION

This specification covers the material and quality requirements for solid concrete manhole blocks for use in the construction of drainage structures.

MATERIALS

Materials shall meet the requirements specified in the following subsections of NYSDOT Standard Specification Section 700:

Precast Concrete Pavers	704-13
Mortar for Concrete Masonry	705-21

If radial, they must be made in true segments of a circle with the inside and outside surfaces curved to the desired radius. The units used in the cone section of the manhole shall be drawn in (reduced) 6 inches for every 8 inches in height. The unit shall be so designed and laid that the interior surfaces of manholes are cylindrical for the straight sides and conical for at least the top four courses with no offsets.

Corner units for square or rectangular basins or inlets must be "L" shaped with an inside return side not less than one quarter nor more than one half the length of the normal unit.

Units for both manholes and basins shall be so designed that only full length units are required to lay anyone course. Inside and outside joints shall not exceed one-half inch.

Concrete mix proportions shall be such that the minimum compressive strength as determined on the units themselves shall be as stated in this specification.

The transportation and placement of concrete shall be done by methods that will prevent segregation of the concrete materials.

The use of high early strength cement, calcium chloride, or any other concrete additive not expressly approved is prohibited.

Blocks shall be sound and free from cracks or other defects that would interfere with the proper placing of the block.

All blocks shall be subjected to curing by anyone of the methods described in the subsection entitled "Curing" 706-02, Reinforced Concrete Pipe. Curing shall be accomplished to the satisfaction of the County. Units shall be protected from freezing from the time the concrete is placed and until curing is completed.

TEST

The minimum average compressive strength of concrete block samples representing any lot, as determined upon the units themselves, shall be 2500 pounds per square inch of cross sectional area of the unit as laid in the structure.

The compressive strength of any individual unit shall not be less than 2000 pounds per square inch. The maximum average absorption of concrete block samples representing any lot shall not exceed eight percent (8%) by weight. The absorption of any individual unit-shall not exceed ten

percent (10%) by weight.

All test procedures shall be conducted in accordance with ASTM C140.

BASIS OF ACCEPTANCE

The material will be considered for acceptance in accordance with procedural directives of the County for either stock lot quantities at the manufacturing location, or on the basis of job sampling in the event samples are not taken at the plant.

BASIS OF PAYMENT

Payment will be made under:

Item No.	Item	Pay Unit
E704.01	Solid Concrete Block, 8” x 8” x 16”	Each
E704.02	Solid Concrete Block, 4” x 8” x 16”	Each
E704.03	Hollow Concrete Block, 8” x 8” x 16”	Each
E704.04	Hollow Concrete Block, 4” x 8” x 16”	Each
E704.05	Standard Concrete Brick	Each
E704.06	2’ x 2’ x 6’ Concrete Bin Block with Tongue and Groove Connections	Each
E704.1101	Delivery Charge, 1 Pallet to Aurora District	Lump Sum
E704.1124	Delivery Charge, 2-4 Pallets to Aurora District	Lump Sum
E704.1159	Delivery Charge, 5 or More Pallets to Aurora District	Lump Sum
E704.1201	Delivery Charge, 1 Pallet to Clarence District	Lump Sum
E704.1224	Delivery Charge, 2-4 Pallets to Clarence District	Lump Sum
E704.1259	Delivery Charge, 5 or More Pallets to Clarence District	Lump Sum
E704.1301	Delivery Charge, 1 Pallet to East Concord District	Lump Sum
E704.1324	Delivery Charge, 2-4 Pallets to East Concord District	Lump Sum
E704.1359	Delivery Charge, 5 or More Pallets to East Concord District	Lump Sum
E704.1401	Delivery Charge, 1 Pallet to Hamburg District	Lump Sum
E704.1424	Delivery Charge, 2-4 Pallets to Hamburg District	Lump Sum
E704.1459	Delivery Charge, 5 or More Pallets to Hamburg District	Lump Sum
E704.1501	Delivery Charge, 1 Pallet to Harlem District	Lump Sum
E704.1524	Delivery Charge, 2-4 Pallets to Harlem District	Lump Sum
E704.1559	Delivery Charge, 5 or More Pallets to Harlem District	Lump Sum

SECTION 705 - CLAY SOIL

Clay Soil shall have a Soil Classification of CL or CH, and have a minimum Plasticity Index of 12. The Sieve Size Specification shall be as follows.

Sieve Size	Percent Passing
2”	100%
½”	Min. of 85%
200	Min. of 50 %

The unit price bid shall include the costs of furnishing all labor, material, and equipment necessary to load the material onto County trucks at the bidder’s plant/pit. Cost for transportation shall be paid under a separate item.

Payment will be made under:

Item No.	**Item**	**Pay Unit**
E705.01	Clay Soil	Ton

SECTION 800 – MATERIALS DELIVERY

DELIVERY ON ALL BITUMINOUS MIXES AND 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:

$0.30 each mile for the first five (5) miles
plus (+)
$0.25 each additional mile six to fifteen (6 -15) miles
plus (+)
$0.20 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.

Unit prices bid shall be for the indicated Non-Prevailing Wage Rate (NPW) or Prevailing Wage Rate (PWR) as indicated in the item.

E800-1.01 All Bituminous Materials or Aggregate Delivered to a Paver or Widener:

Hauling from Plant Gate or Pit to Job Site.

Item No.	Item	Pay Unit
E800.0101NPW	Bituminous Materials or Aggregate Delivered to Paver or Widener, 0-5 Miles Fixed Charge Price	Ton
E800.0102NPW	Bituminous Materials or Aggregate Delivered to Paver or Widener, 6-15 Miles Price per Ton per Mile	Ton/Mile
E800.0103NPW	Bituminous Materials or Aggregate Delivered to Paver or Widener, Price per Ton per Mile for over 15 Miles	Ton/Mile
E800.0101PWR	Bituminous Materials or Aggregate Delivered to Paver or Widener, 0-5 Miles Fixed Charge Price	Ton
E800.0102PWR	Bituminous Materials or Aggregate Delivered to Paver or Widener, 6-15 Miles Price per Ton per Mile	Ton/Mile
E800.0103PWR	Bituminous Materials or Aggregate Delivered to Paver or Widener, Price per Ton per Mile for over 15 Miles	Ton/Mile

E800-1.02 All Asphalt, Stone or Gravel Delivered to a Stockpile or Plant:

Hauling from Plant Gate or Pit to Stockpile or Plant.

Item No.	Item	Pay Unit
E800.0201NPW	Asphalt, Stone or Gravel Delivered to Stockpile or Plant, 0-5 Miles Fixed Charge Price	Ton
E800.0202NPW	Asphalt, Stone or Gravel Delivered to Stockpile or Plant, 6-15 Miles Price per Ton per Mile	Ton/Mile
E800.0203NPW	Asphalt, Stone or Gravel Delivered to Stockpile or Plant, Price per Ton per Mile for over 15 Miles	Ton/Mile
E800.0201PWR	Asphalt, Stone or Gravel Delivered to Stockpile or Plant, 0-5 Miles Fixed Charge Price	Ton
E800.0202PWR	Asphalt, Stone or Gravel Delivered to Stockpile or Plant, 6-15 Miles Price per Ton per Mile	Ton/Mile
E800.0203PWR	Asphalt, Stone or Gravel Delivered to Stockpile or Plant, Price per Ton per Mile for over 15 Miles	Ton/Mile

E800-1.03 Medium, Heavy, Dry, and Dimensional Rip Rap delivered to a Stockpile or Plant:

Hauling from Plant Gate or Pit to Stockpile or Plant.

Item No.	Item	Pay Unit
E800.0301NPW	Medium, Heavy, Dry, and Dimensional Rip Rap delivered to a Stockpile or Plant: 0-5 Miles Fixed Charge Price	Ton
E800.0302NPW	Medium, Heavy, Dry, and Dimensional Rip Rap delivered to a Stockpile or Plant:, 6-15 Miles Price per Ton per Mile	Ton/Mile
E800.0303NPW	Medium, Heavy, Dry, and Dimensional Rip Rap delivered to a Stockpile or Plant:, Price per Ton per Mile for over 15 Miles	Ton/Mile
E800.0301PWR	Medium, Heavy, Dry, and Dimensional Rip Rap delivered to a Stockpile or Plant: 0-5 Miles Fixed Charge Price	Ton
E800.0302PWR	Medium, Heavy, Dry, and Dimensional Rip Rap delivered to a Stockpile or Plant:, 6-15 Miles Price per Ton per Mile	Ton/Mile
E800.0303PWR	Medium, Heavy, Dry, and Dimensional Rip Rap delivered to a Stockpile or Plant:, Price per Ton per Mile for over 15 Miles	Ton/Mile

SECTION 900 – RENTAL EQUIPMENT

Description:
Provide the equipment enumerated on an as needed basis. Equipment shall be a recent model in good repair and operating condition and shall be fully insured. The vehicles, equipment and drivers/operators must be in compliance with all applicable NYSDMV and Federal regulations. Bid price shall include all routine maintenance and repair of vehicles and equipment.

Unless otherwise noted, the price bid shall include delivery to and from any single jobsite in Erie County.

A day is eight (8) hours, a week is forty (40) hours and a month is one hundred seventy-six (176) hours. Overtime for operators (employees) shall be computed at time and one half over 8 hours per day. Overtime for machine shall be computed as straight time (one eighth of the daily rate, one fortieth of the weekly rate, etc.) for each hour over 8 hours.

When the Item includes an Operator, the Operator shall be fully trained and licensed, if applicable, for the equipment being used.

Rental of vehicles which include an Operator, including but not limited to Dump Trucks and Plows, shall include all fuel and mileage costs.

900-1.01 Road Widener with Operator:

The widener shall be of a Blaw Knox Model #195 or equal.

Item No.	Item	Pay Unit
E900.01PD	Road Widener with Operator (per Day)	Day
E900.01PW	Road Widener with Operator (per Week)	Week
E900.01PM	Road Widener with Operator (per Month)	Month

900-1.02 Bituminous Asphalt Paver with Operator:

The paver shall be a minimum of 19 feet paving width (Barber Green 240 or Cat AP1000 or equal) equipped with automatic transverse slope and longitudinal grade screed controls.

Item No.	Item	Pay Unit
E900.02PD	Bituminous Asphalt Paver with Operator (per Day)	Day
E900.02PW	Bituminous Asphalt Paver with Operator (per Week)	Week
E900.02PM	Bituminous Asphalt Paver with Operator (per Month)	Month

900-1.03 Bituminous Asphalt Paver with Operator and Screed Man:

The paver shall be a minimum of 19 feet paving width (Barber Green 240 or Cat AP1000 or equal) equipped with automatic transverse slope and longitudinal grade screed controls.

Item No.	Item	Pay Unit
E900.03PD	Bitum. Asphalt Paver with Operator and Screed Man (per Day)	Day
E900.03PW	Bitum. Asphalt Paver with Operator and Screed Man (per Week)	Week
E900.03PM	Bitum. Asphalt Paver with Operator and Screed Man (per Month)	Month

900-1.0301 Bituminous Asphalt Paver NO Operator:

The small paver (approximately 13,000 pounds) shall have a maximum width of 13’-0” (LeeBoy 7000C or equal).

Item No.	Item	Pay Unit
E900.0301PD	Bituminous Asphalt Paver (per Day)	Day
E900.0301PW	Bituminous Asphalt Paver (per Week)	Week
E900.0301PM	Bituminous Asphalt Paver (per Month)	Month

900-1.04 Self-Propelled 4-Speed Loader with Operator:

The loader shall be a minimum twenty-five (25') foot conveyor model 7-11 Vathey type loader or equal.

Item No.	Item	Pay Unit
E900.04PD	Self-Propelled 4-Speed Loader with Operator (per Day)	Day
E900.04PW	Self-Propelled 4-Speed Loader with Operator (per Week)	Week
E900.04PM	Self-Propelled 4-Speed Loader with Operator (per Month)	Month

900-1.05 Portable Screening Plant without Operator:

Portable Screening Plant to be Finlay 312 or equal with portable fifty (50') foot Stacking Conveyor to be Finlay 524 or equal. Unit to be sized to screen RAP at approximately *1-1/2",* at approximately 80 T.P.H.

Item No.	Item	Pay Unit
E900.05PD	Portable Screening Plant without Operator (per Day)	Day
E900.05PW	Portable Screening Plant without Operator (per Week)	Week
E900.05PM	Portable Screening Plant without Operator (per Month)	Month

900-1.06 Portable Screening plant with Operator:

Portable Screening Plant to be Finlay 312 or equal with portable fifty (50') foot Stacking Conveyor to be Finlay 524 or equal. Unit to be sized to screen RAP at approximately *1-1/2",* at approximately 80 T.P.H.

Item No.	Item	Pay Unit
E900.06PD	Portable Screening Plant with Operator (per Day)	Day
E900.06PW	Portable Screening Plant with Operator (per Week)	Week
E900.06PM	Portable Screening Plant with Operator (per Month)	Month

900-1.07 2-Ton Roller without Operator:

The roller shall be a minimum sixty (60") inch dual drum articulated vibratory asphalt compactor.

Item No.	Item	Pay Unit
E900.07PD	2-Ton Roller without Operator (per Day)	Day
E900.07PW	2-Ton Roller without Operator (per Week)	Week
E900.07PM	2-Ton Roller without Operator (per Month)	Month

900-1.08 2-Ton Roller with Operator:

The roller shall be a minimum sixty (60") inch dual drum articulated vibratory asphalt compactor.

Item No.	Item	Pay Unit
E900.08PD	2-Ton Roller with Operator (per Day)	Day
E900.08PW	2-Ton Roller with Operator (per Week)	Week
E900.08PM	2-Ton Roller with Operator (per Month)	Month

900-1.09 3-5-Ton Roller without Operator:

The roller shall be a minimum sixty (60") inch dual drum articulated vibratory asphalt compactor.

Item No.	Item	Pay Unit
E900.09PD	3-5-Ton Roller without Operator (per Day)	Day
E900.09PW	3-5-Ton Roller without Operator (per Week)	Week
E900.09PM	3-5-Ton Roller without Operator (per Month)	Month

900-1.10 3-5-Ton Roller with Operator:

The roller shall be a minimum sixty (60") inch dual drum articulated vibratory asphalt compactor.

Item No.	Item	Pay Unit
E900.10PD	3-5-Ton Roller with Operator (per Day)	Day
E900.10PW	3-5-Ton Roller with Operator (per Week)	Week
E900.10PM	3-5-Ton Roller with Operator (per Month)	Month

900-1.11 10-Ton Roller without Operator:

The roller shall be a minimum seventy-two (72") inch dual drum articulated vibratory asphalt compactor.

Item No.	Item	Pay Unit
E900.11PD	10-Ton Roller without Operator (per Day)	Day
E900.11PW	10-Ton Roller without Operator (per Week)	Week
E900.11PM	10-Ton Roller without Operator (per Month)	Month

900-1.12 10-Ton Roller with Operator:

The roller shall be a minimum seventy-two (72") inch dual drum articulated vibratory asphalt compactor.

Item No.	Item	Pay Unit
E900.12PD	10-Ton Roller with Operator (per Day)	Day
E900.12PW	10-Ton Roller with Operator (per Week)	Week
E900.12PM	10-Ton Roller with Operator (per Month)	Month

900-1.13 Pneumatic Tired Roller without Operator:

The pneumatic tired roller shall have a maximum wheel load of five thousand six hundred (5,600 lbs) pounds, tire compression on pavement of 80 ± 5 P.S.I. and a maximum axle load of twenty-two thousand four hundred (22,400 lbs.) pounds.

Item No.	Item	Pay Unit
E900.13PD	Pneumatic Tired Roller without Operator (per Day)	Day
E900.13PW	Pneumatic Tired Roller without Operator (per Week)	Week

900-1.14 Pneumatic Tired Roller with Operator:

The pneumatic tired roller shall have a maximum wheel load of five thousand six hundred (5,600 lbs) pounds, tire compression on pavement of 80 ± 5 P.S.I. and a maximum axle load of twenty-two thousand four hundred (22,400 lbs.) pounds.

Item No.	Item	Pay Unit
E900.14PD	Pneumatic Tired Roller with Operator (per Day)	Day
E900.14PW	Pneumatic Tired Roller with Operator (per Week)	Week

900-1.15 6-Ton Excavator Crawler without Operator:

Item No.	Item	Pay Unit
E900.15PD	6-Ton Excavator Crawler without Operator (per Day)	Day
E900.15PW	6-Ton Excavator Crawler without Operator (per Week)	Week
E900.15PM	6-Ton Excavator Crawler without Operator (per Month)	Month

900-1.16 6-Ton Excavator Crawler with Operator:

Item No.	Item	Pay Unit
E900.16PD	6-Ton Excavator Crawler with Operator (per Day)	Day
E900.16PW	6-Ton Excavator Crawler with Operator (per Week)	Week
E900.16PM	6-Ton Excavator Crawler with Operator (per Month)	Month

900-1.17 12-Ton Excavator Crawler without Operator:

Item No.	Item	Pay Unit
E900.17PD	12-Ton Excavator Crawler without Operator (per Day)	Day
E900.17PW	12-Ton Excavator Crawler without Operator (per Week)	Week
E900.17PM	12-Ton Excavator Crawler without Operator (per Month)	Month

900-1.18 12-Ton Excavator Crawler with Operator:

Item No.	Item	Pay Unit
E900.18PD	12-Ton Excavator Crawler with Operator (per Day)	Day
E900.18PW	12-Ton Excavator Crawler with Operator (per Week)	Week
E900.18PM	12-Ton Excavator Crawler with Operator (per Month)	Month

900-1.19 15-Ton Excavator Crawler without Operator:

Item No.	Item	Pay Unit
E900.19PD	15-Ton Excavator Crawler without Operator (per Day)	Day
E900.19PW	15-Ton Excavator Crawler without Operator (per Week)	Week
E900.19PM	15-Ton Excavator Crawler without Operator (per Month)	Month

900-1.20 15-Ton Excavator Crawler with Operator:

Item No.	Item	Pay Unit
E900.20PD	15-Ton Excavator Crawler with Operator (per Day)	Day
E900.20PW	15-Ton Excavator Crawler with Operator (per Week)	Week
E900.20PM	15-Ton Excavator Crawler with Operator (per Month)	Month

900-1.21 22-Ton Excavator Crawler without Operator:

Item No.	Item	Pay Unit
E900.21PD	22-Ton Excavator Crawler without Operator (per Day)	Day
E900.21PW	22-Ton Excavator Crawler without Operator (per Week)	Week
E900.21PM	22-Ton Excavator Crawler without Operator (per Month)	Month

900-1.22 22-Ton Excavator Crawler with Operator:

Item No.	Item	Pay Unit
E900.22PD	22-Ton Excavator Crawler with Operator (per Day)	Day
E900.22PW	22-Ton Excavator Crawler with Operator (per Week)	Week
E900.22PM	22-Ton Excavator Crawler with Operator (per Month)	Month

900-1.23 15-Ton Excavator Rubber Tire with Telescope Boom without Operator:

Item No.	Item	Pay Unit
E900.23PD	15-Ton Exc. Rubber Tire w/ Telescope Boom w/o Op. (per Day)	Day
E900.23PW	15-Ton Exc. Rubber Tire w/ Telescope Boom w/o Op. (per Week)	Week
E900.23PM	15-Ton Exc. Rubber Tire w/ Telescope Boom w/o Op. (per Month)	Month

900-1.24 15-Ton Excavator Rubber Tire with Telescope Boom with Operator:

Item No.	Item	Pay Unit
E900.24PD	15-Ton Exc. Rubber Tire w/ Telescope Boom with Op. (per Day)	Day
E900.24PW	15-Ton Exc. Rubber Tire w/ Telescope Boom with Op. (per Week)	Week
E900.24PM	15-Ton Exc. Rubber Tire w/ Telescope Boom with Op. (per Month)	Month

900-1.25 15-Ton Excavator Rubber Tire with Telescope Boom without Operator:

Item No.	Item	Pay Unit
E900.25PD	18-Ton Exc. Rubber Tire w/ Telescope Boom w/o Op. (per Day)	Day
E900.25PW	18-Ton Exc. Rubber Tire w/ Telescope Boom w/o Op. (per Week)	Week
E900.25PM	18-Ton Exc. Rubber Tire w/ Telescope Boom w/o Op. (per Month)	Month

900-1.26 15-Ton Excavator Rubber Tire with Telescope Boom with Operator:

Item No.	Item	Pay Unit
E900.26PD	18-Ton Exc. Rubber Tire w/ Telescope Boom with Op. (per Day)	Day
E900.26PW	18-Ton Exc. Rubber Tire w/ Telescope Boom with Op. (per Week)	Week
E900.26PM	18-Ton Exc. Rubber Tire w/ Telescope Boom with Op. (per Month)	Month

900-1.27 21-Ton Excavator Rubber Tire with Telescope Boom without Operator:

Item No.	Item	Pay Unit
E900.27PD	21-Ton Exc. Rubber Tire w/ Telescope Boom w/o Op. (per Day)	Day
E900.27PW	21-Ton Exc. Rubber Tire w/ Telescope Boom w/o Op. (per Week)	Week
E900.27PM	21-Ton Exc. Rubber Tire w/ Telescope Boom w/o Op. (per Month)	Month

900-1.28 21-Ton Excavator Rubber Tire with Telescope Boom with Operator:

Item No.	Item	Pay Unit
E900.28PD	21-Ton Exc. Rubber Tire w/ Telescope Boom with Op. (per Day)	Day
E900.28PW	21-Ton Exc. Rubber Tire w/ Telescope Boom with Op. (per Week)	Week
E900.28PM	21-Ton Exc. Rubber Tire w/ Telescope Boom with Op. (per Month)	Month

900-1.29 Wheel Loader, Rubber Tire, 2-Yard Unit without Operator:

Item No.	Item	Pay Unit
E900.29PD	Wheel Loader, Rubber Tire, 2-Yard Unit w/o Operator (per Day)	Day
E900.29PW	Wheel Loader, Rubber Tire, 2-Yard Unit w/o Operator (per Week)	Week
E900.29PM	Wheel Loader, Rubber Tire, 2-Yard Unit w/o Operator (per Month)	Month

900-1.30 Wheel Loader, Rubber Tire, 2-Yard Unit with Operator:

Item No.	Item	Pay Unit
E900.30PD	Wheel Loader, Rubber Tire, 2-Yard Unit with Operator (per Day)	Day
E900.30PW	Wheel Loader, Rubber Tire, 2-Yard Unit with Operator (per Week)	Week
E900.30PM	Wheel Loader, Rubber Tire, 2-Yard Unit with Operator (per Month)	Month

900-1.31 Wheel Loader, Rubber Tire, 2 ½-Yard Unit without Operator:

Item No.	Item	Pay Unit
E900.31PD	Wheel Loader, Rubber Tire, 2 ½-Yard Unit w/o Operator (per Day)	Day
E900.31PW	Wheel Loader, Rubber Tire, 2 ½-Yard Unit w/o Operator (per Week)	Week
E900.31PM	Wheel Loader, Rubber Tire, 2 ½-Yard Unit w/o Operator (per Month)	Month

900-1.32 Wheel Loader, Rubber Tire, 2 ½-Yard Unit with Operator:

Item No.	Item	Pay Unit
E900.32PD	Wheel Loader, Rubber Tire, 2 ½-Yard Unit with Operator (per Day)	Day
E900.32PW	Wheel Loader, Rubber Tire, 2 ½-Yard Unit with Operator (per Week)	Week
E900.32PM	Wheel Loader, Rubber Tire, 2 ½-Yard Unit with Operator (per Month)	Month

900-1.33 Wheel Loader, Rubber Tire, 3-Yard Unit without Operator:

Item No.	Item	Pay Unit
E900.33PD	Wheel Loader, Rubber Tire, 3-Yard Unit w/o Operator (per Day)	Day
E900.33PW	Wheel Loader, Rubber Tire, 3-Yard Unit w/o Operator (per Week)	Week
E900.33PM	Wheel Loader, Rubber Tire, 3-Yard Unit w/o Operator (per Month)	Month

900-1.34 Wheel Loader, Rubber Tire, 3-Yard Unit with Operator:

Item No.	Item	Pay Unit
E900.34PD	Wheel Loader, Rubber Tire, 3-Yard Unit with Operator (per Day)	Day
E900.34PW	Wheel Loader, Rubber Tire, 3-Yard Unit with Operator (per Week)	Week
E900.34PM	Wheel Loader, Rubber Tire, 3-Yard Unit with Operator (per Month)	Month

900-1.35 Backhoe, Rubber Tire, without Operator:

The backhoe shall have an 18 foot digging capacity, extend-a-hoe case 580K, or equal.

Item No.	Item	Pay Unit
E900.35PD	Backhoe, Rubber Tire, without Operator (per Day)	Day
E900.35PW	Backhoe, Rubber Tire, without Operator (per Week)	Week
E900.35PM	Backhoe, Rubber Tire, without Operator (per Month)	Month

900-1.36 Backhoe, Rubber Tire, with Operator:

The backhoe shall have an 18 foot digging capacity, extend-a-hoe case 580K, or equal.

Item No.	Item	Pay Unit
E900.36PD	Backhoe, Rubber Tire, with Operator (per Day)	Day
E900.36PW	Backhoe, Rubber Tire, with Operator (per Week)	Week
E900.36PM	Backhoe, Rubber Tire, with Operator (per Month)	Month

900-1.37 Bulldozer, D-6 or equal without Operator:

Item No.	Item	Pay Unit
E900.37PD	Bulldozer, D-6 or equal, without Operator (per Day)	Day
E900.37PW	Bulldozer, D-6 or equal, without Operator (per Week)	Week
E900.37PM	Bulldozer, D-6 or equal, without Operator (per Month)	Month

900-1.38 Bulldozer, D-6 or equal with Operator:

Item No.	Item	Pay Unit
E900.38PD	Bulldozer, D-6 or equal, with Operator (per Day)	Day
E900.38PW	Bulldozer, D-6 or equal, with Operator (per Week)	Week
E900.38PM	Bulldozer, D-6 or equal, with Operator (per Month)	Month

900-1.39 Bulldozer, D-7 or equal without Operator:

Item No.	Item	Pay Unit
E900.39PD	Bulldozer, D-7 or equal, without Operator (per Day)	Day
E900.39PW	Bulldozer, D-7 or equal, without Operator (per Week)	Week
E900.39PM	Bulldozer, D-7 or equal, without Operator (per Month)	Month

900-1.40 Bulldozer, D-7 or equal with Operator:

Item No.	Item	Pay Unit
E900.40PD	Bulldozer, D-7 or equal, with Operator (per Day)	Day
E900.40PW	Bulldozer, D-7 or equal, with Operator (per Week)	Week
E900.40PM	Bulldozer, D-7 or equal, with Operator (per Month)	Month

900-1.41 Bucket Truck without Operator:

The bucket truck shall be a Baker Versalift VO-50 or equal. The truck shall have an articulate, telescopic boom with a minimum of a forty (40 ft) foot reach.

Item No.	Item	Pay Unit
E900.41PD	Bucket Truck without Operator (per Day)	Day
E900.41PW	Bucket Truck without Operator (per Week)	Week
E900.41PM	Bucket Truck without Operator (per Month)	Month

900-1.42 Single Axle Dump Truck with Operator:

Single axle dump trucks equipped with tarps as required. Bid price shall include fuel and mileage.

Item No.	Item	Pay Unit
E900.42PH	Single Axle Dump Truck with Operator (per Hour)	Hour
E900.42PD	Single Axle Dump Truck with Operator (per Day)	Day
E900.42PW	Single Axle Dump Truck with Operator (per Week)	Week
E900.42PM	Single Axle Dump Truck with Operator (per Month)	Month

900-1.43 Tandem Axle Dump Truck with Operator:

Ten (10) wheel tandem axle dump trucks equipped with tarps as required. Bid price shall include fuel and mileage.

Item No.	Item	Pay Unit
E900.43PH	Tandem Axle Dump Truck with Operator (per Hour)	Hour
E900.43PD	Tandem Axle Dump Truck with Operator (per Day)	Day
E900.43PW	Tandem Axle Dump Truck with Operator (per Week)	Week
E900.43PM	Tandem Axle Dump Truck with Operator (per Month)	Month

900-1.44 Tri-Axle Dump Truck with Operator:

Tri-axle dump trucks equipped with tarps as required. Bid price shall include fuel and mileage.

Item No.	Item	Pay Unit
E900.44PH	Tri-Axle Dump Truck with Operator (per Hour)	Hour
E900.44PD	Tri-Axle Dump Truck with Operator (per Day)	Day
E900.44PW	Tri-Axle Dump Truck with Operator (per Week)	Week
E900.44PM	Tri-Axle Dump Truck with Operator (per Month)	Month

900-1.45 Low-Boy Tractor Trailer, 20 Ton Capacity with Operator:

Equipped with tarps as required. Bid price shall include fuel and mileage.

Item No.	Item	Pay Unit
E900.45PH	Low-Boy Tractor Trailer, 20 Ton Capacity with Operator (per Hour)	Hour
E900.45PD	Low-Boy Tractor Trailer, 20 Ton Capacity with Operator (per Day)	Day
E900.45PW	Low-Boy Tractor Trailer, 20 Ton Capacity with Operator (per Week)	Week
E900.45PM	Low-Boy Tractor Trailer, 20 Ton Capacity with Operator (per Month)	Month

900-1.46 Rotary Broom Sweeper without Operator:

Self-propelled heavy-duty rotary broom sweeper Lay Mor 8-B or equal.

Item No.	Item	Pay Unit
E900.46PD	Rotary Broom Sweeper without Operator (per Day)	Day
E900.46PW	Rotary Broom Sweeper without Operator (per Week)	Week
E900.46PM	Rotary Broom Sweeper without Operator (per Month)	Month

900-1.47 Rotary Broom Sweeper with Operator:

Self-propelled heavy-duty rotary broom sweeper Lay Mor 8-B or equal.

Item No.	Item	Pay Unit
E900.47PD	Rotary Broom Sweeper with Operator (per Day)	Day
E900.47PW	Rotary Broom Sweeper with Operator (per Week)	Week
E900.47PM	Rotary Broom Sweeper with Operator (per Month)	Month

900-1.48 Mower, Side and Rear Mounted Flail Mowers without Operator:

Heavy duty four (4) wheel tractor with side and rear mounted flail mowers.

Item No.	Item	Pay Unit
E900.48PD	Mower, Side and Rear Mounted Flail, without Operator (per Day)	Day
E900.48PW	Mower, Side and Rear Mounted Flail, without Operator (per Week)	Week
E900.48PM	Mower, Side and Rear Mounted Flail, without Operator (per Month)	Month

900-1.49 Mower with Brush Hog without Operator:

Heavy duty four (4) wheel tractor with brush hog.

Item No.	Item	Pay Unit
E900.49PD	Mower with Brush Hog without Operator (per Day)	Day
E900.49PW	Mower with Brush Hog without Operator (per Week)	Week
E900.49PM	Mower with Brush Hog without Operator (per Month)	Month

900-1.50 185 CFM Compressor without Operator:

Item No.	Item	Pay Unit
E900.50PD	185 CFM Compressor without Operator (per Day)	Day
E900.50PW	185 CFM Compressor without Operator (per Week)	Week
E900.50PM	185 CFM Compressor without Operator (per Month)	Month

900-1.51 Street Sweeper with Operator:

Broom type front loader Elgin, pelican, or equal.

Item No.	Item	Pay Unit
E900.51PD	Street Sweeper with Operator (per Day)	Day
E900.51PW	Street Sweeper with Operator (per Week)	Week
E900.51PM	Street Sweeper with Operator (per Month)	Month

900-1.52 Brush Chipper with Operator:

The brush chipper shall be a Vermeer BC1800A or equal equipped with automatic feed.

Item No.	Item	Pay Unit
E900.52PD	Brush Chipper without Operator (per Day)	Day
E900.52PW	Brush Chipper without Operator (per Week)	Week
E900.52PM	Brush Chipper without Operator (per Month)	Month

900-1.53 Skid Steer Loader without Operator:

To be a Bobcat 863F series or equal, with a 73HP engine minimum and High-flow Hydraulics 27 GPM minimum. Attachments for the Skid Steer Loader to be bid as price per day added to the daily rate bid for the basic machine.

Item No.	Item	Pay Unit
E900.53PD	Skid Steer Loader without Operator (per Day)	Day
E900.53PW	Skid Steer Loader without Operator (per Week)	Week
E900.53PM	Skid Steer Loader without Operator (per Month)	Month

Skid Steer Loader Attachments:

E900.5301PD Skid Steer Loader Auger Attachment (per Day)	Day
E900.5302PD Skid Steer Loader Breakers Attachment (per Day)	Day
E900.5303PD Skid Steer Loader Planer Attachment (per Day)	Day
E900.5304PD Skid Steer Loader Wheel Saw Attachment (per Day)	Day
E900.5305PD Skid Steer Loader Combination Bucket Attachment (per Day)	Day
E900.5306PD Skid Steer Loader Sweeper Attachment (per Day)	Day
E900.5307PD Skid Steer Loader Trenchers Attachment (per Day)	Day

900-1.54 Chassis Mounted Spray Patcher without Operator:

Spray patcher to be chassis mounted Rosco RA-300 or equal.

Item No.	Item	Pay Unit
E900.54PD	Chassis Mounted Spray Patcher without Operator (per Day)	Day
E900.54PW	Chassis Mounted Spray Patcher without Operator (per Week)	Week
E900.54PM	Chassis Mounted Spray Patcher without Operator (per Month)	Month

900-1.55 Chassis Mounted Spray Patcher with Operator:

Spray patcher to be chassis mounted Rosco RA-300 or equal.

Item No.	Item	Pay Unit
E900.55PD	Chassis Mounted Spray Patcher with Operator (per Day)	Day
E900.55PW	Chassis Mounted Spray Patcher with Operator (per Week)	Week
E900.55PM	Chassis Mounted Spray Patcher with Operator (per Month)	Month

900-1.56 Trailer Mounted Spray Patcher without Operator:

Spray patcher to be chassis mounted Rosco RA-300 or equal.

Item No.	Item	Pay Unit
E900.56PD	Trailer Mounted Spray Patcher without Operator (per Day)	Day
E900.56PW	Trailer Mounted Spray Patcher without Operator (per Week)	Week
E900.56PM	Trailer Mounted Spray Patcher without Operator (per Month)	Month

900-1.57 Trailer Mounted Spray Patcher with Operator:

Spray patcher to be chassis mounted Rosco RA-300 or equal.

Item No.	Item	Pay Unit
E900.57PD	Trailer Mounted Spray Patcher with Operator (per Day)	Day
E900.57PW	Trailer Mounted Spray Patcher with Operator (per Week)	Week
E900.57PM	Trailer Mounted Spray Patcher with Operator (per Month)	Month

900-1.58 Flusher/Vacuum Truck without Operator:

Combination sewer flusher and vacuum unit, vactor 2100 series, or equal.

Item No.	Item	Pay Unit
E900.58PD	Flusher/Vacuum Truck without Operator (per Day)	Day
E900.58PW	Flusher/Vacuum Truck without Operator (per Week)	Week
E900.58PM	Flusher/Vacuum Truck without Operator (per Month)	Month

900-1.59 Flusher/Vacuum Truck with Operator:

Combination sewer flusher and vacuum unit, vactor 2100 series, or equal.

Item No.	Item	Pay Unit
E900.59PD	Flusher/Vacuum Truck with Operator (per Day)	Day
E900.59PW	Flusher/Vacuum Truck with Operator (per Week)	Week
E900.59PM	Flusher/Vacuum Truck with Operator (per Month)	Month

900-1.60 Shoring Equipment, Trench Boxes without Operator:

Item No.	Item	Pay Unit
E900.60PD	Shoring Equipment, Trench Boxes without Operator (per Day)	Day
E900.60PW	Shoring Equipment, Trench Boxes without Operator (per Week)	Week
E900.60PM	Shoring Equipment, Trench Boxes without Operator (per Month)	Month

900-1.61 Intentionally Left Blank

900-1.62 Topsoil Shredder with Operator:

Large with 3/4 inch sieve.

Item No.	Item	Pay Unit
E900.62PD	Topsoil Shredder with Operator (per Day)	Day

900-1.63 Mat Smoothness Machine/Material Transfer Device with Operator:

Item No.	Item	Pay Unit
E900.63PD	Mat Smoothness Machine/Mat. Transfer Device with Op. (per Day)	Day

900-1.64 Movement of Equipment:

After initial delivery of equipment (rental) to a single jobsite, any move to an additional jobsite will be paid per move on a per hour basis between jobsites. **Note:** On all equipment rental charges, portal to portal costs will not be paid for on an hourly rate, vendor to include these charges in hourly rate bid.

Item No.	Item	Pay Unit
E900.64	Movement of Equipment (per Hour)	Hour

900-1.65 Snow and Ice Removal Trucks with Operator:

Rental of dump trucks with plow and salter for snow and ice removal to include machine, equipment, and operator. There will be No Additional Payment for overtime.

Item No.	Item	Pay Unit
E900.6501PH	Snow and Ice Removal, Single Axle Dump Truck (per Hour)	Hour
E900.6502PH	Snow and Ice Removal, Tandem Axle Dump Truck (per Hour)	Hour
E900.6503PH	Snow and Ice Removal, Tri-Axle Dump Truck (per Hour)	Hour

900-1.66 thru 900-1.75 Portable Standby Generator

All generators shall be 3 Phase. Rental Unit price shall **not** include delivery or pick-up charges. The lump sum price bid for delivery and pick-up shall include both and shall be for any location within the County.

Item No.	Item	Pay Unit
E900.66PH	Portable Standby Generator 100 Kw @ 208 VAC	Hour
E900.66PD	Portable Standby Generator 100 Kw @ 208 VAC	Day
E900.66PM	Portable Standby Generator 100 Kw @ 208 VAC	Month
E900.6601	Portable Standby Generator 100 Kw @ 208 VAC, Running Time Premium/Hour	Hour
E900.6602	Portable Standby Generator 100 Kw @ 208 VAC, Delivery/Pick-up	Lump Sum
E900.6603	Portable Standby Generator 100 Kw @ 208 VAC, (Extra Cable, Per Foot Per Day)	Foot/Day
E900.67PH	Portable Standby Generator 150 Kw @ 208 VAC	Hour
E900.67PD	Portable Standby Generator 150 Kw @ 208 VAC	Day
E900.67PM	Portable Standby Generator 150 Kw @ 208 VAC	Month
E900.6701	Portable Standby Generator 150 Kw @ 208 VAC, Running Time Premium/Hour	Hour
E900.6702	Portable Standby Generator 150 Kw @ 208 VAC, Delivery/Pick-up	Lump Sum
E900.6703	Portable Standby Generator 150 Kw @ 208 VAC, Extra Cable, Per Foot Per Day	Foot/Day
E900.68PH	Portable Standby Generator 50 Kw @ 240 VAC	Hour
E900.68PD	Portable Standby Generator 50 Kw @ 240 VAC	Day
E900.68PM	Portable Standby Generator 50 Kw @ 240 VAC	Month
E900.6801	Portable Standby Generator 50 Kw @ 240 VAC, Running Time Premium/Hour	Hour
E900.6802	Portable Standby Generator 50 Kw @ 240 VAC, Delivery/Pick-up	Lump Sum
E900.6803	Portable Standby Generator 50 Kw @ 240 VAC, Extra Cable, Per Foot Per Day	Foot/Day
E900.69PH	Portable Standby Generator 150 Kw @ 240 VAC	Hour
E900.69PD	Portable Standby Generator 150 Kw @ 240 VAC	Day
E900.69PM	Portable Standby Generator 150 Kw @ 240 VAC	Month
E900.6901	Portable Standby Generator 150 Kw @ 240 VAC, Running Time Premium/Hour	Hour
E900.6902	Portable Standby Generator 150 Kw @ 240 VAC, Delivery/Pick-up	Lump Sum
E900.6903	Portable Standby Generator 150 Kw @ 240 VAC, Extra Cable, Per Foot Per Day	Foot/Day
E900.70PH	Portable Standby Generator 100 Kw @ 480 VAC	Hour
E900.70PD	Portable Standby Generator 100 Kw @ 480 VAC	Day
E900.70PM	Portable Standby Generator 100 Kw @ 480 VAC	Month
E900.7001	Portable Standby Generator 100 Kw @ 480 VAC, Running Time Premium/Hour	Hour
E900.7002	Portable Standby Generator 100 Kw @ 480 VAC, Delivery/Pick-up	Lump Sum

E900.7003	Portable Standby Generator 100 Kw @ 480 VAC, Extra Cable, Per Foot Per Day	Foot/Day
E900.71PH	Portable Standby Generator 200 Kw @ 480 VAC	Hour
E900.71PD	Portable Standby Generator 200 Kw @ 480 VAC	Day
E900.71PM	Portable Standby Generator 200 Kw @ 480 VAC	Month
E900.7101	Portable Standby Generator 200 Kw @ 480 VAC, Running Time Premium/Hour	Hour
E900.7102	Portable Standby Generator 200 Kw @ 480 VAC, Delivery/Pick-up	Lump Sum
E900.7103	Portable Standby Generator 200 Kw @ 480 VAC, Extra Cable, Per Foot Per Day	Foot/Day
E900.72PH	Portable Standby Generator 300 Kw @ 480 VAC	Hour
E900.72PD	Portable Standby Generator 300 Kw @ 480 VAC	Day
E900.72PM	Portable Standby Generator 300 Kw @ 480 VAC	Month
E900.7201	Portable Standby Generator 300 Kw @ 480 VAC, Running Time Premium/Hour	Hour
E900.7202	Portable Standby Generator 300 Kw @ 480 VAC, Delivery/Pick-up	Lump Sum
E900.7203	Portable Standby Generator 300 Kw @ 480 VAC, Extra Cable, Per Foot Per Day	Foot/Day
E900.73PH	Portable Standby Generator 500 Kw @ 480 VAC	Hour
E900.73PD	Portable Standby Generator 500 Kw @ 480 VAC	Day
E900.73PM	Portable Standby Generator 500 Kw @ 480 VAC	Month
E900.7301	Portable Standby Generator 500 Kw @ 480 VAC, Running Time Premium/Hour	Hour
E900.7302	Portable Standby Generator 500 Kw @ 480 VAC, Delivery/Pick-up	Lump Sum
E900.7303	Portable Standby Generator 500 Kw @ 480 VAC, Extra Cable, Per Foot Per Day	Foot/Day
E900.74PH	Portable Standby Generator 800 Kw @ 480 VAC	Hour
E900.74PD	Portable Standby Generator 800 Kw @ 480 VAC	Day
E900.74PM	Portable Standby Generator 800 Kw @ 480 VAC	Month
E900.7401	Portable Standby Generator 800 Kw @ 480 VAC, Running Time Premium/Hour	Hour
E900.7402	Portable Standby Generator 800 Kw @ 480 VAC, Delivery/Pick-up	Lump Sum
E900.7403	Portable Standby Generator 800 Kw @ 480 VAC, Extra Cable, Per Foot Per Day	Foot/Day
E900.75PH	Portable Standby Generator 1250 Kw @ 480 VAC	Hour
E900.75PD	Portable Standby Generator 1250 Kw @ 480 VAC	Day
E900.75PM	Portable Standby Generator 1250 Kw @ 480 VAC	Month
E900.7501	Portable Standby Generator 1250 Kw @ 480 VAC, Running Time Premium/Hour	Hour
E900.7502	Portable Standby Generator 1250 Kw @ 480 VAC, Delivery/Pick-up	Lump Sum
E900.7503	Portable Standby Generator 1250 Kw @ 480 VAC, Extra Cable, Per Foot Per Day	Foot/Day

900-1.76 thru 900.1-82 Portable Pump Rental

Item No.	Item	Pay Unit
E900.7601	Portable Pump - Critically Silenced, Trailer Mount, 4" Self Priming, Solids Handling, 1,000 GPM @ 100' Total Head, 200 GPM @ 165' Total Head - Godwin CD103M or equal	Day
E900.7602	Portable Pump - Critically Silenced, Trailer Mount, 6" Self Priming, Solids Handling, 2,000 GPM @ 35' Total Head, 500 GPM @ 100' Total Head - Godwin CD150M or equal	Day
E900.7603	Portable Pump - Trailer Mount, 8" Self Priming, Solids Handling, 2,000 GPM @ 35' Total Head, 500 GPM @ 100' Total Head - Godwin CD200M or equal	Day
E900.7604	Portable Pump - Trailer Mount, 10" Self Priming, Solids Handling, 3,500 GPM @ 50' Total Head, 1,500 GPM @ 145' Total Head - Godwin CD250M or equal	Day
E900.7605	Portable Pump - Skid Mount, 12" Self Priming, Solids Handling, 4,500 GPM @ 60' Total Head, 2,000 GPM @ 85' Total Head - Godwin DPC300M or equal	Day
E900.7701	Heavy Duty Suction Hose w/one male and one female Bauer Style QD Fitting Installed on Hose, 4"x20'	Day
E900.7702	Heavy Duty Suction Hose w/one male and one female Bauer Style QD Fitting Installed on Hose, 6"x20'	Day
E900.7703	Heavy Duty Suction Hose w/one male and one female Bauer Style QD Fitting Installed on Hose, 8"x10'	Day
E900.7704	Heavy Duty Suction Hose w/one male and one female Bauer Style QD Fitting Installed on Hose, 10"x10'	Day
E900.7705	Heavy Duty Suction Hose w/one male and one female Bauer Style QD Fitting Installed on Hose, 12"x10'	Day
E900.7706	Layflat Discharge Hose w/one male and one female Bauer Style QD Fitting Installed on Hose, 4"x50'	Day
E900.7707	Layflat Discharge Hose w/one male and one female Bauer Style QD Fitting Installed on Hose, 6"x50'	Day
E900.7708	Layflat Discharge Hose w/one male and one female Bauer Style QD Fitting Installed on Hose, 8"x50'	Day
E900.7802	Rigid Galvanized Discharge Pipe, 6"X10' Godwin QD or Equal	Day
E900.7803	Rigid Galvanized Discharge Pipe, 8"X10' Godwin QD or Equal	Day
E900.7804	Rigid Galvanized Discharge Pipe, 10"X10' Godwin QD or Equal	Day
E900.7805	Rigid Galvanized Discharge Pipe, 12"X10' Godwin QD or Equal	Day
E900.7901	Fittings - 90 Degree Bend, 4" Godwin QD or Equal	Day
E900.7902	Fittings - 90 Degree Bend, 6" Godwin QD or Equal	Day
E900.7903	Fittings - 90 Degree Bend, 8" Godwin QD or Equal	Day
E900.7904	Fittings - 90 Degree Bend, 10" Godwin QD or Equal	Day
E900.7905	Fittings - 90 Degree Bend, 12" Godwin QD or Equal	Day
E900.8001	Fittings - 45 Degree Bend, 4" Godwin QD or Equal	Day
E900.8002	Fittings - 45 Degree Bend, 6" Godwin QD or Equal	Day
E900.8003	Fittings - 45 Degree Bend, 8" Godwin QD or Equal	Day
E900.8004	Fittings - 45 Degree Bend, 10" Godwin QD or Equal	Day
E900.8005	Fittings - 45 Degree Bend, 12" Godwin QD or Equa l	Day
E900.8101	Fittings - Suction Screen, W/Female Bauer Style Fitting, 4" Godwin QD or Equal	Day

SECTION 900 – RENTAL EQUIPMENT

Item No.	Item	Pay Unit
E900.8102	Fittings - Suction Screen, W/Female Bauer Style Fitting, 6" Godwin QD or Equal	Day
E900.8103	Fittings - Suction Screen, W/Female Bauer Style Fitting, 8" Godwin QD or Equal	Day
E900.8104	Fittings - Suction Screen, W/Female Bauer Style Fitting, 10" Godwin QD or Equal	Day
E900.8105	Fittings - Suction Screen, W/Female Bauer Style Fitting, 12" Godwin QD or Equal	Day
E900.8201	Temporary Road Ramps in 4" with Male and Female Connection Flanges, Low Profile for Easy Crossing, Load Capacity of 21,600 Pounds Per Axle, Minimum Passable Vehicle Width Shall Be 144", Fitted with 150 Lb. Flanged Inlet and Outlet Connections, Fitted with Drain Valve to Facilitate Draining After Usage Godwin or Equal	Day
E900.8202	Temporary Road Ramps in 6" with Male and Female Connection Flanges, Low Profile for Easy Crossing, Load Capacity of 21,600 Pounds Per Axle, Minimum Passable Vehicle Width Shall Be 144", Fitted with 150 Lb. Flanged Inlet and Outlet Connections, Fitted with Drain Valve to Facilitate Draining After Usage Godwin or Equal	Day
E900.8203	Temporary Road Ramps in 8" with Male and Female Connection Flanges, Low Profile for Easy Crossing, Load Capacity of 21,600 Pounds Per Axle, Minimum Passable Vehicle Width Shall Be 144", Fitted with 150 Lb. Flanged Inlet and Outlet Connections, Fitted with Drain Valve to Facilitate Draining After Usage Godwin or Equal	Day
E900.8204	Temporary Road Ramps in 10" with Male and Female Connection Flanges, Low Profile for Easy Crossing, Load Capacity of 21,600 Pounds Per Axle, Minimum Passable Vehicle Width Shall Be 144", Fitted with 150 Lb. Flanged Inlet and Outlet Connections, Fitted with Drain Valve to Facilitate Draining After Usage Godwin or Equal	Day
E900.8205	Temporary Road Ramps in 12" with Male and Female Connection Flanges, Low Profile for Easy Crossing, Load Capacity of 21,600 Pounds Per Axle, Minimum Passable Vehicle Width Shall Be 144", Fitted with 150 Lb. Flanged Inlet and Outlet Connections, Fitted with Drain Valve to Facilitate Draining After Usage Godwin or Equal	Day

E900.8301 to E900.8306 Crawler Impact Crusher with integral screen 2" minus: Includes stacker with scale and supporting equipment. Material must be crushed to 2" minus. Delivery and pick-up shall be paid under the mobilization item, and shall include round trip transportation, permits and escorts as applicable.

Item No.	Item	Pay Unit
E900.8301PD	Crawler Impact Crusher – Concrete	Day
E900.8302PW	Crawler Impact Crusher – Concrete	Week
E900.8303PD	Crawler Impact Crusher – Asphalt / Stone / Gravel	Day
E900.8304PW	Crawler Impact Crusher - Asphalt / Stone / Gravel	Week
E900.8305	Mobilization – Concrete	LS
E900.8306	Mobilization – Asphalt / Stone / Gravel	LS

E900.84 Stone Slinger with Operator

Item No.	Item		Pay Unit
E900.8401	PD	Slinger (per Day)	Day
E900.8402	PW	Slinger (per Week)	Week

900-1.85 Wood Tub Grinder with Operator:

Large tub grinder, Morbark 1600 or equivalent capable of grinding large trees and stumps.

Item No.	Item	Pay Unit
E900.85PH	Tub Grinder with Operator (per Hour)	Hour
E900.85PD	Tub Grinder with Operator (per Day)	Day
E900.85PW	Tub Grinder with Operator (per Week)	Week
E900.85PM	Tub Grinder with Operator (per Month)	Month

900-1.86 Wood Grinder with Operator:

Large horizontal grinder, Vermeer HG4000 or equivalent capable of grinding large trees and stumps.

Item No.	Item	Pay Unit
E900.86PH	Horizontal Wood Grinder with Operator (per Hour)	Hour
E900.86PD	Horizontal Wood Grinder with Operator (per Day)	Day
E900.86PW	Horizontal Wood Grinder with Operator (per Week)	Week
E900.86PM	Horizontal Wood Grinder with Operator (per Month)	Month

900-1.87 Wood Splitting Equipment with Operator:

Bobcat with splitting tool attachment, or equivalent, capable of splitting large trees into manageable pieces to be fed into horizontal or tub grinder machinery

Item No.	Item	Pay Unit
E900.87PH	Bobcat with splitter and Operator (per Hour)	Hour
E900.87PD	Bobcat with splitter and Operator (per Day)	Day
E900.87PW	Bobcat with splitter and Operator (per Week)	Week
E900.87PM	Bobcat with splitter and Operator (per Month)	Month

900-1.88 Wood Splitting Equipment with Operator:

Excavator with splitting tool attachment, or equivalent, capable of splitting large trees into manageable pieces to be fed into horizontal or tub grinder machinery

Item No.	Item	Pay Unit
E900.88PH	Excavator with splitter and Operator (per Hour)	Hour
E900.88PD	Excavator with splitter and Operator (per Day)	Day
E900.88PW	Excavator with splitter and Operator (per Week)	Week
E900.88PM	Excavator with splitter and Operator (per Month)	Month

900-89 Cone truck without Operator:

The cone truck shall be able to hold 450 standard traffic cones, up to 36” tall, plus have room for some additional road closed or traffic control signs. The unit must have a rear mounted

Attenuator and have man baskets on both driver and passenger sides, preferably directly behind operator's cab for ease of communication. The truck needs to have flashing strobes and enough illumination for either day or night operations. A minimum 20,000 pound Gross Vehicle Weight (GVW) will be required. Cones shall meet NYSDOT Standard Specification Section 729-02.

Truck will be needed for usage around Highmark Stadium events, for example: Buffalo Bills games, concerts, Winter Classic hockey, etc. The event will be defined as picking up the truck from vendor the day before the event and returning it to the vendor early on the day after the event. Vendors must be from within a 25 mile radius of Highmark Stadium, Orchard Park. Outside of this radius will not be considered. If the successful bidder's office is closed on the day prior to the event, other arrangements shall be made. A County point of contact will communicate with the successful bidder prior to each event for pickup/drop off times and locations.

Item No.	Item	Pay Unit
E900.8901PD	Cone truck with 450 cones and without Operator (per Event)	Event
E900.8902PD	Cone truck without cones and without Operator (per Event)	Event

900-90 Grader With Operator

Grader with 12' blade width, CAT 140/140 AWD, CAT 150/150 AWD or equivalent.

Item No.	Item	Pay Unit
E900.90PD	Grader with Operator (per Day)	Day
E900.90PW	Grader with Operator (per Week)	Week
E900.90PM	Grader with Operator (per Month)	Month

900-91 Grader Without Operator

Grader with 12' blade width, CAT 140/140 AWD, CAT 150/150 AWD or equivalent

Item No.	Item	Pay Unit
E900.91PD	Grader without Operator (per Day)	Day
E900.91PW	Grader without Operator (per Week)	Week
E900.91PM	Grader without Operator (per Month)	Month