



WehranEnviroTech

**BID DOCUMENTS AND FINAL SPECIFICATIONS
FOR THE CLOSURE ACTION OF THE REMEDIAL DESIGN
FOR THE BROOME COUNTY COLESVILLE LANDFILL**

Prepared for

BROOME COUNTY DIVISION OF SOLID

WASTE MANAGEMENT

Broome County, New York

and

GAF CORPORATION

Wayne, New Jersey

Prepared by

WEHRAN-NEW YORK, INC.

666 East Main Street

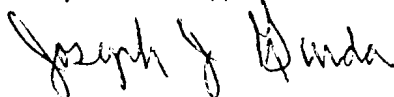
Middletown, New York 10940

WE Project No. 02260.CS

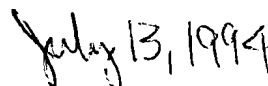
April 1994

Revised July 1994

It is a violation of Section 7209, Subdivision 2, of the New York State Education Law for any person unless acting under the direction of a licensed Professional Engineer or Land Surveyor to alter, in any way, Plans, Specifications, Plats or Report to which the seal of a Professional Engineer or Land Surveyor has been applied.



Joseph J. Gurda



N.Y.P.E. License No. 51494

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LEGAL NOTICE

LEGAL NOTICE

Bids for Closure Action of the Broome County Colesville Landfill Remedial Design, will be received beginning on _____, at the Division of Purchasing of Broome County, 1st Floor, Broome County Office Building, Binghamton, New York, 13902-1766, telephone (607)-778-2188, until _____ p.m., _____. Bids will be publicly opened and read at _____ p.m., _____, the Public Assembly Room, on the 2nd Floor of the Broome County Office Building in the Government Plaza, for the following:

PROJECT: Broome County
 Division of Solid Waste Management
 Closure Action of the Broome County Colesville Landfill Remedial Design

Deposit Required: Each Proposal must be made upon the form provided and shall be accompanied by a deposit, made payable to the Broome County Commissioner of Finance, of five percent (5%) of the amount of the bid as a guarantee that the bidder will enter into the contract if it be awarded to him/her.

Minimum Wage Rates shall be as determined by the New York State Department of Labor.

Plans, Specifications, Design Report and Proposal Forms may be seen at the Office of the Broome County Division of Purchasing at the above address, and copies may be obtained upon deposit of \$150.00 for each set, with check made payable to the Broome County Commissioner of Finance. If there is more than one project, then SEPARATE deposit checks are required for EACH project. Specifications/Plans deposit checks, if mailed, should be addressed to the Division of Purchasing at the above address. Delivery via Federal Express can be arranged. Contact the Division of Purchasing with your Federal Express account number. Refunds will be made in accordance with Article 5A, Section 102, Subdivision 2 of the General Municipal Law as amended.

Attention is called to Section 103-d of the General Municipal Law of the State of New York on Non-Collusive Bidding and the fact that not less than the minimum salaries and wages as set forth in the Contract Documents must be paid on this project. In addition, State assistance in the project provides for an Affirmative Action Program which seeks to assure the participation of Minority/Women Business Enterprise(s) in contracting activities and the participation of minorities and women in the workforce of the project pursuant to NYS Executive Law, Article 15A and applicable State and Federal Laws, Rules, and Regulations.

Special attention of bidders is called to the "Information for Bidders" in the Proposal, Specifications and Contract Agreements. Contract Proposals must be submitted in sealed envelopes with the words Broome County Division of Purchasing, the Project Name, Contract Number, and Contract Type plainly printed on the outside. Each bid must be in a separate envelope.

Each Proposal must be accompanied by cash, draft, certified check or bid bond payable to the Broome County Commissioner of Finance, in the amount of the deposit, as specified in this advertisement.

The retention and disposal of such cash, draft, certified check or bid bond by the County of Broome shall conform with Article 5A, Section 102 of the General Municipal Law, as amended. The successful bidder will be required to execute the Contract and comply in all respects with Article 5A, Section 102 of the General Municipal Law, as amended.

The Broome County Division of Purchasing reserves the right to reject any or all bids offered.

CONTRACTOR'S QUALIFICATION STATEMENT MUST BE SUBMITTED WITH THE PROPOSAL. Contractors shall have, at a minimum, 3 years construction experience of similar magnitude and successfully completed landfill component construction under NYS Part 360.

A mandatory Pre-Bid Information Meeting will be held on _____, _____ in the Public Assembly Room, on the 2nd floor of the Broome County Building in the Governmental Plaza, Binghamton, New York 13902-1766.

Direct all technical questions to Fay L. Standish, P.E. Deputy for Engineering Services.

Broome County
Board of Acquisition and Contract
TIMOTHY M. GRIPPEN, CHAIRPERSON

DATED: _____

NOTICE TO BIDDERS

NOTICE TO BIDDERS

BROOME COUNTY

DIVISION OF SOLID WASTE MANAGEMENT

CLOSURE ACTION OF THE BROOME COUNTY COLESVILLE LANDFILL

REMEDIAL DESIGN

Separate sealed Proposals for the Closure Action of the Broome County Colesville Landfill Remedial Design set out above, in Broome County, State of New York, in accordance with specifications, will be received by the Division of Purchasing, 1st Floor, Broome County Office Building, Government Plaza, Binghamton, New York, until ____ p.m., _____. The sealed proposals will be publicly opened and read at ____ p.m., _____, in the Public Assembly Room, on the 2nd Floor of the Broome County Office Building in the Government Plaza.

Each Proposal must be made upon the form provided therefore and shall be accompanied by a certified check made payable to the Commissioner of Finance of Broome County, of 5% of the amount of the bid as a guarantee that the Bidder will enter into the Contract if it be awarded to him. A Bid Bond of the same amount will be accepted in lieu of a check.

The name of the Contract, Contract Number and Type, as above, must be written on the front of the envelope containing the Proposal.

Special attention of bidders is called to the Equal Employment Opportunity Requirements.

The blank spaces in the Proposal must be filled in, and no change shall be made in the phraseology of the Proposal. Proposals that carry any omissions, erasures, alterations or additions may be rejected as informal. Successful Bidder(s) will be required to give a bond conditioned for the faithful performance of the Contract and a separate bond for the payment of labor and materials in the sum mentioned in the Information for Bidders. Corporation(s) submitting Proposals shall be authorized to do business in the State of New York. Specifications may be examined free of charge at the office of the Division of Purchasing, 1st Floor, Broome County Office Building, Government Plaza, Binghamton, New York.

Attention is called to Section 103-d of the General Municipal Law of the State of New York on Non-Collusive Bidding and the fact that not less than the minimum salaries and wages as set forth in the Contract Documents must be paid on this project. In addition, State assistance in the project provides for an Affirmative Action Program which seeks to assure the participation of Minority/Women Business Enterprise(s) in contracting activities and the participation of minorities and women in the workforce of the project pursuant to NYS Executive Law, Article 15A and applicable State and Federal Laws, Rules, and Regulations.

Specifications may be obtained at the office of the Division of Purchasing, by making a deposit of \$150.00. Refunds will be made in accordance with Article 5A, Section 102, Subdivision 2 of the General Municipal Law as amended, which is further described in these specifications under Article I, Section 1.13 of the General Conditions.

CONTRACTOR'S QUALIFICATION STATEMENT MUST BE SUBMITTED WITH THE PROPOSAL. Contractors shall have, at a minimum, 3 years construction experience of similar magnitude and successfully completed landfill component construction under NYS Part 360.

A mandatory Pre-Bid Information Meeting will be held on _____, _____ in the Public Assembly Room, on the 2nd Floor of the Broome County Building in the Governmental Plaza, Binghamton, New York 13902-1766.

Direct all technical questions to:

Ray L. Standish, P.E.
Deputy for Engineering Services.
Broome County Division of Solid Waste
(607) 778-2285, fax (607) 778-2395

INFORMATION FOR BIDDERS

INFORMATION FOR BIDDERS

Persons desiring to make a proposal shall use the proposal blank prepared and attached hereto. The specifications attached hereto are to be considered as and shall form a part of the agreement. The time for which proposals will be received will be found in the Published Notice calling for proposals and any proposal offered after that date and hour shall not be accepted. Specifications may be obtained from the Division of Purchasing, 1st Floor, Broome County Office Building, Government Plaza, Binghamton, New York.

Proposals must be made upon the blank form provided. The blank places in the proposal must be filled in as noted and no change will be made in the phraseology of the proposal or in the items mentioned herein.

Each proposal will specify the correct gross or lump sum and will also specify the unit prices for each of the separate items if called for in the proposal. No "or equals" will be approved during the bid period. In cases where the amount shown in words and its equivalent in figures do not agree, the written words will be considered binding.

Each proposal must be accompanied by a draft or certified check or bid bond payable to the Broome County Commissioner of Finance for the sum specified in the proposal and in the advertisement for proposals.

The following documents shall be submitted by the Contractor:

Part 1

- Bid Proposal Forms
- Statement of Surety's Intent for Performance and Labor Material Bonds
- Acknowledgement Forms (addenda)
- Certification of Availability of Insurance
- Non-collusive Bidding Certification
- Pre-Bid Meeting Attendance Voucher
- Contractor's Qualification Statement

Part 2

- Corporate Resolution
- Contingency Plan – The Contingency Plan shall address measures to be taken by the Contractor, to control noise, dust, fire, vectors, and accidents.

- Health and Safety Plan
- Special Construction Technique Submittals
- List of Subcontractors
- Quality Assurance/Control Plan (see Engineers QA/QC Plan for format)

The Contractor's QA/QC Plan shall be prepared similar to the Engineers QA/QC Plan and address all aspects of quality assurance and quality control to be implemented by the Contractor during the performance of the work.

- Standard Form Construction Agreement
- Performance Bond with Power of Attorney
- Labor and Material Bond with Power of Attorney
- Certificate of Insurance
- Preliminary Schedule
- Financial Information

Award of contract(s) will be made only to the lowest responsive responsible bidder whose proposal shall comply with all provisions required to render it formal. The Contractor shall have, at a minimum, 3 years construction experience of similar magnitude and successfully completed landfill component construction under NYS Part 360. The Board of Acquisition and Contract reserves the right to reject any or all proposals if, in their opinion, the best interest of Broome County will thereby be promoted.

The Contract will be awarded to the lowest responsible bidder regardless of the alternative bid selected. The bid evaluation will be made by comparing the total bid price, which is equal to the cost of the base bid plus the cost of the overages for the alternative bid upon.

The person or persons whose proposal is accepted will be required to execute the contract and to comply in all respects with the statutory provisions relating to the contract within ten (10) days of the date of notification of the award of the contract to them by the Broome County Board of Acquisition and Contract. In case of failure or refusal on the part of the bidder to enter into a contract within the ten day period herein mentioned, the amount of deposit will be forfeited by the bidder.

The Contractor(s) agree to furnish all necessary licenses or permits unless noted otherwise in the Contract Documents.

The execution of the Contract(s) by the Contractor(s) binds him/them to the following specified agreements required by Law:

The Contractor(s) specifically agrees to operate according to the following sections of the Labor Law: Section 220, 220-d, as amended; Section 220-e, as amended; Section 222, as amended; and Section 222-a, as amended.

The Contractor(s) specifically agrees to follow the provisions of the Workmens' Compensation Law.

The Contractor(s) specifically agrees to follow the provisions of Article 15 of the Executive Law of the State of New York relating to discrimination in employment.

The Contractor specifically agrees to follow the current minimum goals for minority participation as defined by the Environmental Quality Bond Act (EQBA) Reimbursement Program.

The Contract is subject to the provisions of NYS Executive Law, Article 15A and applicable State and Federal Laws, Rules and Regulations with respect to Affirmative Action Plans for employment opportunity.

The Contractor specifically agrees to follow the current minimum goals for minority participation as defined by the Environmental Quality Bonded Act (EQBA) Reimbursement Program.

While no attempt is made herein to fully summarize the provisions of the statutes and regulations governing Affirmative Action, the minimum contractual requirements are specified in the Supplemental General Conditions. Further information pertaining to Affirmative Action requirements may be obtained upon request from Mr. John W. Printup at the New York State Department of Environmental Conservation, Bureau of Minority and Women's Business Programs, 50 Wolf Road, Albany, New York 12233 (518) 457-7187.

The Contractor(s) shall furnish to the Broome County Board of Acquisition and Contract a certificate or certificates of insurance in a form satisfactory to the Contracting Agency.

This bid is not subject to New York State Sales Tax or Broome County Sales Tax.

The New York State Department of Environmental Conservation (NYSDEC) is providing partial funding for this project under the Title III Environmental Quality Bond Act, and shall be provided access to the site to inspect the work; however, the NYSDEC will not be a party to this Contract.

A bond will be executed for the faithful performance of the contract(s), the coverage will be 100 percent of the contract, and will remain in effect for 1 year after the final completion of work.

A bond guaranteeing prompt payment of monies due all persons supplying the contractor(s) or subcontractor(s) with labor and materials employed and used in carrying out the contract will be executed for the coverage of 100 percent of the contract.

The Contractor(s) may withdraw his bid if no award is made by the County after forty-five (45) calendar days from date of bid opening by submitting a written notice indicating such to the Broome County, Division of Purchasing of Broome County, 1st Floor, Broome County Office Building, Binghamton, New York 13902-1766.

CONTRACTOR'S QUALIFICATION STATEMENT MUST BE SUBMITTED WITH THE PROPOSAL. Contractor's shall have, at a minimum, 3 years construction experience of similar magnitude and successfully completed landfill component construction under NYS Part 360.

A mandatory Pre-Bid meeting will be held on _____, _____ in the Public Assembly Room on the 2nd Floor of the Broome County Building in the Governmental Plaza, Binghamton, New York 13902-1766.

Direct all technical questions to:

Ray L. Standish, P.E.
Deputy for Engineering Services
Broome County Division of Solid Waste Management
(607) 778-2286, FAX (607) 778-2395

DEPOSITS ON PLANS AND SPECIFICATIONS

A. BIDDER

Full refund will be given to all bidders for one (1) set of specifications and plans returned to Broome County in good condition* within thirty (30) days after the date of award or rejection of the bid.

B. NON-BIDDERS AND ADDITIONAL SETS

Partial refund in the amount of the full deposit LESS the cost of reproduction will be given for each set of specifications and plans to non-bidders and bidders with additional sets returned to Broome County in good condition within thirty (30) days after the date of award of the contract or rejection of the bid.

C. SUCCESSFUL BIDDER

Full refund will be given to the successful bidder for all sets of specifications and plans.

- * **GOOD CONDITION:** Broome County defines "good condition" as intact, useable, legible and in no way altered so as to change the content or intent of the specifications and plans. The final decision as to the condition of the specifications and plans will be with the Broome County Commissioner of Public Works or designated representative.

(Highlighting with see-through markers or notes made in light pencil may be acceptable as long as the above noted conditions are met).

D. REFUND SCHEDULE

Sets returned in good condition* within forty-five (45) calendar days from date of bid opening.

\$150.00 Deposit, Bidder	- Full Refund	\$150.00 (one set)
Bidder	- Partial Refund	\$120.00 (additional set)
Non-Bidder	- Partial Refund	\$120.00 (each set)

Please return specifications and plans to the address below:

Broome County Division of Purchasing
P.O. Box 1066
Government Plaza
Binghamton, New York 13902

DO NOT SEND THEM TO DIVISION OF PUBLIC WORKS OR DIVISION OF SOLID WASTE MANAGEMENT

INFORMATION AVAILABLE FOR REVIEW

The following additional information pertaining to the site is available for review at the offices of the Division of Solid Waste Management:

- Final Engineering Design Report for the Closure Action of the Broome County Colesville Landfill Remedial Design, prepared by Wehran-New York, Inc., April 1994.
- Feasibility Study for Colesville Landfill, prepared by Wehran-New York, Inc., December 1990.
- Colesville Study for Colesville Landfill, prepared by Wehran-New York, Inc., April 1988.
- Phase II Hydrogeological Investigation and Remedial Alternative Evaluation at the Colesville Landfill and Surrounding Area, Town of Colesville, prepared by Wehran-New York, Inc., November 1984.

EXEMPTION FROM SALES AND COMPENSATING USE TAXES

EXEMPTION FROM SALES AND COMPENSATING USE TAXES OF THE STATE OF NEW YORK AND OF CITIES AND COUNTIES.

- a) Broome County is exempt from payment of Sales and Compensating Use Taxes of the State of New York and of cities and counties on all supplies and materials sold to Broome County, pursuant to the provisions, of this Contract and these taxes are not to be included in proposals.

The purchase by the Contractor(s) of the supplies and materials sold and used hereunder will be a purchase or procurement for resale and therefore not subject to the New York State Sales or Compensating Use Taxes or any such taxes of the cities or counties. The sale of such supplies and materials by the Contractor(s) to Broome County which is a non-profit tax exempt, charitable institution, will not be subject to the aforesaid Sales or Compensating Use Taxes. With respect to such supplies and materials sold hereunder, the Contractor(s) at the request of Broome County shall furnish to Broome County such bills of sale and other instruments as may be required by it, properly executed, acknowledged and delivered, assuring to it title to such supplies and materials free of encumbrances and Contractor(s) shall mark or otherwise identify all such supplies and materials as the property of Broome County.

Purchase by subcontractor(s) of supplies and materials to be sold and used hereunder will be a purchase or procurement also, for resale to the Contractor(s) (either directly or through other subcontractors) and therefore not subject to the aforesaid Sales or Compensating Use Taxes, PROVIDED THAT the subcontract agreements provide for resale of such supplies and materials prior to and separate and apart from the incorporation of such supplies and materials into the permanent construction and that such subcontract agreements are in a form similar to this contract with respect to separation of the sale of supplies and materials from work and labor to be provided. If, as a result of such sale of supplies and materials, (I) any claim is made against the Contractor(s) by the State of New York or any city or county for Sales Compensating Use Taxes on the aforementioned supplies and materials, if the Contractor(s) and Subcontractor(s) have complied with the provisions of this contract relating thereto, Broome County will reimburse the Contractor(s) for amount equal to the amount of such sales tax required to be paid in accordance with requirement of law, PROVIDED THAT:

- A) (I) The subcontractor(s) agreements in connection with this contract provide for the resale and transfer of title to such supplies and materials to the construction job site before incorporation of such supplies and materials into the permanent construction (II) such subcontractor agreements are in a form similar to this contract with respect to their separation of

EXEMPTION FROM SALES AND COMPENSATING USE TAXES OF THE STATE OF NEW YORK AND OF CITIES AND COUNTIES - CONTINUED

A) - CONTINUED

the sale of supplies and materials from other work and labor to be provided and (III) such separation is actually followed in practice, including the separation of payments for other work and labor; and

- B) The Contractor(s) and his subcontractor(s) and materialmen obtain any and all necessary resale exemption certificates from the appropriate governmental agency or agencies or corporations from which they purchase supplies and materials for the performance of the work covered by this contract; and
- C) Broome County is afforded the opportunity before any payment of tax is made to contest said claim in the manner and to the extent that Broome County may choose to settle or satisfy said claims, such attorney as Broome County may designate is authorized to act for the purpose of contesting, settling, and satisfying said claim; and
- D) The Contractor(s) and the subcontractor(s) give immediate notice to Broome County and its designated attorney in contesting said claim and furnish promptly to Broome County and its attorney all information and documents necessary or convenient for contesting said claims, said information to be preserved for six (6) years after the date of final payment for the sale or longer if such claim is pending, or threatened at the end of such six (6) years. If Broome County elects to contest any such claim, it will bear the expense of such contest.

Nothing in this article or contract(s) is intended or shall be construed as relieving the Contractor(s) from his obligations under this agreement or any other provision of the contract, and the Contractor(s) shall have full continuing responsibility to install the materials and supplies purchases in accordance with the provisions of this contract, to protect same, to maintain them in proper condition and to forthwith repair, replace and make good any damage thereto without cost to Broome County until such time as the work covered by the contract(s) is fully accepted. The requirements of this section are in keeping with the requirements of the state of New York Department of Taxation for exemption from the New York State Sales Tax as set forth in full portfolio on the subject filed in the Office of the Broome County Department of Law.

LABOR RATES

LABOR RATES

All workmen employed on this project by the Contractor or his Subcontractors, shall be compensated at the "Prevailing Rate". including Supplemental Benefit Payments as determined by the New York State Department of Labor. Copies of these rates are attached and form a part of the Contract Documents. Labor classifications not appearing on this Schedule cannot be used until the County has determined, in consultation with the N.Y. State Department of Labor, the wage rate and supplemental benefits that will be paid such workmen.

STATE OF NEW YORK
DEPARTMENT OF LABOR
BUREAU OF PUBLIC WORK
STATE OFFICE BUILDING CAMPUS
ALBANY, NY 12240

Schedule Type- COMPLETE 1993A

Date 04/15/94
Refer to:
PREVAILING RATE CASE NO.

BROOME CO.
to: KEVIN ~~HANSEN~~ *Harrison*
WEHREN ENGINEERING
666 EAST MAIN ST.
MIDDLETOWN NY 10940

PRC 9402611 BROOME COUNTY 01
Location and Type of Project
PROJECT ID #: NONE
CLOSURE OF THE COLESVILLE
LANDFILL, PLAINS ROAD
COLESVILLE, NY

In response to your request, enclosed are schedules of the prevailing hourly wage rates and the prevailing hourly supplements for the above project, together with copies of the Notice of Contract Let (PW-16) for your use. The schedules must be annexed to and form a part of the specifications for this project when it is advertised for bids. These schedules have been prepared and forwarded in accordance with Section 220 of the Labor Law, which provides that it shall be the duty of the fiscal officer to ascertain and determine the schedules of supplements to be provided and wages to be paid to workers, laborers and mechanics employed on public work projects, and to file such schedules with the department having jurisdiction.

The attached rates are based on the latest information available to the Department of Labor, Bureau of Public Work. Care should be taken to review the rates for obvious errors. It is the responsibility of the Public Work contractor to use the proper rate. Any corrections should be brought to the Department's attention immediately.

This schedule is applicable only from July 1, 1993 through June 30, 1994, unless otherwise noted. If your project goes beyond the period covered by this determination, a new determination should be requested when this schedule expires.

Note: A 1983 AMENDMENT TO SECTION 220 OF THE LABOR LAW REQUIRES THE PRESERVATION OF ORIGINAL OR TRANSCRIPTS OF PAYROLL RECORDS FOR THREE YEARS FROM THE DATE OF COMPLETION OF THE WORK IN THE AWARDED CONTRACT.

Very truly yours,
CHET RYSEDORPH,
DIRECTOR

NOTICE TO CONTRACTING AGENCIES :

Upon cancellation or completion of this project, enter the necessary information and return this page to the ALBANY OFFICE of the BUREAU at the address listed below:

PROJECT HAS BEEN :

Date Completed _____
Date Cancelled _____
Date Postponed _____
Until _____
Signature _____
Title _____
Contracting Agency _____

For Additional Information, contact the following District Offices:

St. Off. Bldg. #12, Campus, Albany N.Y. 12240
155 Main Street West, Rochester N.Y. 14614
175 Fulton Ave., Hempstead N.Y. 11550
207 Genesee St., Utica N.Y. 13501

65 Court St., Buffalo N.Y. 14202
30 Wall St., Binghamton N.Y. 13901
333 East Washington St., Syracuse N.Y. 13202
30 Glenn St., White Plains N.Y. 10603

CONTRACT REQUIREMENTS

Each public work contract to which the State, a public benefit corporation, a municipal corporation or a commission appointed pursuant to law is a party and which may involve the employment of laborers, workers or mechanics, shall comply with the requirements of Article 8 (Sections 220-223) of the New York State Labor Law:

1. No laborer, worker 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 any one calendar day or more than five days in any one week except in the extraordinary emergencies set forth in the Labor Law or where a dispensation is granted by the Commissioner of Labor. (See Section 220.2)
2. Each laborer, worker or mechanic employed by the contractor or subcontractor shall be paid not less than the prevailing rate of wages as indicated on the wage schedule provided by the Department, Bureau of Public Work. The prevailing rate of wage shall be annually determined no later than thirty days prior to July first of each year. The prevailing rate of wage for the period commencing July first of such year through June thirtieth, inclusive, of the following year shall be the rate of wage set forth in collective bargaining agreements for the same period, including those increases for such period which are directly ascertainable from such collective bargaining agreements. (See Sections 220.3, 220.5)
3. It shall be the duty of the department of jurisdiction to file with the fiscal officer, the classification of workers, mechanics and laborers to be employed on a public work project, together with a statement of the work to be performed by each classification. (See Section 220.3-a)
4. The contractor and every subcontractor shall post in a prominent and accessible place at the work site a statement of all wage rates and supplements to be paid or provided for the various classes of mechanics, workers or laborers. (See Section 220.3-a)
5. No employee shall be deemed to be an apprentice unless individually registered in a program registered with the New York State Department of Labor. The allowable ratio of apprentices to journey-level workers in any craft classification shall not be greater than the ratio permitted to the contractor as to its work force on any job under the registered program. Any employee who is not registered as above, shall be paid or provided the prevailing wage and supplement rate for the journey-level classification of work actually performed. The contractor or subcontractor will be required to furnish written evidence of registration of its program and apprentices as well as of the appropriate ratios and wage and supplement rates for the area of construction, prior to using any apprentices on the contract work. (See Section 220.3-e)
6. (a) No contractor, subcontractor, nor any person acting on its behalf, shall by reason of race, creed, color, disability, 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. (See Section 220-e(a))
(b) No contractor, subcontractor, nor any person acting on its behalf, shall in any manner, discriminate against or intimidate any employee on account of race, creed, color, disability, sex or national origin. (See Section 220-e(b)) NOTE: The Human Rights Law also prohibits discrimination in employment because of age, marital status or religion.
(c) There may be deducted from the amount payable to the contractor under the contract a penalty of fifty dollars for each calendar day during which such person was discriminated against or intimidated in violation of the provisions of the contract. (See Section 220-e(c))
(d) The contract may be cancelled or terminated by the State or municipality, and all moneys due or to become due thereunder may be forfeited, for a second or any subsequent violation of the terms or conditions of the anti-discrimination sections of the contract. (See Section 220-e(d))
7. (a) All contractors or their subcontractors shall provide to their subcontractors a copy of the prevailing wage rate schedule specified in the public work contract as well as any subsequently issued schedules. A failure to provide these schedules by a contractor or subcontractor is a violation of Article 8 of the Labor Law. (See Section 220-a)
(b) All subcontractors engaged by a public improvement contractor or its subcontractor, upon receipt of the original schedule and any subsequently issued schedules, shall provide to such contractor or subcontractor a verified statement attesting that the subcontractor has received the wage schedule and will pay or provide the applicable rate of wages and supplements specified therein. (See Section 220-a)

ATTENTION: ALL CONTRACTORS AND SUBCONTRACTORS
ENGAGED ON PUBLIC WORK PROJECTS IN NEW YORK STATE

INTRODUCTION: Below are the major provisions of the Labor Law covering workers on public work projects.

HOURS: A laborer, worker or mechanic is permitted to work on a public work project no more than eight hours a day and no more than five days in a week, except in case of extraordinary emergency such as fire, flood or danger to life or property. You may apply to the Bureau of Public Work for a dispensation permitting workers to work additional hours or days per week on a particular public work project.

WAGES AND SUPPLEMENTS: The wages and supplements to be paid and provided for laborers, workers and mechanics employed on a public work project shall be not less than those listed in the current prevailing rate schedule for the locality where the work is performed. If a prevailing rate schedule for the project has not been provided to the prime contractor by the department of jurisdiction (i.e., the governmental entity awarding the public work contract), or to a subcontractor by the prime contractor, the applicable schedule must be obtained from the Department of Jurisdiction, who must make written application to the Bureau of Public Work, Labor Department, Building No. 12, State Office Building Campus, Albany, New York 12240.

The prime contractor is responsible for any underpayments of prevailing wages or supplements by its subcontractors.

PAYROLL RECORDS: Every contractor and subcontractor must keep originals or transcripts of payroll records, showing for each person employed on public work, the following: 1.Name, 2.Address and phone number, 3.Social Security number, 4.Occupational classifications in which worked, 5.Hourly wage rate paid, 6.Supplements provided, 7.Daily and weekly number of hours worked in each classification, 8.Deductions made, 9. Actual wages paid. When payroll records are requested by the Commissioner each payroll record must be affirmed as true under the penalties of perjury which means a notarized signature to that effect. Such records must be kept on the site of the work when the contractor or subcontractor does not maintain a regular place of business in New York State and the amount of the contract exceeds \$25,000. All other contractors and subcontractors must within five days after request produce at the work site the original payrolls or transcripts.

The original payrolls or transcripts must be preserved for three years from the date of completion of the project.

POSTING: The current prevailing rate schedule must be posted in a prominent and accessible place on the site of the public work project.

APPRENTICES: Employees cannot be paid apprentice rates if they are not individually registered under a program or agreement registered with the Commissioner of Labor. The contractor or subcontractor will be required to furnish written evidence of the registration of its program and apprentices and of the appropriate ratio. The allowable ratio of apprentices to journeymen in any craft classification can be no greater than the ratio permitted to the contractor or subcontractor as to its work force on any job under the registered program. An employee listed on a payroll as an apprentice, who is not registered as above, must be paid the prevailing journeymen's wage rate for that classification of work.

WITHHOLDING OF PAYMENTS: When a complaint is filed with the Commissioner of Labor alleging the failure of a contractor or subcontractor to pay or provide the prevailing wages or supplements, or when the Commissioner of Labor believes that unpaid wages or supplements may be due, payments on the public work contract may be withheld from the prime contractor in a sufficient amount to satisfy the alleged unpaid wages and supplements, including interest and civil penalty, pending a final determination.

INTEREST AND PENALTIES: If an underpayment of wages or supplements is found, interest must be added at the rate then in effect prescribed by the Superintendent of Banks pursuant to section 14-a of the banking law per annum from the date of underpayment to the date of the payment, and may also include the imposition of a civil penalty not to exceed 25% of the amount due.

DEBARMENT: When final determinations have been made against a contractor or subcontractor in two instances within a six-year period determining that it willfully failed to pay or provide the prevailing rate of wages or supplements, such contractor or subcontractor will be ineligible to bid on or be awarded a public work contract for a period of five years from the second final determination.

CRIMINAL SANCTIONS: Willful violations of the Prevailing Wage Law (Article 8 of the Labor Law) constitute a misdemeanor punishable by fine or imprisonment, or both.

DISCRIMINATION: No employee or applicant for employment may be discriminated against on account of age, race, creed, color, national origin, sex, disability or marital status. Every employer subject to the New York State Human Rights Law must conspicuously post at its offices, places of employment or employment training centers, notices furnished by the State Division of Human Rights.

POSTING OF OTHER NOTICES: Every employer providing workers' compensation insurance and disability benefits must post in a conspicuous place notices of such coverage in a form prescribed by the Workers' Compensation Board.

Employers liable for contributions under the Unemployment Insurance Law must conspicuously post notices furnished by the State Department of Labor.

NOTICE of NEW PREVAILING WAGE RATE PUBLICATIONS
APPLICABLE TO ALL COUNTIES

(*) AS NOTED ON PREVAILING RATE SCHEDULES PAGES.

The annual determination of the prevailing rates of wages and supplements for workers employed on public work projects throughout the state will be published on May 31st of each year. These new rates will be in effect July 1st thru June 30th. This new determination will supersede the original schedule or any prior issued annual determination

It is the responsibility of the contracting agency or its agent to provide all prevailing rate schedules to contractors immediately upon receipt. Any rate change from a previously issued determination becomes effective July 1st, regardless of whether the new determination has been received by the contractor.

When you review the schedule for a particular occupation, your attention should be directed to the dates above the column of rates. These are the dates that additional adjustments become effective.

VERIFYING THE REGISTRATION OF APPRENTICES

Certain State and Federal Laws require that apprentices must be individually registered as such in order to be paid apprenticeship rates on Public Work.

The New York State Labor Department is the official registration agency for apprentices in New York State. No other Federal or State Agency or office registers apprentices in New York State.

Each year the apprentice training central office in Albany receives hundreds of requests from Federal and State Agencies, Contractors, and other interested parties requesting verification of individual apprentice registrations.

The following information is provided in order to clarify New York State procedures.

All registered apprentices in New York State are individually registered by name, address, social security number, starting date of training, and other related data.

This information is computerized and is available ONLY through the Albany Apprentice Training Central Office.

Persons wishing to verify the apprentice registration of any individual should write to the Senior Employment Consultant, New York State Department of Labor, Job Service and Training Division, Building 12, Room 223, State Office Building Campus, Albany, New York 12240.

All inquiries MUST include name and social security number and will be answered in writing. The response will indicate whether or not the individual is registered, and if so, will provide other pertinent information regarding the registration.

The only conclusive proof of individual apprentice registration is written verification from the Albany Apprentice Training Central Office. Neither Federal nor State Apprentice Training Offices outside Albany can provide conclusive registration information.

It should be noted that the existence of a registered apprenticeship program is not conclusive proof that any individual is registered in that program.

Furthermore, the existence or possession of wallet cards, identification cards or copies of state forms are not conclusive proof of the registration of any individual as an apprentice.



NEW YORK STATE DEPT. OF LABOR
Bureau of Public Work
State Office Building Campus
Albany, NY 12240

BROOME CO.

Schedule Type
COMPLETE 1993A

Date 04/15/94

KEVIN HAMSON
WEHREN ENGINEERING
666 EAST MAIN ST.

MIDDLETOWN NY 10940

Prevailing Rate Case No.
01

9402611
PROJECT ID #: NONE
CLOSURE OF THE COLESVILLE
LANDFILL, PLAINS ROAD
COLESVILLE, NY

BROOME COUNTY
AGY. OF JURIS. : COUNTY
NAT. OF PROJECT: HEAVY & HWY CONS-NEW & REPAIR

Copies of the wage and supplement schedule for the Public Work project identified above are enclosed herewith. Sec.220.3a of the Labor Law requires that certain information be furnished to the Commissioner of Labor.

Accordingly, you MUST complete ONE of these requests for EACH prime contract let immediately upon notifying a successful bidder for this Public Work project. Photocopy as many blank forms as required to supply one for each contractor.

Return this request to the address given above

- ☐ Project CANCELLED, POSTPONED or assigned to agency's own employees. If reactivated, new rates and supplements will be requested.
- ☐ CONTRACT AWARDED: (check one and indicate date of first legal instrument which bound agency to contract.)
- ☐ Letter of Intent _____ ☐ Contract Signed _____ ☐ Resolution _____

Work to be done by this prime contractor:

Type of Contract: CHECK APPLICABLE TYPE

- ☐ (01) General Construction ☐ (02) Heating/Ventilation ☐ (03) Electrical
☐ (04) Plumbing ☐ (05) Other _____

Contractor Information: ALL INFORMATION MUST BE SUPPLIED

Federal Employer Identification Number: _____

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Amount of Contract _____ Approximate Starting Date: ____/____/____

Approximate Completion Date: ____/____/____

Estimated Date Entire Project Will be Completed: ____/____/____

CONTRACTS NOT YET AWARDED

Type of Contract (Check all applicable contract types)

- ☐ (01) General Construction ☐ (02) Heating/Ventilation ☐ (03) Electrical
☐ (04) Plumbing ☐ (05) Other _____

Signature _____ Date _____

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PREVAILING RATE SCHEDULE INFORMATION

The information listed below is provided to assist you in the interpretation of particular requirements, for each classification of worker, contained in the attached Schedule of Prevailing Rates

Paid Holidays

Paid Holidays are days for which an eligible employee receives a regular day's pay, but is not required to perform work.

Note: If an employee works on a day listed as a paid holiday, this remuneration is in addition to payment of the required prevailing rate for the work actually performed.

Holiday Pay

Holiday pay is the premium pay that is required for work performed on the holidays contained in the negotiated agreement used to establish a prevailing rate. Holiday pay is only applicable where an employee actually performs work on such days. The required rate of pay for covered holidays can be found in the Overtime Pay section listed for each classification. Not all of the holidays on which, if worked, a premium rate of pay is required are listed in the attached schedule. If you have any questions or need additional information concerning this requirement, please contact the Bureau of Public Work at the number listed below.

Supplemental Benefits

Particular attention should be given to the supplemental benefit requirements. Although in most cases the payment or provision of supplements is for each hour worked, some classifications require the payment or provision of supplements for each hour paid (this may include paid holidays on which no work is performed) and/or may require supplements to be paid or provided at a premium rate for premium hours worked.

Effective Dates

When you review the schedule for a particular trade or occupation, your attention should be directed to the dates above the column(s) of rates. These are the dates that any adjustments become effective. However, if the last date listed in a particular occupation is prior to June 30 of the current year, the rate listed for that time period is valid until the new annual determination takes effect on July 1 of that year. All contractors and subcontractors are required to pay the current prevailing rates of wages and supplements and, if the department of jurisdiction does not provide a copy of the current annual determination on or before July 1, you should contact the Bureau of Public Work for the correct information.

Workers Compensation

In accordance with Section 142 of the State Finance Law, the contractor shall maintain coverage under the life of the contract for the benefit of such employees as required by the provisions of the New York State Workers Compensation Law.

- Contractor to be awarded contract must provide proof of Workers' Compensation coverage prior to being allowed to begin work.
- The policy of insurance must be issued by a company authorized to provide Workers' compensation coverage in this state.
- Proof of coverage must be on form C-105.2 (certificate of workers' compensation insurance) and must name this agency as a certificate holder.
- If New York State coverage is added to an existing out of state policy, it can only be added to a policy of a company authorized to write workers' compensation coverage in this state, and the coverage must be listed under item 3A of the information page.
- The contract must maintain proof that subcontractors doing work covered under this contract secure and maintain a workers' compensation policy for all employees working in New York State.

If you have any questions concerning the attached schedule or would like additional information, please contact the BUREAU of PUBLIC WORK at (518) 457-5589 or write to the NEW YORK STATE DEPARTMENT of LABOR, BUREAU of PUBLIC WORK, BUILDING 12, STATE OFFICE BUILDING CAMPUS, ALBANY, NEW YORK 12240. (7/01/93)

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OVERTIME

Following is an explanation of the code(s) listed in the OVERTIME section of each classification contained in the attached schedule.
Additional requirements may also be listed in the OVERTIME section.

- (A) Time and one half of the hourly rate after 7 hours per day.
- (AA) Time and one half of the hourly rate after 7 and one half hours per day.
- (B) Time and one half of the hourly rate after 8 hours per day.
- (B1) Time and one half of the hourly rate for the 9th. & 10th. hours Week days and the 1st. 8 hours on Saturday. Double the hourly rate for all additional hours.
- (C) Double the hourly rate after 7 hours per day.
- (CC) Double the hourly rate after 7 and one half hours per day.
- (C1) Double the hourly rate after 7 and one half hours per day.
- (D) Double the hourly rate after 8 hours per day.
- (D1) Double the hourly rate after 9 hours per day.
- (E) Time and one half of the hourly rate on Saturday.
- (E1) Time and one half 1st 4 hours on Saturday double the hourly rate all additional Saturday hours.
- (E2) Saturday may be used as a make-up day at straight time when a day is lost during that week due to inclement weather.
- (E3) Between Nov. 1st and March 3rd Saturday may be used as a make-up day at straight time when a day is lost during that week due to inclement weather, provided a given employee has worked between 16 and 32 hours that week.
- (E4) Saturday and Sunday may be used as a make-up day at straight time when a day is lost during that week due to inclement weather.
- (F) Time and one half of the hourly rate on Saturday and Sunday.
- (G) Time and one half of the hourly rate on Saturday and Holidays.
- (H) Time and one half of the hourly rate on Saturday, Sunday and Holidays.
- (I) Time and one half of the hourly rate on Sunday.
- (J) Time and one half of the hourly rate on Sunday and Holidays.
- (K) Time and one half of the hourly rate on Holidays.
- (L) Double the hourly rate on Saturday.
- (M) Double the hourly rate on Saturday and Sunday.
- (N) Double the hourly rate on Saturday and Holidays.
- (O) Double the hourly rate on Saturday, Sunday and Holidays.
- (P) Double the hourly rate on Sunday.
- (Q) Double the hourly rate on Sunday and Holidays.
- (R) Double the hourly rate on Holidays.
- (S) Two and one half times the hourly rate for Holidays, if worked.
- (T) Triple the hourly rate for Holidays, if worked.
- (U) Four times the hourly rate for Holidays, if worked.
- (V) Including benefits at SAME PREMIUM as shown for overtime.
- (W) Time and one half for benefit on all overtime hours.

NOTE: BENEFITS are PER HOUR WORKED, for each hour worked, unless otherwise noted

HOLIDAYS

Following is an explanation of the code(s) listed in the HOLIDAY section of each classification contained in the attached schedule.
The Holidays as listed below are to be paid at the wage rates at which the employee is normally classified.

- (1) None.
- (2) Labor Day.
- (3) Memorial Day and Labor Day.
- (4) Memorial Day and July 4th.
- (5) Memorial Day, July 4th and Labor Day.
- (6) New Years Day, Thanksgiving Day and Christmas Day.
- (7) Lincoln's Birthday, Washington's Birthday and Veterans Day.
- (8) Good Friday.
- (9) Lincoln's Birthday.
- (10) Washington's Birthday.
- (11) Columbus Day.
- (12) Election Day.
- (13) Presidential Election Day.
- (14) 1/2 Day on Presidential Election Day.
- (15) Veteran's Day.
- (16) Day after Thanksgiving Day.
- (17) July 4th.
- (18) 1/2 Day before Christmas Day.
- (19) 1/2 Day before New Years Day.
- (20) Thanksgiving Day.
- (21) New Years Day.
- (22) Christmas Day.
- (23) Day before Christmas.
- (24) Day before New Years Day.
- (25) Presidents Day.
- (26) Martin Luther King, Jr. Day.

(7/01/91)

OVERTIME and HOLIDAY REQUIREMENTS

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ASBESTOS WORKERWAGES(per hour) 5/01/92-
4/30/93Asbestos
Worker..... \$ 19.59OVERTIME PAY: See (B1, Q) on OVERTIME PAGE attached.PAID HOLIDAYS: See (1) on HOLIDAY PAGE attached.ALLOWABLE RATIO: Apprentice(s) to Journeymen (1- 3) (2-6)1st APPRENTICES: (1) year terms at the following percentage of Journeyman's wage.

1st.	2nd.	3rd.	4th.
40%	50%	70%	80%

SUPPLEMENTAL BENEFITS:(per hour worked)

\$7.06

Listed supplements apply to ALL classifications (x) Yes () No. 6-30BOILERMAKERWAGES(per hour) 7/01/93- 10/01/93-
9/30/93 9/30/94Boilermaker..... \$ 20.825 Additional
1.05 per hrOVERTIME PAY:New Work See (B*,E*,Q) on OVERTIME PAGE attached.

Time & 1/2 for the 9th & 10th hours Monday thru Saturday, double all addit. hours.

OVERTIME PAY:Maint. See (B, O) on OVERTIME PAGE attached.PAID HOLIDAYS: See (1) on HOLIDAY PAGE attached.ALLOWABLE RATIO: Apprentice(s) to Journeymen (1 - 5) (1 - 10)APPRENTICES: (1/2) year terms at the following percentage of Journeyman's wage.

1st.	2nd.	3rd.	4th.	5th.	6th.	7th.	8th.
60%	65%	70%	75%	80%	85%	90%	95%

SUPPLEMENTAL BENEFITS:(per hour worked)\$6.59*Note
plus 10%
of Gross Wage

*Note- \$ 3.33 of this amount is for each hour paid.

Listed supplements apply to ALL classifications (x) Yes () No. 6-175CARPENTER-BuildingWAGES(per hour) 5/15/92- 5/15/93-
5/14/93 5/14/94

Building:		
Carpenter.....	\$ 15.30	15.65
Floor Coverer.....	15.30	15.65
Carpet Layer.....	15.30	15.65
Dry-Wall Applicator..	15.30	15.65
Lather.....	15.30	15.65
Millwright/Mach Erect	15.55	15.90
Piledriver (Bldg)....	15.55	15.90

OVERTIME PAY: See (B, E, E2, Q) on OVERTIME PAGE attached.PAID HOLIDAYS: See (1) on HOLIDAY PAGE attached.ALLOWABLE RATIO: Apprentice(s) to Journeymen (1 - 2)APPRENTICES: (1) year terms at the following percentage of Journeyman's wage.

1st.	2nd.	3rd.	4th.
40%	50%	65%	80%

SUPPLEMENTAL BENEFITS:(per hour worked)

\$4.45 \$4.75

Listed supplements apply to ALL classifications (x) Yes () No. 2-281OCCUPATIONS APPLICABLE TO BUILDING SCHEDULES

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ELEVATORWAGES(per hour) 12/02/91-
7/08/92Elevator Constructor...\$ 17.91
Helper..... 12.54OVERTIME PAY: See (D, O, T) on OVERTIME PAGE attached.
PAID HOLIDAYS: See (5, 6, 16) on HOLIDAY PAGE attached.SUPPLEMENTAL BENEFITS:(per hour worked)\$ 6.12 plus
6 % of wageListed supplements apply to ALL classifications (X)Yes ()No. 2-100GLAZIERWAGES(per hour) 6/01/92-
4/30/93

Glazier..... \$ 15.43

An additional \$.35 per hr. for swing work, outside belt work, open steel (free fall)
and work of 25' or more above the floor or ground level.OVERTIME PAY: See (B, E, Q) on OVERTIME PAGE attached.
PAID HOLIDAYS: See (1) on HOLIDAY PAGE attached.ALLOWABLE RATIO: Apprentice(s) to Journeymen (1-1)(1-5)
APPRENTICES: (1/2) year terms at the following percentage of Journeyman's wage.

1st	2nd	3rd	4th	5th	6th	7th	8th
40%	47.5%	55%	62.5%	70%	77.5%	85%	92.5%

SUPPLEMENTAL BENEFITS:(per hour worked)

\$ 3.81

Listed supplements apply to ALL classifications (x)Yes ()No. 2-1988LABORER-Building

Building Laborer:

Group #1: Basic. Group #2: Pipe Layers, Mortar Mixer, Jackhammer Operator,
Concrete Vibrator and all air or gas driven tools, Power-driven Buggy,
Well Point (actual Jet Man). Group #3: Formsetter(curb). Group #4: Wagon Drill
Operator. Group #5: Demolition. Group #6: Acetylene Burner. Group #7: Blaster.WAGES(per hour) 10/10/92-
5/28/94Building Laborer:
Basic.....\$ 13.60
Asbestos Abatement..... \$14.35
Cleaner..... \$10.50OVERTIME PAY: See (B, E, Q) on OVERTIME PAGE attached.
PAID HOLIDAYS: See (1) on HOLIDAY PAGE attached.SUPPLEMENTAL BENEFITS:(per hour worked)

\$4.15

Listed supplements apply to ALL classifications (x)Yes ()No. 2-7OCCUPATIONS APPLICABLE TO BUILDING SCHEDULES

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LATHER

Lather

See BUILDING CARPENTER

2-57

MARBLE/TILE/TERRAZZO

WAGES(per hour)	5/01/93-
Building:	5/31/94
Bricklayer.....\$	17.00
Cement Finish (Bldg)...	17.00
Plasterer.....	17.00
Tuck Pointer.....	17.00
Tile, Terrazzo Worker..	17.00
Tile Finisher.....	13.56

OVERTIME PAY: See (B, E, Q) on OVERTIME PAGE attached.PAID HOLIDAY: See (1) on HOLIDAY PAGE attached.ALLOWABLE RATIO: Apprentice(s) to Journeymen (1-3)(2-6)(3-9)

The following is for all classifications EXCEPT Tile Finisher.

APPRENTICES: (1) year terms at the following percentage of Journeyman's wage.

1st.	2nd.	3rd.
50%	65%	90%

The following is for Tile Finisher.

APPRENTICES: 1000 hour terms at the following rates.

1st.	2nd.	3rd.	4th.
7.45	9.08	10.84	12.61

SUPPLEMENTAL BENEFITS:(per hour worked)

Journeymen.....	\$ 4.62
Journeyman Tile Finisher	\$ 3.52
Tile Fin. Appr 1st 1000	\$.28
" " Appr 2nd 1000	\$.28
" " Appr 3rd 1000	\$ 2.37
" " Appr 4th 1000	\$ 3.52
All other Apprs.	\$ 4.62

Listed supplements apply to ALL classifications (X) Yes () No.

2-42

ROOFER

WAGES(per hour)	5/15/93-
	5/14/94

Roofer/Waterproofer..	\$ 16.51
Pitch.....	17.26

OVERTIME PAY: See (B, O) on OVERTIME PAGE attached.PAID HOLIDAY: See (1) on HOLIDAY PAGE attached.ALLOWABLE RATIO: Apprentice(s) to Journeymen (1-1)(2-6)APPRENTICES: (1/2) year terms at the following percentage of Journeyman's wage.

1st.	2nd.	3rd.	4th.
60%	65%	70%	75%

SUPPLEMENTAL BENEFITS:(per hour worked)

\$ 4.80

Listed supplements apply to ALL classifications (x) Yes () No.

2-203BI

OCCUPATIONS APPLICABLE TO BUILDING SCHEDULES

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SHEETMETAL WORKER

<u>WAGES</u> (per hour)	5/01/93- 10/31/93	11/01/93- 4/30/94	5/01/94- 10/30/94	11/01/94- 4/30/95
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Sheetmetal Worker....	\$ 16.70	Addit. .25 per hr.	Addit. .25 per hr.	Addit. .25 per hr.
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OVERTIME PAY: See (B, E, Q) on OVERTIME PAGE attached.PAID HOLIDAY: See (1) on HOLIDAY PAGE attached.ALLOWABLE RATIO: Apprentice(s) to Journeymen (1 - 3)APPRENTICES: (1/2) year terms at the following percentage of Journeyman's wage.

Indentured prior to 5/01/90.										
1st.	2nd.	3rd.	4th.	5th.	6th.	7th.	8th.	9th.	10th.	
30%	35%	40%	45%	50%	55%	60%	65%	70%	75%	
Indentured 5/01/90 or after.										
1st.	2nd.	3rd.	4th.	5th.	6th.	7th.	8th.	9th.	10th.	
40%	45%	50%	55%	60%	65%	70%	75%	80%	85%	

SUPPLEMENTAL BENEFITS:(per hour worked)

Journeyman	\$ 7.46 plus 3% of Wage
Apprentices	
Indentured prior to 5/01/90.	
All Terms	\$ 6.59 plus 3 % of Wage

Indentured 5/01/90 or after.	
1st term	\$.31
2nd term	\$ 2.74
3rd & 4th terms	\$ 4.19 plus 3% of wage
5th & 6th terms	\$ 4.63 plus 3% of wage
7th & 8th terms	\$ 4.99 plus 3% of wage
9th & 10th terms	\$ 6.59 plus 3% of wage

Listed supplements apply to ALL classifications (x) Yes () No. 2-112SPRINKLER FITTER

<u>WAGES</u> (per hour)	4/01/93- 12/31/94	1/01/94- 3/31/94
Sprinkler Fitter.....	\$ 21.50	\$21.50

OVERTIME PAY: See (B, D) on OVERTIME PAGE attached.PAID HOLIDAY: See (1) on HOLIDAY PAGE attached.ALLOWABLE RATIO: Apprentice(s) to Journeymen(1-1)(1-2)(2-3)APPRENTICES: (1/2) year terms at the following percentage of Journeyman's wage.

Indentured prior to 4/01/91												
1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	11th	12th	loe
35%	39%	43%	47%	50%	55%	60%	65%	70%	75%	80%	85%	
Indentured 4/01/91 or after.												
1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th			
38%	41%	45%	50%	56%	62%	68%	74%	85%	85%			

SUPPLEMENTAL BENEFITS:(per hour worked)

Journeyman	\$8.53	\$9.23
Apprentices	\$8.53	\$9.23

Listed supplements apply to ALL classifications (X) Yes () No.

1-669

OCCUPATIONS APPLICABLE TO BUILDING SCHEDULES

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TEAMSTER-Building

Truck Driver (Building):

Group # A: Single Axel.

Group # B: Tandem Axle.

Group # C: Euclids or similar equipment.

<u>WAGES</u> (per hour)	4/01/84-
	3/31/85

Building:

Group #A.....\$	13.49
Group #B.....	13.54
Group #C.....	13.74

OVERTIME PAY: See (B, E, Q) on OVERTIME PAGE attached.PAID HOLIDAY: See (5, 6) on HOLIDAY PAGE attached.SUPPLEMENTAL BENEFITS:(per hour worked)

\$ 2.45

Listed supplements apply to ALL classifications (x)Yes ()No. 2-693POWER EQUIPMENT OPERATOR-Building

Building:

Master Mechanic.

CLASS 1: Tractor Road Paver, Crane*, Power Road Grader, Shovel, Backhoe, Dragline, Piledriver, Locomotive Crane, Gradalls, Tractor Mounted Drill(Quarry Master), Concrete Pump, All CMI Equipment, Concrete Central Mix Plt., Automated Asphalt Conc. Plant, Derricks, Whirlies, Tower Cranes*, Cableways, Hydraulic Cranes*, Mucking Machine and Front-End Rubber Tire Loader

CLASS 2: Seeding and mulching machines, Batch Bin and Plant Operator, Dinkey Locomotive, Barber Green Loader, Tractor, Bulldozer, Road Roller, Form Fine Grader, Power Brooms, Sweepers, Blacktop Spreader, Blacktop Roller, High Lift, Fork Lift, One Drum Hoist, Post Hole Digger, Traxcavator, Core and Well Drillers(One Drum), A-L Frame Winches, Power Hoisting(Single Drum), LeTourneau Grader or Scraper, Trenching Machine, Pushcat, Hoist-Two Drum or More, Three Drum Engine, Model CHB Vibro-Tamp or Similar Machines, Sidebooms, Hydro Hammer, Two Drum and Swinging Engine, Three Drum Swinging Engine, Spreader, Concrete Finishing Machine, and Power Hoisting (Two Drum and Over)

CLASS 3: Oiler, Fireman and Heavy Duty Greaser, Boilers, and Steam Generators, Pump, Vibrator, Mortar Mixer, Air Compressor, Dust Collector, Welding Machine, Well Point, Mechanical Heater, Generators, Temporary Light Plants, Belcrete Power Pack(Belcrete System), Concrete Mixer, Elevators, Electric Submersible Pump 4" and over, Murphy Type Diesel Generator, Conveyor

<u>WAGES</u> (per hour)	4/01/93-
	3/31/94

Building:

Master Mechanic....\$	17.79
Class # 1.....	17.36*
Class # 2.....	16.92
Class # 3.....	14.88
Crane 100-130ft....	17.74*
Crane 130-175ft....	18.10
Crane 175-210ft....	18.50*
Crane 210-225ft....	18.92*
Crane + 225ft.....	19.45*

Additional \$3.00 per hour for hazardous waste removal work (All Classifications)

OVERTIME PAY: See (B, E, Q) on OVERTIME PAGE attached.PAID HOLIDAY: See (5, 6) on HOLIDAY PAGE attached.SUPPLEMENTAL BENEFITS:(per hour worked)

\$ 6.35

Listed supplements apply to ALL classifications (x)Yes ()No. 2-410bOCCUPATIONS APPLICABLE TO BUILDING SCHEDULES

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ELECTRICIAN-Lineman

WAGES(per hour)	6/01/93- 5/31/94	6/01/94- 5/06/95
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Lineman/Tech./Welder..	26.99	26.99
Digging Mach./Dynamite.	24.29	24.29
Chief Mech./Trctr.Trlr.	22.94	22.94
Mobile Equip.Oper./Truck Dr./		
Mech. 1st Class.....	21.59	21.59
Groundman	20.24	20.24
Cable Splicer.....	26.99	26.99
Flagman.....	12.64	12.64

Additional 1.00 per hr. for crew on helicopter job.

Above rates applicable on all overhead Transmission line work where other Construction trades are or have been involved.

Lineman/Technician.....	25.78	25.78
Digging Mach./Dynamite.	23.20	23.20
Chief Mech./Trctr.Trlr.	21.91	21.91
Mobile Equip.Oper./Truck Dr./		
Mech. 1st Class.....	20.62	20.62
Groundman	19.34	19.34
Flagman.....	11.60	11.60
Certified Welder.....	25.78	25.78
**Certified Welder(pipe)	27.07	27.07
**Groundman Equip (pipe)	25.78	25.78
Cable Splicer	28.36	28.36

Additional 1.00 per hour on helicopter job.

Above rates apply on Sub-Stations, Switching Structures, Maintenance Projects, Railroad Cantenary install/maint, Third rail installation, Bonding of Rails, and Pipe Type Cable Installation.

**) Applicable for Pipe Type Cable Installations.

Lineman /Tech....\$	24.55	24.55
Welder/Cable Splicer	24.55	24.55
Digging Mach./Dynamite.	22.10	22.10
Chief Mech./Trctr.Trlr.	20.87	20.87
Mobile Equip.Oper./Truck Dr./		
Mech. 1st Class.....	19.64	19.64
Groundman.....	18.41	18.41
Flagman.....	11.05	11.05

Additional 1.00 per hr. for crew on helicopter job.

Above rates applicable on overhead transmission line work where NO other Construction Trades are or have been involved.

OVERTIME PAY: Pipe Type Cable & Overhead Transmission where other trades involved etc...See (D,O,V) on OVERTIME PAGE attached.OVERTIME PAY: All Others See (B, E, Q, V) on OVERTIME PAGE attached.PAID HOLIDAYS: See (5,6,8,13,25,) on HOLIDAY PAGE attached plus Gov. Election Day.ALLOWABLE RATIO: Apprentice(s) to Journeymen (1-2)(2-4)(3-6) .

The following APPRENTICE Rates and the following SUPPLEMENTAL BENEFITS apply to all classifications categories of CONSTRUCTION, TRANSMISSION and DISTRIBUTION.

APPRENTICES: (1000) hour terms at the following percentage of Journeyman's wage.

1st.	2nd.	3rd.	4th.	5th.	6th.	7th.
60%	65%	70%	75%	80%	85%	90%

SUPPLEMENTAL BENEFITS:(per Hour Paid.)

\$ 5.50 *Note	\$ 6.00 *Note
plus	plus
6 3/4 % of	6 3/4% of
wage	wage

(*) This amount to be paid at overtime rate for overtime hours worked. 6-1249a

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ELECTRICIAN-Lineman (cont)

<u>WAGES</u> (per hour)	6/01/93- 5/31/94	6/01/94- 5/06/95
Cable Splicer/Welder...	23.56	24.45
Lineman/Technician.....	23.56	24.45
Digging Mach./Dynamite.	21.20	22.01
Chief Mech./Tractor Trler	20.03	20.78
Mobile Equip. Oper./Truck Dr./		
Mechanic 1st Class...	18.85	19.56
Groundman	17.67	18.34
Flagman	10.23	10.23
Above rates applicable on ALL Overhead and Underground Distribution and Maintenance		

OVERTIME PAY: See (B, E, Q, V) on OVERTIME PAGE attached.PAID HOLIDAYS: See (5,6,8,13,25) on HOLIDAY PAGE attached and Gov. Election Day.ALLOWABLE RATIO: Apprentice(s) to Journeymen (1-2)(2-4)(3-6)
The following APPRENTICE Rates and the following SUPPLEMENTAL BENEFITS
apply to all classificationsAPPRENTICES: (1000) hour terms at the following percentage of Journeyman's wage.

1st.	2nd.	3rd.	4th.	5th.	6th.	7th.
60%	65%	70%	75%	80%	85%	90%

SUPPLEMENTAL BENEFITS: per Hour Worked.

\$ 5.50 *note	\$6.00 *note
plus	plus
6 3/4 %	6 3/4%
of wage	of wage

NOTE(S): Each employee in a helicopter crew to receive \$ 1.00 above regular pay rate.
(*) This amount to be paid at overtime rate for overtime hours worked. 6-1249a-UO

<u>WAGES</u> (per hour)	6/01/93- 4/30/94
Cert. Welder...	22.07
Crane/Line/Tech/Splic..	21.02
Digging Mach./Dynamite.	18.92
Chief Mech./Tractor Trler	17.87
Mobile Equip. Oper./Truck Dr./	
Mechanic 1st Class...	16.82
Groundman 3rd Yr.....	15.77
" 2nd Yr.....	12.62
" 1st Yr.....	9.46
Flagman.....	9.46
Above rates applicable on ALL Lighting and Traffic Signal Systems.	

OVERTIME PAY: See (B, E, Q, V) on OVERTIME PAGE attached.PAID HOLIDAYS: See (5,6,8,13,25) on HOLIDAY PAGE attached plus Gov Election Day.ALLOWABLE RATIO: Apprentice(s) to Journeymen (1-2)(2-4)(3-6)
The following APPRENTICE Rates and the following SUPPLEMENTAL BENEFITS
apply to all classificationsAPPRENTICES: (1000) hour terms at the following percentage of Journeyman's wage.

1st.	2nd.	3rd.	4th.	5th.	6th.	7th.
60%	65%	70%	75%	80%	85%	90%

SUPPLEMENTAL BENEFITS: per Hour Worked.

\$ 5.50 *note
plus
6 and 3/4 % of wage

NOTE(S): Each employee in a helicopter crew to receive \$ 1.00 above regular pay rate.
(*) This amount to be paid at overtime rate for overtime hours worked. 6-1249a-LTOCCUPATIONS APPLICABLE TO HEAVY/HIGHWAY and BUILDING SCHEDULES

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TELEPHONE

Rates below are for telephone work up to Point of Demarcation.
Point of Demarcation is defined as the point of interconnection between
customer provided equipment and telephone company provided facilities.

WAGES(per hour) 8/07/88-
/ /

Telephone

System Technician/Cable Splicing

Starting.....	6.73
After 6 mos.....	7.40
" 12 mos.....	8.14
" 18 mos.....	8.94
" 24 mos.....	9.83
" 30 mos.....	10.81
" 36 mos.....	11.89
" 42 mos.....	13.06
" 48 mos.....	14.39
" 54 mos.....	15.81
" 60 mos.....	17.40

Cable Splicing Technician Helper

Start.....	6.03
After 6 mos.....	6.61
" 12 mos.....	7.26
" 18 mos.....	7.99
" 24 mos.....	8.79
" 30 mos.....	9.66
" 36 mos.....	10.63
" 42 mos.....	11.68
" 48 mos.....	12.85

Service Technician

Starting.....	6.73
After 6 mos.....	7.39
" 12 mos.....	8.11
" 18 mos.....	8.90
" 24 mos.....	9.79
" 30 mos.....	10.75
" 36 mos.....	11.81
" 42 mos.....	12.96
" 48 mos.....	14.25
" 54 mos.....	15.65
" 60 mos.....	17.20

OVERTIME PAY: See () on OVERTIME PAGE attached.

PAID HOLIDAYS: See () on HOLIDAY PAGE attached.

ALLOWABLE RATIO: Apprentice(s) to Journeymen ()

APPRENTICES: (None)

SUPPLEMENTAL BENEFITS:(per hour worked)

14% of wage

Listed supplements apply to ALL classifications ()Yes ()No.

nytele/alb

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TELEPHONE(cont)

Rates listed below are for installation of customer provided telephone equipment from point of demarcation.

WAGES(per hour)	5/27/90- 5/25/91	5/26/91-
Telephone		
System Technician		
Starting.....	6.71	6.86
After 6 mos.....	7.41	7.57
" 12 mos.....	8.18	8.37
" 18 mos.....	9.03	9.25
" 24 mos.....	9.98	10.21
" 30 mos.....	11.02	11.27
" 36 mos.....	12.18	12.46
" 42 mos.....	13.45	13.76
" 48 mos.....	14.86	15.20
" 54 mos.....	16.41	16.78
" 60 mos.....	18.12	18.53
Technician Asst.		
Start.....	6.38	6.52
After 6 mos.....	7.01	7.16
" 12 mos.....	7.70	7.86
" 18 mos.....	8.45	8.63
" 24 mos.....	9.27	9.48
" 30 mos.....	10.18	10.41
Senior Technician		
Starting.....	6.71	6.86
After 6 mos.....	7.45	7.61
" 12 mos.....	8.26	8.45
" 18 mos.....	9.17	9.38
" 24 mos.....	10.18	10.41
" 30 mos.....	11.30	11.56
" 36 mos.....	12.55	12.82
" 42 mos.....	13.92	14.23
" 48 mos.....	15.45	15.80
" 54 mos.....	17.15	17.53
" 60 mos.....	19.03	19.46
Services Technician		
Start.....	6.71	6.86
After 6 mos.....	7.41	7.57
" 12 mos.....	8.18	8.37
" 18 mos.....	9.03	9.25
" 24 mos.....	9.98	10.21
" 30 mos.....	11.02	11.27
" 36 mos.....	12.18	12.46
" 42 mos.....	13.45	13.76
" 48 mos.....	14.86	15.20
" 54 mos.....	15.80	16.15

OVERTIME PAY: See (B,I,S) on OVERTIME PAGE attached.PAID HOLIDAYS: See (5,6 16) on HOLIDAY PAGE attached.SUPPLEMENTAL BENEFITS:(per hour worked)

Full Time & Part Time		
Employees working 25 or		
more hours per work.		
	19.3% of	19.3% of
	wage	wage
Part Time Employees		
0 thru 16 hours		
	9.3% of	9.3% of
	wage	wage
17 thru 24 hours		
	14.3% of	14.3% of
	wage	wage

Listed supplements apply to ALL classifications (X)Yes ()No.

att/alb+

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ELECTRICIAN

WAGES(per hour) 3/01/93-
2/28/94

Electrician..... \$ 18.34
Cable Splicer..... 20.49
Electrician - Tunnels &
40' above roof level 18.85

OVERTIME PAY: See (B,E,Q) on OVERTIME PAGE attached.

PAID HOLIDAYS: See (1) on HOLIDAY PAGE attached.

ALLOWABLE RATIO: Apprentice(s) to Journeymen (1 - 1) (2 - 4)

APPRENTICES: (see below) Terms at the following percentage of journeyman's wage.

0 to 2000hrs	to 3500hrs	to 5000hrs	to 6500hrs	to 8000hrs
35%	45%	55%	65%	75%

SUPPLEMENTAL BENEFITS:(per hour worked)

Journeyman	\$5.96 plus
	3% of wage
Appr 1st 2000 hrs	\$2.25 plus
	3% of wage
Appr 2000-3500 hrs.	\$4.73 plus
	3% of wage
Appr 3500-5000 hrs.	\$4.95 plus
	3% of wage
Appr 5000-6500 hrs.	5.18 plus
	3% of wage
Appr 6500-8000 hrs.	5.40 plus
	3% of wage

Listed supplements apply to ALL classifications (X)Yes ()No 2-325

IRONWORKER

WAGES(per hour) 6/01/93-
5/31/94

Structural/Reinf....\$ 17.16
Mach. Mov. & Rigger.. 17.16
Ornamental..... 17.16
Chain Link Fence..... 17.16
Sheeter..... 17.16
Pre-Cast/Stressed Concrete Erectors
(Stone Derrickman).. 17.16

OVERTIME PAY: See (B, E, Q*) on OVERTIME PAGE attached.

*Holidays if worked-New Years, Memorial Day, July 4th., Thanks. & Christmas.

PAID HOLIDAYS: See (1) on HOLIDAY PAGE attached.

ALLOWABLE RATIO: Apprentice(s) to Journeymen (1-7)(2-14)

APPRENTICES: (1000) hour terms at the following percentage of Journeyman's wage.

1st.	2nd.	3rd.	4th.	5th.	6th.
60%	70%	75%	80%	85%	90%

SUPPLEMENTAL BENEFITS:(per hour worked)

\$ 5.69

Listed supplements apply to ALL classifications (x)Yes ()No. 6-60/s

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MASON-BricklayerWAGES(per hour) 6/01/93-
5/31/94

Bricklayer..... \$ 17.00

OVERTIME PAY: See (B, E, Q) on OVERTIME PAGE attached.PAID HOLIDAY: See (1) on HOLIDAY PAGE attached.ALLOWABLE RATIO: Apprentice(s) to Journeymen (1-3)(2-6)(3-9)APPRENTICES: (1) year terms at the following percentage of Journeyman's wage.

1st.	2nd.	3rd.
50%	65%	90%

SUPPLEMENTAL BENEFITS:(per hour worked)

\$ 4.62

Listed supplements apply to ALL classifications (x)Yes ()No. 2-42-CPAINTERWAGES(per hour) 6/01/93-
5/31/94

Brush/Taper..... \$ 13.66

Brush/Roll(epoxy) 13.91

Steel (Build) Spray... 14.66

Spray..... 14.66

Spray (epoxy)..... 14.91

Sandblast., Steam, 14.16

High Pressure Water. 14.16

Paper/Vinyl Hanger 15.13

Bridge..... 13.66

" Cleaning & Oiling. 13.66

OVERTIME PAY: Bridge See (B,E,E2,Q) on OVERTIME PAGE attached.OVERTIME PAY: All except Bridge See (B, E, Q) on OVERTIME PAGE attached.PAID HOLIDAY: See (1) on HOLIDAY PAGE attached.ALLOWABLE RATIO: Apprentice(s) to Journeymen (1-5)APPRENTICES: (1/2) year terms at the following percentage of Journeyman's wage.

1st.	2nd.	3rd.	4th.	5th.	6th.
52%	60%	68%	76%	84%	92%

SUPPLEMENTAL BENEFITS:(per hour worked)

\$ 4.34

Listed supplements apply to ALL classifications (x)Yes ()No. 2-103OCCUPATIONS APPLICABLE TO HEAVY/HIGHWAY and BUILDING SCHEDULES

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PLUMBER / STEAMFITTER

WAGES(per hour) 5/01/93- 5/01/94-
 4/30/94 4/30/95

Plumber..... \$ 18.65 Addit. .30
Steamfitter..... 18.65 per hr.

OVERTIME PAY: See (B, E, Q) on OVERTIME PAGE attached.
PAID HOLIDAY: See (1) on HOLIDAY PAGE attached.

ALLOWABLE RATIO: Apprentice(s) to Journeymen (1 - 1) (1 - 3)
APPRENTICES: (1) year terms at the following percentage of Journeyman's wage.

1st	2nd	3rd	4th	5th
40%	50%	60%	70%	80%

SUPPLEMENTAL BENEFITS:(per hour worked)

\$ 5.91

Listed supplements apply to ALL classifications (x)Yes ()No. 2-112DRILLING

For Core Drilling - See Operating Engineer

For Water Well Drilling - See Operating Engineer

TREE TRIMMER

Applies to line clearance, tree work and right-of-way preparation on all new or existing overhead electrical, telephone and CATV lines.

WAGES(per hour)	1/01/92- 1/03/93	1/04/93- 1/02/94	1/03/94- 12/31/94
Tree Trimmer:			
Treeman.....	\$ 12.56	Additional	Additional
Equip. Operator.....	11.13	4 % of	4 % of
Mechanic.....	11.13	previous	previous
Truck Driver.....	9.44	wage	wage
Inexperienced Grdsman	7.82		

OVERTIME PAY: See (B,E,Q) on OVERTIME PAGE attached.

PAID HOLIDAYS: See (5,6,8,10,15,16) on HOLIDAY PAGE attached.

SUPPLEMENTAL BENEFITS: (per hour worked.)

\$ 2.80	\$ 2.80	\$ 2.80
plus	plus	plus
1% of wage	1% of wage	1% of wage

Listed supplements apply to ALL classifications (x)Yes ()No. 6-1249TTOCCUPATIONS APPLICABLE TO HEAVY/HIGHWAY and BUILDING SCHEDULES

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WELDER

Welder To be paid the rate of the mechanic performing the work.

SURVEY CREWSURVEY CLASSIFICATIONS:

Party Chief- One who directs a survey party.

Instrumentman- One who runs the instrument and assists the Party Chief.

Rodman- One who holds the rods and in general, assists the survey party.

WAGES: (per hour)	6/01/91- 5/31/92	6/01/92- 5/31/93	6/01/93- 5/31/94
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Survey Rates:

Party Chief.....	17.63	17.93	18.23
Instrument Man.....	14.99	15.29	15.59
Rodman.....	13.22	13.52	13.82

Additional 2.00 per hr. for work in a Tunnel.

Additional 2.50 per hr. for EPA or DEC certified toxic or hazardous waste work

OVERTIME PAY: See (B, E, Q) on OVERTIME PAGE attached.PAID HOLIDAY: See (5, 6) on HOLIDAY PAGE attached.ALLOWABLE RATIO: Apprentice(s) to Journeymen (1 - 10)APPRENTICES: (1000) hour terms at a percentage of Class "A" Tech. Engineer.

	1st.	2nd.
91/92-	10.58	11.90
92/93-	10.82	12.17
93/94-	11.06	12.44

SUPPLEMENTAL BENEFITS: (per hour worked)

\$ 7.10	\$ 7.40	\$ 7.70
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Listed supplements apply to ALL classifications (x) Yes () No.

6-545Dha1b

SURVEY CREW - CONSULTING ENGINEERS

Feasibility and preliminary design surveying, line and grade surveying for inspection or supervision of construction when performed under a consulting engineer agreement.

SURVEY CLASSIFICATIONS:

Party Chief- One who directs a survey party.

Instrumentman- One who runs the instrument and assists the Party Chief.

Rodman- One who holds the rods and in general, assists the survey party.

WAGES: (per hour)	6/01/92- 5/31/93	6/01/93- 5/31/94
-------------------	---------------------	---------------------

Survey Rates:

Party Chief.....	16.93	17.23
Instrument Man.....	14.29	14.59
Rodman.....	12.52	12.82

Additional 2.00 per hr. for work in a Tunnel.

Additional 2.50 per hr. for EPA or DEC certified toxic or hazardous waste work

OVERTIME PAY: See (B, E, Q) on OVERTIME PAGE attached.PAID HOLIDAY: See (5, 6) on HOLIDAY PAGE attached.ALLOWABLE RATIO: Apprentice(s) to Journeymen (1 - 1)APPRENTICES: (1 yr or 1000 hr) terms at the following Rates.

	1st.	2nd.
92/93	10.02	11.27
93/94	10.21	11.54

SUPPLEMENTAL BENEFITS: (per hour worked)

\$ 7.40	\$ 7.70
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Listed supplements apply to ALL classifications (x) Yes () No.

6-545Dca1b

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CARPENTER-Heavy/HighwayWAGES(per hour) 6/01/93-
5/31/94

Heavy/Highway:
Carpenter/Millwright...\$ 19.39
Piledriver(Heavy/Hiway) 19.39
Dockbuilder..... 19.39
Diver (Dry Day)..... 20.39
Diver (Wet Day)..... 255.00
per day
Diver Tender..... 20.39
Certified Welder..... 20.89

OVERTIME PAY: See (B, E, Q) on OVERTIME PAGE attached.

PAID HOLIDAYS: See (2, 17) on HOLIDAY PAGE attached.

ALLOWABLE RATIO: Apprentice(s) to Journeymen (1 - 2)

APPRENTICES: (1/2) year terms at the following percentage of Journeyman's wage.

1st.	2nd.	3rd.	4th.	5th.	6th.	7th.	8th.
60%	65%	70%	75%	80%	85%	90%	95%

SUPPLEMENTAL BENEFITS:(per hour worked)

\$4.75

Listed supplements apply to ALL classifications (x)Yes ()No. 2-281hLABORER-Heavy/Highway

Heavy/Highway Laborer:

Group # A: Basic, Drill Helper, Flagman, Outboard and Hand Boats.
Group # B: Bull Float, Chain Saw, Concrete Aggregate Bin, Concrete Bootmen,
Gin Buggy, Hand or Machine Vibrator, Jack Hammer, Mason Tender, Mortar Mixer,
Pavement Breaker, Handlers of all SteelWash, Small Generators for Laborers' Tools,
Installation of Bridge Drainage Pipe, Pipe Layers, Vibrator Type Rollers,
Tampers, Drill Doctor, Tail or Screw Operator on Asphalt Paver, Water Pump
Operators(1-1/2" and Single Diaphragm), Nozzle (Asphalt, Guniting, Seeding, and
Sand Blasting), Laborers on Chain Link Fence Erection, Rock Splitter and Power Unit,
Pusher Type Concrete Saw and all other Gas, Electric, Oil and Air Tool
Operators, Wrecking Laborer.
Group #C: All Rock or Drilling Machine Operators (Except Quarry Master and
Similar Type), Acetylene Torch Operators, Asphalt Raker and Powderman.
Group #D: Blasters, Form Setters, Stone or Granite Curb Setters.

WAGES(per hour) 6/01/91- 6/01/92- 6/01/93-
5/31/92 5/31/93 5/31/94

Heavy/Highway Laborer:
Group # A..... 16.24 16.94 17.69
Group # B..... 16.44 17.14 17.89
Group # C..... 16.64 17.34 18.09
Group # D..... 16.84 17.54 18.29
Hazardous Waste Work.. 18.84 19.54 20.29

OVERTIME PAY: See (B, E, Q) on OVERTIME PAGE attached.

PAID HOLIDAYS: See (5, 6) on HOLIDAY PAGE attached.

SUPPLEMENTAL BENEFITS:(per hour worked)

\$ 4.15 \$ 4.15 \$ 4.15

Listed supplements apply to ALL classifications (x)Yes ()No. 2-7/2hOCCUPATIONS APPLICABLE TO HEAVY/HIGHWAY SCHEDULES

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1993a-7/01/93 thru 6/30/94
Published -07/01/93

BROOME COUNTY

Page 17

MASON-Heavy/HighwayWAGES(per hour) 6/01/93-
5/31/94Heavy/Highway:
Cement Finish (H/H)... 18.38OVERTIME PAY: See (B, E Q) on OVERTIME PAGE attached.PAID HOLIDAY: See (5, 6) on HOLIDAY PAGE attached.ALLOWABLE RATIO: Apprentice(s) to Journeymen (1 - 3)APPRENTICES: (1/2) year terms at the following percentage of Journeyman's wage.

1st.	2nd.	3rd.	4th.	5th.	6th.
50%	55%	60%	65%	70%	80%

SUPPLEMENTAL BENEFITS:(per hour worked)

\$4.91

Listed supplements apply to ALL classifications (x)Yes ()No. 2-42hTEAMSTER-Heavy/Highway

Truck Driver(H/H):

GROUP 1: Warehousemen, Yardmen, Truck Helpers, Pickups, Panel Trucks, Flatboy
Material Trucks(straight jobs), Single Axel Dump Trucks, Dumpsters, Material
Checkers and Receivers, Greasers, Truck Tiremen, Mechanics Helpers and Parts Chasers.

GROUP 2: Tandems and Batch Trucks, Mechanics, Dispatcher.

GROUP 3: Semi-Trailers, Low-boy Trucks, Asphalt Distributor Trucks, and Agitator,
Mixer Trucks and dumpcrete type vehicles, Truck Mechanic, Fuel Trucks.GROUP 4: Specialized Earth Moving Equipment, Euclid type, or similar off-
highway, where not self-loading, Straddle (Ross) Carrier, and self-contained
concrete mobile truck.GROUP 5: Off-highway Tandem Back-Dump, Twin Engin Equipment and Double-Hitched
Equipment where not self-loading.WAGES(per hour) 6/01/93-
5/31/94

Heavy/Highway:

Group #1.....	16.37
Group #2.....	16.42
Group #3.....	16.47
Group #4.....	16.62
Group #5.....	16.90

For work bid on or after April 1, 1982 there shall be a 12 month carryover
of the negotiated rate in effect at the time of the bid.OVERTIME PAY: See (B, E Q) on OVERTIME PAGE attached.PAID HOLIDAY: See (5, 6) on HOLIDAY PAGE attached.SUPPLEMENTAL BENEFITS:(per hour worked)

\$ 5.75

Listed supplements apply to ALL classifications (x)Yes ()No. 2-693hOCCUPATIONS APPLICABLE TO HEAVY/HIGHWAY SCHEDULES

State of New York
Department of Labor

Case Number

Bureau of
Public Work

9402611

1993a-7/01/93 thru 6/30/94
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BROOME COUNTY

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POWER EQUIPMENT OPERATOR-Heavy/Highway

Heavy/Highway:

MASTER MECHANIC:

CLASS A: Automated Concrete Spreader (CMI Type), Automatic Fine Grader, Asphalt Paver (fixed screed 12ft. & over), Extend-a-matic Paver, Backhoe (except tractor-mounted, rubber tired), Belt Placer (CMI Type), Blacktop Plant (automated), Cableway, Caisson Auger, Central Mix Concrete Plant (automated), Cherry Picker (over 5 tons capacity), Concrete Pump (8" or over), Crane, Cranes and Derricks (steel erection), Dragline, Dredge, Dual Drum Paver, Excavator (all purpose-hydraulic-Gradall or Similar), Front End Loader (4c.y. & over), Head Tower (Sauerman or equal), Hoist (two or three Drum), Mine Hoist, Holland Loader, Hydrodemolition Equip. (self-contained), Mucking Machine or Mole, Overhead Crane (Gantry or Straddle Type), Pavement Profiler over 300 H.P., Pile Driver, Power Grader, Quad 9, Quarry Master (or equivalent), Scraper, Shovel, Side Boom, Slip Form Paver (If a second man is needed, he shall be an Oiler), Tractor Drawn Belt Type Loader, Truck Crane, Truck or Trailer Mounted Chipper (self-feeding), Tug & Operator (manned, rented equipment excluded) & Tunnel Shovel, Maintenance Engineer, Concrete Curb Machine, Self-Propelled Slip Form, Boom Truck 100' or over (boom & jib)

CLASS B: Asphalt paver under 12ft. Backhoe (Tractor-Mounted, Rubber Tired) Blacktop Plant (non-automated), Blast or Rotary Drill (Truck or Tractor Mounted), Boring Machine, Cage Hoist, Central Mix Plant (Non Automated), All Concrete Batching Plants, Cherry Picker (5 tons & under) Conc. Paver over 16S, Conc. Pump (Under 8"), Core Drill, Crusher, Diesel Power Unit, Drill Rigs (Tractor Mounted), F.E. Loader (under 4 c.y.), Hi-Pressure Boiler (15 lbs. & over), Hoist (One Drum), Kolman Plant Loader & similar type loaders (if employer requires another man, he shall be Oiler), L.C.M. Work Boat Operator, Locomotive, Greaseman/Lubrication Eng., Welder, Mixer (for stabilized base-self propelled), Monorail Machine, Pavement Profiler (under 300 H.P.) Plant Engineer, Pump Crete, Ready Mix Concrete Plant Refrigeration Equipment (for soil stabilization), Road Widener, Roller (all above sub-grade), Sea Mule, Tractor with Dozer and/or Pusher, Trencher, Tugger Hoist, Vacuum Mach. (self propelled), Vermeer Saw (ride-on), Winch and Winch Cat, Boom Truck under 100' (boom & jib) Skid Steer, Bobcat Type Loader, Log Skidder, Vibratory Screeding Mach. Ride-on Laser Guides, Hydraulic Rock Drill, Ride-on with Cab.

CLASS C: A Frame Truck, Ballast Regulator (ride-on), Concrete Pavement Spreaders and Finishers, Conveyor, Drill (well), Farm Tractor with Accessories, Fine Grade Machine, Grout Pump, Gunite Machine, Hydra-spiker (ride-on), Hammers (hydraulic-self propelled), Post Hole Digger & Post Driver, Power Sweeper, Roller (grade & fill), Scarifier (ride-on), Span-saw (ride-on), Tamper (ride-on), All ride-on Tie Extractors, Tie Handlers, Tie Inserters, Tie spacers and Track Liners, Fork Lift, Tractor (with towed accessories), Vibratory Compactor, Vibro Tamp, Well Point

CLASS D: Aggregate Plant, Boiler (used with production), Cement & Bin Operator, Compressors, Dust Collectors, Generators, Pumps, Welding Machs., Light Plants, Heaters, Concrete Paver or Mixer (16S & under), Concrete Saw (self propelled), Form Tamper, Hydraulic Pump (jacking system), Mulching Machine, Parapet Concrete or Pavement Grinder, Power Broom (towed), Power Heaterman, Revinius Widner, Shell Winder, Steam Cleaner, Tractor

CLASS E: Oiler

WAGES (per hour)	6/01/92-	6/01/93-
Heavy/Highway:	5/31/93	5/31/94
Master Mechanic.....	22.25*	22.69*
CLASS A.....	20.89*	21.29*
CLASS B.....	20.07*	20.44*
CLASS C.....	17.89*	18.18*
CLASS D.....	16.07*	16.30*
CLASS E.....	9.83*	9.84*

Crane with boom length & jib 150ft. & over 1.00 per hr. premium

*An additional 2.50 per hour for Hazardous Waste Work

OVERTIME PAY: See (B, E, Q) on OVERTIME PAGE attached.PAID HOLIDAY: See (5, 6) on HOLIDAY PAGE attached.ALLOWABLE RATIO: Apprentice(s) to Journeymen (1-1 (1-16)APPRENTICES: (1000) hours terms at the following percentage of Journeyman's wage.

1st	2nd	3rd	4th
.60% of D rate	65% of C rate	70% of B rate	75% of a rate.

SUPPLEMENTAL BENEFITS: (per hour worked)

\$ 7.60

\$ 8.20

Listed supplements apply to ALL classifications (x) Yes () No.

2-410h

OCCUPATIONS APPLICABLE TO HEAVY/HIGHWAY SCHEDULES



STATE OF NEW YORK
DEPARTMENT OF LABOR
(Bureau of Public Work)
STATE OFFICE BUILDING CAMPUS
ALBANY, N.Y. 12240

04/13/94

EMPLOYERS INELIGIBLE TO BID ON OR BE AWARDED ANY PUBLIC WORK

Under Article 8 of the NYS Labor Law, when two final determinations have been rendered against a contractor, subcontractor and/or its successor within any consecutive six-year period determining that such contractor, subcontractor and/or its successor has WILFULLY failed to pay the prevailing wage and/or supplements; or when one final determination involves the falsification of payroll records or the kickback of wages and/or supplements, said contractor, subcontractor and/or its successor shall be debarred and ineligible to submit a bid on or be awarded any public work contract with the state, any municipal corporation or public body for a period of five years from the date of debarment. Below is a list of employers who have been debarred.

Contractor	Number of Determ's	Date of first Wilful	Date of last Wilful	Fiscal Officer (see Note)	Barred until
L & M Company, a Div. of Nieto Roofing Contractors, Inc. (3) 501 Willet Ave., Port Chester, NY 10573		05/05/87	09/13/89	DOL	09/13/94
J.L. Bailey dba Castile Hardware a/k/a Castile Hardware, Plumb. & Hgt. (2) 1 East Park Road, Castile, NY 14427		05/07/87	05/16/89	DOL	05/16/94
Great South Beach Marine Construction a/k/a Great South Beach Marine Construction, Inc. (2) 70 Browns River Road, Sayville, NY 11782		01/27/88	06/15/89	DOL	06/15/94
Mid-States Industries, Ltd. (2) P O Box 4228, 1105 Catalyn St., Schenectady, NY 12303		03/03/87	06/22/89	DOL	06/22/94
TAP Electrical Contracting Service, Inc. a/k/a ATS Electrical Contracting Corp. (2) 926 Lincoln Avenue, Holbrook, NY 11741		01/21/86	11/08/89	DOL	11/09/94
Dickson Painting, Inc. (2) 326 Maple Street, Endicott, NY 13760		09/10/86	03/13/90	DOL	03/13/95
Silver Springs Construction Corp. (2) Box 204, Bald Mountain Rd., Troy, NY 12180		11/15/88	02/23/90	DOL	02/23/95

Interior Systems Co., Inc. (2) 3020 Cross Road, Johnson City, NY 13790	08/24/84 03/19/90	DOL	03/19/95
Hollywood Commercial Renewals, Inc. a/k/a Hollywood Commercial Renewals of Nassau, Inc. (2) 359 Duffy Avenue, Hicksville, NY 11801	12/16/88 10/26/90	DOL	10/26/95
Stride Construction Company and Christopher Risdale & David Strano (Individually) (2) 78 Otis Street, Rochester, NY	04/06/87 11/15/90	DOL	11/15/95
T.J. Marks & Sons, Inc. (2) P O Box 145, Guilford, NY 13780	07/01/87 10/19/90	DOL	10/19/95
Montour Metals, Inc. (2) 116 North Catherine St., Montour Falls, NY	09/28/90 09/24/91	DOL	09/24/96
Sloan Steel Erectors & Equip. Rental Inc. (2) 1560 Harlem Road, Buffalo, NY 14206	10/18/89 02/19/92	DOL	02/19/97
G & C Construction Corp. (2) 3706 12th Ave., Brooklyn, NY 11218	09/28/90 10/06/92	DOL	10/06/97
Nelson's Lamplighters, Inc. (2) 1811 Castle Gardens Road, Vestal, NY 13850	05/29/87 10/30/92	DOL	10/30/97
Global Oceanic Enterprises (2) P O Box 99, Langhorne, PA 19047	03/29/90 09/15/92	DOL	09/15/97
Atlantic Contracting Corp. (2) 52-09 31st Pl., Long Island City, NY 11101	11/23/92 02/08/93	DOL	02/08/98
Easton Industries, Inc. (2) 3100 7th Avenue, Troy NY 12180	10/26/92 04/08/93	DOL	04/08/98
Associated Safety Lighting, Inc. (2) 2788 Mohawk Street, Sauquoit, NY 13456	10/05/87 12/21/90	DOL	12/21/95

Owners Management & Const. Corp. (2) 14-08 Clintonville St., Whitestone, NY 11357	06/07/91 01/08/93	DOL	01/08/98
Melisz Building Impvt., Inc. (2) 49 Crescent Place, Lackawanna, NY 14218	07/24/87 01/29/93	DOL	01/29/98
J.F.B. Painting & Supply, Inc. (2) 722 West Gray Street, Elmira, NY 14901	11/28/88 02/19/93	DOL	02/19/98
Rosenthal Contracting, Inc. (2) R.D. 1, Box 402, Owego, NY 13827	12/07/92 01/28/93	DOL	01/28/98
Finger Lakes Painting & Decorating (1) 150 Lenox Road, Geneva, NY 14456	06/28/93 N/A	DOL	06/28/98
Silver Steel Erectors (2) 494 Ashland Ave., Buffalo, NY 14222	06/03/93 11/30/93	DOL	11/30/98
Environspan Safety Corp. (*) (*) (*) 10 West 36th Street, New York, NY		DOL	01/25/99
Ron Kenyon & Sons Excavating (2) 16305 Holley Rd., Holley, NY 14470	12/09/90 01/27/94	DOL	01/27/99
Great Neck Electric Co., Inc. (2) 245 East Shore Rd., Great Neck, NY 11023	12/31/90 04/04/92	DOL	04/04/97
North Country Installers, Inc. and Alter ego The Locker Master, Inc. (2) Box 33, Main Street, West Pawlet, VT 05775	06/19/89 01/03/94	DOL	01/04/99
Gorton Construction (2) P O Box 606, Norwich, NY 13815	03/19/90 01/27/94	DOL	01/27/99

Note: (*) Pursuant to a Stipulation dated January 14, 1994 and an Order and Determination dated January 25, 1994, in lieu of a finding concerning the willfulness of any violations, the employer has voluntarily agreed to preclude itself from bidding on or being awarded any public work for a five-year period.

Note: Where the Fiscal Officer is denoted "NYC," the information has been provided by the New York City Comptroller's Office, the agency issuing the determinations. Any questions regarding these listings should be addressed directly to the Comptroller. The Bureau of Public Work of the New York State Department of Labor will respond in regard to listings where the Fiscal Officer is listed as "DOL."

BONDS AND INSURANCE



Office of the County Executive

Timothy M. Grippen
Broome County Executive

ORDER

WHEREAS, it is the law of the State of New York (Labor Law Article 8) that prevailing wages and supplements be paid to all workers engaged to perform work under public contracts, and

WHEREAS, the County of Broome intends to ensure compliance with Article 8 of the Labor Law on all contracts let by the County of Broome by any reasonable means.

NOW, THEREFORE, I, Timothy M. Grippen, as County Executive of the County of Broome do hereby direct all Departments, Boards, Agencies and Commissions of the County of Broome under my jurisdiction:

1. That a clause shall be inserted in every specification for a construction contract let by the County of Broome requiring each and every prospective bidder to provide an affirmative statement that the bidder has not been found guilty of a willful violation of the New York State Labor Law for failure to pay prevailing wages and supplements, as these terms are defined by the New York State Labor Law, within the twelve month period immediately preceding the submission of the bid.

2. That a clause shall be inserted into the specifications and incorporated into the contract for each construction project to be let by the County of Broome which shall read substantially as follows:

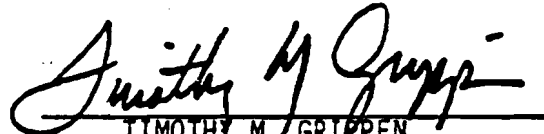
In the event the contractor shall fail, in one or more instances, to pay prevailing wages and supplements in accordance with Article 8 of the New York State Labor Law, Section 220, et. seq., and as described in this contract, it shall be considered a material breach. For the breach or violation of this provision, without limiting any other rights or remedies to which the County or any individual may be entitled or any civil or criminal penalty for which any violator may be liable, the County shall have the right, in its discretion, to terminate this agreement immediately upon notice. In such event, the Contractor shall be liable to the County for any additional costs incurred by the County in the completion of the project.

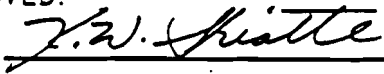
3. It is the public policy of the County of Broome that prevailing wages and supplements in accordance with Article 8 of the Labor Law be paid to all workers engaged to perform work under construction contracts with the County of Broome. In accordance with Section 220-b(3)(b), when final determinations have been rendered against a contractor or subcontractor and/or its successors in two instances within any consecutive six year period determining that such contractor or subcontractor and/or its successor has willfully failed to pay the prevailing rate of wages or to provide supplements in accordance with Article 8, such contractor or subcontractor and/or its successor shall be ineligible to submit a bid on or be awarded any public work contract with the County of Broome for a period of five years from the second determination. For the purpose of this paragraph, a successor shall mean an employer engaged in work substantially similar to that of the predecessor, where there is substantial continuity of operation with that of the predecessor.

All departments are directed to investigate, to the maximum extent practicable, any allegation that an apparent low bidder has been found in willful violation of the Labor Law and shall report its findings to the Board of Acquisition and Contract for consideration in the award of the bid.

4. That this Order shall take effect immediately.

Dated: March 28, 1990
Binghamton, New York


TIMOTHY M. GRIPPEN
Broome County Executive

TO:		ENGINEERING BULLETIN	
		NEW YORK STATE DEPARTMENT OF TRANSPORTATION	
		SUBJECT: NYS LABOR LAW, SECTION 220-a LABOR AFFIDAVITS	
		Subject Code 7.30	
Distribution:	30 <input checked="" type="checkbox"/> Main Office	32 <input checked="" type="checkbox"/> Regions	34 <input checked="" type="checkbox"/> Special
APPROVED:			Code: EB-89-11
 K. W. Shiatte, Deputy Chief Engineer (Construction)			Date: 03/13/89
			Supersedes: N/A

This Engineering Bulletin Expires _____

All contracts let after March 1, 1989 are covered by the revised provisions of Section 220a of the NYS Labor Law in regard to the submission of Labor Affidavits. New certifications executed by the prime contractor (Form A&C-2) and each subcontractor (Form A&C-3) will replace the Labor Affidavit (Form A&C-1) in current use. Attached is a February 6, 1989 letter from T.J. O'Brien in the Office of The State Comptroller explaining the new process.

Please insure that this information together with copies of the new certifications are transmitted to the contractor at the pre-construction meeting.

Note that these new requirements apply only to contracts let after March 1, 1989. Contractors on older contracts are still required to submit labor affidavits on Form A&C-1 for themselves and each of their subcontractors.

Attachment

New York State Labor Law, Section 220-a
Prime Contractor's Certification

1. That I am an officer of _____
and am duly authorized to make this affidavit on behalf of the
prime contractor on public contract No. _____.
2. That I fully comprehend the terms and provisions of Section
220-a of the Labor Law.
3. That, except as herein stated, there are no amounts due and
owing to or on behalf of laborers employed on the project by the
contractor. (Set forth any unpaid wages and supplements, if
none, so state).

Name

Amount

-
-
-
4. That the contractor hereby files every verified statement
required to be obtained by the contractor from the
subcontractors.
 5. That, upon information and belief, except as stated herein, all
laborers (exclusive of executive or supervisory employees)
employed on the project have been paid the prevailing wages and
supplements for their services through _____, the last
day worked on the project by their subcontractor. (Set forth
any unpaid wages and supplements, if none, so state and utilize
clause 5 (A)).

Name

Amount

-
-
-
- (5A) That the contractor has no knowledge of amounts owing to
or on behalf of any laborers of its subcontractors.

- continued -

New York State Labor Law, Section 220-a
Prime Contractor's Certification
(Page 2)

6. In the event it is determined by the Commissioner of Labor that the wages or supplements or both of any such subcontractors have not been paid or provided pursuant to the appropriate schedule of wages and supplements, then the contractor shall be responsible for payment of such wages and supplements pursuant to the provision of Section 223 of the Labor Law.

SIGNATURE

PRINT NAME

TITLE

ACKNOWLEDGEMENT:

STATE OF NEW YORK
COUNTY OF _____ : SS.:

On this _____ day of _____ 19 _____
before me personally came _____ to me
known and known to me to be the person described in an who
executed for foregoing instrument and acknowledged that he executed
the same.

NOTARY PUBLIC

County

If this affidavit is verified by an oath administered by a notary public in a foreign country other than Canada, it must be accompanied by a certificate authenticating the authority of the notary who administers the oath. (See CPLR § 2309(c); Real Property Law, § 311,312).

New York State Labor Law, Section 220-a
Subcontractor's Certification

1. That I am an officer of _____
a subcontractor on public contract No. _____ and I am
duly authorized to make this affidavit on behalf of the firm.
2. That I make this affidavit in order to comply with the provisions
of Section 220-a of the Labor Law.
3. That on _____ we received from _____
the prime contractor a copy of the initial/revised schedule of
wages and supplements Prevailing Rate Schedule Case Number
_____ (PRC) specified in the public improvement contract.
4. That I have reviewed such schedule(s), and agree to pay the
applicable prevailing wages and to pay or provide the
supplements specified therein.

SIGNATURE

PRINT NAME

TITLE

ACKNOWLEDGEMENT:

STATE OF NEW YORK
COUNTY OF _____ : SS.:

On this _____ day of _____ 19____
before me personally came _____ to me
known and known to me to be the person described in an who
executed for foregoing instrument and acknowledged that he executed
the same.

NOTARY PUBLIC

County

If this affidavit is verified by an oath administered by a notary
public in a foreign country other than Canada, it must be
accompanied by a certificate authenticating the authority of the notary
who administers the oath. (See CPLR § 2309(c); Real Property Law, §
311,312).

BONDS AND INSURANCE

BONDS

The Contractor shall procure and deliver to the County and maintain at his own expense and without expense to the County until final acceptance by the County of the work covered by this contract and shall remain in effect for one year after the final completion of work.

FAITHFUL PERFORMANCE BOND

A bond shall be furnished guaranteeing the faithful performance of the Contract, the coverage shall be 100% of the contract price.

The bond shall be furnished in the form prescribed by the Board with sufficient sureties, approved by the said Board, that the Contractor will perform the work in accordance with the terms of the contract and with the plans and specifications, and that he will commence and complete the work within the time prescribed in the contract, and that he will provide against direct or indirect damage that shall be suffered or claimed on account of such construction or improvement during the time thereof, and until the work is accepted.

LABOR AND MATERIAL BOND

Pursuant to the provisions of Section 137 of the State Finance Law, a separate bond guaranteeing prompt payment of moneys due to all persons supplying the contractor or a sub-contractor with labor and materials employed and used in carrying out the contract, which bond shall insure to the benefit of the persons supplying such labor and materials, shall be executed and delivered to the Board. The amount of such bond shall be 100% of the amount of the contract price.

INSURANCE

The Contractor shall procure and maintain at his own expense and without expense to the County, until final acceptance by the County of the work covered by the contract, insurance for liability for damages imposed by law, of the kinds and in the amounts hereinafter provided, in insurance companies authorized to do such business in the State covering all operations under the contract whether performed by him or by sub-contractors. Before commencing the work the Contractor shall furnish to the Board a certificate or certificates of insurance in form satisfactory to the Board showing that he has complied with this paragraph, which certificate or certificates shall provide that the policies shall not be changed or cancelled until thirty (30) days written notice has been given to the Board. The kinds and amounts of insurance are as follows:

(a) Workers' Compensation Insurance

A policy covering the obligations of the Contractor in accordance with the provisions of Chapter 41 of the Laws of 1914, as amended, known as the Workers' Compensation Law, covering all operations under the contract, whether performed by him or by his sub-contractor, and also under Article 9

BONDS AND INSURANCE, Continued

of the Workers' Compensation Law, known as the Disability Benefits Law (Chapter 600 of the Laws of 1949) and amendments thereto. The contract shall be void and of no effect unless the person or corporation making or executing same shall secure compensation and disability benefits coverage for the benefit of, and keep insured during the life of said contract, such employees in compliance with the provisions of the Workers' Compensation Law, (State Finance Law, Section 142).

(b) Liability and Property Damage Insurance

Unless otherwise specifically required by special specifications, each policy with limits of not less than One Million Dollars (\$1,000,000) combined single limit, for all damages arising during the policy period shall be furnished in the types specified, viz.:

1. Contractor's Liability Insurance issued to and covering the liability for damages imposed by law upon the CONTRACTOR with respect to all work performed by him under the agreement;
2. Contractor's Liability Insurance issued to and covering the liability for damages imposed by law upon EACH SUB-CONTRACTOR with respect to all work performed by said sub-contractor under the agreement;
3. Contractor's Protective Liability Insurance issued to and covering the liability for damages imposed by law upon the Contractor with respect to all work under the agreement performed for the Contractor by sub-contractors;
4. Protective Liability Insurance issued to and covering the liability for damages imposed by law upon The People of the County of Broome and its officers and employees both officially and personally, with respect to all operations under the agreement by the Contractor or by his sub-contractors, including omissions and supervisory acts of the County;
5. Completed Operations' Liability Insurance issued to and covering the liability for damages imposed by law upon the Contractor and each sub-contractor arising, between the date of final cessation of the work and the date of final acceptance thereof, out of that part of the work performed by each;
6. Owners', Landlords' and Tenants' Liability Insurance issued to and covering the liability for damages imposed by law upon the People of the County of Broome and its officers and employees both officially and personally, with respect to temporarily opening to vehicular traffic any portion of the County highway under the agreement, until the construction or reconstruction pursuant to the agreement has been accepted by the County.

BONDS AND INSURANCE, Continued

(c) Auto Insurance

- Auto insurance comprehensive liability coverage for all owned, non-owned, rented or leased vehicles.
- Broome County is to be named an additional insured on all liability policies with respect to the interest Broome County maintains.

FAITHFUL PERFORMANCE BOND

1. Know all men by these presents, That we (hereinafter called the "Principal")

_____ of _____
_____ of _____
_____ of _____
_____ of _____
and _____
of _____

(hereinafter called the "Surety") are held and firmly bound unto the County of Broome, State of New York in the full and just sum of _____ Dollars (\$ _____) good and lawful money of the United States of America, to the payment of which said sum of money, well and truly to be made and done, the said Principal binds himself, his heirs, executors, administrators, and assignees and the said SURETY binds itself, its successors or assigns, jointly and severally, firmly by these presents.

2. Signed, sealed and dated this _____ day of _____ 19____.

3. Whereas, Said Principal has entered into a certain written contract bearing date on the _____ day of _____, 19____. with the County of Broome, State of New York for the _____

_____ in the County of Broome, State of New York.



Broome County
OFFICE OF RISK MANAGEMENT
Broome County Office Building / Government Plaza / Binghamton, New York 13902 / (607) 778-2402

RECEIVED FEB 6 5 1993

Contractor: _____ Project: Colesville Hand fil

Contract Amount: _____

Type of Insurance	Limits Required	Provided
Performance Bond	\$ <u>100%</u> of contract	
Labor & Materials Bond	\$ <u>100%</u> of " "	
Builder's Risk	\$ <u>100%</u> of " "	
General Liability	\$ <u>2,000,000</u>	

Comprehensive form
Premises-operations
Explosion & Collapse Hazard
Underground Hazard
Products/Completed Operations Hazard
Contractual Insurance
Broad Form Property Damage
Independent Contractors
Personal Injury

X
X
X
X
X
X
X
X
X

Automobile Liability

\$ 1,000,000

Comprehensive Form
Owned
Hired
Non-owned

X
X
X
X

Workers' Compensation and
Employers' Liability

Statutory
\$100,000 X

Professional Liability

\$ 2,000,000

Other: Non Exclusion Clause
for Contaminates or
Pollutions

BROOME COUNTY AS ADDITIONAL INSURED

REQUIRED

Certificate

- Prior Notice of Cancellation
- *- Acceptable Carrier

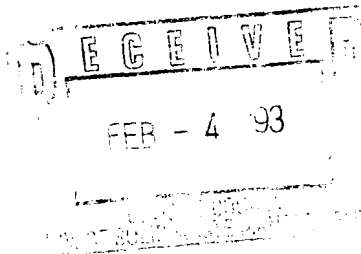
30 days

☒

KYS *RATED B+ OR HIGHER BY "BEST'S"
CURRENT RATING GUIDE

Original: To Contract
Copy : Contractor - Provide Your
Broker/Agent with Insurance Req.

Approved: Keith D. Barren
Manager, Risk & Insurance



FAITHFUL PERFORMANCE BOND - CONTINUED

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH that the said PRINCIPAL shall well, truly and faithfully comply with and perform all the terms, covenants and conditions of said contract on their (his, its) part to be kept and performed in accordance with the terms of the contract and in accordance with the plans and specifications, and will commence and complete the work within the time prescribed in the contract, and shall protect the said County of Broome against, and pay any and all amounts, damages, costs and judgments which may or shall be recovered against said County of Broome or its officers or agents or which the said County of Broome may be called upon to pay to any person or corporation by reason of any damages, direct or indirect, arising or growing out of the doing of said work, or the repair of maintenance thereof, or from the negligence, nonfeasance, misfeasance or malfeasance of the PRINCIPAL or of any officer, agent, servant or employee of the PRINCIPAL, or the infringement of any patent or patent rights by reason of the use of any materials furnished or work done as of foresaid or otherwise, then this obligation shall be null and void, otherwise to remain in full force and virtue.

The Surety, for value received, hereby stipulates and agrees, if requested to do so by the County of Broome, to fully perform and complete the work mentioned and described in said contract and specifications, pursuant to the terms, conditions and covenants thereof, if for any cause, said PRINCIPAL fails or neglects to fully perform and complete said work; the said Surety further agrees to commence said work of completion within 20 days after notice thereof from the County of Broome, and to complete the same with all and due diligence.

The said Surety, for value received, hereby stipulates and agrees that no change, extension, alteration or addition to the terms of this contract or specifications accompanying the same, shall in any wise effect its obligations of this bond, and does hereby wave notice of any such change, extension, alteration or addition.

IN TESTIMONY WHEREOF, the said PRINCIPAL has hereunto set his (their, its) hand and seal and the said Surety has caused this instrument to be signed by its _____, and its corporate seal to be hereunto affixed, the day and year first above written.

Signed, sealed and delivered in the presence of:

PRINCIPAL

By _____

Title _____

Witness

SURETY

By _____

Title _____

Witness

FAITHFUL PERFORMANCE BOND, CONTINUED

(Acknowledgement by principal, if a corporation.)

STATE OF NEW YORK)
COUNTY OF) ss.:

On this _____ day of _____, 19 _____, before me personally came _____
to me known, who being by me duly sworn, did depose and say that he resides in _____
that he is the _____
of the _____
the corporation described in and which executed
the foregoing instrument; that he knew the seal of said corporation; that the seal
affixed to said instrument was such corporate seal; that it was so affixed by order
of the Board of Directors of said corporation, and that he signed his name thereto by
like order.

Signature of Notary Public

(Notary's seal to be attached.)

(Acknowledgement by Surety Company)

STATE OF NEW YORK)
COUNTY OF) ss.:

On this _____ day of _____, 19 _____, before me personally
came _____ to me
known, who being by me duly sworn, did depose and say that he resides in _____
that he is the _____
of the _____
the corporation described in and which executed the foregoing instru-
ment; that he knew the seal of said corporation; that the seal affixed to said instru-
ment was such corporate seal; that it was so affixed by order of the Board of Directors
of said corporation, and that he signed his name thereto by like order.

Signature of Notary Public

FAITHFUL PERFORMANCE BOND, CONTINUED

(Notary's seal to be attached.)

(The Surety Company must append statement of its financial condition and a copy of the resolution authorizing the execution of Bonds by officers of the Company).

(Acknowledgement by Co-partnership.)

STATE OF NEW YORK)
COUNTY OF) ss.:

On this _____ day of _____, 19 _____, before me personally came and appeared _____ to me known to be the person who executed the above instrument, who, being duly sworn by me, did for himself depose and say that he is a member of the firm of _____ and that he executed the foregoing instrument individually and in the firm name of _____.

Signature of Notary Public

(Notary's seal to be attached.)

BROOME COUNTY

I hereby approve the foregoing contract and bond as to form and manner of execution.

DATED _____

County Attorney

LABOR AND MATERIAL BOND

Know all men by these presents, That _____ of _____ (hereinafter called the "Principal") and the _____ a corporation created and existing under the laws of the State of _____ having its principal office in the City of _____, (hereinafter called the "Surety"), are held and firmly bound unto the County of Broome, State of New York (hereinafter called the "County"), in the full and just sum of _____ good and lawful money of the United States of America,

LABOR AND MATERIAL BOND, CONTINUED

for the payment of which said sum of money, well and truly to be made and done, the said Principal binds themselves (himself, itself), their (his, its) heirs, executors, and administrators, successors, and assigns, and the said Surety binds itself, its successors and assigns jointly and severally, firmly by these presents; _____

Signed, sealed and dated this _____
_____, 19 _____, A.D.

Whereas, said Principal has entered into a certain written contract, bearing date _____ with the _____
_____.

Whereas, the Board of Acquisition and Contracts has required this bond guaranteeing prompt payment of monies due to all persons supplying the contractor or a sub-contractor with labor and materials employed and used in carrying out the contract, which bond shall insure to the benefit of the persons supplying such labor and materials.

Now, Therefore, The Condition Of The Foregoing Obligation Is Such, that is the said Principal shall promptly pay all monies due to all persons supplying the contractor or a sub-contractor with labor and materials employed and used in carrying out the contract, then this obligation shall be null and void, otherwise, to remain in full force and virtue.

IN TESTIMONY WHEREOF, the said Principal has hereunto set his (their, its) hand and seal and the said Surety has caused this instrument to be signed by its _____

President and its _____
Secretary, and its corporate seal to be hereunto affixed, the day and year first above written.

Signed, sealed and delivered in the presence of:

(Corporate seal of _____ L.S.)

Principal if a _____ L.S.)

LABOR AND MATERIAL BOND, CONTINUED

corporation) _____ (L.S.)

Principal

(Corporation seal _____ Company

of Surety Company) of _____

By _____

(Title of officer)

Attast _____

(Title of officer)

Surety

(Acknowledgement by Principal, unless it be a corporation)

STATE OF NEW YORK)

COUNTY OF) ss.:

On this _____ day of _____, 19 _____, before me personally
came _____

to me known and known to me to be the person described in and who executed the fore-
going instrument and who being duly sworn by me did depose and say that he executed
the same.

Notary Public

County

(Acknowledgement by Principal, if a corporation)

STATE OF NEW YORK)

COUNTY OF) ss.:

On this _____ day of _____, 19 _____, before me personally
came _____

to me known, who being by me duly sworn did depose and say that he resides in _____

_____ that he is the _____

_____ of the _____

the corporation described in and which executed the foregoing instrument; that he
knew the seal of said corporation; that the seal affixed to said instrument was such
corporate seal; that it was so affixed by order of the Board of Directors of said

corporation, and that he signed his name thereto by like order.

Notary Public

County

(Acknowledgement by Surety Company)

STATE OF NEW YORK)
COUNTY OF BROOME) ss.:

On this _____ day of _____, 19_____, before me personally
came _____ to me know, who being
by me duly sworn did depose and say that he resides in _____
_____ that he is the _____
_____ of the _____
_____ the corporation described in and
which executed the within instrument ; that he knows the seal of said corporation; that
the seal affixed to said instrument is such corporate seal; that it was so affixed by
the order of the Board of Directors of said corporation, and that he signed his name
thereto by like order; and that the liabilities of said company do not exceed its assets
as ascertained in the manner provided by the laws of the State of New York; and the
said _____
further said that he is acquainted with _____
and knows him to be the _____ of said company;
that the signature of the said _____ subscribed
to the within instrument is in genuine handwriting of the said _____
_____ and was subscribed thereto by like order of the Board of
Directors, and in the presence of him, the said _____
_____.

Notary Public

County

(Acknowledgement by co-partnership)

STATE OF NEW YORK)
COUNTY OF) ss.:

On this _____ day of _____, 19_____, before me personally
came and appeared _____ to me known
and known to me to be the person who executed the above instrument, who, being duly
sworn by me, did for himself depose and say that he is a member of the firm of _____
_____ and
that he executed the foregoing instrument individually and in the firm name of _____
_____.

Notary Public

County

BROOME COUNTY

I hereby approve the foregoing contract and bond as to form and manner of execution.

DATE: _____

County Attorney

PROPOSAL - GENERAL CONSTRUCTION

PROPOSAL

All amounts shall be written out in full and also stated in figures.

THE INTERPOLATION OR ALTERING OF PROPOSAL BY WHICH THE TERMS OF THE SPECIFICATIONS ARE CHANGED SHALL CAUSE REJECTION OF THE PROPOSAL.

The Broome County Board of Acquisition and Contract or the Commissioner of General Services reserves the right to reject any or all bids.

Persons or Firms submitting bids shall be engaged in the lines of work required and shall be able to refer to work of similar character performed by them. CORPORATION(S) SHALL BE AUTHORIZED TO DO BUSINESS IN THE STATE OF NEW YORK.

EACH PROPOSAL SHALL BE ACCOMPANIED BY A DEPOSIT AS A GUARANTEE THAT THE BIDDER WILL ENTER INTO THE CONTRACT IF AWARDED SAME. DEPOSIT SHALL CONSIST OF CERTIFIED CHECK DRAWN UPON SOME LEGALLY INCORPORATED BANK IN THIS STATE AND MADE PAYABLE TO THE Broome County Commissioner of Finance, or a Bid Bond for not less than 5 percent of the bid.

NOTE: Sealed Proposals covering Closure Action of the Broome County Colesville Landfill Remedial Design, in accordance with Contract Documents, will be received by the Division of Purchasing, 1st Floor, Broome County Office Building, Government Plaza, Binghamton, New York until ____ p.m. _____, and will be publicly opened and read at ____ p.m. _____, in the Public Assembly Room, on the 2nd Floor of the Broome County Office Building.

CONTRACTOR'S QUALIFICATION STATEMENT MUST BE SUBMITTED WITH THE PROPOSAL.

ENVELOPE SHALL BE SEALED AND PLAINLY MARKED:

Broome County
Division of Solid Waste Management
Colesville Landfill Closure

TO: BROOME COUNTY
PURCHASING DIVISION
BROOME COUNTY OFFICE BUILDING
GOVERNMENT PLAZA, 1ST FLOOR
44 HAWLEY STREET
P.O. BOX 1766
BINGHAMTON NY 13902-1766

FORM OF PROPOSAL

GENERAL CONSTRUCTION

The following proposal is hereby respectfully submitted to: The Broome County Board of Acquisition and Contract by:

CONTRACTOR

BY

TITLE

BUSINESS ADDRESS

CITY/STATE

DATE _____

STIPULATED AMOUNTS: The above signed hereby proposes and agrees to perform all the work and furnish all things required for:

Colesville Landfill
Broome County
Division of Solid Waste Management
Closure Action of the Broome County Colesville Landfill Remedial Design

all in accordance with the Drawings, Specifications, Design Report and other Contract Documents prepared by Broome County Department of Public Works - Engineering Division for the following stipulated amounts:

ALTERNATES:

Bidders shall select one alternative indicated within the Bidding Documents to bid upon. Bidders shall set forth in the space provided below the amount in both words and figures. If the Bidder does not desire to make a change from the Base Bid, he shall so indicate by using the words "No Change". The Bidder shall cross out the three alternatives which were not bid upon. The Bids received will be evaluated by comparing the total bid price which is equal to the cost of the base items plus the overages.

1/1 - Final Cover Alternate No. 1 and Gas Venting Layer Alternative 1

Base Items	_____	\$	_____
	(Written)		(Figures)
Overages	_____	\$	_____
	(Written)		(Figures)
Total Bid	_____	\$	_____
	(Written)		(Figures)

1/2 - Final Cover Alternate No. 1 and Gas Venting Layer Alternative 2

Base Items	_____	\$	_____
	(Written)		(Figures)
Overages	_____	\$	_____
	(Written)		(Figures)
Total Bid	_____	\$	_____
	(Written)		(Figures)

2/1 - Final Cover Alternate No. 2 and Gas Venting Layer Alternative 1

Base Items	_____	\$	_____
	(Written)		(Figures)
Overages	_____	\$	_____
	(Written)		(Figures)
Total Bid	_____	\$	_____
	(Written)		(Figures)

2/1 - Final Cover Alternate No. 2 and Gas Venting Layer Alternative 2

Base Items	_____	\$	_____
	(Written)		(Figures)
Overages	_____	\$	_____
	(Written)		(Figures)
Total Bid	_____	\$	_____
	(Written)		(Figures)

KNOWLEDGE OF LOCAL CONDITIONS AND CONTRACT DOCUMENTS: The above-signed has examined the location of the proposed Work, Drawings, Specifications and other Contract Documents and is familiar with local conditions at the place where the work is to be performed.

PROPOSAL PERIOD: The above signed agrees to hold bid open for a forty-five (45) day period following the scheduled time for the opening of bids.

EXECUTION OF AGREEMENT AND FURNISHING BOND: Within ten (10) days after issuance of the letter of Notice of Intent, the above signed agrees to execute the Form of Agreement and to furnish Performance and Payment Bonds in an amount equal to 100 percent of the contract amount.

ADDENDA: The above-signed hereby acknowledges receipt of the following addenda:

ADDENDUM NO.

DATE

CONTRACT TIME: If awarded the Contract, the above signed agrees to substantially complete the construction work under this contract within 200 calendar days exclusive of a winter shutdown. This time will begin 10 days after the date of the Notice to Proceed.

BROOME COUNTY'S RIGHTS RESERVED: The above signed understands that Broome County reserves the right to reject any or all proposals or to waive any formality or technicality in any proposal.

ATTENDANCE VOUCHER

Attach here validated attendance voucher received at the mandatory pre-bid meeting.

(STAPLE HERE)



Broome County

DIVISION OF SOLID WASTE MANAGEMENT

Broome County Office Building / Government Plaza / Box 1766 / Binghamton, New York 13902 / (607) 778-2482

John P. Kowalchuk, Director

Timothy M. Grippen, County Executive

Colesville Landfill
Closure Action of the Broome County
Colesville Landfill Remedial Design
Town of Colesville
County of Broome
State of New York

PRE-BID MEETING ATTENDANCE VOUCHER

This voucher must be completed and presented with bid proposals. Failure to do so will render the proposal invalid.

Contractor Name _____

Company Name _____

Company Address _____

Signature _____

Project Engineer
Ray Standish, P.E.
Deputy for Engineering Services
Broome County Division of Solid Waste Management
(607) 778-2286, FAX (607) 778-2395

Date

PROPOSAL - continued

Accompanying this proposal is cash, draft, certified check or a bid bond for \$_____. In case this proposal shall be accepted by the Broome County Board of Acquisition and Contract, and the undersigned shall fail to execute the contract and in all respects comply with the provisions of Article 5A, Section 102 of the General Municipal Law, as amended, the monies represented by such cash, draft, certified check or bid bond shall be regarded as liquidated damages and shall be forfeited and become the property of Broome County; otherwise to be returned to the depositor in accordance with the provisions of said Article 5A, Section 102 of the General Municipal Law, as amended.

On acceptance of this proposal for said work, the undersigned does or do hereby bind himself or themselves to enter into written contract, within ten (10) days of Notice of Intent, with Broome County, and to comply in all respects with Article 5A, Section 102 of the General Municipal Law, as amended, in relation to security for the faithful performance of the terms of said contract.

DATED _____ 19 ____

Legal Name of Person, Firm or Corporation

By _____

The P.O. address of the bidder is:

_____ Street

_____ City and State

In witness thereof, I hereunto set my official seal

Notary Public (SEAL)

Date _____

My Commission Expires _____

IF A CORPORATION

NAME		ADDRESS
_____	President	_____
_____	Secretary	_____
_____	Treasurer	_____

IF A FIRM

NAME OF MEMBERS		ADDRESS
_____	President	_____
_____	Secretary	_____
_____	Treasurer	_____

TO THE COUNTY OF BROOME

In accordance with Section 103A of the New York State General Municipal Law, the undersigned declares that in submitting this bid 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 a making another bid for the same contract; that the bid is in all respects fair and without collusion; fraud or mental reservation; and that no officials of the County or any person in the employ of the County is directly or indirectly interested in said bid or in the supplies or work to which it relates, or in any portion of the profits thereof.

Non-Collusive Bidding Certification: (Section 103d, as amended)

- a. 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 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 with 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 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.

NAME OF BIDDER

SIGNATURE OF SIGNER

TITLE

NOTE:

A bid shall not be considered for award nor shall any award be made where a.1., 2., and 3. aforementioned have not been complied with; providing however; that if in any case the bidder cannot make the foregoing certification, the bidder shall so state and shall furnish with the bid a signed statement which sets forth in detail the reason therefore.

Where a.1, 2., and 3. aforementioned have not been complied with, the bid shall not be considered for award nor shall any award be made unless the head of the purchasing unit of the political subdivision, public department, agency or official thereof to which the bid

is made, or his designee, determines that such disclosure was not made for the purpose of restricting competition.

The fact that a bidder (a) has published price lists, rates or tariffs covering items being procured, (b) has informed prospective customers of proposed or pending publications of new or revised price lists for such items, or (c) has sold the same items to other customers at same prices being bid, does not constitute, without more, a disclosure within the meaning of paragraph (a), subparagraph (1), (2) and (3).

ITEMIZED PROPOSAL
BROOME COUNTY DIVISION OF SOLID WASTE MANAGEMENT / GAF CORPORATION
BROOME COUNTY COLESVILLE LANDFILL
CLOSURE ACTION OF THE REMEDIAL DESIGN

Item No.	Item and Unit Price (price in words)	Approximate Quantities		Unit Price		Total Price	
		Quantity	Unit	Dollars	Cents	Dollars	Cents
1	Mobilization and General Conditions per LS	1	LS				
2	Survey per LS	1	LS				
3	Clearing and Grubbing a. First 17 AC per AC b. Over 17 AC per AC	17 2	AC AC				
4	Soil Erosion and Sediment Control per LS	1	LS				
5	Subgrade Preparation, Fill Soils, and Fine Grading a. First 158,000 SY per SY b. Over 158,000 SY per SY	158,000 16,000	SY SY				
6.1	Alternate 1 Gas Venting Layer (6 In Sand) a. First 139,000 SY per SY b. Over 139,000 SY per SY	139,000 14,000	SY SY				
6.2	Alternate 2 Gas Venting Layer (Geocomposite Drain) a. First 1,250,000 SF per SF b. Over 1,250,000 SF per SF	1,250,000 125,000	SF SF				
7	Slotted Corrugated Polyethylene Gas Pipe, Subangular Stone, Geotextile Type B, and Gas Vents per LS	1	LS				
8	40 mil Flexible Membrane Liner a. First 1,224,000 SF per SF b. Over 1,224,000 SF per SF	1,224,000 122,000	SF SF				

ITEMIZED PROPOSAL
BROOME COUNTY DIVISION OF SOLID WASTE MANAGEMENT / GAF CORPORATION
BROOME COUNTY COLESVILLE LANDFILL
CLOSURE ACTION OF THE REMEDIAL DESIGN

Item No.	Item and Unit Price (price in words)	Approximate Quantities		Unit Price		Total Price	
		Quantity	Unit	Dollars	Cents	Dollars	Cents
9.1	Alternate 1 Drainage Layer (12 In Sand)						
	a. First 139,000 SY	139,000	SY				
	_____ per SY						
	b. Over 139,000 SY	14,000	SY				
9.2	Alternate 2 Drainage Layer (Geocomposite Drain)						
	a. First 1,250,000 SF	1,250,000	SF				
	_____ per SF						
	b. Over 1,250,000 SF	125,000	SF				
10.1	Alternate 1 Geotextile Type A						
	a. First 1,250,000 SF	1,250,000	SF				
	_____ per SF						
	b. Over 1,250,000 SF	125,000	SF				
11.1	Alternate 1 Barrier Protective Layer (12 In)						
	a. First 139,000 SY	139,000	SY				
	_____ per SY						
	b. Over 139,000 SY	14,000	SY				
11.2	Alternate 2 Barrier Protective Layer (24 In)						
	a. First 139,000 SY	139,000	SY				
	_____ per SY						
	b. Over 139,000 SY	14,000	SY				
12	Topsoil (6 inches)						
	a. First 139,000 SY	139,000	SY				
	_____ per SY						
	b. Over 139,000 SY	14,000	SY				
13	Seeding and Mulch						
	a. First 49 AC	49	AC				
	_____ per AC						
	b. Over 49 AC	5	AC				
14	Gravel Access Road	1	LS				
	_____ per LS						

ITEMIZED PROPOSAL
BROOME COUNTY DIVISION OF SOLID WASTE MANAGEMENT / GAF CORPORATION
BROOME COUNTY COLESVILLE LANDFILL
CLOSURE ACTION OF THE REMEDIAL DESIGN

Item No.	Item and Unit Price (price in words)	Approximate Quantities		Unit Price		Total Price	
		Quantity	Unit	Dollars	Cents	Dollars	Cents
15	Grass-Lined Drainage Channel						
	a. First 6,000 LF	6,000	LF				
	_____ per LF						
	b. Over 6,000 LF	600	LF				
	_____ per LF						
16	Rip-Rap Lined Drainage Channel						
	a. First 280 LF	280	LF				
	_____ per LF						
	b. Over 280 LF	30	LF				
	_____ per LF						
17	Gabion-Lined Channel						
	a. First 60 LF	60	LF				
	_____ per LF						
	b. Over 60 LF	10	LF				
	_____ per LF						
19	Step Downchute						
	a. First 1,070 LF	1,070	LF				
	_____ per LF						
	b. Over 1,070 LF	110	LF				
	_____ per LF						
19	Energy Dissipator Pads	2	EA				
	_____ per EA						
20	Dual 36-Inch Diameter RCP Culvert						
	a. First 140 LF	140	LF				
	_____ per LF						
	b. Over 140 LF	10	LF				
	_____ per LF						
21	18-Inch Diameter RCP Culvert						
	a. First 40 LF	40	LF				
	_____ per LF						
	b. Over 40 LF	10	LF				
	_____ per LF						
22	Sediment Basin	1	LS				
	_____ per LS						
23	Wetland Mitigation	1	LS				
	_____ per LS						
24	Perimeter Fence						
	a. First 11,000 LF	11,000	LF				
	_____ per LF						
	b. Over 11,000 LF	1,100	LF				
	_____ per LF						

ITEMIZED PROPOSAL
BROOME COUNTY DIVISION OF SOLID WASTE MANAGEMENT / GAF CORPORATION
BROOME COUNTY COLESVILLE LANDFILL
CLOSURE ACTION OF THE REMEDIAL DESIGN

Item No.	Item and Unit Price (price in words)
1/1	Final Cover Alternate 1 & Gas Venting Layer, Alternate 1 Base Items _____ Overages _____ Total Bid _____
1/2	Final Cover Alternate 1 & Gas Venting Layer, Alternate 2 Base Items _____ Overages _____ Total Bid _____
2/1	Final Cover Alternate 2 & Gas Venting Layer, Alternate 1 Base Items _____ Overages _____ Total Bid _____
2/2	Final Cover Alternate 2 & Gas Venting Layer, Alternate 2 Base Items _____ Overages _____ Total Bid _____

Notes:

- 1 Overages are approximately 10% of the Estimated Quantities.
- 2 Alternative 1/1 includes all Item Nos. exclusive of Item Nos. 6.2, 9.2 and 11.2
 Alternative 1/2 includes all Item Nos. exclusive of Item Nos. 6.1, 9.2 and 11.2
 Alternative 2/1 includes all Item Nos. exclusive of Item Nos. 6.2, 9.1, 10.1 and 11.1
 Alternative 2/2 includes all Item Nos. exclusive of Item Nos. 6.1, 9.1, 10.1 and 11.1
- 3 Units are as follows:

AC – Acres	LS – Lump Sum
CY – Cubic Yard	SF – Square Foot
EA – Each	SY – Square Yard
LF – Linear Foot	
- 4 Final Cover Alternatives:
 - Alternate 1 – 12" Barrier Protection Layer with 12" drainage layer
 - Alternate 2 – 24" Barrier Protection Layer with geocomposite drain
- 5 Gas Venting Layer Alternatives:
 - Alternate 1 – Sand
 - Alternate 2 – Geocomposite

AFFIRMATIVE ACTION PLAN

MINORITY BUSINESS ENTERPRISE POLICY

It is the policy of the County of Broome that Minority Business Enterprise as defined hereafter shall have the full opportunity to participate in the performance of all County contracts where the total dollar amount bid by each Prime Contractor exceeds \$100,000. excluding projects which are wholly or partially funded with State and/or Federal funds. In furtherance of this policy, the Broome County Legislature did adopt Resolution No. 260 of 1983 and as amended by Resolution No. 139 of 1985 establishing procedures for meeting a goal of 3.5 percent MBE participation for all such contracts. (Rev. 7/85)

COUNTY MBE REQUIREMENTS

MINORITY BUSINESS ENTERPRISE (MBE) PROPOSAL

As evidence of the commitment to a goal of awarding 3.5 percent of the Gross Sum Bid to minority-owned firms the following must be submitted to the County together with the Contractor's Proposal within ten (10) days after the bid opening. The County shall have the right to reduce or eliminate the ten (10) day period when it determines time to be of the essence in awarding the contract.

1. County MBE Form A: Schedule of MBE Participation. List all minority owned firms scheduled to participate in the contract including scope of work and dollar value to be performed.

2. County MBE Form B: Intent to Perform as a Subcontractor. For all minority firms listed on Form A, include a completed and signed Form B.

3. County MBE Form C: Affidavit of Minority Business Enterprises. Each minority firm proposed must submit MBE Form C attesting to its validity as an MBE to the Contractor who shall provide a copy to the County within 10 days of award of the contract.

4. County MBE Form D: Final Certification of Payment To MBE, WBE or DBE. The contractor is to submit Form D with the Final Payment Estimate for the project. Final payment will not be made until the form is submitted.

[illegible]

The undersigned will enter into a formal agreement with the MBE Contractor(s) listed in this schedule conditioned upon execution of a contract with the County of Broome.

Date _____

MBE-3

BROOME COUNTY
MINORITY BUSINESS ENTERPRISE FORM B
INTENT TO PERFORM AS A SUBCONTRACTOR

TO: _____
(Name of Bidder)

The undersigned intends to perform work in connection with the above project as (Check one):

_____ an individual _____ a corporation
_____ a partnership _____ a joint venture

The MBE status of the undersigned is confirmed on the attached Affidavit of Minority Business Enterprise (MBE Form C)

The undersigned is prepared to perform the following described work in connection with the above project: _____

_____,

and at the following price: _____

With respect to the proposal sub-contract described above, _____% of the dollar value of such sub-contract will be sublet and/or awarded to non-MBE contractors and/or non-MBE suppliers. The undersigned will enter into a formal agreement for the above work with you conditioned upon your execution of a contract with the County of Broome.

DATE

NAME OF MBE CONTRACTOR

By _____

BROOME COUNTY
MINORITY BUSINESS ENTERPRISE FORM C
AFFIDAVIT OF MINORITY BUSINESS ENTERPRISE

STATE OF _____:

COUNTY (CITY) OF _____:

I HEREBY DECLARE AND AFFIRM that I am the _____
and duly authorized representative of the firm _____

I hereby declare and affirm that I am a minority business enterprise
(MBE) as defined in subject Contract Documents and that I will provide
information as may be requested by the Contractor or the County of Broome
to document that fact.

I DO SOLEMNLY DECLARE AND AFFIRM UNDER THE PENALTIES OF PERJURY THAT
THE CONTENTS OF THE FOREGOING DOCUMENT ARE TRUE AND CORRECT AND THAT I AM
AUTHORIZED, ON BEHALF OF THE ABOVE FIRM, TO MAKE THIS AFFIDAVIT.

(Affiant)

Date _____

STATE OF _____:

COUNTY (CITY) OF _____:

On this _____ day of _____ of
_____, 19____, before me, _____, the
undersigned officer, personally appeared _____,
known to me to be the person described in the foregoing Affidavit and
acknowledged that he (she) executed the same in the capacity therein
stated and for the purposes therein contained.

In witness thereof, I hereunto set my official seal

NOTARY PUBLIC

(Seal)

My Commission Expires _____

COUNTY OF BROOME

MINORITY BUSINESS ENTERPRISE FORM D

FINAL CERTIFICATION OF PAYMENT TO MBE, WBE or DBE (1)

Project _____

Contractor _____

MBE, WBE or DBE Supplier or Subcontractor:

Name _____

Address _____

Telephone _____

Amount of subcontract
or supply contract \$ _____

Amount paid to date \$ _____

Amount payable from
final payment \$ _____

The undersigned contractor and supplier or subcontractor hereby certify that the above information correctly reflects the amount actually paid to date to the supplier or subcontractor on this project and that the amount shown above as payable from final payment will be made to the supplier or subcontractor immediately upon receipt by the undersigned of the final payment for the prime contract.

The undersigned further certify that all payments made or to be made to subcontractor or supplier are for work actually performed, and for supplies or equipment actually furnished, by the subcontractor or supplier in connection with this contract.

Subcontractor or Supplier _____

Contractor _____

By _____

By _____

Title _____

Title _____

Date _____

Date _____

NOTE: WBE'S AND DBE PARTICIPATION CANNOT BE APPLIED TOWARDS GOALS ON BROOME COUNTY PROJECTS UNLESS THE FUNDING SOURCE (FEDERAL OR STATE) HAS SPECIFIC REQUIREMENTS WHICH SUPERSEDES THE COUNTY MBE PROGRAM.

A. Goals

This contract includes a goal (not a mandatory set aside) of awarding 3.5 percent of the amount of the contract to subcontractors and/or suppliers which qualify as minority owned and controlled businesses.

B. Definitions

"Minority Business Enterprise" or "MBE" as used herein is defined as follows:

For purposes of this section, the term "minority business enterprise" shall mean a business of at least fifty-one percent (51%) of which is owned by minority group members or in the case of publicly owned businesses, at least fifty-one percent (51%) of the stock is owned by minority group members. For the purposes of this section, minority business members are citizens of the United States who are Black, Hispanic, Asian-American, American Indian, Eskimos or Aleuts.

A minority is an individual who is a citizen or lawful permanent resident of the United States and who is:

(a) Black (a person having origins in any of the black racial groups of Africa);

(b) Hispanic (a person of Spanish or Portuguese culture with origins in Mexico, South or Central America, or the Carribean Islands regardless of race);

(c) Asian American (a person having origins in any of the original peoples of the Far East, Southwest Asia, the Indian subcontinent, or Pacific Islands; regardless of race);

(d) American Indian, Eskimo and Aleuts (a person having origins in any of the original peoples of North America);

C. MBE Selection Criteria

1. Award of contract shall be made to the Contractor who submits the lowest responsible bid and who either demonstrates his ability to meet the MBE goal through the use of properly completed MBE forms "A", "B" and "C" or, in the event of the Contractor's failure to do so, demonstrates to the satisfaction of the County reasonable good faith efforts to meet this goal.

2. In any case where the low bidder fails to demonstrate within the required time his ability to meet the specified MBE goal, the Contractor shall be required to demonstrate sufficient reasonable good faith efforts to meet the MBE contractor goal. Such reasonable good faith efforts may include but are not necessarily limited to:

(i) Utilizing a source list of minority business enterprises established by Federal and/or New York State Agencies, including but not limited to the Office of General Services and the New York State Department of Transportation; (Rev. 7/85)

(ii) Solicitation of bids from said minority business enterprises particularly those located within the County of Broome, or surrounding counties;

(iii) Advertisement in general circulation media for specific sub-bids that would be at least equal the percentage goal for MBE utilization specified for the subject;

(iv) written notification to MBEs that their interest in the contract is solicited;

(v) Giving said minority business enterprise sufficient time but no less than seven (7) days, to submit proposals in response to solicitations;

(vi) Demonstration of efforts made to select portions of the work proposed which would be performed by MBEs in order to increase the likelihood of achieving the stated goals;

(vii) Documented efforts to negotiate with MBEs for specific sub-bids including:

a. A statement of why additional agreements with the MBEs were not reached;

(viii) Concerning each MBE the Contractor contacted but rejected as unqualified, the reason for the contractor's conclusion;

(ix) Documented effort made to assist the MBEs contacted that needed assistance in obtaining bonding or insurance required by the Contractor; or

(x) Maintaining records showing said minority business enterprises in specific efforts to identify and award contracts and subcontracts to these companies.

3. Contractors that fail to meet MBE goals and fail to demonstrate reasonable good faith efforts shall not be eligible to be awarded the contract.

D. Counting MBE Participation

1. It shall be the Contractor's responsibility to use MBE subcontractors listed with the New York State Department of Transportation or New York State Office of General Services for purposes of meeting the MBE goal. The Contractor may use in lieu of or in addition to MBE firms so listed by NYSDOT or CGS, MBE firms which have made application for inclusion on either such list but have not yet been approved. For such subcontractors, it shall be the Contractor's responsibility to certify the validity of the firm's MBE status. (Rev. 7/85)

2. (a) the bidder may count toward its MBE goals only expenditures to MBEs that perform a commercially useful function in the work of a contract. An MBE is considered to perform a commercially useful function when it is responsible for execution of a distinct element of the work of a contract and carrying out its responsibility by actually performing, managing and supervising the work involved. To determine whether an MBE is performing a commercially useful function, the bidder shall evaluate the amount of work subcontracted, industry practices, and other relevant factors.
- (b) Consistent with normal industry practices, an MBE may enter into subcontractors. If an MBE contractor subcontracts a significantly greater portion of the work of the contract than would be expected on the basis of normal industry practices, the MBE shall be presumed not to be performing a commercially useful function. The MBE may present evidence to rebut this presumption to the County.

3. The bidder may count toward its MBE goals expenditures for materials and supplies obtained from MBE suppliers and manufacturers provided that the MBEs assume the actual and contractual responsibility for the provision of the materials and supplies.

E. Directions to Bidders

1. Agreements between a bidder/proposer and an MBE in which the MBE promises not to provide subcontracting quotations to other bidders/proposers are prohibited.

2. The contractor shall, at a minimum, seek MBEs in Broome County or surrounding counties. If the Contractor cannot meet the goals using MBEs from this geographic area, the Contractor, as part of its efforts to meet the goals, shall expand their search to a reasonably wider geographic area.

3. In furtherance of these goals, price alone shall not be an acceptable basis for the rejecting of the MBE subcontractors' bids, unless the Contractor evidences to the County's satisfaction that no reasonable price could be obtained from the MBEs.

4. The prime Contractor shall make good faith effort to replace an MBE subcontractor that is unable to perform successfully with another MBE. The County shall approve all substitutions of subcontractors during contract performance.

F. Post-Award MBE Obligations

1. To insure that all obligations under contracts awarded to MBEs are met, the County shall review the Contractor's MBE involvement efforts during the performance of the contract. The contractor shall bring to the attention of the County any situation in which regularly scheduled progress payments are not made to MBE subcontractors.

2. Prior to or at such time as the Contractor has completed 30% of the total project, he shall submit to the County a complete list of the minority business enterprises with whom the Contractor has entered into a binding agreement for subcontracting under this contract or has made good faith efforts to do so. The 30% completion point shall be measured in accordance with the amount of work which the Contractor is seeking payment on the monthly requisition for progress payment.

Failure of the Contractor to use reasonable good faith efforts to attain the specified MBE goal shall constitute a breach of the contract and shall subject the Contractor to such remedies as the County may deem necessary or appropriate.

3. The Contractor shall maintain for one (1) year following completion of the contract such subcontracts, purchase orders and other records as the County may deem necessary to determine compliance by the Contractor of its MBE obligations, as herein contained.

G. The Contractor shall not use the requirements of this MBE program to discriminate against any qualified company or group of companies.

(Added 7/85)

**STEPS & PROCEDURES DEMONSTRATING
GOOD FAITH EFFORT
BROOME COUNTY MINORITY BUSINESS UTILIZATION PROGRAM**

1. Ad in local newspapers.
2. Send out Certified Letters requesting bids (at least 10). The letters must be sent to MBE firms that are engaged in work consistent with the project scope.
3. Follow-up with phone contact with any of the remaining 10 that did not respond.
4. Document that the above steps 1, 2 & 3 were completed, i.e. copy of Ad, copies of certified letters, & phone log of contacts made with date, time & party spoken with.

Note: If MBE's were found and their bids were not determined to be within the fair market value of work, then documentation must be provided.

5. The contractor must document that he utilized the services of minority community organizations, minority contractors groups, local state and federal minority business assistance offices, and other organizations that provide assistance in the recruitment and placement of MBE's. Some of these are:

Black & Minority Business Coalition
Association of Building Contractors
Emerging Business Assistance Advisory Board
Broome County Affirmative Action Office
Governor's Office of Minority and Womens'
Business Development

More information on these can be obtaining by calling the Broome County Affirmative Action Office at 607-778-2471.

6. DPW would verify above steps and forward to AAO with recommendations.
 - A. If all steps were followed correctly and MBE could not be found: waive requirements and allow project to start with understanding that contractor will continue to look for minority businesses.
 - B. If not followed: Try again (note problems identified and give remedies).
 - C. Either rebid project or go to the next lowest bidder based on financial considerations and time frames allowed.

A:\steps.grh

ADDENDUM TO MINORITY BUSINESS ENTERPRISE POLICY

A. Minority and Women's Business Enterprises and Equal Employment Opportunity:

1. The Contractor agrees to make good faith efforts to contract or contractually require any contractor, subcontractor, consultant and subconsultant with whom it contracts to make good faith efforts to contract at least 15 percent of the dollar value of all contracts required by the Project to Minority-owned Business Enterprises (MBEs), and at least 5 percent of the dollar value of all contracts required by the Project to Women-owned Business Enterprises (WBEs).
2. The Contractor agrees to make good faith efforts to provide equal opportunities to minorities and women with regard to all jobs necessary for the performance of work or contracts required by the Project. In doing so, the Contractor agrees to employ or contractually require the employment of minorities and women by any contractor, subcontractor, consultant and subconsultant with whom it contracts, to make good faith efforts to employ minorities for at least 10 percent of, and women for at least 10 percent of, the work force hours required for the completion of the Project. Different occupational category work force participation goals may be used to meet these overall goals for the work force participation.
3. In meeting the requirements under this contract, the Contractor and all subcontractors, consultants and subconsultants agree to comply with the requirements of Sections 52-0113 of the Environmental Quality Bond Act (EQBA) and of 6 NYCRR Part 615. The Contractor also agrees to incorporate into such contracts, with contractors, subcontractors, consultants and subconsultants, contractual provisions applicable to recordkeeping, reporting, notice requirements and sanctions determined by the County to be necessary and implementing the requirements of Title 1 of Article 52 of the EQBA.
4. Failure to comply with the requirements stated herein shall constitute violation of this contract and shall be good cause for the County to impose sanctions against the Contractor as provided for by law.

CONTRACTOR'S QUALIFICATION STATEMENT

BROOME COUNTY DEPARTMENT OF PUBLIC WORKS
DIVISION OF ENGINEERING

Contractor's Qualification Statement

The Undersigned certifies under oath the truth and correctness of all statements and of all answers to questions made hereinafter.

SUBMITTED TO:

ADDRESS:

SUBMITTED BY:

NAME:

ADDRESS:

PRINCIPAL OFFICE:

Corporation ☐
Partnership ☐
Individual ☐
Joint Venture ☐
Other ☐

PHONE:

1.0 How many years has your organization been in business as a General Contractor?

2.0 How many years has your organization been in business under its present business name?

2.1 Under what other or former names has your organization operated?

3.0 If a corporation answer the following

3.1 Date of incorporation:

3.2 State of incorporation:

3.3 President's name:

3.4 Vice-president's name(s):

3.5 Secretary's name:

3.6 Treasurer's name:

4.0 If an individual or a partnership answer the following:

4.1 Date of organization:

4.2 Name and address of all partners (State whether general or limited partnership):

5.0 If other than a corporation or partnership, describe organization and name principals:

6.0 List states and categories in which your organization is legally qualified to do business. Indicate registration or license numbers, if applicable. List states in which partnership or trade name is filed.

7.0 We normally perform the following work with our own forces:

8.0 Have you ever failed to complete any work awarded to you? If so, note when, where, and why:

9.0 Within the last five years, has any officer or partner of your organization ever been an officer or partner of another organization when it failed to complete a construction contract? If so, attach a separate sheet of explanation.

10.0 On a separate sheet, list major construction projects your organization has in process, giving the name of project, owner, architect, contract amount, percent complete, and scheduled completion date.

11.0 On a separate sheet, list the major projects your organization has completed in the past five years, giving the name of project, owner, architect, contract amount, date of completion, and percentage of the cost of the work performed with your own forces.

12.0 On a separate sheet, list the construction experience of the key individuals of your organization.

13.0 Trade References:

14.0 Bank References:

15.0 Name of Bonding Company and name and address of agent:

16.0 Attach a financial statement, audited if available, including Contractor's latest balance sheet and income statement showing the following items:

A Financial Statement must be submitted, only by Low Bidder, if required by Broome County, within five (5) days of notice.

A. Current Assets (e.g., cash, joint venture accounts, accounts receivable, notes receivable, accrued income, deposits, materials inventory and prepaid expenses):

B. Net Fixed Assets:

C. Other Assets:

D. Current Liabilities (e.g., accounts payable, notes payable, accrued expenses, provision for income taxes, advances, accrued salaries, and accrued payroll taxes):

E. Other Liabilities (e.g., capital, capital stock, authorized and outstanding shares par values, earned surplus, and retained earnings):

Name of firm preparing financial statement and date thereof:

Is this financial statement for the identical organization named on page one?

If not, explain the relationship and financial responsibility of the organization whose financial statement is provided (e.g., parent-subsidiary).

Will this organization act as guarantor of the contract for construction?

17.0 Dated at

this

day of

19

Name of Organization:

By:
Title:

18.0

M
that he/she is the

being duly sworn deposes and says
of

Contractor(s), and that answers to the foregoing questions and all statements therein contained are
true and correct.

Subscribed and sworn before me this

day of

19

Notary Public:

My Commission Expires:

STANDARD FORM CONSTRUCTION AGREEMENT

STANDARD FORM CONSTRUCTION AGREEMENT

THIS AGREEMENT, made this _____ day of _____, 19____, between County of Broome, hereinafter referred to as "County", located at the Broome County Office Building, Government Plaza, Binghamton, New York, _____ and _____, hereinafter referred to as "Contractor", having a mailing address at .

WHEREAS, the Broome County Board of Acquisition and Contract (BAC) advertised for bids for Closure Action of the Broome County Colesville Landfill Remedial Design.

AND

WHEREAS, the BAC at its regularly scheduled meeting of _____, 199____, approved the "Bid Proposal" of the Contractor, a copy of which is attached hereto and made part hereof as Exhibit "A",

WHEREAS, partial funding for this project is being provided by the New York State Department of Environmental Conservation (NYSDEC) through the provisions of the Environmental Quality Bond Act (EQBA) and this agreement is expressly made subject to the rules and regulations of the State of New York.

NOW, THEREFORE, in consideration of the mutual covenants, promises and agreements contained herein, the County and the Contractor do hereby agree as follows:

I. GENERAL

A. DEFINITIONS

- (1) B.A.C., as used in this Agreement, the term "B.A.C." shall refer to the Broome County Board of Acquisition and Contract as duly authorized and empowered by Article XII of the Administrative Code of Broome County.
- (2) COUNTY, as used in the Agreement, the term "County" shall refer to County of Broome, located at the Broome County Office Building, Government Plaza, Binghamton, New York.
- (3) DATE OF EXECUTION, as used in this Agreement, the term "Date of Execution" will refer to the date of execution of this Agreement and any subsequent modification of the terms, compensation or scope of service pertinent to unperformed work.
- (4) CONTRACTOR, The term "Contractor" as used in this Agreement will refer to _____.

I. GENERAL - CONTINUED

A. DEFINITIONS - CONTINUED

- (5) EXHIBIT "A", The term "Exhibit A" as used in this Agreement will refer to the "Bid Proposal" submitted by the Contractor and approved by the B.A.C. Such "Exhibit A" is attached hereto and made a part hereof.
- (6) The term "NYSDEC" as used in this agreement will refer to the New York State Department of Environmental Conservation, located at 50 Wolf Road, Albany, New York.
- (7) The term "USEPA" as used in this agreement will refer to the United States Environmental Protection Agency, located at 26 Federal Plaza, New York, New York 10278.

B. CAPTIONS

The Titles or Captions of articles and paragraphs of this Agreement are intended for convenience and reference purposes only and in no way define, limit or describe the scope or intent thereof or of the Agreement or in any way affect the Agreement.

C. NOMENCLATURE

Materials, equipment, methodologies or other work described in words which have a well-known, technical or trade meaning in connection with this Agreement.

D. ENTIRE AGREEMENT

The Agreement, which includes and incorporates as if fully set forth herein the "Information for Bidders", "Exemption from Sales and Compensation Taxes", "Labor Rates", "General Conditions", as amended by "Special Supplemental to General Conditions", "Supplementary General Conditions", and "Technical Specifications", as set forth in the project specifications distributed to the Contractor, constitutes the entire Agreement between the parties hereto and no statement, promise, condition, understanding, inducement or representation, oral or written, expressed or implied, which is not contained herein will be binding or valid and this Agreement will not be changed, modified or altered in any manner except by an instrument in writing executed by the parties hereto.

This Agreement will bind the Successors, Assigns and Representatives of the parties hereto.

I. GENERAL - CONTINUED

F. INVALID PROVISIONS

If any term or provision of this Agreement or the application thereof to any agency, person, firm, or corporation or circumstance will, to any extent, be invalid or unenforceable, will not be affected thereby and each term or provision of this Agreement will be valid and be enforced to the fullest extent permitted by law.

G. NOTICES

Any written notice required hereunder will be deemed properly given, delivered and service thereof completed when said notice is deposited in any Post Office or Post Office Box in a post-paid envelope properly addressed or when said notice is sent by telegram or when said notice is delivered in person to the party to whom it is addressed or their authorized representatives, the addresses of the County and the Contractor set forth in the beginning of this Agreement will be deemed the place to which written notice to them will be directed; provided, however, that any such party or parties may by written notice to the others pursuant to this paragraph designate a different address to which notices to it will be directed or designate the name and address of another person, firm or corporation to whom notices to it may be directed.

H. CONTINGENT ON APPROVALS

The parties agree that the implementation of this contract shall be contingent upon appropriate and/or necessary approvals from; or other appropriate offices of the State of New York and/or the United States Government, and shall be subject to the applicable orders, rules and regulations of said agency(ies).

II. RESPONSIBILITY OF THE CONTRACTOR

- A.** The Contractor shall be responsible for the quality, technical accuracy timely completion, and the coordination of all plans, studies, designs, drawings, labor, materials, construction, specifications, reports and other services furnished by the Contractor under this Agreement. The Contractor shall, without additional compensation, correct or revise any errors, omissions or other deficiencies in his plans, studies, designs, drawings, labor, materials, construction, specifications, reports and other services.
- B.** The Contractor shall perform such services as may be necessary to accomplish the work required to be performed under this Agreement, in accordance with this Agreement and applicable County requirements in effect on the date of execution of this Agreement.

II. RESPONSIBILITY OF THE CONTRACTOR - CONTINUED

- C. Approval by the County of plans, studies, labor, materials, construction drawings, designs, specifications, reports, and incidental work furnished hereunder shall not in any way relieve the Contractor of responsibility for the technical adequacy of his work. Neither the County's approval or acceptance of, nor payment for, any of the services shall be construed to operate as a waiver of any rights under this Agreement or of any cause of action arising out of the performance of this Agreement.

III. COUNTY RESPONSIBILITY

- A. Provide full information as to its requirements for this project.
- B. Assist the Contractor by placing at his disposal all available information pertaining to the project including previous reports and any other data relative to the completion of the project.
- C. Furnish the Contractor, as appropriate, property boundary, right-of-way, topographic and utility surveys and any other similar reports which it may have in its possession.
- D. Guarantee access to any appropriate properties for any studies which the Contractor deems necessary.
- E. Designate, in writing, the person to act as the County's representative with respect to work to be performed under this Agreement.
- F. Give prompt written notice to the Contractor whenever the County observes or otherwise becomes aware of any defect in this project.

IV. ADMINISTRATION

A. CLAIMS AND DISPUTES

- (1) If the Contractor claims (1) that any work he has been ordered to do is revised work or (2) that he has performed or is going to perform revised work or (3) that any action or omission of the County is contrary to the terms and provisions of this Agreement, he shall:
 - (a) Promptly comply with such order.
 - (b) File with the County, within thirty (30) working days after being ordered to perform the work claimed by him to be revised work or within thirty (30) working days after commencing performance of

IV. ADMINISTRATION - CONTINUED

A. CLAIMS AND DISPUTES - CONTINUED

the revised work, whichever date shall be earlier, or within thirty (30) working days after the said action or omission on the part of the County occurred, a written notice of the basis of his claim and request a determination thereof;

- (c) File with the County, within thirty (30) working days after said alleged revised work was required to be performed or said alleged revised work was commenced, whichever date shall be earlier, or said alleged action or omission by the County occurred, a verified, detailed statement, with documentary evidence, of the items and basis of his claim;
 - (d) Produce for the County's examination, upon notice from the County, all his books of account, bills, invoices, payrolls, subcontracts, time books, progress records, daily reports, bank deposit books, bank statement, checkbooks and canceled checks, showing all of his actions and transactions in connection with or relating to or arising by reason of his claim, and submit himself and persons in his employ and in his subcontractor's employ if appropriate, for examination under oath by any person designated by the County to investigate any claim made against the County under this Agreement, such examination to be made at the offices of the County; and
 - (e) Proceed diligently, pending and subsequent to the determination of the County with respect to any such disputed matter, with the performance of this Agreement and in accordance with all instructions of the County.
- (2) The Contractor's failure to comply with any or all parts of Subdivision (b) of Subparagraph 1 of Paragraph A of the article shall be deemed to be:
- (a) A conclusive and binding determination on his part that said order, work, action or omission does not involve revised work and it is not contrary to the terms and provisions of this Agreement; and
 - (b) A waiver by the Contractor of all claims for additional compensation or damages as a result of said order, work, action, or omission. The provisions of Subdivision (b) of Subparagraph 1 of Paragraph A of this section are for the purpose of enabling the County to avoid waste of public funds by affording it promptly the opportunity to cancel or revise the effects of circumstances giving rise to a claim or take such other action as may seem desirable and

IV. ADMINISTRATION - CONTINUED

A. CLAIMS AND DISPUTES - CONTINUED

to verify any claimed expenses or circumstances as they occur. Compliance with such provisions is essential whether or not the County is aware of the circumstances which might constitute a basis for a claim and whether or not the County has indicated it will consider a claim in connection therewith.

- (c) No person has power to waive or modify any of the foregoing provisions and in any action against the County to recover any sum in excess of the sum certified by the County to be due under or by reason of this Agreement. The Contractor must allege in his complaint and prove at trial compliance with the provisions of this section.
- (d) Nothing in this section shall in any way affect the County's right to obtain an examination before trial or a discovery and inspection in any action that might be instituted by or against the County.

B. REVISION OF WORK

- (1) The County may, at any time, by written order, make changes within the general scope of this Agreement and the services for work to be performed. If such changes cause an increase or decrease in the Contractor's cost of, or time required for, performance of any services under this Agreement, whether or not changes by any order, an equitable adjustment shall be made in accordance with Paragraphs A and B of this Article, and subject to Article VII, Paragraph C below.
- (2) No services for which an additional compensation will be charged by the Contractor shall be furnished without the written authorization of the County.
- (3) In the event that there is a modification of requirements related to the services to be performed under this Agreement subsequent to the date of execution of this Agreement, the increased or decreased cost of performance of the services provided for in this Agreement shall be reflected in the appropriate modification of this Agreement and shall be subject to Article VI, Paragraph D, below.

C. ACCEPTABILITY OF WORK

The County shall, in all cases, determine the amount, quality, acceptability, and fitness of the work being performed hereunder and shall determine every question which may arise relative to the fulfillment of this Agreement on the part of the Contractor and the County's decision shall be final, conclusive, and

IV. ADMINISTRATION

C. ACCEPTABILITY OF WORK- CONTINUED

binding upon the Contractor, except that if such decision is arbitrary or capricious, the Contractor may have such decision reviewed by a competent court of jurisdiction within the State of New York.

D. ORDERS FOR CHANGE, REVISION, TERMINATION AND COMPENSATION

All orders to the Contractor directing changes in the project, revision within the scope of services, terminations of the project, regular payments upon the project and payments representing increases and decreases in compensation due to changes, revision or termination shall be made by the County through its duly authorized Board of Acquisition and Contract.

E. SUPERVISION

Supervision of the progress of this work shall be conducted by the County through its duly-authorized County representative.

V. SCOPE OF SERVICES

A. GENERAL

The Services to be rendered under this Agreement shall include the construction of Closure Action of the Broome County Colesville Landfill Remedial Design in accordance with the Construction Plans and Technical Specifications prepared for the project by Wehran-New York, Inc., dated April 1994.

All materials and supplies shall be furnished to the County freight paid. The Contractor shall also provide site protection and a twelve (12) month written unconditional warranty covering labor, materials and workmanship.

All work on this project, and all phases of such work as described in Subdivision (A) above shall be performed in accordance with the detailed description of such phases and work as contained in the "Bid Proposal" of the Contract attached to this Agreement as Exhibit "A".

VI. TIME FOR PERFORMANCE

A. DATE OF COMMENCEMENT

The Contractor agrees that he will begin the work herein embraced on or about the time specified in Paragraph (C) below, and that he will prosecute the same with such diligence that all work covered by this Agreement shall be entirely completed and performed on or about the times specified in Paragraph (C) below.

The County shall submit to the Contractor a notice of approval upon its receipt of appropriate approvals from NYSDEC and USEPA and/or other appropriate governmental agencies of the State of New York or the United States Government.

B. BEST EFFORTS

The Contractor acknowledges that the services to be performed are essential to the effective operation of the County, that time is of the essence, and that, therefore, the Contractor will exercise his best efforts to complete the services called for under this agreement in the minimum time possible, and within the time specified in such work orders as may be issued by the County to the Contractor. In the event that the Contractor, for good cause shown, cannot complete the services for a particular task or phase within the time agreed to, the Contractor shall make a written request to the County, in accordance with Paragraph E below.

- C. The Contractor shall not begin actual construction at the Landfill site before _____ and shall be completed within 200 calendar days exclusive of a winter shutdown.

D. NOTICE OF CONDITIONS CAUSING DELAY

- (1) Within ten (10) working days after the commencement of any condition which is causing or may cause delay in completion, the Contractor must notify the County in writing of the effect, if any, of such condition upon the time progress schedule, and must state and in what respects, if any, the condition is causing or may cause such delay.
- (2) Failure to strictly comply with this requirement may, in the discretion of the County, be deemed sufficient cause to deny any extension of time on account of delay in completion arising out of or resulting from any change, extra work, suspension, or other condition.

E. EXTENSION OF TIME

- (1) An extension of or extensions of time for the completion of the work may be approved by the County subject to the provisions of this section, but only upon written Change Order to the Contract and subsequent approval by the County.
- (2) An application for an extension of time must set forth in detail the source and nature of each alleged cause of delay in the completion of the work, the date upon which each such cause of delay began, ended, or will end, and the number of days delay attributable to each of such causes. It must be submitted prior to completion of the work.
- (3) If such an application is made, the Contractor shall be entitled to an extension of time for delay and completion of the work caused solely:
 - (a) By the acts of omissions of the County, its officers, agents, or employees; or
 - (b) By unforeseeable supervening conditions entirely beyond the control of either party hereto (such as, but not limited to Acts of God or the public enemy, war or other national emergency making performance temporarily impossible, illegal or strikes or labor disputes).
- (4) The Contractor shall, however, be entitled to an extension of time for such causes only for the number of calendar days of delay which the County may determine to be due solely to such causes, and then only if the Contractor shall have strictly complied with all the requirements of this Paragraph and Paragraph D above. The County shall make such determination within ninety (90) calendar days after receipt of the Contractor's application for an extension of time; provided however, said application complies with the requirements of this Paragraph.
- (5) The Contractor shall not be entitled to receive a separate extension of time for each one of several causes of delay operating concurrently, but, if at all, only for the actual period of delay in completion of the work as determined by the County, irrespective of the number of causes contributing to produce such delay. If one of several causes of delay operating concurrently results from any act, fault or omission of the Contractor or of his Subcontractor, if any, and would of itself (irrespective of the concurrent causes) have delayed the work, no extension of time will be allowed for the period of delay resulting from such act, fault or omission.
- (6) The granting of an application for an extension of time for causes of delay other than those herein referred to shall be entirely within the discretion of the County.

VI. TIME FOR PERFORMANCE - CONTINUED

E. EXTENSION OF TIME - CONTINUED

- (7) If the Contractor shall claim to have sustained any damages by reason of delays, extraordinary or otherwise, or hindrances which he claims to be due to any action, omission, direction or order by the County, the Contractor shall be entitled only to an extension of time as herein above provided and shall not have or assert any claims or prosecute any suit, action, cause of action or proceeding against the County based upon such delays or hindrances.

VII. SCHEDULE OF PAYMENTS

A. ENTIRE SUM

In no event shall the total amount of the contract exceed the sum of \$ _____ except as in accordance with Paragraph C. below.

B. METHOD OF PAYMENT

On the faithful performance of the work of the contract and its acceptance by the County, the County hereby agrees to make payment to the Contractor therefore based upon the proposal hereto attached and made a part of this contract in the following manner, to with:

The Contractor shall, once in each month on such date as the County may fix, submit to the County a requisition for a progress payment for the work performed and material which has actually been put in place in accordance with the terms and conditions of the contract, during the preceding month, and compute the value thereof. The quantity of work done and material actually put in place and value thereof as indicated in the requisition for progress payment shall be subject to verification by the County. Upon verification by the County of the quantity of work done and material actually put in place in accordance with the terms and conditions of the contract and the value thereof, the County shall pay to the Contractor all monies due as computed upon the percentage basis prescribed by Subdivision 1, Section 106-b of the General Municipal Law. If, however, the amount earned by the Contractor in any one month except the month in which the final requisition for progress payment is made should be less than five percent (5%) of the contract amount or One Thousand Dollars (\$1,000), no progress payment will be made for that month. Upon substantial completion of the project, retainage held will be released to the Contractor.

VII. SCHEDULE OF PAYMENTS - CONTINUED

B. METHOD OF PAYMENT - CONTINUED

It is further agreed that so long as any lawful or proper direction concerning the work or material given by the Board of Acquisition and Contract, or its representative, shall remain uncomplied with, the Contractor shall not be entitled to submit a requisition for a progress payment, nor shall any such requisition for a progress payment be accepted by the County on account of work done or material furnished until such lawful or proper direction aforesaid has been fully and satisfactorily complied with.

- (1) Upon satisfactory completion of the work performed hereunder, and prior to final payment under this Agreement, and as a condition precedent thereto, the Contractor shall execute and deliver to the County a release of all claims against the County arising under or by virtue of this Agreement, other than such claims, if any, as may be specifically excepted by the Contractor from the operation of the release in stated amounts to be set forth therein.

C. VALUE OF REVISION OF WORK

- (1) The amount by which the Agreement consideration is to be increased or decreased by any revision shall be determined by the County by one or more of the following methods:
 - (a) By accepting an amount agreed upon by the parties, or
 - (b) By estimating the fair and reasonable cost of (1) Labor, including all wages, required wage supplements, and insurance required by law (Workers Compensation, Social Security Disability, Unemployment, etc.) employed pursuant to the work; (2) materials, (3) Equipment, and (4) maximum percentage rate for overhead equal to 10 percent, and profit equal to 10 percent, or
 - (c) By determining the actual cost of the revision in the same manner as in the above Subdivision b. except that actual costs of the Contractor shall be utilized in lieu of estimated costs, and the maximum percentage rate for overhead shall be equal to 10 percent and profit equal to 10 percent, the County shall have the option to utilize this method provided it notifies the Contractor of its intent to do so prior to the time the Contractor commences performance of such revision.
- (2) Irrespective of the method used or to be used by the County in determining the value of a revision, the Contractor, within thirty (30) working days after a request for the same, must submit to the County a detailed breakdown of the Contractor's estimate of the value of the revision.

VII. SCHEDULE OF PAYMENTS - CONTINUED

C. VALUE OF REVISION OF WORK - CONTINUED

- (3) Unless otherwise specifically provided for in a revision, the compensation specified thereof for revised work covered thereby and for any damage or expense caused the Contractor by any delays to other work to be done under this contract resulting from or on account of said revised work and the Contractor waives all rights to any other compensation for said revised work, damage or expense.

D. LIMITATION OF ACTIONS

- (1) No action or proceeding shall lie or be maintained by the Contractor, or anyone claiming under or through the Contractor, against the County upon any claim arising out of or based upon this Agreement or any breach hereof or by reason of any act or omission or requirement of the County or its officers, agents, servants or employees unless:
 - (a) Such action or proceeding is instituted in a court or competent jurisdiction in the State of New York.
 - (b) The Contractor or the person claiming under or through him shall have strictly complied with all requirements relating to the giving of notices and information with respect to such claim; and
 - (c) Such action or proceeding shall be commenced within one (1) year after the submission to the County of the final application for payment or, if the claim is based upon monies retained for any period after the date of the final application for payment, such action is commenced within six (6) months after such monies become due and payable under the terms of this Agreement; or
 - (d) If this Agreement is terminated or the Contractor declared in default by the County, such action is commenced within six (6) months after the date of such termination or declaration of default by the County.
- (2) Notwithstanding anything in the laws of the State of New York to the contrary, the Contractor or anyone claiming under or through the Contractor, shall not be entitled to any additional time to begin anew any other action if any action commenced within the times herein specified by dismissed or discontinued for any reason whatsoever.

VII. SCHEDULE OF PAYMENTS - CONTINUED

D. LIMITATION OF ACTIONS - CONTINUED

(3) NO ESTOPPEL OR WAIVER

- (a) The County shall not be precluded or estopped by any inspection, acceptance, application for payment or payments, final or otherwise, issued or made under this Agreement or otherwise issued or made by it, or any officer, agent or employee of the County, from showing at any time the true amount and character of the work performed, or from showing that any such inspection, acceptance, application for payment is incorrect, or was improperly issued or made; and the County shall not be precluded or estopped, notwithstanding for payment or payments, from recovering from the Contractor any damages which it may sustain by reason of any failure on his part to comply strictly with this Agreement and any monies which may be paid to him or for his account in excess of those which he is lawfully entitled.
- (b) Neither the acceptance of all or any part of the work covered by this Agreement, nor any payment therefore, nor any order or application for payment issued by the County for any officer, agent or employee of the County, nor any permission or direction to continue with the performance of this Agreement before or after its specified completion date, nor any performance by the County of any of the Contractor's duties or obligations, nor any delay or omission by the County to exercise a right or remedy accruing to it under the terms of this Agreement or existing at law or in equity or by statute or otherwise, nor any other thing done or omitted to be done by the County, its officers, agents, or employees, shall be deemed to be a release to the Contractor or his sureties, if any, from any obligations, liabilities, or undertakings in connections with this Agreement or a waiver of any provision of this Agreement or of any rights or remedies to which the County may be entitled because of any breach thereof, excepting only a written instrument expressly providing for such release or waiver. No termination, revision or annulment hereof, in whole or as to any part of this Agreement, because of any breach hereof, shall be deemed a waiver of any money damages to which the County may be entitled because of such breach. No waiver by the County of any breach of this Agreement shall be deemed to be a waiver of any other or any subsequent breach.

E. LIQUIDATED DAMAGES

Owner will incur substantial increased costs and damages if contractor fails to complete the Work within the scheduled time for completion. Contractor

VII. SCHEDULE OF PAYMENTS - CONTINUED

E. LIQUIDATED DAMAGES - CONTINUED

agrees to reimburse Owner for all such costs and damages, including without limitation all extended costs for inspection of the Work. Contractor acknowledges that if the Work has not been completed on schedule, the costs and damage contemplated hereby include, without limitation, the costs of such inspection. The liquidated damages payments shall be the sum of \$760 for each consecutive calendar day, weekends, and holidays observed thereafter that the Project is not completed as provided in the Contract Documents which liquidated damages will be deducted by the County from the Contract amount.

VIII. TERMINATION

- A. This agreement may be terminated in whole or in part in writing by either party in the event of substantial failure by the other party to fulfill its obligations under this agreement through no fault of the terminating party; provided, that no such termination may be effected unless the other party is given: 1) not less than ten (10) calendar days written notice (delivered by certified mail, return receipt requested) of intent to terminate, and 2) an opportunity for consultation with the terminating party prior to termination.
- B. This agreement may be terminated in whole or in part in writing by the County for its convenience; provided, that the Contractor is given: 1) no less than twenty (20) calendar days written notice (delivered by certified mail, return receipt requested) of intent to terminate, and 2) an opportunity for consultation with the terminating party prior to termination.
- C. If terminating is effected by the County, the County shall reimburse the Contractor for all costs and obligations not previously paid by the County. However, if termination for default is effected by the County, any payment due to the Contractor at the time of termination may be adjusted to the extent of any additional costs occasioned to the County by reason of the Contractor's default.
- D. Upon receipt of a termination action pursuant to Paragraphs "A" or "B" above, the Contractor shall 1) promptly discontinue all services affected (unless the notice directs otherwise), and 2) deliver or otherwise make available to the County all data, plans, studies, drawings, specifications, materials, supplies, reports, estimates, summaries, and such other information and material as may have been accumulated by the Contractor in performing this agreement, whether completed or in process.
- E. Upon termination pursuant to Paragraphs "A" or "B" above, the County may take over the work and prosecute the same to completion by agreement with another party or otherwise.

IX. PROVISIONS REQUIRED BY LAW

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

X. INSURANCE

The Contractor shall supply all insurance coverage as the County may deem necessary for any and all liability including, but not necessarily limited to, comprehensive general liability, motor vehicle, disability benefits, workers compensation benefits, owner protection policies, and all insurance required by the laws of the County, the State of New York, and the United States Government. The Contractor shall, as to liability policies, list the County as an additional named insured. The Contractor shall provide the necessary insurance certificates setting forth the above coverage. The Contractor hereby waives any and all rights or subrogation against the County, its employees, agents, invitees, and licensees for any injury, death or property damage sustained by the Contractor, its employees, agents, invitees, and licensees to the extent covered by any insurance; and the Contractor shall require that all parties with whom it contracts in connection with this contract shall waive their rights to subrogation against the County, its employees, agents, invitees and licensees for any injury, death or property damage sustained by the contracting party, its employees, agents, licensees, and invitees.

XI. INDEMNIFICATION

A. RISKS ASSUMED BY THE CONTRACTOR

- (1) The Contractor solely assumes the following distinct and several risks whether they arise from acts or omissions (whether negligent or not and whether supervisory or otherwise), of the Contractor, of the Architect, of the Engineers, or any subcontractor, anyone directly or indirectly employed by any of them, their officers, agents and employees, or third persons, or from any other cause, including unforeseen obstacles and difficulties which may be encountered in the prosecution of the work covered by the contract, whether such risks are within or beyond the control of the Contractor and whether such risks involve a legal duty, primary or otherwise, imposed upon third parties, the Architect, or the Engineers, if any, except that the Contractor shall not be responsible for risks which arise from affirmative acts of the County committed with intent to cause the loss, damage and injuries hereinbelow set forth:
 - (a) The risk of loss or damage, direct or indirect, of whatever nature, to the work covered by the contract or to any plant, equipment, tools, materials or property furnished, used, installed or received by the County or by the

XI. INDEMNIFICATION

A. RISKS ASSUMED BY THE CONTRACTOR - CONTINUED

Contractor or any subcontractor, materialmen or workmen performing services or furnishing materials for the work covered hereunder. The Contractor shall bear such risk of loss or damage until the work covered by the contract has been finally accepted by the County or until completion of removal of such plant, equipment, tools, materials or property from the construction site and the vicinity thereof, whichever event occurs last. In the event of such loss or damage, the Contractor shall forthwith repair, replace and/or make good any such loss or damage without cost to the County.

- (b) The risk of claims, just or unjust, by third persons against the Contractor, or County, the Architect, Engineer or their officers, agents and their employees on account of bodily injury (including wrongful death) and property damage (direct or consequential) and loss or damage of any kind whatsoever arising or alleged to arise out of or as a result of or in connection with the performance by the Contractor of the work covered by the contract (whether actually caused by or resulting from the performance of the contract) or out of or in connection with the Contractor's operations or presence at or in the vicinity of the construction site, whether such claims are made and whether such injury, damage or loss is sustained at any time both before and after the final acceptance by the County of all work covered by the contract.
- (2) The Contractor shall indemnify and save harmless the County, Architect, Engineers and their officers, agents and/or employees against all claims described above and for all costs and expenses incurred by them in the defense, settlement or satisfaction thereof, including, attorney's fees and court costs. (If so directed, the Contractor shall, at this own expense, defend against such claims.)
- (3) The Contractor's obligations under this article shall not be deemed waived, limited or discharged by the enumeration or procurement of any insurance for liability for damages.
- (4) Neither the County's final acceptance of the work to be performed hereunder, nor the making of any payment shall release the Contractor from his obligations under this article. The enumeration elsewhere in this contract of particular risks assumed by the Contractor of particular claims for which he is responsible shall not be deemed to limit the effect of the provisions of this article or to imply that he assumes or is responsible for only risks or claims of the type enumerated; and neither the enumeration in this article nor the enumeration elsewhere in the contract of particular risks assumed by the Contractor or of particular claims for which he is responsible shall be deemed to limit the risks

XI. INDEMNIFICATION

A. RISKS ASSUMED BY THE CONTRACTOR - CONTINUED

which the Contractor would assume or the claims for which he would be responsible in the absence of such enumerations.

- (5) The obligation of the Contractor under this paragraph shall not extend to the liability of the Architect, or Engineers, or their officers, agents or employees for property damage or personal injuries of any kind arising out of 1) the preparation of approval of maps, drawings, opinions, reports, surveys, change orders, designs or specifications, or 2) the giving of or the failure to give directions or instructions by the Architect, his agents or employees, provided such giving or failure to give is the primary cause of the injury or damage.
- (6) The obligations of the Contractor under this paragraph shall not extend to the liability of the County, its officers, agents and employees for damage arising out of the bodily injury to persons or damage to property resulting solely from or contributed to by the negligence of either the County, its officers, agents or employees to the extent that such indemnification would violate Section 5-322.1 of the New York General Obligations Law.
- (7) No provisions of this contract which, directly or indirectly, imposes upon the Contractor the responsibility, in whole or in part, for preventing injury to person or damage to property or which specifies, in whole or in part, the means to be used by the Contractor directly or indirectly, the risk of loss or damage and/or liability for or the obligation to hold the County, the Architect, the Engineer, or their officers, agents and employees harmless as to such injury and damage, shall create or give to third parties any claim or right of action against the Contractor, County, Architect, or Engineer, their officers, agents or employees beyond such as may legally exist irrespective of such provisions.

XII. ATTORNEY'S FEES

The Contractor shall be responsible for and will pay to the County all reasonable costs and attorneys fees in the event that:

- (1) The Contractor breaches its duty to defend the County as set forth in Article XI herein.
- (2) The Contractor brings an action against the County for an alleged breach of this agreement and the Contractor fails to prevail in the litigation.

XII. ATTORNEY'S FEES - CONTINUED

- (3) The County brings an action against the Contractor for an alleged breach of this agreement and the County prevails in the litigation.

XIII. COPYRIGHTS AND PATENTS

The Contractor shall defend actions or claims charging infringement of any copyright or patent by reason of the use or adoptions of any plans, studies, designs, drawings, or specifications supplied by him and hold harmless the County from any loss or damages resulting therefrom.

XIV. AUDIT: ACCESS TO RECORDS

The Contractor shall maintain books, records, documents and other evidence directly pertinent to performance under this Agreement in accordance with generally accepted accounting principles and practices consistently applied and in effect on the date of execution of the Agreement.

IN WITNESS WHEREOF, this Agreement has been executed by Broome County and the Contractor on the day and year first above written.

County of Broome

BY: _____
TIMOTHY M. GRIPPEN, BROOME COUNTY EXECUTIVE

BY: _____

TITLE: _____

APPLICATION FOR PAYMENT

APPLICATION FOR PAYMENT NO. _____

To _____ (OWNER)

Contract for _____.

OWNER's Contract No. _____ . ENGINEER's Project No. _____ .

For Work accomplished through the date of _____.

ITEM	CONTRACTOR's Schedule of Values			Work Completed	
	Unit Price	Quantity	Amount	Quantity	Amount
	\$		\$		\$
Total (Orig. Contract) C.O. No. 1 C.O. No. 2			\$		\$

Accompanying Documentation:

GROSS AMOUNT DUE \$ _____
 LESS ____ % RETAINAGE \$ _____
 AMOUNT DUE TO DATE \$ _____
 LESS PREVIOUS PAYMENTS \$ _____
 AMOUNT DUE THIS APPLICATION \$ _____

CONTRACTOR'S Certification:

The undersigned CONTRACTOR certifies that: (1) all previous progress payments received from OWNER on account of Work done under the Contract referred to above have been applied to discharge in full all obligations of CONTRACTOR incurred in connection with Work covered by prior Applications for Payment numbered 1 through _____ inclusive; (2) title to all Work, materials and equipment incorporated in said Work or otherwise listed in or covered by this Application for Payment will pass to OWNER at time of payment free and clear of all liens, claims, security interest and encumbrances (except such as are covered by Bond acceptable to OWNER indemnifying OWNER against any such lien, claim, security interest or encumbrance); and (3) all Work covered by this Application for Payment is in accordance with the Contract Documents and not *defective* as that term is defined in the Contract Documents.

Dated _____, 19____

CONTRACTOR

By _____

(Authorized Signature)

Payment of the above AMOUNT DUE THIS APPLICATION is recommended.

Dated _____, 19____

ENGINEER

By _____

(Authorized Signature)

APPLICATION FOR PAYMENT

INSTRUCTIONS

A. GENERAL INFORMATION

This standard form is intended as a guide only. Many projects require a much more extensive form with space for numerous items, descriptions of Change Orders, identification of variable quantity adjustments, summary of materials and equipment stored at the site and other information. It is expected that a separate form will be developed by Engineer or Contractor at the time Contractor's Schedule of Values is finalized. Note also that the format for retainage must be changed if the Agreement permits (or the Law provides), and Contractor elects, the deposit of securities in lieu of retainage. Refer to Article 14 of the General Conditions for provisions concerning payments to Contractor.

B. COMPLETING THE FORM

The Schedule of Values, submitted and approved as provided in paragraphs 2.6.3 and 2.9 of the General Conditions, should be copied in the space indicated on the Application For Payment form. Note that the cost of materials and equipment is often listed separately from the cost of their installation. All Change Orders affecting the Contract Price should be identified and include such supplemental Schedules of Values as required for progress payments.

The form is suitable for use in the Final Application for Payment as well as for Progress Payments; however, the required accompanying documentation is usually more extensive for final payment. All accompanying documentation should be identified in the space provided on the form.

C. ENGINEER'S REVIEW

Engineer *must* review all Applications for Payment with care to avoid recommending any payments not yet earned by Contractor. All accompanying documentation of legal nature, such as lien waivers, should be reviewed by Owner's attorney, and Engineer should so advise Owner.

GENERAL CONDITIONS

GENERAL CONDITIONS

ARTICLE I

GENERAL PROVISIONS

Section 1.01 DEFINITIONS

Where the following words and expressions are used in the Contract Documents, it is understood that they have the meaning set forth below:

- | | |
|--------------------------------|--|
| Bidding Documents | - The Notice to Bidders, Information for Bidders and Bid. |
| Bonds | - Performance Bond, and Labor and Material Bond. |
| Contract or Contract Documents | - The Information for Bidders, Bid Forms, Contract, General Conditions, Special Conditions, Bonds, Specifications, Drawings, Plans and Addenda issued prior to the opening of bids and Change Orders issued after the award of the Contract. |
| Contractor | - The person, partnership, joint venture or corporation with whom Broome County enters into a Contract for the work. |
| County | - Broome County New York. |
| Drawings | - The graphic portions of the Contract. |
| Engineer | - The Engineer shall mean the Deputy Commissioner of Engineering of the Broome County Department of Public Works, or his Representative. |
| Notice of Award | - Letter of Intent. |
| Project | - The facility or facilities to be constructed include all usual appropriate and necessary attendant work shown on and/or described in the Plans, Specifications, and Addenda. |
| Work | - The using, performing, installing, furnishing, and supplying of all materials, equipment, labor, and incidentals necessary or convenient to the successful completion of the Project and the carrying out of the Project and the carrying out of all the duties and obligations imposed upon the Contractor by the Contract. |
| Specifications | - Technical Specifications and any addenda thereto. |

Section 1.02 CAPTIONS

The titles or captions of Articles and Sections of the Contract are intended for convenience and reference purposes only and in no way define, limit, or describe the scope or intent thereof or of the Contract or in any way affect the Contract.

Section 1.03 NOMENCLATURE

Materials, equipment or other work described in words which have a well known, technical, or trade meaning shall be interpreted as having such meaning in connection with the Contract.

Section 1.04 ENTIRE AGREEMENT

The Contract, Notice to Bidders, General Conditions, Drawings, plans, Specifications, and Addenda constitute the entire agreement between the parties hereto and no statement, promise, condition, understanding, inducement, or representation, oral or written, expressed or implied, which is not contained herein shall be binding or valid and the Contract, Notice to Bidders, General Conditions, Drawings, Plans, Specifications, and Addenda shall not be changed, modified, or altered in any manner except by an instrument in writing executed by the parties hereto.

Section 1.05 AGREEMENT BINDING UPON SUCCESSORS AND ASSIGNS

The Contract shall bind the successors, assigns, and representatives of the parties hereto.

Section 1.06 ACCURACY AND COMPLETENESS OF CONTRACT DOCUMENTS

(1) The Contract Documents are complementary and what is called for by any one shall be as binding as if called for by all. The intention of the Documents is to include all materials, plant, equipment, tools, the transportation thereof, and skill and labor of every kind necessary for the proper execution of the work and also those things which may be reasonably inferable from the Contract Documents as being necessary to produce the intended results.

(2) The Contract Documents contemplate a finished piece of work of such character and quality as is reasonably inferable from them. The Contractor acknowledges that the contract consideration includes sufficient money allowance to make his work complete and operational and in compliance with good practice and he agrees that inadvertent discrepancies or omissions or the failure to show details or to repeat on any plan the figures or notes given on another shall not be the cause for additional charges or claims. In case of a discrepancy between any part or parts of the Contract Documents with any other part or parts of the Contract Documents

Section 1.06 ACCURACY AND COMPLETENESS - CONTINUED

with any other part or parts thereof, preference shall be given in the following order:

- a. Addenda (later dates take precedence over earlier dates)
- b. Supplemental General Conditions
- c. General Conditions
- d. Technical Specifications
- e. Drawings

(3) Any discrepancies found between the Drawings and Specifications and site conditions or any errors or omissions in the Drawings or Specifications shall be immediately reported to the Engineer, who will promptly correct such error or omission in writing. Any work done by the Contractor after his discovery of such discrepancies, errors, or omissions shall be done at the Contractor's risk.

(4) Responsibility for adequacy of the design and for sufficiency of the Drawings and Technical Specifications shall be borne by the Engineer. The complete requirements of the work to be performed under the Contract shall be set forth in Drawings and Specifications Furnished shall be in accordance with the Contract Documents and shall be true and accurate developments thereof.

Section 1.07 FURNISHING OF CONTRACT DOCUMENTS

The Contractor shall be furnished, free of charge, six (6) copies of the Specifications and Drawings within ten (10) working days after the Notice of Award. Any other copies of the Specifications and Drawings which the Contractor may desire can be obtained by him from the Engineer at the latter's cost of duplication thereof.

Section 1.08 EXAMINATION OF CONTRACT DOCUMENTS AND SITE

By executing the Contract, the Contractor agrees that he has carefully examined the Contract Documents together with the site of the proposed work as well as its surrounding territory; that he is fully informed regarding all the conditions affecting the work to be done and the labor and materials to be furnished for the completion of the Contract; and that his information has been acquired by personal investigation and research and not in the estimates and records of the County.

Section 1.09 INVALID PROVISIONS

If any term or provision of the Contract Documents or the application thereof to any person, firm, or corporation of circumstance shall, to any extent, be invalid or unenforceable, the remainder to the Contract Documents, or the application of such

Section 1.09 INVALID PROVISIONS - CONTINUED

terms or provisions to persons, firms or corporations or circumstances other than those to which it is held invalid or unenforceable, shall not be affected thereby and each term or provision of the Contract Documents shall be valid and enforced to the fullest extent permitted by law.

Section 1.10 NOTICES

Any written notice required hereunder shall be deemed properly given, delivered, and service thereof completed when said notice is deposited in any post office box enclosed in a postpaid envelope properly addressed or when said notice, properly addressed, is sent by telegram or when said notice is delivered in person to the party to whom it is directed or their authorized representatives. The addresses of the Contractor and the County set forth in the Bidding Documents shall be deemed the place to which written notice to them shall be directed; provided, however that any such parties may by written notice to the others given pursuant to this Section designate the name and address of another person, firm, or corporation to whom notices to whom it may be addressed.

Section 1.11 ASSURANCES

The construction of the project, including the letting of contracts therewith, will conform to applicable requirements of federal, state, and local laws, ordinances, rules, and regulations to the extent that such requirements do not conflict with federal laws or regulations.

Section 1.12 CONTRACTOR'S OBLIGATIONS

The Contractor shall and will, in good workmanlike manner, do and perform all work necessary or proper to perform and complete all the work required by this contract and said specifications and in accordance with the plans and drawings, and in accordance with the directions of the Engineer as given from time to time during the progress of the work. He shall furnish, erect, maintain, and remove such construction plant and such temporary works as may be required. The Contractor shall observe, comply with and be subject to all terms, conditions, requirements, and limitations of the contract and specifications and shall do, carry on, and complete the entire work to the satisfaction of the Engineer and the County.

Section 1.13 PLAN DEPOSIT REFUND

In accordance with the New York State General Municipal Law, Article 5-A, Section 102, Subdivision 2 as amended, the following will be the policy for refunding of deposits on specifications and plans:

Section 1.13 PLAN DEPOSIT REFUND - CONTINUED

BIDDERS

Full refund will be given to all bidders for one (1) set of specifications and plans returned to Broome County in good condition* within thirty (30) days after the date of award or rejection of the bid.

NONBIDDERS AND ADDITIONAL SETS

Partial refund in the amount of the full deposit LESS the cost of reproduction (20%) will be given for each set of specifications and plans to nonbidders and bidders with additional sets returned to Broome County in good condition within (30) days after the date of award or rejection of the bid.

SUCCESSFUL BIDDER

Full refund will be given to the successful bidder for all sets of specifications and plans.

*GOOD CONDITION: Broome County defines "good condition" as intact, useable, legible and in no way altered so as to change the content or intent of the specifications and plans. The final decision as to the condition of the specifications and plans shall be with the Broome County Commissioner of Public Works or designee.

(Highlighting with see-through markers or notes made in light pencil may be acceptable as long as the above conditions are met).

ARTICLE II

CONTRACT ADMINISTRATION AND CONDUCT

Section 2.01 ENGINEER'S STATUS

(1) The Engineer, as the County's representative, shall provide general administration of the Contract and inspect the work. The Engineer will not be responsible for the construction means, methods, techniques, sequences, or procedures, or for the safety precautions and programs in connection with the work and he will not be responsible for the Contractor's failure to carry out the work in accordance with the Contract Documents. The Engineer's duties, services, and work shall in no way supersede or dilute the Contractor's obligation to perform the work in conformance with all contract requirements, but he is empowered by the County to act on its behalf with respect to the proper execution of the work and to give instructions when necessary to require such corrective measures as may be necessary in his professional opinion to insure the proper execution of the Contract or to protect the County's interest.

(2) The Engineer shall have the authority to stop the work or to require the prompt execution thereof whenever such action may be necessary in his professional opinion to insure the proper execution of the Contract or to protect the interests of the County.

(3) Except as otherwise provided in the Contract, the Engineer shall determine the amount, quality, acceptability, fitness, and progress of the work covered by the Contract and shall decide all questions of fact which may arise in relation to the interpretation of the plans and specifications, the performance of the work and the fulfillment by the Contractor of the provisions of the Contract. The Engineer shall in the first instance be the interpreter of the provisions of the Contract and the judge of its performance and he shall use his power under the Contract to enforce its faithful performance.

Section 2.02 FINALITY OF DECISIONS

(1) Any decisions of the Engineer under the provisions of the Contract shall be final, binding, and conclusive on the Contractor unless the Contractor shall, within ten (10) working days after such decision, make and deliver the decision of the Engineer is contrary to a provision of the Contract. The County shall thereupon determine the validity of the Contractor's contention. Pending decision by the County, the Contractor shall proceed in accordance with the Engineer's decision.

(2) Wherever it is provided in the Contract Documents that an application must be made to the County and/or determination made by the County, the County's decision on such application and/or

its determination under the Contract Documents shall be final, conclusive, and binding on the Contractor unless the same shall be determined by a court of competent jurisdiction to have been fraudulent, capricious, arbitrary or so grossly erroneous as necessarily to imply bad faith and unless the Contractor within ten (10) working days after receiving notice of the County's decision or determination, files a written statement with the County that he reserves his rights in connection with the matters covered by said decision or determination.

(1) If the contractor claims (1) that any work he has been ordered to do is extra work or (2) that he has performed or is going to perform extra work or (3) that any action or omission of the County or the Engineer is contrary to the terms and provisions of the Contract, he shall:

- a. Promptly comply with such order;
- b. File with the County within thirty (30) working days after being ordered to perform the work claimed by him to be extra work or within thirty (30) working days after commencing performance of the extra work, whichever date shall be the earlier, or within thirty (30) working days after the said action or omission on the part of the County occurred, a written notice of the basis of his claim and request a determination thereof;
- c. File with the County, within thirty (30) working days after said alleged extra work was required to be performed, or said alleged extra work was commenced, whichever date shall be earlier, or said alleged action or omission by the County occurred, a verified detailed statement, which documentary evidence of the items and basis of his claim;
- d. Produce for the County's examination, upon notice from the County, all his books of account, bills invoices, payrolls, subcontracts, time books, progress records, daily reports, bank deposit books, bank statements, checkbooks, and canceled checks showing all of his actions and transactions in connection with or relating to or arising by reason of his claim, and submit himself and persons in his employment and in his subcontractor's employment for examination under oath by any person designated by the County to investigate any claims made against the County under the Contract, such examination to be made at the offices of the Contractor; and

Section 2.03

CLAIMS AND DISPUTES - CONTINUED

- e. Proceed diligently, pending, and subsequent to the determination of the County with respect to any such disputed matter, with the performance of the Contract and in accordance with all instructions of the County and the Engineer.

(2) The Contractor's failure to comply with any or all of the foregoing provisions of this Section shall be deemed to be: (1) a conclusive and binding determination on his part that said order, work, action, or omission does not involve extra work and is not contrary to the terms and provisions of the Contract; and (2) a waiver by the Contractor of all claims for additional compensation or damages as a result of said order, work, or omission.

(3) No person has power to waive or modify any of the foregoing provisions and in any action the County to recover any sum in excess of the sum certified by the County to be due under or by reason of the Contract, the Contractor must allege in his complaint and prove at the trial compliance with the provisions of this Section.

(4) Nothing in this Section shall in any way affect the County's right to obtain an examination before trial or a discovery and inspection in any action that might be instituted by or against the County or the Contractor.

Section 2.04

OMITTED WORK

(1) The County reserves the right at any time during the progress of the work to delete, modify, or change the work covered by the Contract, by a change order thereto providing for either reduction or omission of any portion of the work, without constituting grounds for any claim by the Contractor for allowance for damages or for the loss of anticipated profits and in such event a deduction shall be made from the contract considerations, the amount of which is to be determined in accordance with the provisions of Section 4.01 of the General Conditions.

Section 2.05

EXTRA WORK

(1) The County reserves the right at any time during the progress of the work to add, modify, or change the work covered by the Contract by a change order thereto providing for extra work of either qualitative or quantitative nature and in such event the contract consideration shall be increased by an amount to be determined in accordance with the provisions of Section 4.01 of the General Conditions and the completion date for all or any part of the work shall be extended for such period of time as may be determined by the County as necessary, because of the extra work, to complete the work or any part thereof.

Section 2.05 EXTRA WORK - CONTINUED

(2) Nothing in the Contract Documents shall excuse the Contractor from proceeding with the extra work as directed and, except as otherwise specifically provided for in a change order, the terms and conditions of the Contract Documents shall be fully applicable to all extra work.

(3) The Contractor shall have no claim for extra work if the performance of such work, in the judgement of the Engineer is made necessary or desirable because of any act or omission of the Contractor which is not in accordance with the Contract.

Section 2.06 CONTRACTOR TO GIVE PERSONAL ATTENTION

(1) The Contractor shall give his constant personal attention to all the work while it is in progress and he shall place it in charge of a competent and reliable full-time superintendent acceptable to the Engineer and the County who shall have authority to act for the Contractor and who shall be accountable to the Engineer to the extent provided in the Contract. Unless the Superintendent proves to be unsatisfactory to the Contractor and ceases to be in his employ, such superintendent shall not be changed without the written permission of the Engineer.

Section 2.07 DETAILED DRAWINGS AND INSTRUCTIONS

(1) Upon timely notice by the Contractor that supplementary information is required, the Engineer shall furnish additional instructions, by means of drawings or otherwise, necessary for the proper execution of the work. All such drawings and instructions shall be consistent with the Contract Documents, true developments thereof and reasonably inferable therefrom. The work shall be executed in conformity therewith and the Contractor shall do no work without proper drawings and/or instructions.

Section 2.08 CONTRACT DOCUMENTS TO BE KEPT AT SITE

(1) The Contractor shall keep at the site of work a copy of the drawings and specifications and shall at all times give the Engineer and the County access thereto.

Section 2.09 PERMITS AND BUILDING CODES

(1) The Contractor shall obtain from the proper authorities all permits legally required to carry on his work, pay all taxes and fees legally required and shall be responsible for conducting his operations in accordance with the provisions of the work.

Section 2.10 UNFORESEEN OBSTRUCTIONS AND DIFFICULTIES

(1) Except as otherwise expressly provided in other sections of the Contract Documents, the Contractor acknowledges that he has assumed the risk and that the contract consideration includes such provision as he deems proper for any unforeseeable obstructions, obstacles or difficulties which he may encounter in the performance of the work.

Section 2.11 MOVING MATERIALS AND EQUIPMENT

(1) Should it become necessary, in the judgement of the Engineer, at any time during the course of the work to move materials which are stored on the site or equipment which has been temporarily placed thereon, the Contractor, upon request of the Engineer, shall move them or cause them to be moved at his sole cost and expense; provided, however if any materials or equipment that have been stored or placed by the Contractor at a location on the site expressly approved, in writing, by the Engineer's request, such removal shall be deemed extra work and the Contractor shall be compensated therefore in accordance with the provisions of Section 4.01 of the General Conditions.

Section 2.12 OTHER CONTRACTS

(1) During the progress of the work hereunder the County reserves the right to let other contracts relating to the Project or in connection with work on the sites adjoining or adjacent to that on which the work covered by this Contract is to be performed. In the event such other contracts are let, the Contractor and such other contractors shall coordinate their work with each other and afford each other reasonable opportunities for the introduction and storage of their materials, supplies, and equipment and the execution of their work. If the Contractor or such other contractors contend that their work or the progress thereof is being interfered with by the acts or omissions of the other or others or that there is a failure to coordinate the work on the part of the Contractor or such other contractors, they shall, within five (5) working days give written notification to the County and the Engineer of such contention. Upon receipt of such notification or on his own initiative, the Engineer shall investigate the situation and issue such instructions to the Contractor or such other contractors with respect thereto as he may deem proper. The Engineer shall be the sole judge of the rights of the Contractor and of such other contractors and the sequence of work necessary to expedite the completion of all work covered by this Contract in relation to the work covered by said other contracts and in all cases his decision shall be final.

Section 2.13 SHOP DRAWINGS AND SAMPLES

(1) The Contractor, with such promptness and in such sequence as to cause delay in the work, shall submit for the Engineer's approval all shop drawings and samples called for under the Contract or requested by the Engineer.

(2) The Contractor shall provide four copies of the shop drawings to the Engineer. The shop drawings shall establish the actual detail of the work, indicate proper relation to adjoining work, amplify design of mechanical and electrical equipment in proper relation to physical spaces in the structure, and incorporate minor changes of design or construction to suit actual conditions.

(3) All shop drawings and samples shall be thoroughly checked by the Contractor and compliance with the Contract Documents before submitting them to the Engineer for approval and all shop drawings shall bear the contractor's stamp of approval certifying that they have so been checked. Any shop drawings which, in the Engineer's opinion are incomplete or contain errors will be returned unchecked by the Engineer for resubmission by the Contractor. In checking shop drawings, the Contractor shall verify all dimensions and field conditions and shall check and coordinate the shop drawings of any section or trade with the requirements of all other sections or trades whose work is related thereto, as required for proper and complete installation of the work.

(4) Samples must be of sufficient size or number to show the quality type, range of color, finish and texture of the material. Each sample shall be properly labeled to show the nature of the materials, trade name of the manufacturer, name and location of the work where the material represented by the sample is to be used and the name of the Contractor submitting the samples. Transportation charges to the Engineer must be paid on samples forwarded to him.

(5) Shop drawings and samples, submitted or provided by the Contractor in accordance with the approved shop drawing and sample schedule, will be reviewed by the Engineer within (10) working days and if satisfactory will be approved. A shop drawing, when approved, will be returned to the Contractor. If not satisfactory, the drawings and samples will be appropriately marked and returned to the Contractor for correction thereof, in which event the Contractor shall resubmit to the Engineer a corrected copy of the shop drawing or a new sample, as the case may be. The Contractor shall make any corrections required by the Engineer and shall appropriately note any changes or revisions on the shop drawing, dated to correspond with the date of the Engineer's request for change. Upon approval of the shop drawing by the Engineer as many copies thereof as the Engineer may reasonably request.

Section 2.13

SHOP DRAWINGS AND SAMPLES - CONTINUED

(6) At time of the submission of a shop drawing or sample, the Contractor shall inform the Engineer and the County in writing of any deviation in the shop drawing or sample from the requirements of the Contract Documents. Unless such deviation is specifically noted by the Contractor with a notation that such deviation will result in extra work for which the Contractor requests payments, the Contractor shall be deemed to have waived any claim for extra work, to all work shown on, described in or related to the shop drawing or sample.

(7) The Engineer's approval of shop drawings or samples is for design only and is not a complete check on the method of assembly, erection, or construction. Approval shall in no way be construed as (1) permitting any departure whatsoever from the Contract Documents, Except where the Contractor, in accordance with the provisions of paragraph "6" of this Section has previously notified the County and the Engineer of such departure; (2) relieving the Contractor of full responsibility for any error in quality of materials, details, dimensions, omissions, or otherwise may exist; (3) relieving the Contractor of full responsibility for adequate field connections, erection techniques, bracing or deficiencies in strength; (4) relieving the Contractor of full responsibility for satisfactory performance of all work coordination with the work of all subcontractors and other Contractors; or (5) permitting departure from additional details or instructions previously furnished by the Engineer.

(8) No work requiring a shop drawing or sample shall be commenced until a shop drawing or sample is approved by the Engineer and all such work shall be: (1) in accordance with the approved shop drawings, provided the latter conforms in all respects to the Contract Documents or to such deviations therefrom as have been previously noted by the Contractor in accordance with the provisions of Paragraph "6" of this Section; and (2) conforms in all respects to the samples furnished to and approved by the Engineer and, unless otherwise specified, are new and of good quality.

Section 2.14

EQUIVALENTS - APPROVED EQUAL

A. Equivalents - or Approvals - General

(1) The words "similar and equal to," "or equal," "equivalent," and such other words of similar content and meaning shall for the purposes of this Contract be deemed to mean similar and equivalent to one of the name products. For the purposes of subdivisions A and B of this Section and for the purposes of the Bidding Documents, the word "products" shall be deemed to include

the words "articles," "materials," "items," "equipment," and "methods." Whenever in the Contract Documents one or more products are specified, the word "similar and equal to" shall be deemed inserted.

(2) Whenever any product is specified in the Contract Documents by a reference to the name, trade name, make, or catalog number of any manufacturer or supplies, the intent is not to limit completion but to establish a standard of quality which the Engineer has determined is necessary for the Project. A contractor may, at his option, use any product other than that specified in the Contract Documents provided that he submit to the Engineer all the information that Engineer requests concerning the equivalent product and that the equivalent product is approved by the Engineer in accordance with the procedures set forth in Subdivision B of this Section. In all cases the Engineer shall be the sole judge as to whether a proposed product is to be approved and the Contractor shall have the burden of providing, at his own cost and expense, to the satisfaction of the Engineer that the proposed product is similar and equal to the named product. In making such determination, the Engineer may establish such criteria as he may deem proper that the proposed product must meet in order for it to be approved.

(3) Nothing in the Contract Documents shall be construed as representing, expressly or implied, that the name product is available or that there is or there is not a product similar and equal to any of the named products and the Contractor shall have and make no claim by reason of the availability or lack of availability of the named product or of a product similar and equal to any named product.

(4) The Contractor shall have and make no claim for an extension of time or for damages by reason of the time taken by the Engineer in considering a product proposed by the Contractor or by reason of the failure of the Engineer to approve the product proposed by the Contractor.

B. Equivalents or Approvals After Bidding

(1) Substitution Clause - Wherever in the plans and specifications any item or equipment or material is designated by a reference to a particular brand, manufacturer, or trade name, it is understood that an approved equal product, acceptable to the Engineer may be substituted by the Bidder or Contractor.

(2) Where the Engineer, pursuant to the provisions of this Subdivision, approves a product proposed by a Contractor and such proposed product requires a revision or redesign of any part of the work covered by this Contract, all such revision and redesign

Section 2.14 EQUIVALENTS-APPROVALS - CONTINUED

and all new drawings and details required therefore shall be subject to the approval of the Engineer and shall be provided by the Contractor at his own cost and expense.

(3) Where the Engineer, pursuant to the provisions of this Section, approves a product proposed by a Contractor, and such proposed product requires a different quantity and/or arrangement of duct work, piping, wiring, conduit, or any other part of the work from that specified, detailed, or indicated in the Contract Documents, the Contractor shall provide the same at his own cost and expense.

Section 2.15 COMPLETION AND ACCEPTANCE

A. Partial Completion and Acceptance

(1) If before the final completion of all work covered by the Contract, any portion of the permanent construction has been satisfactorily completed and the same will be immediately useful to the County, the latter may, by written notice, advise the Contractor that it accepts such portion of the work. Such action by the County shall in no way affect the obligations of the Contractor under the terms and provisions of the Contract with respect to any work not so completed and accepted.

B. Full Completion and Acceptance

(1) After the completion of all the work covered by the Contract, the Contractor shall give written notice to the County and the Engineer that all the work is ready for inspection and final inspection and if the County and the Engineer shall determine that all work has been satisfactorily completed, the County shall thereupon, by written notice, advise the Contractor that it accepts such work.

Section 2.16 RECORD DRAWINGS

(1) The Contractor shall cooperate with the Engineer to provide an accurate set of current contract prints on which the Contractor has recorded in a neat workmanlike manner, using colored pencil, all instances where actual field construction differs from work as indicated on the Contract Documents, prior to acceptance of all work covered by the Contract.

Section 2.17 GUARANTEES

(1) The Contractor, at the convenience of the County, shall remove, replace and/or repair at his own cost and expense any defects in workmanship, materials, ratings, capacities or characteristics occurring in or to the work covered by the Contract

within one (1) year or within such longer period as may otherwise be provided in the Contract, the period of such guarantee to commence with the County's final acceptance of all work covered under the Contract or at such other date or dates as the County may specify prior to that time, and the Contractor, upon demand, shall pay for all expenses necessary to remove, replace, and/or repair such other work which may be damaged in removing, replacing, or repairing the said defects.

(2) Unless such removal, replacement, and/or repair shall be performed by the Contractor within ten (10) working days after he receives written notice from the County specifying such defect, or if such defect is of such a nature that it cannot be completely removed, repaired, and/or replaced within said ten (10) day period and the Contractor shall not have diligently commenced removing, repairing, and/or replacing such defect within said (10) day period and shall not thereafter with responsible diligence and in good faith proceed to do such work, the County may employ such other person, firm or corporation as it may choose to perform such removal, replacement, and/or repair and the Contractor Agrees, upon demand, to pay to the County all amounts which it expends for such work.

ARTICLE III

TIME OF PERFORMANCE

COMMENCEMENT AND COMPLETION OF WORK

Section 3.01

(1) The Contractor agrees that he will begin the work on or before the date specified in the written "Notice of Award" of the County, and that he will prosecute the same with such diligence that all work covered by the Contract shall be entirely completed and performed by _____.

(2) The Contractor further agrees that the time is of the essence in this Contract and that the work shall be prosecuted in such a manner and with sufficient forces to complete all the work before the above date.

EXTENSION OF TIME

Section 3.02

(1) An extension or extensions of time for the completion of the work may be granted by the County subject to the provisions of the Section, but only upon written application therefore by the Contractor to the County and the Engineer.

(2) An application for an extension of time must set forth in detail the source and the nature of each alleged cause of delay in the completion of the work, the date upon which each such cause of delay began and ended and the number of days' delay attributable to each of such causes. It must be submitted prior to the completion of the work.

(3) If such an application is made, the Contractor shall be entitled to an extension of time for the delay in completion of the work caused solely; (1) by the acts or omissions of the County, its trustees, officers, agents, employees; or (2) by the acts or supervening conditions entirely beyond the control of either party hereto (such as, but not limited to, acts of God or the public enemy, war or other national emergency making performance temporarily impossible or illegal, or strikes or labor disputes).

(4) The Contractor shall, however, be entitled to an extension of time for such causes only for the number of calendar days of the delay which the County may determine to be solely to such causes, and then only if the Contractor shall have strictly complied with all of the requirements of this Section. The County shall make such determination within a reasonable length of time after receipt of the Contractor's application for an extension of time.

ARTICLE IV

PAYMENT

Section 4.01

CHANGES IN THE WORK

(1) The value of any change shall be determined by one or more of the following methods:

- (a) By prices specifically named in the specifications or proposals.
- (b) By acceptance in a lump sum including overhead and profit.
- (c) By estimate of the actual cost of labor and material plus overhead and profit, cost to be determined as the work progresses.
- (d) By actual cost of labor and materials plus overhead and profit, cost to be determined as the work progresses.
- (e) By estimate of the value as deductible from the approved detailed estimate.

Overhead shall be defined to include all premiums of bonds, charges for liability and fire insurance, taxes, and all other expenses, direct or indirect, other than actual cost of labor and material as determined by the following paragraph.

(2) Cost of labor and material shall be defined to include the following items:

- (a) Cost of necessary additional materials delivered to the site.
- (b) Actual costs paid to or on behalf of workmen and foremen for wages and wage supplements, workmen's compensation insurance, unemployment insurance, social security, federal old age benefits. Actual cost shall be based on the number of hours the men were engaged in activity progressing the specific work required by the change order. Wage rates and wage supplements shall be as determined by collective bargaining agreement or other employment contract generally applicable to the

class or labor employed. Compensation insurance shall be at the current rates as established by the Compensation Insurance Rating Board. Other payroll charges enumerated above shall be at the rates determined by law.

- (c) Maintenance, operation, and reasonable rental value of equipment (equipment other than manual tools) approved by the Engineer for use in the required additional work. Rental value shall be based on the actual time the equipment is necessary being utilized for the Change Order. In the event that the rental value of equipment is disputed, the rental value will be computed on the basis of the actual cost of ownership to the Contractor as determined by sound accounting procedure and practice. If the equipment used by the Contractor is rented equipment, the rental value to be paid under this section may not exceed the current actual rates of the rental market existing in the immediate area of the contract site at the time the work is performed.

(3) Regardless of the method used to determine the value of any change, the Contractor will be required to submit evidence satisfactory to the County to substantiate each and every item that constitutes his proposal of the value of the change. The amounts allowed for overhead and profit shall not exceed the applicable percentages as established in the following paragraphs.

(4) If the work is done directly by the Contractor, overhead in an amount of ten (10) percent may be added to the cost of labor and materials if method (b), (c), or (d) is used; and to the cost of the labor and materials plus overhead, there may be added ten (10) percent for profit.

(5) If the work is done by a subcontractor, subcontractor's overhead in the amount of five (5) percent may be added to the cost of labor and materials if method (b), (c), or (d) is used; and to the cost of the labor and materials plus overhead, there may be added ten (10) percent for the subcontractor's profit. To this amount there may be added five (5) percent for the Contractor's combined overhead and profit.

(6) The County shall determine by which of the foregoing methods the value of any changes shall be computed.

(7) In case no agreement can be reached between the County and the Contractor as to the value of the change, the

Section 4.01 CHANGES IN THE WORK - CONTINUED

Contractor shall proceed with the work upon receipt of a written order from the Engineer, which order shall set forth the work to be done and the price allowed by the County. The said order may be reviewed before final certificate is issued if it is deemed that such action is necessary or advisable.

(8) The Contractor may retain overhead and profit on a change order which involves deductions only, except that no overhead and profit shall be considered on value of work determined by method (a).

(9) Unless otherwise specifically provided for in a change order, the compensation specified in said change order for extra work includes full payment for both the extra work covered thereby and for any damage or expense caused the Contractor by any delays to other work to be done under the Contract resulting from or on account of said extra work, damage, or expense.

Section 4.02 PROGRESS PAYMENTS

(1) Unless otherwise provided in the Contract, progress payments will be made as the work progresses. These requests shall be submitted by the Contractor on AIA Documents G 703 and approved by the Engineer and the County.

(2) Upon verification by the County of the quality of work done and material actually put in place in accordance with the terms and conditions of the contract and the value thereof, the County shall pay to the Contractor all monies due as computed upon the percentages basis prescribed by Subdivision 1, Section 106-b of the General Municipal Law.

Section 4.03 APPLICATIONS FOR PROGRESS PAYMENTS

The contractor shall prepare all applications for progress payments for work performed, together with supporting data and computations as are deemed necessary by the Engineer to determine the accuracy of the application. The application for payment shall be submitted on the form prescribed by the County. Failure of the Contractor to submit applications for progress payments, or lack of complete and accurate supporting data, shall be sufficient reason for withholding payment until such omission or errors are rectified. Unless otherwise directed, such applications, signed and certified as correct by the Contractor, shall be delivered by the Contractor to the Engineer not more than once in each thirty (30) day period, showing the total value of work completed and in place on the last day of the payment period covered by the application.

Unless otherwise provided in the Contract Documents, payments will be made on account of materials or equipment not

Section 4.03 APPLICATIONS FOR PROGRESS PAYMENTS - CONTINUED

incorporated in the Work but delivered and suitably stored at the site and, if approved in advance by the County, payments may be similarly be made for materials or equipment suitably stored at some other location agreed upon in writing. Payments for materials or equipment stored on or off the site shall be conditioned upon submission to the Contractor of bills sale or such other procedures satisfactory to the County to establish the County's title to such materials or equipment or otherwise protect the County's interest including applicable insurance and transportation to the site for those materials and equipment stored off the site.

Section 4.04 APPLICATION FOR FINAL PAYMENT

When requesting Final Payment, the Contractor shall submit with the payment request the following documents: AIA Documents G 702 and G 703; AIA Document G 706A - Contractor's Affidavit of Release of Liens; AIA Document G 707 - Consent of Surety Company to Final Payment; a Broome County Release of Claims From; and, if incentive payment is requested, a Certificate of Entitlement to Incentive Payment under Broome County Emerging Business Assistance Program signed by the Affirmative Action Officer.

ARTICLE V

BONDS AND INSURANCE

Section 5.01 BONDS

The Contractor shall procure and deliver to the County and maintain at his own expense and without expense to the County until final payment acceptance by the County of the work covered by this Contract.

Section 5.02 FAITHFUL PERFORMANCE BOND

A bond shall be furnished guaranteeing the faithful performance of the contract, the coverage shall be 100% of the contract price.

The bond shall be furnished in the form prescribed by the Board with sufficient sureties, approved by the said Board, that the Contractor will perform the work in accordance with the terms of the Contract and with the plans and specifications, and that he will commence and complete the work within the time prescribed in the contract, and that he will provide against direct or indirect damage that shall be suffered or claimed on account of such construction or improvement during the time thereof, and until the work is accepted.

Section 5.03 LABOR AND MATERIAL BOND

Pursuant to the provisions of Section 137 of the State Finance law, a separate bond guaranteeing prompt payment of monies due to all persons supplying the contractor or a sub-contractor with the labor and materials employed and used in carrying out the contract, which bond shall insure to the executed and delivered to the Board. The amount of such bond shall be 100% of the contract price.

Section 5.04 INSURANCE

The Contractor shall procure and maintain at his own expense and without expense to the County, until final acceptance by the County of the work covered by the contract, insurance for liability for damages imposed by law, of the kinds and in amounts hereinafter provided, in insurance companies authorized to do such business in the State covering all operations under the contract whether performed by him or by sub-contractors. Before commencing the work the Contractor shall furnish to the Board a certificate or certificates of insurance in from satisfactory to the Board showing that he has complied with this paragraph, which certificate or certificates shall provide that the policies shall not be changed or canceled until thirty (30) days written notice has been given to the Board. The kinds and amounts of insurance are as follows:

BONDS AND INSURANCE - CONTINUED

Section 5.04 INSURANCE - CONTINUED

(a) Workmen's Compensation Insurance

A policy covering the obligations of the Contract in accordance with the provision of Chapter 41 of the Laws of 1914, as amended, known as Workmen's Compensation Law, covering all operations under the contract, whether performed by him or by his sub-contractor, and also under Article 9 of the Workmen's Compensation Law, know as the Disability Benefits Law (Chapter 600 of the Laws of 1949) and amendments thereto. The contract shall be void and of no effect unless the person or corporation making or executing same shall secure compensation and disability benefits coverage for the benefit of, and keep insured during the life of said contract, such employees in compliance with the provisions of the Workmen's Compensation Law (State Finance Law, Section 142).

(b) Liability and Property Damage Insurance

Unless otherwise specifically required by special specifications, each policy with limits of not less than One Million Dollars (\$1,000,000) combines single limit, for all damages arising during the policy period shall be furnished in the types specified, via.:

1. Contractor's Liability Insurance issued to and covering the liability for damages imposed by law upon the CONTRACTOR with respect to all work performed by him under the agreement;
2. Contractor's Liability Insurance issued to and covering the liability for damages imposed by law upon EACH SUBCONTRACTOR with respect to all work performed by said subcontractor under the agreement;
3. Contractor's Protective Liability Insurance issued to and covering the liability for damages imposed by law upon the Contractor with respect to all work under the agreement performed for the Contractor and subcontractors;

BONDS AND INSURANCE - CONTINUED

Section 5.04 INSURANCE - CONTINUED

4. Protective Liability Insurance issued to and covering the liability for damages imposed by law upon the People of the County of Broome and its officers and employees both officially and personally, with respect to all operations under the agreement by the Contractor or by his subcontractors, including omissions and supervisory acts of the County;
5. Completed Operation's Liability Insurance issued to and covering the liability for damages imposed by law upon the Contractor and each subcontractor arising, between the date of final cessation of the work and the date of the work and the date of final acceptance thereof, out of that part of the work performed by each;
6. General Liability Coverage Categories (Limit \$1,000,000)
 - Comprehensive Form
 - Premises - Operations
 - Products/Completed Operations Hazard
 - Contractual Insurance
 - Broad Form Property Damage
 - Independent Contractors
 - Personal Injury
 - Explosion and Collapse Hazard {Required if "X" in Box []}
7. Automobile Liability Coverage Categories (Limit\$1,000,000)
 - Comprehensive Form
 - Owned
 - Hired
 - Non-Owned
8. All insurance must not have an asbestos exclusion {Required if "X" in Box []}
9. Employers Liability Insurance (coverage shall be statutory \$100,000 limit).

BONDS AND INSURANCE - CONTINUED

Section 5.04 INSURANCE CONTINUED

- (c) Builder's Risk Insurance [Required if "X"
in Box []]

A Builder's Risk Policy providing "all risk" coverage on a one-hundred percent (100%) completed value basis on the insurable portion of the project.

1. The policy shall name as insured:
 - a. County
 - b. Contractor
 - c. All subcontractors
2. The policy shall contain the following provisions:
 - a. A waiver of subrogation against the Named Insured,
 - b. Broad Form Property Damage coverage,
 - c. Coverage for the personal property of others which is in the care, custody or control of the Named Insured
3. The original of the Builder's Risk Policy is to be provided to the County prior to commencing work.

(d) Special Notes

1. County must be named as Additional Insured.
2. Insurance carrier must be acceptable to County*.
3. Contractor must furnish to County the Broker/Agent Company name, address, telephone number and specific contact person.
4. Thirty (30) days prior notice of cancellation is required.

* Rated B+, or higher, by "A.M. Best" (Current Rate Guide).

FAITHFUL PERFORMANCE BOND

1. Know all men by these presents, That we (hereinafter called the "Principal")

_____ of _____
_____ of _____
_____ of _____
_____ of _____
and _____
of _____

(hereinafter called the "Surety") are held and firmly bound unto the County of Broome, State of New York in the full and just sum of _____ Dollars (\$_____) good and lawful money of the United States of America, to the payment of which said sum of money, well and truly to be made and done, the said Principal binds himself, his heirs, executors, administrators, and assignees and the said SURETY binds itself, its successors or assigns, jointly and severally, firmly by these presents.

2. Signed, sealed and dated this _____ day of _____ 19____.

3. Whereas, Said Principal has entered into a certain written contract bearing date on the _____ day of _____, 19____ with the County of Broome, State of New York for the _____

_____ in the County of Broome, State of New York.

(Revised 7/83)

FAITHFUL PERFORMANCE BOND - CONTINUED

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH that the said PRINCIPAL shall well, truly and faithfully comply with and perform all the terms, covenants and conditions of said contract on their (his, its) part to be kept and performed in accordance with the terms of the contract and in accordance with the plans and specifications, and will commence and complete the work within the time prescribed in the contract, and shall protect the said County of Broome against, and pay any and all amounts, damages, costs and judgments which may or shall be recovered against said County of Broome or its officers or agents or which the said County of Broome may be called upon to pay to any person or corporation by reason of any damages, direct or indirect, arising or growing out of the doing of said work, or the repair or maintenance thereof, or from the negligence, nonfeasance, misfeasance or malfeasance of the PRINCIPAL or of any officer, agent, servant or employee of the PRINCIPAL, or the infringement of any patent or patent rights by reason of the use of any materials furnished or work done as of aforesaid or otherwise, then this obligation shall be null and void, otherwise to remain in full force and virtue.

The Surety, for value received, hereby stipulates and agrees, if requested to do so by the County of Broome, to fully perform and complete the work mentioned and described in said contract and specifications, pursuant to the terms, conditions and covenants thereof, if for any cause, said PRINCIPAL fails or neglects to fully perform and complete said work; the said Surety further agrees to commence said work of completion within 20 days after notice thereof from the County of Broome, and to complete the same with all and due diligence.

(Revised 7/83)

FAITHFUL PERFORMANCE BOND - CONTINUED

The said Surety, for value received, hereby stipulates and agrees that no change, extension, alteration or addition to the terms of this contract or specifications accompanying the same, shall in any wise effect its obligations of this bond, and does hereby waive notice of any such change, extension, alteration or addition.

IN TESTIMONY WHEREOF, the said PRINCIPAL has hereunto set his (their, its) hand and seal and the said Surety has caused this instrument to be signed by its _____, and its corporate seal to be hereunto affixed, the day and year first above written. Signed, sealed and delivered in the presence of:

PRINCIPAL

By _____

Title _____

Witness

SURETY

By _____

Title _____

Witness

(Revised 7/83)

FAITHFUL PERFORMANCE BOND - CONTINUED

(Acknowledgment by principal, unless it be a corporation.)

STATE OF NEW YORK)
COUNTY OF) ss.:

On this _____ day of _____, 19____, before me personally came _____ to me known to be the person described in and who executed the foregoing instrument and who being duly sworn by me did depose and say that he executed the same.

Signature of Notary Public

(Notary's seal to be attached.)

(Acknowledgment by principal, if a corporation.)

STATE OF YORK)
COUNTY OF) ss.:

On this _____ day of _____, 19____, before me personally came _____ to me known, who being by me duly sworn, did depose and say that he resides in _____ that he is the _____ of the _____, the corporation described in and which executed the foregoing instrument, that he knew the seal of said corporation; that the seal affixed to said instrument was such corporate seal; that it was so affixed by order of the Board of Directors of said corporation, and that he signed his name thereto by like order.

Signature of Notary Public

(Notary's Seal to be attached.)

FAITHFUL PERFORMANCE BOND - CONTINUED

(Acknowledgement by Surety Company.)

STATE OF NEW YORK)
COUNTY OF) ss.:

On this _____ day of _____, 19____, before me personally came _____ to me known, who being by me duly sworn, did depose and say that he resides in _____ that he is the _____ of the _____, the corporation described in and which executed the foregoing instrument; that he knew the seal of said corporation; that the seal affixed to said instrument was such corporate seal; that it was so affixed by order of the Board of Directors of said corporation, and that he signed his name thereto by like order.

Signature of Notary Public

(Notary's Seal to be attached.)

(The Surety Company must append statement of its financial condition and a copy of the resolution authorizing the execution of Bonds by officers of the Company)

(Acknowledgment of Co-partnership)

STATE OF NEW YORK)
COUNTY OF) ss.:

On this _____ day of _____, 19____, before me personally came and appeared _____ to me known to be the person who executed the above instrument, who, being duly sworn by me, did for himself depose and say that he is a member of the firm of _____ and that he executed the foregoing instrument individually and in the firm name of _____.

Signature of Notary Public

(Notary's seal to be attached.)

FAITHFUL PERFORMANCE BOND - CONTINUED

BROOME COUNTY

I hereby approve the foregoing contract and bond as to form and manner of execution.

DATED: _____

COUNTY ATTORNEY

LABOR AND MATERIAL BOND

Know all men by these presents, That _____
of _____
(hereinafter called the "Principal") and the _____
_____ a corporation created and existing
under the laws of the State of _____ having its
principal office in the City of _____ (hereinafter
called the "Surety"), are held and firmly bound unto the County of
Broome, State of New York (hereinafter called the "County"), in the
full and just sum of _____ good and
lawful money of the United States of America, for the payment of
which said sum of money, well and truly to be made and done, the
said Principal binds themselves (himself, itself), their (his, its)
heirs, executors, and administrators, successors, and assigns, and
the said Surety binds itself, its successors and assigns jointly and
severally, firmly by these presents; _____

Signed, sealed and dated this _____, 19____, A.D.

Whereas, said Principal has entered into a certain written
contract, bearing date _____ with the
_____.

LABOR AND MATERIAL BOND - CONTINUED

Whereas, the Board of Acquisition and Contract has required this bond guaranteeing prompt payment of monies due to all persons supplying the Contractor or a subcontractor with labor and materials employed and used in carrying out the contract, which bond shall insure to the benefit of the persons supplying such labor and materials.

Now, Therefore, the Condition Of The Foregoing Obligations Is Such, that if the said Principal shall promptly pay all monies due to all persons supplying the Contractor or subcontractor with labor and materials employed and used in carrying out the contract, then this obligation shall be null and void, otherwise, to remain in full force and virtue.

IN TESTIMONY WHEREOF, the said Principal has hereunto set his (their, its) hand and seal and the said Surety has caused this instrument to be signed by its _____ President and its _____ Secretary, and its corporate seal to be hereunto affixed, the day and year first above written.

LABOR AND MATERIAL BOND - CONTINUED

Signed, sealed and delivered in the presence of:

(Corporate seal of _____ (L.S.)

Principal if a _____ (L.S.)

corporation) _____ (L.S.)

Principal

Corporate Seal _____ Company

of Surety Co.) of _____

By _____

Title of Officer

Attest _____

Title of Officer

Surety

(Acknowledgement of Principal, unless it be a corporation)

STATE OF NEW YORK)
COUNTY OF) ss.:

On this _____ day of _____, 19____, before
me personally came _____
to me known and known to me to be the person described in and who
executed the foregoing instrument and who being duly sworn by me did
depose and say that he executed the same.

Notary Public _____ County

(Acknowledgement by Principal, if a Corporation)

STATE OF NEW YORK)
COUNTY OF) ss.:

On this _____ day of _____, 19____, before me
personally came _____
to me known, who being by me duly sworn did depose and say that he
resides in _____
_____ that he is the

LABOR AND MATERIAL BOND - CONTINUED

the corporation described in and which executed the foregoing instrument; that he knew the seal of said corporation; that the seal affixed to said instrument was such corporate seal; that it was so affixed by order of the Board of Directors of said corporation, and that he signed his name thereto by like order.

Notary Public

County

(Acknowledgement of Surety Company)

STATE OF NEW YORK)
COUNTY OF) ss.:

On this _____ day of _____, 19____, before me personally came _____ to me known, who being by me duly sworn did depose and say that he resides in _____ that he is the _____ of the _____, the corporation described in and which executed the within instrument; that he knows the seal of said corporation; that the seal affixed to said instrument is such corporate seal; that it was so affixed by the order of the Board of Directors of said corporation, and that he signed his name thereto by like order; and that the liabilities of said company do not exceed its assets as ascertained in the manner provided by laws of the State of New York; and the said _____ further said that he is acquainted with _____ and knows him _____ to be the _____ of said company; that the _____ signature of the said _____ subscribed to the within instrument is in genuine handwriting of the said _____ and was subscribed thereto by like order

LABOR AND MATERIAL BOND - CONTINUED

of the Board of Directors, and in the presence of him, the said _____

Notary Public

County

(Acknowledgement by co-partnership)

STATE OF NEW YORK)
COUNTY OF) ss.:

On this _____ day of _____, 19____, before me personally
came and appeared _____
to me known and known to me to be the person who executed the above
instrument, who being duly sworn by me, did for himself depose and
say that he is a member of the firm of _____
that he executed the foregoing instrument individually and in the
firm name of _____

Notary Public

County

BROOME COUNTY

I hereby approve the foregoing contract and bond as to form and
manner of execution.

DATE: _____
County Attorney

ARTICLE VI

PROVISIONS REQUIRED BY LAW

Section 6.01 PROVISIONS DEEMED INSERTED

Each and every provision required by law to be inserted in the Contract shall be deemed to be inserted herein and the Contract shall be read and enforced as though it were included herein and in the event that such provision is not inserted or is not correctly inserted then, upon the application of either party, this Contract shall forthwith be physically amended to make such insertion or correction.

Section 6.02 LABOR PROVISIONS

A. Working Hours and Pay

(1) No laborer, workman, or mechanic in the employ of the Contractor, subcontractor or other person doing or contracting to do the whole or any part of the work contemplated by the Contract shall be permitted or required to work more than eight hours in any one calendar day or more than five (5) days in any one week except in cases of extraordinary emergency set forth in the Labor Law.

(2) The wages (including supplements) paid for a legal day's work shall not be less than the prevailing rate of wages (including supplements) as defined by law.

(3) The minimum hourly wage rates (including supplements) to be paid shall not be less than that designated by the Industrial Commissioner.

(4) The minimum hourly supplement to be paid shall be in accordance with the prevailing practices in the locality where the work is located and shall be not less than that designated by the Industrial Commissioner. Supplements as defined in Section 220 of the Labor Law, as amended means all remuneration for employees paid in any medium other than cash or reimbursements for expense or any payments which are not wages within the meaning of the law, including, but not limited to, health, welfare, non-occupational disability, retirement, vacation benefits, holiday pay and life insurance.

(5) In the event the contractor shall fail, in one or more instances, to pay prevailing wages and supplements in accordance with Article 8 of the New York State Labor Law, Section 220, et. seq., and as described in this contract, it shall be considered a material breach. For the breach or violation of this provision, without limiting any other rights or remedies to which the County or any individual may be entitled or any civil or criminal penalty for which any violator may be liable, the County

PROVISIONS REQUIRED BY LAW - CONTINUED

Section 6.02 LABOR PROVISIONS - CONTINUED

A. Working Hours and Pay - Continued

shall have the right, in its discretion, to terminate this agreement immediately upon notice. In such event, the Contractor shall be liable to the County for any additional costs incurred by the County in the completion of the project. (Revised 9/90)

B. Non-Discrimination in Employment

(1) In the hiring of employees for the performance of work under the Contract or any subcontract thereunder, neither the Contractor, nor any subcontractor, nor any person acting on behalf of the Contractor or any subcontractor, shall by reason of race, creed, sex, color or national origin discriminate against any person who is qualified or available to perform work to which the employment relates.

(2) Neither the Contractor nor any subcontractor nor any person acting on behalf of the Contractor or any subcontractor shall in any way or manner discriminate against or intimidate any employee hired for the performance of the work covered by the Contract on account of race, creed, sex, color or national origin.

C. Equal Opportunity

During the performance of this contract, the Contractor agrees as follows:

a. The Contractor will not discriminate against any employee or applicant for employment because of race, creed, sex, color, or national origin, and will take affirmative action to insure that they are afforded equal employment opportunities without discrimination because of race, creed, sex, color or national origin. Such action shall be taken with reference, but not limited, to: recruitment, employment, job assignment, promotion, upgrading, demotion, transfer, layoff or termination, rates of pay or other forms of compensation, and selection for training or retraining, including apprenticeship and on-the-job training.

b. The Contractor will post and keep posted in conspicuous places, available to employees and applicants for employment, notices to be provided by the State Division of Human Rights, setting forth the substance of the provisions of clause a. and such provision of the State's laws against discrimination as the State Division of Human Rights shall determine.

PROVISIONS REQUIRED BY LAW - CONTINUED

Section 6.02 LABOR PROVISIONS - CONTINUED

C. Equal Opportunity - Continued

c. The Contractor will state, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, that all qualified applicants will be afforded equal employment opportunities without discrimination because of race, creed, sex, color or national origin.

d. The Contractor will comply with the provisions of Section 291-299 of the Executive Law and the Civil Rights Law, will furnish all information and reports deemed necessary by the State Division of Human Rights under these non-discrimination clauses and such sections of the Executive Law, and will permit access to his books, records and accounts by the State Division of Human Rights, the Attorney General and Industrial Commissioner for purposes of investigation to ascertain compliance with these non-discrimination clauses and such sections of the Executive Law and Civil Rights Law.

e. This contract may be forthwith canceled, terminated or suspended, in whole or in part, by the County upon the basis of a finding made by the State Commissioner of Human Rights that the Contractor has not complied with these non-discrimination clauses, and the Contractor may be declared ineligible for future contracts made by or on behalf of the State or a public authority or agency of the State, until he satisfies the State Commissioner of Human Rights that he has established and is carrying out a program in conformity with the provisions of these non-discrimination clauses and after a verified complaint has been filed with the Division, notice thereof has been given to the Contractor and an opportunity has been afforded him to be heard publicly before the Commissioner or his designee. Such sanctions may be imposed and remedies invoked independently of-or in addition to sanctions and remedies otherwise provided by law.

f. As used herein, the words and designation "affirmative action" include, but are not limited to, the following:

1. Except as otherwise provided by this Contract, the Contractor shall be the judge as to the qualifications of all applicants for employment on or in connection with the construction of the project and where a collective bargaining agreement provides for referral by the union of "qualified journeymen", the Contractor should evaluate the qualifications of such applicants.

PROVISIONS REQUIRED BY LAW - CONTINUED

Section 6.02 LABOR PROVISIONS - CONTINUED

C. Equal Opportunity - Continued

2. The Contractor will not limit recruitment or employment, directly or indirectly, to member or referrals of labor organizations which do not have minority group journeymen members or do not currently (and consistently refer minority group members for employment or do not indicate willingness to admit into journeymen membership a prospective employee or applicant for employment who is a member of a minority group or to permit his employment on the construction site of the project.
3. The Contractor will notify community agencies and communication media associated with minority groups of opportunities for employment.
4. To the extent permitted by law and the applicable collective bargaining agreement not in violation thereof, the Contractor will recruit, evaluate and hire, without regard to race, creed, sex, color, national origin or union membership, it being understood that a union may require a new employee to join the union within eight (8) days after he commences work and it being further understood that the Contractor may retain in employment any employee he deems qualified whose tender of initiation fees and dues has been refused by the union.
5. To the extent permitted by law and the applicable collective bargaining agreement, not in violation thereof, the Contractor will take the initiative in seeking out for prospective employment on the construction site of the Project craftsmen who are members of minority groups.
6. To the extent permitted by law and the applicable collective bargaining agreement, not in violation thereof, wherever possible and consistent with the actual requirements of the work to be done, the Contractor will establish entry-level positions, (e.g., mechanic's helper, electrician's helper, laborer's helper, etc.) in which skills may be taught in preparation for, or

PROVISIONS REQUIRED BY LAW - CONTINUED

Section 6.02 LABOR PROVISIONS - CONTINUED

C. Equal Opportunity - Continued

as an adjunct or alternative to, formal apprenticeship.

7. The Contractor will review his respective collective bargaining agreements in order to identify, and discontinue when possible, provisions which tend to limit recruitment or hiring members of minority groups, and will seek to negotiate remedial provisions.
8. To the extent permitted by law and the applicable collective bargaining agreement, not in violation thereof, the Contractor will make the fullest possible use of his rights of selection to further the employment of members of minority groups.

D. Workmen's Compensation and Disability Insurance

1. The Contractor will secure workmen's compensation and disability insurance as set forth in Article V, Bonds and Insurance, Section 5.04 - Insurance, subparagraph (a) Workman's Compensation Insurance.

SUPPLEMENTARY GENERAL CONDITIONS

SUPPLEMENTARY GENERAL CONDITIONS

1. GENERAL SCOPE OF WORK REQUIRED

- A. Individual Sealed Proposals are solicited on the following:

Prime Contracts for the completion of all parts of the Contract work as shown on the Plans and prescribed by the Specifications and Addenda, including all work incidental thereto for the following:

Colesville Landfill
Closure Action of the Broome County
Colesville Landfill Remedial Design
Town of Colesville
County of Broome
State of New York

- B. The Contractor will accomplish all work as described in these Documents. He will furnish and install all work related to this project. All work will be done in a first class manner.

2. TIME OF COMPLETION

- A. Time is of the essence. Each Prime Contractor and Bonding Company will be held strictly accountable for completion as a condition to satisfactory contractual performance.
- B. The specific time of completion is noted elsewhere in the Contract Documents.
- C. Each Prime Contractor will arrange his work so as not to conflict with operations of other contractors.
- D. Only regular working hours will be allowed for all aspects of this project. No overtime will be allowed.

3. LIQUIDATED DAMAGES

- A. Each Prime Contractor agrees to pay as liquidated damages the sum of \$760 for each consecutive calendar day, weekends, and holidays inclusive thereafter that the Project is not completed as provided in the Contract Documents which liquidated damages will be deducted by the County from the contract amount. The Contractor agrees that the time period set for completion of the Project is reasonable and that the liquidated damages feature of this contract are fair equitable. The Contractor agrees to accept and abide by these conditions of the Contract.

4. EQUIVALENT EQUIPMENT AND MATERIAL

- A. Each proposal for equipment will be accompanied by two sets of technical and construction information on equipment being offered, including substantially all information required by the Specifications.
- B. The mention of any apparatus, component or material by name or specific description of same as made herein is intended only as a standard of quality. Any apparatus, component, or material which, in the opinion of the Department of Public Works, will conform to the degree of quality, efficiency, durability, and appearance, to perform the required functions, may be eligible for offer. The qualifications will be judged on the conformance of any offer with the Specifications.
- C. The equipment furnished under this specification will be the current standard product of each manufacturer. Catalog and model numbers are intended to indicate type and quality of design and material as well as operating features required.
- D. The Department of Public Works reserves exclusive rights in determining acceptance of substitution items. Rejection will be final and all bids containing rejected substitutions will be considered void.
- E. Award will be made to the lowest bidder submitting a bid meeting the requirements of the "Technical Specifications" and "Supplementary General Conditions" as interpreted by the Department of Public Works. However, it is explicitly understood that the County may reject any or all bids or award a contract for only such portions of the bid as may be in its best interest.
- F. No "or equal" will be approved during the bid period.

5. BIDDER'S UNDERSTANDING

- A. Each Prime Contractor intending to make a bid or proposal agrees in making a bid or proposal that he has examined the bidding documents and has fully informed himself, from his personal examination of the same, and that he will make no claim against the County or any of its agents, servants, or employees, by relying on any estimates or any representations made by the County with respect to the work or materials to be performed or supplied under the bidding documents. Proposers or bidders will be required to furnish the work or materials according to the bidding documents to the satisfaction of the Department of Public Works or his duly authorized representative.

6. SHOP DRAWINGS

- A. Upon receipt of the low bidder, and prior to placement of the order for materials and equipment, each Prime Contractor will be required to furnish complete shop drawings showing any and all pertinent information relating

to the project including also typical and/or special conditions occurring within the scope of work.

7. ACCEPTANCE OF SYSTEM

- A. Upon mutual agreement that the work as installed meets all specifications provided herein and is functioning properly, the County will accept the work and all warranties will commence from that date.
- B. Until the work is accepted by the County, the Contractor will be responsible for all costs, direct or indirect, associated with the work.

8. CLEANING UP

- A. Each Prime Contractor at all times will keep the premises free from accumulation of waste materials or rubbish caused by his operations. At the completion of the work he will remove all his waste materials and rubbish from and about the project as well as all tools, construction equipment, and machinery and surplus materials, and will clean all surfaces and leave the work "broom- clean" or its equivalent, except as otherwise specified.
- B. If each Prime Contractor fails to clean up, the County may do so and the cost thereof will be charged to the Contractor.
- C. If a dispute arises between the separate Prime Contractors as to their responsibility for cleaning up as required, the County may clean up and charge the cost thereof to the several contractors as the Engineer will determine to be just.

9. BUILDING SERVICES

- A. Each Prime Contractor, in performing his work on this contract, will not interrupt any service at the Project Location.

10. PROTECTION

- A. Each Prime Contractor will make all necessary provisions to protect the area of this building and immediate contents where he is working from damage as the result of his construction activities. He will be held liable for any damage to the building and its contents to the satisfaction of the County during the entire period of this work to the final acceptance of the work.

11. TESTS: Each Prime Contractor will comply with the following:

- A. If the Contract Documents, laws, ordinances, rules, regulations or orders of any public authority having jurisdiction require any work to be inspected, tested, or approved, each Prime Contractor will give the County timely notice of its readiness and of the date arranged so the County may observe such

inspection, testing, or approval. Each Prime Contractor will bear all costs of such inspections, tests, approvals, unless otherwise provided, related to his specific prime contract.

- B. If after the commencement of the work the Engineer determines that any work requires special inspection, testing, or approval which subparagraph "A" (above) does not include, he will, upon written authorization from the County, instruct the specific Prime Contractor to order such special inspection, testing, or approval, and the Prime Contractor involved will give notice as in subparagraph "A" (above). If such special inspection or testing reveals a failure of the work to comply (1) with the requirements of the contract documents, or (2) with respect to the performance of the work, with laws, ordinances, rules, regulations, or orders of any public authority having jurisdiction, the specific Prime Contractor involved will bear all costs thereof, including the Engineer's additional services made necessary by such failure.
- C. Required certificates of inspection, testing, or approval will be secured by each Prime Contractor and promptly delivered by him to the Engineer.

12. SAFETY PRECAUTIONS AND PROGRAMS

- A. Each Prime Contractor will be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the work, and will provide all reasonable protection to prevent damage, injury or loss to:
 - (1) All employees on the work and all other persons who may be affected thereby.
 - (2) All the work and all materials and equipment to be incorporated therein, whether in storage on or off the site, under the care, custody, or control of each Prime Contractor or any of his Subcontractors or Sub-subcontractors.
 - (3) Other property at the site or adjacent thereto, including walks, curbs, pavements, roadways, and utilities not designated for removal, relocation, or replacement in the course of construction.
- B. Each Prime Contractor will comply with all applicable laws, ordinances, rules, regulations, and orders of any public authority having jurisdiction for the safety of persons or property, to protect them from damage, injury, or loss. He will erect and maintain as required by existing conditions and progress of the work, all reasonable safeguards for safety and protection, including posting danger signs and other warning against hazards, promulgating safety regulations and notifying owners and users of adjacent utilities.
- C. When the use or storage of explosive or other hazardous materials or equipment is necessary for the execution of the work, each Prime Contractor

will exercise the utmost care and will carry on such activities under the supervision of properly qualified personnel.

- D. All damages or loss to any property caused in whole or in part by each Prime Contractor, his Subcontractor, or his Sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable, will be remedied by each Prime Contractor, except damage or loss attributable to faulty drawings of specifications.
- E. Each Prime contractor will designate a responsible member of his organization at the site whose duty will be the prevention of accidents. This person will be the Prime Contractor's superintendent unless otherwise designated in writing by the Prime Contractor to the County.
- F. Each Prime Contractor will not load or permit any part of the work to be loaded so as to endanger its safety.

13. "AS BUILT" DRAWINGS

- A. After submittal of Record Documents and approval of same by the County, each Prime Contractor will furnish to the County one complete set of reproducible Mylar Polyester Film "AS BUILT" drawings for his completed part of the project.

14. CHANGES IN THE WORK

- A. Delete Article IV, Section 4.01 in its entirety and replace with the following:

"A. MODIFICATIONS AND EXTRA WORK

The Contractor, in entering into this contract, understands that Broome County reserves the right to modify the arrangement, character or size of the work or appurtenances whenever in its opinion shall deem it necessary or advisable to do so. Minor changes in the work not involving extra cost and not inconsistent with the purpose of the work may be made by written field order, but no modifications involving substantial extra work or changes shall be made unless ordered in writing by Broome County. The Contractor shall and will accept such modifications when ordered in writing by Broome County, and the same shall not vitiate or void this contract. Any such modifications so made shall not, however, subject the Contractor to increased expenses without equitable compensation. If such modifications result in a decrease in the cost of work involved, an equitable deduction from the contract price, to be determined by Broome County on the basis of unit prices bid and accepted, shall be made.

Broome County may make alterations in the line, grade, plan, form, dimensions or materials of the work, or any part thereof, either before or after the commencement of construction. If such alterations diminish the quantity of work to be done, no claim for damages or for anticipated profits on the work dispensed with shall be

warranted thereby or claimed therefore; and if they increase the amount of work, such increase shall be paid for according to the quantity actually done at the unit prices bid for such work under this contract, or in case there is no price established, it shall be paid for as extra work in accordance with Section B.

B. ORDERS ON CONTRACT

1. Broome County may make changes by altering, adding to or deducting from the work, and adjusting the Contract sum accordingly. All change work shall be executed in conformity with the terms and conditions of the Contract documents unless otherwise provided in the Order on Contract. Any change in the Contract sum or time for completion shall be adjusted prior to issuing the Order on Contract.
2. No written or oral instructions shall be construed as directing a change in the work unless in the form of an Order on Contract signed by the Engineer, Broome County, and the Contractor. The Order on Contract shall describe or enumerate the work to be performed and state the price to be added to or deducted from the Contract sum. If the extent or cost of the work is not determinable until after the change work is performed, the Order on Contract shall specify the method for determining the cost and extent of the changed work when completed. If the Contractor disagrees as to any element of the Order on Contract, it shall indicate its disagreement in writing on the face of the Order on Contract and promptly proceed with the work in accordance with the Order on Contract.
3. If the Contractor is directed to perform work for which it believes it is entitled to an Order on Contract, it shall give the Engineer prompt written notice and await written instructions before proceeding to execute such work. The Engineer may order the Contractor to execute the work and proceed under Claims and Disputes (General Conditions, Section 2.03).
4. The value of any Order on Contract shall be determined by one or more of the following methods as approved by Broome County:
 - (a) By acceptance of prices negotiated or established, based on estimated cost, plus overhead and profit as applicable.
 - (b) By prices specifically named in the Specifications or Bid Proposal.
 - (c) By acceptance of agreed unit prices based on estimated cost plus overhead and profit as applicable.
 - (d) By estimate of the actual cost of labor and materials plus overhead and profit, cost to be determined as the work progresses.
 - (e) By actual cost of labor and materials plus overhead and profit, cost to be determined as the work progresses.

(f) By estimate of the value as deductible from the approved detailed estimate.

5. Overhead shall be defined as an allowance to compensate for all costs, charges and expenses, direct or indirect, except for the actual cost of labor and material as defined by Paragraph No. 6. Overhead shall be considered to include, but not be limited to insurance (other than as mentioned in Paragraph No. 6), bond or bonds, field and office supervisors and assistants above the level of foreman, use of small tools and minor equipment, incidental job burdens, general office expense, etc.

6. Actual cost of labor and material shall be defined as the amount paid for the following items, to the extent determined reasonable and necessary:

Item 1 - Cost of materials delivered to the job site for incorporation into the Contract work.

Item 2 - Wage paid to workmen and foremen and wage supplements paid to labor organizations in accordance with current labor agreements.

Item 3 - Premiums or taxes paid by the Contractor for worker's compensation insurance, unemployment insurance, FICA tax and other payroll taxes as required by law, net of actual and anticipated refunds and rebates.

Item 4 - Sales taxes paid if required by law.

Item 5 - Allowance for use of construction equipment (exclusive of hand tools and minor equipment), as approved for use by the Engineer. The rate of self-owned equipment used for periods of under 5 days will be the Blue Book by Dataquest, Inc. in effect on the date of the work, published monthly rate divided by 22 days to establish a daily rate and divided again by 8 hours to establish an hourly rate. Equipment used for periods of 5 days or more will be billed at a rate equal to 45 percent of the published monthly rate. In the alternative, the Engineer's representative may approve for reimbursement a rate representing the allocable costs of ownership.

Self-owned equipment is defined to include equipment rented from controlled or affiliated companies. Rented equipment will be paid for at the actual rental cost. When, in the opinion of the Contractor, and as approved by the Engineer's representative, suitable equipment is not available on the site, the moving of said equipment to and from the site will be paid for at actual cost.

Item 6 - When the material furnished under Item 1 is used material, its value shall be pro-rated to the value of new material, but shall be no more than its cost. When, in the opinion of the Engineer, the

salvage value of salvageable material furnished under Item 1 exceeds the cost of salvage, a suitable credit shall be given to Broome County.

7. Regardless of the method used to determine the value of any Order on Contract, the Contractor will be required to submit evidence satisfactory to the Engineer to substantiate every item included in its proposal for the value of the change. The amounts allowed for overhead and profit shall not exceed the applicable percentages as established in the two following paragraphs.
8. If the work done directly by the Contractor, overhead in an amount of 10 percent may be added if any one of the methods described in paragraph 4(a), (c), (d), or (e) is used, and to the cost of the labor and materials, plus overhead there may be added 5 percent for profit. The percentages for overhead and profit may vary according to the nature, extent and complexity of the work involved, but in no case shall exceed the percentages set forth in this paragraph and in paragraph 9. No percentages for overhead and profit will be allowed on payroll taxes or on the premium portion of overtime pay.
9. If the work is to be done by a Subcontractor, Subcontractor's overhead in the amount of 5 percent may be added to cost of labor and materials if any one of the methods described in paragraph 4(a), (c), (d), or (e) is used and to the cost of labor and materials plus overhead there may be added 10 percent for the Subcontractor's profit. To this amount there may be added 10 percent for the Contractor's combined overhead and profit. No percentage for overhead and profit will be allowed on payroll taxes or on the premium portion of overtime pay. However, to the extent that the aggregate dollar value of orders on contract exceeds \$75,000, the 10 percent profit applied to total costs of labor and materials and overhead incurred by the Subcontractor shall be reduced to 5 percent and the combined overhead and profit of 10 percent applied to Contractor's billings shall be reduced to 5 percent. In addition, on all individual Orders on Contract in excess of \$75,000, the Subcontractor's overhead may be 5 percent and profit shall be no more than 5 percent of the total actual cost of labor and materials incurred, and the combined Contractor's overhead and profit allowance applied to subcontract billings shall be not more than 5 percent.
10. The Engineer shall determine by which of the foregoing methods the value of any changes shall be computed.
11. In case no agreement can be reached between the Engineer and the Contractor as to value of the change, the Contractor shall proceed with the work upon receipt of a written order from the Engineer, which order shall set forth the work to be done and the price allowed by Broome County. The said order may be reviewed before final certificate is issued if it is deemed that such action is necessary or advisable.

12. In computing the value of an Order on Contract which involves additions and deductions of work and the added work exceeds the omitted work, overhead and profit shall be computed on the amount by which the cost of additional labor and material exceeds the cost of the omitted labor and material, except no additional overhead and profit shall be allowed on value of work determined by methods (b) or (f).
13. In computing the value of an Order on Contract which involves deductions or additions of work and the omitted work exceeds the added work, the Contractor will be allowed to retain the overhead and profit on the amount which the omitted work exceeds the added work, except that no overhead and profit shall be retained on value of work determined by methods (b) or (f).
14. The Contractor may retain overhead and profit on an Order on Contract which involves deductions only, except no overhead and profit shall be considered on value of work determined by method (b) or (f).

C. CLAIMS FOR UNAUTHORIZED EXTRA WORK

If the Contractor performs work which he considers is not included under any of the items of the contract and which has not been specifically ordered in writing by Broome County as extra work, he shall make claim for extra payment for such work by immediate oral notice followed by written notice within seven (7) days after the occurrence to Broome County and shall submit detailed cost data to support his claim within thirty (30) days after the said work is performed. Should such work extend over a period of more than thirty (30) days, he shall submit monthly records of all cost data relating to the claim for extra payment of such work."

15. **AFFIRMATIVE ACTION REQUIREMENTS**

- A. Because Broome County's portion of this Remedial Action project is eligible for reimbursement by the New York State Department of Environmental Conservation under the Title III Environmental Quality Bond Act, the Contractor shall conform with the requirements of the affirmative action aspects of the Title III program.

16. **ARTICLE I – GENERAL PROVISIONS**

A. Section 1.01 – Definitions

1. Engineer – The definition shall read as follows: "The Engineer shall mean the Deputy for Engineering Services – Broome County Division of Solid Waste Management, or his Representative."
2. Notice of Award – The definition shall be revised to state: "Intent to Award."

17. ARTICLE III – TIME OF PERFORMANCE, COMMENCEMENT AND COMPLETION OF WORK

- A. Section 3.01 (1) – This paragraph shall be deleted and replaced with the following paragraph:

"The Contractor agrees that he will begin work within ten (10) days after issuance of the letter of Notice of Award by the County, and that he will prosecute the same with such diligence that all work covered by the Contract shall be entirely completed and performed within 200 calendar days exclusive of winter shutdown."

- B. Section 3.02 (1) – This paragraph shall be deleted and replaced with the following paragraph:

"An extension, or extensions, of time for the completion of the work may be granted by the County subject to the provisions of this Contract, but only upon written Change Order to the Contract and subsequent approval by the County."

18. ARTICLE IV – PAYMENT

- A. Section 4.01 (2)(b) – Delete the third sentence of the paragraph and replace it with the following sentence:

"Wage rates and wage supplements shall be paid in accordance with those wage rates stated in the NYS Prevailing Wage Rates which are in effect during the Contract time."

- B. Section 4.01 (8) – Delete this paragraph in its entirety.

- C. Section 4.03 – Add the following paragraph to this section:

"Retainage in the amount equal to five (5) percent of the cost of work completed and shall be applied to every progress payment with the exception of the final application for payment."

19. APPLICATION FOR FINAL PAYMENT

- D. Section 4.04 – Application for Final Payment shall read as follows:"

"When requesting Final Payment, the Contractor shall submit with the payment request, the following documents: AIA Documents G 702 and G 703; AIA Document G 706A – Contractor's Affidavit of Release of Liens; and AIA Document G 707 – Consent of Surety Company to Final Payment; a Broome County Release of Claims Form."

20. ARTICLE V - BONDS AND INSURANCE

- A. Section 5.02 - Add the following to the end of the first sentence of this section: "and shall remain in effect for one year after the final completion of work."
- B. Section 5.03 - Add the following to the end of the second sentence of this section: "and shall remain in effect for one year after the final completion of work."
- C. Section 5.04(b) 6. - The General liability coverage shall be increased to \$2,000,000.

21. ARTICLE VI - PROVISIONS REQUIRED BY LAW

- A. Section 6.02 (2) - Add the following to the end of this paragraph: "in New York State."

TECHNICAL SPECIFICATIONS

DIVISION 1 - GENERAL REQUIREMENTS

SECTION 01010 SUMMARY OF WORK

1. PART 1 – GENERAL

1.1 SECTION INCLUDES

- A. Work to be Done
- B. Work by Owner
- C. Contractor Use of Site and Premises
- D. Future Work
- E. Work Sequence
- F. Owner Occupancy

1.2 WORK TO BE DONE

- A. The Contractor shall furnish all material, labor, equipment, and incidentals required to perform the work under the contract for the construction of the Colesville Landfill including, but not limited to, the following:
 - 1. Perform all clearing, grubbing, excavation and disposal of unsuitable material, provide dewatering as necessary, backfill, grading, site cleanup and restoration, and perform all site construction work necessary to complete the work of this contract.
 - 2. Construct landfill final cover and drainage features.
 - 3. The Contractor shall be responsible for maintaining the drainage and erosion control at the site that may be affected as a result of the construction activities.
 - 4. Perform site survey for control and verification of payment quantities.
 - 5. Retain the services of a qualified laboratory for performance of quality assurance and quality control testing.

6. Prepare Record Drawings signed and sealed by a New York State licensed surveyor.
 7. Place all facilities and equipment for functional operation, including all associated and necessary services. All fees, labor, material, and consultation from manufacturer's and manufacturer's representatives during construction and during one-year warranty period shall be borne by Contractor as may be required to accomplish intent of contract documents and functional service thereof. Warranty period shall commence upon date of substantial completion.
- B. The work to be done shall include all work shown on the Drawings and specified herein. All work shall be in accordance with the Drawings and the requirements of the specifications and addendums (if any).
- C. The foregoing is a general description only and shall not be construed as a complete description of the work to be performed. The Contractor shall be thoroughly familiar with the Contract Documents before proceeding with the Work.

1.3 WORK BY OWNER

- A. Information or services under the Owner's control will be furnished by the Owner with reasonable promptness to avoid delay in the orderly progress of the work.
- B. The Owner will issue all instructions to the Contractor through the Engineer.
- C. Items noted "NIC" (Not in Contract) will be furnished and installed by Owner or other Contractors.

1.4 CONTRACTOR USE OF SITE AND PREMISES

- A. Limit use of site and premises to allow:
1. Owner occupancy.
 2. Work by Others and Work by Owner.
 3. Use of site and premises by public.
- B. The Contractor shall confine his materials and their storage, and the operation of his workmen to limits indicated by laws, ordinances permits, directions of the Engineer and as shown, and will not unreasonably encumber the premises with such materials, but shall store them in orderly fashion so that they will not

interfere with the work under this Contract or other contracts, or with the operation of the Owner's facilities. The Contractor shall not load nor permit any part of the work to be loaded with a weight that will endanger its safety or unduly affect the structure or any part thereof. The Contractor shall enforce the instructions of the Engineer regarding signs, fires, and smoking.

- C. Contractor staging areas and stockpiles of material shall be in areas approved or designated by the Engineer.
- D. Neither the Contractor nor any of his employees shall park any vehicle anywhere on the site, except at such locations as shown or as specifically approved by the Engineer for the purpose.

1.5 FUTURE WORK

- A. In addition to final cover, groundwater collection, and seep collection, the project also includes a future groundwater treatment plant. Groundwater and/or seep collection will not commence until the treatment plant is approved and operable.

1.6 WORK SEQUENCE

- A. Construct Work in stages to accommodate Owner's occupancy requirements during the construction period, coordinate construction schedule and operations with Owner and Engineer.

1.7 OWNER OCCUPANCY

- A. Cooperate with Owner to minimize conflict and to facilitate Owner's operations.
- B. Schedule the work to accommodate this requirement.

1.8 WEEKEND WORK

- A. The Contractor will not be allowed to work on Saturday or Sunday.

1.9 MAINTENANCE OF TRAFFIC

- A. The Contractor shall provide flagmen as necessary to facilitate flow of Contractor's traffic at no additional cost to the Owner.

2. PART 2 – PRODUCTS

Not Used

3. PART 3 – EXECUTION

Not Used

END OF SECTION

SUMMARY OF WORK 01010

-4-

10.006.5/94.02260.CS

SECTION 01025 MEASUREMENT AND PAYMENT

1. PART 1 – GENERAL

1.1 SECTION INCLUDES

- A. Procedures for measurement and payment for the work to be done under the respective items listed in the itemized quantity listing (itemized proposal) for the Closure Action of the Remedial Design for the Broome County Colesville Landfill.

1.2 RELATED SECTIONS

- A. Section 01027 – Applications for Payment
- B. Section 01050 – Field Engineering
- C. Section 01300 – Submittals
- D. Section 01700 – Contract Closeout

1.3 GENERAL

- A. The following paragraphs describe measurement of and payment for the work to be done under the respective items listed in the itemized bid for this contract.
- B. Each lump sum and unit price stated in the itemized bid shall constitute full compensation for all labor, equipment and materials necessary and required to complete all work specified under that particular item including cleanup, and all costs for doing related work as set forth in these Specifications and/or on the Contract Drawings or implied in carrying out their intent.
- C. Requests for payment shall be in accordance with Section 01027 – Applications for Payment.

1.4 COMPUTATION OF QUANTITIES

- A. Measurement of quantities expressed as area shall be based upon a horizontal, planimetric projection to the work limits as determined by survey Record Drawings for each item with no additional allowances for slopes.
- B. Measurement of linear items such as piping will be for quantities actually field installed to the specified work limits, based upon surveyed stations recorded along the straight or curved centerline of each respective item.
- C. Payment will be made to the limits as specified in the Contract Documents. If the constructed limits are less than the specified limit, payment will be made to the actual limits of construction as shown on the Record Drawings. Payment for quantities that exceed the specified contract limits will only be made with the approval of the Owner/Engineer. The payment for quantities that exceed the contract quantities can only be obtained through an approved change order before contract quantities are exceeded.
- D. No partial payments shall be made for the installation of items which have not been tested and approved by the Engineer.
- E. Partial payment will be made for material delivered to the site, and adequately stored and protected until installation. Materials will be paid for at direct cost plus shipping, upon presentation of a valid receipt or bill with the payment request. All such requests must have material quantities verified by the Engineer prior to payment.
- F. Upon installation, the unit cost for the item will be paid less any prior payments for stored material. Upon installation, an adjustment will be made in payment to account for the quantity of materials actually installed in the work. The Owner will not pay for material in excess of what is actually installed in the work.
- G. Payment for unit price items (all items except Lump Sum items) will be made monthly until completion of each unit price item based on quantity estimated by Contractor, and verified by Engineer. Final payment will be based on quantity calculated from Record Drawings.

1.5 VARIATIONS IN ESTIMATED QUANTITIES

- A. The quantities given in the Contract Documents are approximate only, and are given as a basis for the uniform comparison of bids, and Owner does not expressly or by implication agree that the actual amount of work will correspond therewith.
- B. The Contractor must provide, for Unit Price Work, a proposed contract price determined on the basis of estimated quantities required for each item. The

estimated quantities of items are not guaranteed and are solely for the purpose of comparing bids. Each such unit price will be deemed to include an amount for overhead, profit and indirect costs for each separately defined item. Additionally, the Contractor must provide, for Unit Price Work, a proposed unit price for additional quantities, beyond that estimated for the initial Contract Price, which does not include indirect or overhead costs.

- C. All the Contractor's indirect costs for each of the items will be included in the bid price for the first sub-item listed under the respective item. Variation from the estimate quantity in the actual work performed under any second or subsequent sub-item or elimination of all work under such a second or subsequent sub-item will not be the basis for an adjustment in contract unit price.
- D. An increase or decrease in the quantity for any unit price item shall not be regarded as sufficient grounds for an increase or decrease in the price of the item except as provided herein.
- E. If the quantity of a unit-priced item in this contract is an estimated quantity and the actual quantity of the unit-priced has a minimum dollar value of \$100,000 and item varies more than 15 percent below the estimated quantity or above 15 percent of the sum of quantities for unit price work where two sub-items are listed, an equitable adjustment in the contract price shall be made upon demand of either party. The equitable adjustment shall be based upon any increase or decrease in costs due solely to the variations below 85 percent of the estimated quantity or above the sum of quantities for unit price work where two sub-items are listed. If the quantity variation is such as to cause an increase in the time necessary for completion, the Contractor may request, in writing, an extension of time, to be received by the Engineer and Owner within 10 days from the beginning of the delay, or within such further period as may be granted by the Engineer and Owner before the date of final settlement of the contract. Upon the receipt of a written request for an extension, the Engineer and Owner shall ascertain the facts and make an adjustment for extending the completion date as, in the judgement of the Engineer and Owner, is justified.

2. PART 2 – PROCEDURE

2.1 CONTRACT ITEMS

A. Item No. 1 – Mobilization and General Conditions

- 1. The Lump Sum price for this item shall be payment in full for mobilization and demobilization of all parts, material and equipment to the site, as well as Contractor-provided utilities and ongoing related expenses, considered normal for administration of the work. Clearing and grubbing outside the

limit of work (as shown on the Construction Plans), required by the Contractor for staging areas, parking areas, and dewatering areas will be paid as part of this item. Thirty-five (35) percent of the Lump Sum price will be paid with Payment Request No. 1. Twenty-five (25) percent will be paid with Payment Request No. 2. Forty (40) percent of the Lump Sum price will be paid with the Final Payment request.

B. Item No. 2 – Survey

1. The Lump Sum price for this item shall be payment in full for the services of a licensed New York surveyor to establish all lines, elevations, reference marks, for the staking of the 100-foot construction grid, the maintenance of the construction grid for field and testing purposes, etc., needed by the Contractor and Engineer during the progress of the work, and from time to time to verify such marks to allow for the accurate and satisfactory construction and completion of the entire work in accordance with the requirements of the Plans and Specifications.
2. The Lump Sum price shall include the following work activities.
 - a. Initial horizontal and vertical control construction stakeout survey.
 - b. Ongoing verification of original 100-foot construction grid stakeout and resetting grid points for interim layer thickness checks.
 - c. Preparation of progress and Record Drawings as described in the Specifications for survey.
3. Payment for survey services will be made according to the following schedule. Twenty (20) percent of the Lump Sum price will be paid with Payment Request No. 1. Ten (10) percent of the Lump Sum price will be paid with Payment Request No. 2 through No. 6, inclusive. The final thirty (30) percent of the Lump Sum price will be paid with the Final Payment Request upon submittal of the final Record Drawings.

C. Item No. 3 – Clearing and Grubbing

1. The unit price per acre for this item shall be payment in full for providing all material, equipment, and labor for performing all clearing and grubbing of the project site, disposal of all trees, brush, and debris; and preparation for all closure construction and borrow activities.
2. Cleared and grubbed land shall be measured in acres. The area will be measured planimetrically based upon field survey, with no allowance for slopes.

3. Payment for this item will be made monthly until completion of this item, based upon the acres of land cleared, grubbed and approved by the Engineer.

D. Item No. 4 – Soil Erosion and Sediment Control

1. The Lump Sum price for this item shall be payment in full for control of soil erosion and sediment throughout the duration of the contract up to the date the finished facility is accepted as substantially complete by the Engineer and Owner.
2. Payment for soil erosion and sediment control will be made according to the following schedule. Fifty (50) percent will be paid with Payment Request No. 1. The final fifty (50) percent will be paid with the Final Payment Request.

E. Item No. 5 – Subgrade Preparation, Fill Soils and Fine Grading

1. The unit price per square yard for this item shall be payment in full for grading the existing subgrade and excavation and processing of material, laboratory testing, hauling from an on-site source, handling, placing, grading and compacting the subgrade fill soils and installation of the pumping well connection in accordance with the Plans and Specifications in conformance with the lines, grades, and typical cross-sections shown on the Plans.
2. Area of subgrade preparation, fill soils, and fine grading will be measured planimetrically in square yards.
3. Payment for this item will be made monthly, until completion of this item.

F. Item No. 6.1 – Alternate 1 Gas Venting Layer (6 inches)

1. The unit price per square yard for this item shall be payment in full for providing materials, laboratory testing, hauling, processing, mixing, placing, grading and compacting the gas venting layer in accordance with the Specifications and in conformance with the lines, grades, and cross-sections shown on the Plans.
2. Placement of the gas venting layer actually performed and within the limits specified will be measured in square yards. The area will be measured planimetrically to the limits of the full liner thickness with no additional allowances for placement of material on slopes.
3. Payment for this item will be made monthly, until completion of this item, based on square yards of gas venting layer in place, tested, and approved by the Engineer.

G. Item No. 6.2 – Alternate 2 Gas Venting Layer – Geocomposite Drain

1. The unit price per square foot, for this item, shall be payment in full for providing materials, laboratory testing, and installation of geocomposite drain for gas venting layer in accordance with the Plans and Specifications and in conformance with the lines, grades and cross-sections shown on the Plans.
2. Installation of the geocomposite drain actually performed and within the limits specified will be measured in square feet. The area will be measured planimetrically with no additional allowance for installation on slopes, required overlap or anchor trenches.
3. Payment for geocomposite drain delivered to the site and adequately stored and protected until installation will be paid for at direct cost plus shipping charges upon presentation of a valid receipt or bill with the Payment Request. Payment for installation of this item at the square foot unit price will be made monthly, until completion of this item, with deductions made for the amount(s) previously paid for the cost of material and shipping.

H. Item No. 7 – Slotted Corrugated Polyethylene Gas Pipe, Subangular Stone, Geotextile Type B, and Gas Vents

1. The Lump Sum price for this item shall be payment in full for providing materials and installation of the 6-inch slotted corrugated polyethylene pipe including fittings, trenching, subangular stone, geotextile Type B, gas vents, appurtenances, and corresponding laboratory testing in accordance with the Specifications and in conformance with the lines, grades, and cross-sections shown on the Plans.
2. Payment for 6-inch slotted corrugated polyethylene pipe and gas vent pipe delivered to the site, stored and adequately protected until installation will be paid for at direct cost plus shipping charges upon presentation of a valid receipt or bill with the Payment Request. Payment for installation of this item at the Lump Sum price shall be made monthly, until completion of this item, based on percent completed with deductions made for the amount(s) previously paid for the cost of material and shipping.

I. Item No. 8 – 40 Mil Flexible Membrane Liner

1. The unit price per square foot for this item shall be payment in full for providing material, installation and testing of the smooth and textured 40 mil flexible membrane liner in accordance with the Specifications and in conformance with the lines, grades, and cross-sections in the Plans. The unit price shall include the installation of pipe penetration boots, anchor

trenches, destructive and non-destructive field and laboratory testing appurtenances as presented in the Plans and Specifications.

2. Installation of the 40 mil flexible membrane liner actually performed and within the limits specified shall be measured in square feet. The area will be measured planimetrically with no additional allowances for installation on slopes, anchor trenches, test strips, sheet overlaps, or repair of damaged or failed areas.
3. Payment for 40 mil flexible membrane liner delivered to the site and adequately stored and protected until installation will be paid for at direct cost plus shipping charges upon presentation of a valid receipt or bill with the Payment Request. Payment for installation of this item will be made monthly, until completion of this item, based on square feet of geomembrane in place, tested, and approved by the Engineer.

J. Item No. 9.1 – Alternate 1 Drainage Layer (12 inches)

1. The unit price per square yard for this item shall be payment in full for providing materials, laboratory testing, hauling, processing, mixing, placing, grading and compacting the drainage layer in accordance with the Specifications and in conformance with the lines, grades, and cross-sections shown on the Plans.
2. Placement of the drainage layer actually performed and within the limits specified will be measured in square yards. The area will be measured planimetrically to the limits of the full liner thickness with no additional allowances for placement of material on slopes.
3. Payment for this item will be made monthly, until completion of this item, based on square yards of drainage layer in place, tested, and approved by the Engineer.

K. Item No. 9.2 – Alternate 2 Drainage Layer – Geocomposite Drain

1. The unit price per square foot for this item shall be payment in full for providing materials, installation, and laboratory testing of geocomposite drain in accordance with the Plans and Specifications and in conformance with the lines, grades, and typical cross-sections shown on the Plans.
2. Installation of the geocomposite drain actually performed and within the limits specified will be measured in square feet. The area will be measured planimetrically with no additional allowances for installation on slopes, anchor trenches, or for specified overlaps.

3. Payment for geocomposite drain delivered to the site and properly stored and protected until installation will be paid for at direct cost plus shipping charges upon presentation of a valid receipt or bill with the Payment Request. Payment for installation of this item will be made monthly, until completion of this item, based upon the square footage of geocomposite drain in place, tested and approved by the Engineer.

L. Item No. 10.1 - Alternate 1 Geotextile - Type A

1. The unit price per square foot for this item shall be payment in full for providing materials and installation of geotextile above the drainage layer in accordance with the Plans and Specifications, and in conformance with the lines, grades, and typical cross-sections shown on the Plans.
2. Installation of the geotextile actually performed and within the limits specified will be measured in square feet. The area will be measured planimetrically with no additional allowances for installation on slopes, anchor trenches, or specified overlaps.
3. Payment for geotextile, delivered to the site and properly stored and protected until installation, will be paid for at direct cost plus shipping charges upon presentation of a valid receipt or bill with the Payment Request. Payment for installation of this item will be made monthly, until completion of this item, based upon the square footage of geotextile in place, tested and approved by the Engineer.

M. Item No. 11.1 - Alternate 1 Barrier Protection Layer (12 inches)

1. The unit price per square yard for this item shall be payment in full for providing materials, laboratory testing, hauling, placing, grading and compacting the barrier protection layer in accordance with the Plans and Specifications and in conformance with the lines, grades, and typical cross-sections shown on the Plans.
2. Placement of the barrier protection layer actually performed and within the limits specified will be measured in square yards. The area will be measured planimetrically to the limits of the full layer thickness with no additional allowances for placement of material on slopes.
3. Payment for this item will be made monthly, until completion of the item, based on square yards of barrier protection layer in place, tested, and approved by the Engineer.

N. Item No. 11.2 - Alternate 2 Barrier Protection Layer (24 inches)

1. The unit price per square yard for this item shall be payment in full for providing materials, laboratory testing, hauling, placing, grading and compacting the barrier protection layer in accordance with the Plans and Specifications and in conformance with the lines, grades, and typical cross-sections shown on the Plans.
2. Placement of the barrier protection layer actually performed and within the limits specified will be measured in square yards. The area will be measured planimetrically to the limits of the full layer thickness with no additional allowances for placement of material on slopes.
3. Payment for this item will be made monthly, until completion of the item, based on square yards of barrier protection layer in place, tested, and approved by the Engineer.

O. Item No. 12 - Topsoil

1. The unit price per square yard for this item shall be payment in full for providing materials from off-site, laboratory testing, hauling, processing, mixing, placing, grading and compacting the topsoil layer in accordance with the Specifications and in conformance with the lines, grades, and cross-sections shown on the Plans.
2. Placement of the topsoil layer actually performed and within the limits specified will be measured in square yards. The area will be measured planimetrically to the limits of the full layer thickness with no additional allowances for placement of material on slopes.
3. Payment for this item will be made monthly, until completion of this item, based on square yards of topsoil in place, tested, and approved by the Engineer.

P. Item No. 13 - Seeding and Mulch

1. The unit price per acre for this item shall be payment in full for providing materials and placing seed and mulch in accordance with the Plans and Specifications or as directed by the Owner and Engineer.
2. Installation of seed and mulch actually performed and within the limits specified will be measured in acres. The area will be measured planimetrically with no additional allowances for placement of material on slopes.

Q. Item No. 14 – Gravel Access Road

1. The Lump Sum price for this item shall be payment in full for providing materials, laboratory testing, and installation of the gravel access road including all grading, fill and appurtenances in accordance with the Specifications and in conformance with the lines, grades, limits, and cross-sections shown on the Plans.
2. Payment for this item will be made monthly, until completion of this item, based upon the percent complete of road in place, tested and approved by the Engineer.

R. Item No. 15 – Grass-Lined Drainage Channel

1. The unit price per linear foot for this item shall be payment in full for providing materials and installation of the grass-lined drainage channels including all fill, forming, grading, seeding mulch, erosion-control material and appurtenant items in accordance with the Specifications and in conformance with the lines, grades, and cross-sections shown on the Plans.
2. Installation of the drainage channel actually performed will be measured in linear feet along the center line of the drainage channel with no allowance for placement on slopes.
3. Payment for this item will be made monthly, until completion of this item, based upon the linear footage of grass-lined drainage channel in place, tested and approved by the Engineer.

S. Item No. 16 – Rip-Rap Lined Drainage Channel

1. The unit price per linear foot for this item shall be payment in full for providing materials and installation of the rip-rap lined drainage channels including all excavation, fill, grading, geotextile, stone, and appurtenant items in accordance with the Specifications and in conformance with the lines, grades, and cross-sections shown on the Plans.
2. Installation of the drainage channel actually performed will be measured in linear feet along the center line of the drainage channel.
3. Payment for installation of this item will be made monthly, until completion of this item, based upon the linear footage of rip-rap lined drainage channel in place, tested and approved by the Engineer.

T. Item No. 17 - Gabion-Lined Channel

1. The unit price per linear foot for this item shall be payment in full for providing materials and installation of the gabion-lined channels including all grading, geotextile, baskets, fill stone, and appurtenant items in accordance with the Specifications and in conformance with the lines, grades, and cross-sections shown on the Plans.
2. Installation of the gabion-lined channels actually performed will be measured in linear feet along the center line of the downchute with no allowance for placement on slopes.
3. Payment for gabion baskets delivered to the site and properly stored and protected until installation will be paid for at direct cost plus shipping charges upon presentation of a valid receipt or bill with the Payment Request. Payment for installation of this item will be made monthly, until completion of this item, based upon the linear footage of gabion-lined channel in place, tested and approved by the Engineer.

U. Item No. 18 - Step Downchute

1. The unit price per linear foot for this item shall be payment in full for providing materials and installation of the step downchutes including all grading, geotextile, rip-rap, concrete tumbling block elements, and appurtenant items in accordance with the Specifications and in conformance with the lines, grades, and cross-sections shown on the Plans.
2. Installation of the step downchutes actually performed will be measured in linear feet along the center line of the channel.
3. Payment for concrete tumbling block elements delivered to the site and properly stored and protected until installation will be paid for at direct cost plus shipping charges upon presentation of a valid receipt or bill with the Payment Request. Payment for installation of this item will be made monthly, until completion of this item, based upon the linear footage of step downchute in place, tested and approved by the Engineer.

V. Item No. 19 - Energy Dissipator Pads

1. The unit price per each for this item shall be payment in full for providing materials and installation of the energy dissipator pads in accordance with the Plans and Specifications in conformance with the lines, grades, and typical cross-sections shown on the Plans. The unit price shall include grading, geotextile, baskets, fill stone, and appurtenant items.

2. Payment for gabion baskets delivered to the site and properly stored and protected until installation will be paid for at direct cost plus shipping charges upon presentation of a valid receipt or bill with the Payment Request. Payment for installation of this item will be made monthly, until completion of this item, based upon the number of energy dissipator pads in place, tested and approved by the Engineer.

W. Item No. 20 – Dual 36-inch Diameter Reinforced Concrete Pipe Culvert

1. The unit price per linear foot of this item shall be payment in full for excavation, backfill providing materials and installation of reinforced concrete pipe culvert; inlet and outlet protection including rip-rap gabions, and geotextile; and appurtenant items in accordance with the Specifications and in conformance with the lines, grades, and cross-sections shown on the Plans.
2. Installation of culvert actually performed will be measured in linear feet along the center line of the culvert from the culvert pipe inlet to the culvert pipe outlet.
3. Payment for this item will be made monthly until completion of this item based upon the linear footage of culvert in place and approved by the Engineer.

X. Item No. 21 – 18-inch Diameter Reinforced Concrete Pipe Culvert

1. The unit price per linear foot of this item shall be payment in full for excavation, backfill providing materials and installation of reinforced concrete pipe culvert, and appurtenant items in accordance with the Specifications and in conformance with the lines, grades, and cross-sections shown on the Plans.
2. Installation of culvert actually performed will be measured in linear feet along the center line of the culvert from the culvert pipe inlet to the culvert pipe outlet.
3. Payment for this item will be made monthly until completion of this item based upon the linear footage of culvert in place and approved by the Engineer.

Y. Item No. 22 – Sediment Basin

1. The Lump Sum price for this item shall be payment in full for providing all work, materials, and installation to complete the construction of the sediment basin in accordance with the Specifications and with the sizes, materials, lines, grades, and cross-sections shown on the Plans.

2. The Lump Sum price for this item shall include, but not be limited to, the following:
 - a. All required excavation and fill, and stockpiling of excess excavated material.
 - b. Rock excavation (if encountered).
 - c. Principal spillway structures, appurtenances, and hardware, spillway outlet pipes, anti-seep collars, and outlet protection including trenching, bedding, forming and placing concrete, steel reinforcement, connections and pipe joining, backfill, rip-rap, gabions geotextile Type A, etc.
 - d. All related material testing as required by the Specifications.
3. Payment for this item will be made upon substantial completion of all work and acceptance of Record Drawings and all related testing, as required by the Specifications.

Z. Item No. 23 – Wetland Mitigation

1. The Lump Sum price for this item shall be payment for providing all work, materials, and installation to complete the wetland mitigation in accordance with the Specifications and with the lines, grades, and cross-sections shown on the Plans.
2. The Lump Sum price shall include, but not be limited to, the following:
 - a. All required excavation, fill, and regrading of the borrow area.
 - b. Placement and compaction of 12 inches of low permeability soil liner as shown on the plans.
 - c. Revegetation of the specified species in the density and distribution shown for the mitigation area.
3. Payment for this item shall be made upon substantial completion of all work as verified by the Engineer.

AA. Item No. 24 – Perimeter Fence

1. The unit price per linear foot of this item shall be payment in full for providing all labor, materials, and equipment for construction of the on-site perimeter fence including all hardware, posts, chain mesh fabric, gates, locks,

and appurtenant items in accordance with the Specifications and in conformance with the lines and grades shown on the Plans.

2. Installation of perimeter fence actually performed will be measured planimetrically in linear feet based upon field survey, with no allowance for slopes.
3. Payment for this item will be made monthly until completion of this item, based upon the linear footage of perimeter fence in place, and approved by the Engineer.

END OF SECTION

SECTION 01041 PROJECT COORDINATION

1. PART 1 – GENERAL

1.1 SECTION INCLUDES

- A. Project Coordination Administrator
- B. Construction Mobilization
- C. Schedules
- D. Submittals
- E. Coordination Drawings
- F. Closeout Procedures

1.2 RELATED SECTIONS

- A. Section 01039 – Coordination and Meetings
- B. Section 01700 – Contract Closeout

1.3 PROJECT COORDINATION ADMINISTRATOR

- A. Project Coordination Administrator – Project Engineer.

1.4 CONSTRUCTION MOBILIZATION

- A. The Contractor will cooperate with the Owner and Engineer in allocation of mobilization areas of site; for field offices and sheds, for access, traffic, and parking facilities.
- B. During construction, coordinate use of site and facilities through the Engineer.

- C. Comply with Engineer's procedures for project communications; submittals, reports and records, schedules, coordination drawings, and recommendations; and resolution of ambiguities and conflicts.
- D. Comply with instructions of the Engineer for use of temporary utilities and construction facilities.
- E. Coordinate field engineering and layout work under instructions of the Engineer.

1.5 SCHEDULES

- A. Submit preliminary construction work schedule in accordance with Section 01300 and 01311.
- B. At a minimum, submit revised construction work schedule with each request for payment.

1.6 SUBMITTALS

- A. Submit shop drawings, product data and samples in accordance with Section 01300 for review and compliance with Contract Documents, for field dimensions and clearances, for relation to available space, and for relation to work of separate contracts. Revise and resubmit as required.
- B. Submit requests for interpretation of Contract Documents, and obtain instructions through Engineer.
- C. Process requests for substitutions, and change orders, through the Engineer.
- D. Deliver closeout submittals for review and preliminary inspection reports, for transmittal to the Engineer.

1.7 CLOSEOUT PROCEDURES

- A. Notify Engineer in writing when Work is considered ready for Substantial Completion. Accompany Engineer on preliminary inspection to determine items to be listed for completion or correction in Contractor's notice of Substantial Completion.
- B. Comply with Engineer's instructions to correct items of Work listed in executed Certificates of Substantial Completion and for access to Owner occupied areas.

- C. Notify Engineer in writing when Work is considered finally complete. Accompany Engineer on preliminary final inspection.
- D. Comply with Engineer's instructions for completion of items of Work determined by the Engineer's final inspection.

2. PART 2 – PRODUCTS

Not Used

3. PART 3 – EXECUTION

Not Used

END OF SECTION

SECTION 01050 FIELD ENGINEERING

1. PART 1 – GENERAL

1.1 SECTION INCLUDES

- A. Quality control.
- B. Submittals.
- C. Project Record Documents.

1.2 RELATED SECTIONS

- A. Document – Information Available to Bidders
- B. Document – General Conditions
- C. Section 01025 – Measurement and Payment
- D. Section 01700 – Contract Closeout

1.3 QUALITY CONTROL

- A. Employ a Land Surveyor registered in the State of New York and acceptable to Engineer.
- B. Employ a Certified testing laboratory, acceptable to the Engineer, familiar with the requirements of the Specifications.

1.4 SUBMITTALS

- A. Submit name, address, and telephone number of Contractor's Surveyor and Certified testing laboratory before starting survey work.
- B. On request, submit documentation verifying accuracy of survey work.

- C. Submit a copy of registered site drawing and certificate signed by the Land Surveyor that the elevations and locations of the Work are in conformance with Contract Documents.

1.5 PROJECT RECORD DOCUMENTS

- A. Maintain a complete and accurate log of control and survey work as it progresses.
- B. Submit Record Documents under provisions of Sections 01025, 01027, 01300, and 01700.
- C. Record drawings shall be prepared at a scale of 1" = 50' with a 2-foot contour interval, unless otherwise directed by the Engineer. All record drawings shall be signed and sealed by a Surveyor licensed in the State of New York. The Contractor is to submit two (2) prints for each record drawing required.

1.6 SURVEY REFERENCE POINTS

- A. Contractor to locate and protect survey control and reference points.
- B. Control datum for survey is National Geodetic vertical datum.
- C. Protect survey control points prior to starting site work; preserve permanent reference points during construction.
- D. Promptly report to Engineer the loss or destruction of any reference point or relocation required because of changes in grades or other reasons.
- E. Replace dislocated survey control points based on original survey control. Make no changes without prior written notice to Engineer.

1.7 SURVEY REQUIREMENTS

- A. All work under this Contract shall be constructed in accordance with the lines and grades shown on the Contract Drawings or as directed by the Engineer. The Owner will provide six benchmarks with appropriate horizontal and vertical control. The Contractor shall provide such materials as templates, stakes, ranges, spikes, nails and boards, and give such assistance as may be required. Elevation of existing ground, structures and appurtenances are believed to be reasonably correct but are not guaranteed to be absolute and, therefore, are presented only as approximations. Any error or apparent discrepancy in the data shown, or omissions of data required for accurately accomplishing the stakeout survey shall be referred immediately to the Engineer for interpretation or correction.

- B. Establish elevations, lines and levels. Locate and lay out by instrumentation and similar appropriate means:
1. Site improvements including stakes for grading, fill placement, slopes, and invert elevations.
 2. 50-foot construction grid as directed by the Engineer.
 3. The Engineer will supply a construction grid system that will be established by the Contractor in the field with a maximum spacing of 50 feet over the entire limits of Work. The grid system shall be established and maintained by the Contractor for the purpose of determining cut and fill quantities for payment, as well as locating work and testing by the Engineer. The Contractor shall establish the ground elevations at every grid point immediately after clearing and grubbing and topsoil stripping, after any muck excavation, after final grades of subgrade fill placement, gas venting layer final grade, drainage layer final grade, barrier protection layer final grade, and topsoil final grade.
 4. The Contractor shall furnish record drawings indicating, at a minimum, the limit of Contractor's work for each payment item, spot elevations at all construction grid point locations, contours, all drainage features and stockpile areas. The record drawings shall include locations and elevations of all work as directed by the Engineer. The Contractor shall furnish the following record drawings:
 - a. The finished subgrade fill surface drawing.
 - b. The finished gas venting layer surface drawing.
 - c. The finished flexible liner installation.
 - d. The finished barrier protection layer surface drawing.
 - e. The finished topsoil layer surface drawing.
 - f. The finished drainage feature drawing.
 5. The Contractor shall provide sufficient survey to verify quantities included in requests for payment.
- C. Periodically verify layouts by same means.

1.8 SURVEYS FOR MEASUREMENT AND PAYMENT

- A. Prepare estimates to determine quantities of partially complete work, including control surveys to establish measurement reference lines. Notify Engineer prior to starting work.
- B. Upon completion of the work, the Engineer will prepare an independent survey for unit cost work. Unit cost work items will be based on areal extent of in-place quantities with no provision for slope correction, overlap, scrap, etc. The Engineer shall approve all work for payment to the Contractor.

1.9 CERTIFIED TESTING LABORATORY REQUIREMENTS

- A. The Contractor shall retain the services of a Certified laboratory qualified and experienced in geotechnical and geosynthetic testing. The Contractor shall submit the laboratory qualification to the Engineer for approval prior to construction.
- B. The Contractor shall coordinate all sampling, testing, and distribution of results in order to allow review and approval by the Engineer.

2. PART 2 – PRODUCTS

Not Used

3. PART 3 – EXECUTION

Not Used

END OF SECTION

SECTION 01090 REFERENCE STANDARDS

1. PART 1 – GENERAL

1.1 SECTION INCLUDES

- A. Quality Assurance
- B. Schedule of References

1.2 RELATED SECTIONS

- A. Document – General Conditions: Reference Standards

1.3 QUALITY ASSURANCE

- A. For products or workmanship specified by association, trade, or Federal Standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.
- B. Conform to the latest reference standard as of the date of these Contract Documents.
- C. Maintain copy at job site during submittals, planning, and progress of the specific work, until Substantial Completion.
- D. Should specified reference standards conflict with Contract Documents, request clarification from Engineer before proceeding.
- E. The contractual relationship of the parties to the Contract shall not be altered from the Contract Documents by mention or inference otherwise in any reference document.

1.4 SCHEDULE OF REFERENCES

AA	Aluminum Association 818 Connecticut Avenue, N.W. Washington, DC 20006
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AABC	Associated Air Balance Council 1000 Vermont Avenue, N.W. Washington, DC 20005
AASHTO	American Association of State Highway and Transportation Officials 444 North Capitol Street, N.W. Washington, DC 20001
ACI	American Concrete Institute Box 19150 Reform Station Detroit, MI 48219
ADC	Air Diffusion Council 230 North Michigan Avenue Chicago, IL 60601
AGC	Associated General Contractors of America 1957 "E" Street, N.W. Washington, DC 20006
AI	Asphalt Institute Asphalt Institute Building College Park, MD 20740
AIA	American Institute of Architects 1735 New York Avenue, N.W. Washington, DC 20006
AISC	American Institute of Steel Construction 400 North Michigan Avenue Eighth Floor Chicago, IL 60611
AISI	American Iron and Steel Institute 1000 16th Street, N.W. Washington, DC 20036
AITC	American Institute of Timber Construction 333 W. Hampden Avenue Englewood, CO 80110

AMCA	Air Movement and Control Association 30 West University Drive Arlington Heights, IL 60004
ANSI	American National Standards Institute 1430 Broadway New York, NY 10018
APA	American Plywood Association Box 11700 Tacoma, WA 98411
API	American Petroleum Institute 1220 "L" Street Northwest Washington, DC 20005
ARI	Air-Conditioning and Refrigeration Institute 1501 Wilson Boulevard Arlington, VA 22209
ASHRAE	American Society of Heating, Refrigerating and Air Conditioning Engineers 1791 Tullie Circle, N.E. Atlanta, GA 30329
ASME	American Society of Mechanical Engineers 345 East 47th Street New York, NY 10017
ASPA	American Sod Producers Association 4415 West Harrison Street Hillside, IL 60162
ASTM	American Society for Testing and Materials 1916 Race Street Philadelphia, PA 19103
AWI	Architectural Woodwork Institute 2310 South Walter Reed Drive Arlington, VA 22206
AWPA	American Wood-Preservers' Association 7735 Old Georgetown Road Bethesda, MD 20014

AWS	American Welding Society 550 LeJeune Road, N.W. Miami, FL 33135
AWWA	American Water Works Association 6666 West Quincy Avenue Denver, CO 80235
BIA	Brick Institute of America 11490 Commerce Park Drive Reston, VA 22091
CDA	Copper Development Association 57th Floor, Chrysler Building 405 Lexington Avenue New York, NY 10174
CLFMI	Chain Link Fence Manufacturers Institute 1101 Connecticut Avenue, N.W. Washington, DC 20036
CRSI	Concrete Reinforcing Steel Institute 933 Plum Grove Road Schaumburg, IL 60195
DHI	Door and Hardware Institute 7711 Old Springhouse Road McLean, VA 22102
EJCDC	Engineers' Joint Contract Documents Committee American Consulting Engineers Council 1015 15th Street, N.W. Washington, DC 20005
EJMA	Expansion Joint Manufacturers Association 25 North Broadway Tarrytown, NY 10591
FGMA	Flat Glass Marketing Association 3310 Harrison White Lakes Professional Building Topeka, KS 66611

FM	Factory Mutual System 1151 Boston-Providence Turnpike P.O. Box 688 Norwood, MA 02062
FS	Federal Specification General Services Administration Specifications and Consumer Information Distribution Section (WFSIS) Washington Navy Yard, Bldg. 197 Washington, DC 20407
FTMS	Federal Test Method Standard General Services Administration Specifications and Consumer Information Branch Distribution Building 197 Washington, DC 20407
GA	Gypsum Association 1603 Orrington Avenue Evanston, IL 60201
GRI	Geosynthetic Research Institute Drexel University West Wing - Rush Building Philadelphia, PA 19104
ICBO	International Conference of Building Officials 5360 S. Workman Mill Road Whittier, CA 90601
IEEE	Institute of Electrical and Electronics Engineers 345 East 47th Street New York, NY 10017
IMIAC	International Masonry Industry All-Weather Council International Masonry Institute 815 15th Street, N.W. Washington, DC 20005

MBMA	Metal Building Manufacturer's Association 1230 Keith Building Cleveland, OH 44115
MFMA	Maple Flooring Manufacturers Association 60 Rivere Drive Northbrook, IL 60062
MIL	Military Specification Naval Publications and Forms Center 5801 Tabor Avenue Philadelphia, PA 19120
ML/SFA	Metal Lath/Steel Framing Association 221 North LaSalle Street Chicago, IL 60601
NAAMM	National Association of Architectural Metal Manufacturers 221 North LaSalle Street Chicago, IL 60601
NCMA	National Concrete Masonry Association P.O. Box 781 Herndon, VA 22070
NEBB	National Environmental Balancing Bureau 8224 Old Courthouse Road Vienna, VA 22180
NEMA	National Electrical Manufacturers' Association 2101 "L" Street, N.W. Washington, DC 20037
NFPA	National Fire Protection Association Battery March Park Quincy, MA 02269
NFPA	National Forest Products Association 1619 Massachusetts Avenue, N.W. Washington, DC 20036

NSF	National Sanitation Foundation 3475 Plymouth Road P.O. Box 1468 Ann Arbor, MI 48106
NSWMA	National Solid Wastes Management Association 1730 Rhode Island Ave., N.W. Washington, DC 20036
NTMA	National Terrazzo and Mosaic Association 3166 Des Plaines Avenue Des Plaines, IL 60018
NWMA	National Woodwork Manufacturers Association 205 W. Touhy Avenue Park Ridge, IL 60068
PCA	Portland Cement Association 5420 Old Orchard Road Skokie, IL 60077
PCI	Prestressed Concrete Institute 201 North Wells Street Chicago, IL 60606
PPI	Plastics Pipe Institute 1275 "K" Street, N.W. Suite 400 Washington, DC 20005
PS	Product Standard U. S. Department of Commerce Washington, DC 20203
RIS	Redwood Inspection Service One Lombard Street San Francisco, CA 94111
RCSHSB	Red Cedar Shingle and Handsplit Shake Bureau 515 116th Avenue Bellevue, WA 98004
SDI	Steel Deck Institute P.O. Box 9506 Canton, OH 44711

SDI	Steel Door Institute 712 Lakewood Center North 14600 Detroit Avenue Cleveland, OH 44107
SIGMA	Sealed Insulating Glass Manufacturers Association 111 East Wacker Drive Chicago, IL 60601
SJI	Steel Joist Institute 1205 48th Avenue North Suite A Myrtle Beach, SC 29577
SMACNA	Sheet Metal and Air Conditioning Contractors' National Association 8224 Old Court House Road Vienna, VA 22180
SPI	Society of the Plastics Industry 1275 "K" Street, N.W. Suite 400 Washington, DC 20005
SSPC	Steel Structures Painting Council 4400 Fifth Avenue Pittsburgh, PA 15213
TCA	Tile Council of America, Inc. Box 326 Princeton, NJ 08540
UL	Underwriters' Laboratories, Inc. 333 Pfingston Road Northbrook, IL 60062
WCLIB	West Coast Lumber Inspection Bureau 6980 S.W. Varns Road Box 23145 Portland, OR 97223

WWPA

Western Wood Products Association
1500 Yeon Building
Portland, OR 97204

1.5 REFERENCE DOCUMENTS

- A. The following documents were referenced in the preparation of these technical specifications. Certain specification sections include references to these documents.
1. New York State Department of Environmental Conservation, 6 NYCRR Part 360, Solid Waste Management Facility, effective December 31, 1988, revised May 28, 1991.
 2. New York State Department of Transportation Standard Specifications - Construction and Materials, May 15, 1986.
 3. New York State Guidelines for Urban Erosion and Sediment Control dated October 1991.
- B. The above documents shall be made part of these Specifications. All provisions of these documents except as noted herein shall apply.

2. PART 2 - PRODUCTS

Not Used

3. PART 3 - EXECUTION

Not Used

END OF SECTION

SECTION 01201 SUPERVISION BY CONTRACTOR

1. PART 1 – GENERAL

1.1 REQUIREMENTS

- A. The Contractor shall supervise and direct the work using his best skill and attention. He shall be solely responsible for all construction means, methods, techniques, sequences and procedures and safety precautions employed for the work under the Contract.
- B. The Contractor shall employ at the site during the performance of the work or any part thereof, a competent superintendent or foreman who shall be satisfactory to the Engineer, and who shall not be replaced except with the consent of the Engineer, unless he shall cease to be in the employ of the Contractor. Such superintendent or foreman shall represent and have full authority to act for the Contractor in his absence and all directions given such superintendent or foreman shall be as binding as if given to the Contractor.
- C. The Contractor shall employ at the site during the performance of QA/QC testing, a competent and experienced construction materials testing technician for the purpose of acquiring samples and performing field testing required of the Contractor.

2. PART 2 – MATERIALS

NOT USED

3. PART 3 – EXECUTION

NOT USED

END OF SECTION

SECTION 01300 SUBMITTALS

1. PART 1 – GENERAL

1.1 SECTION INCLUDES

- A. Submittal Procedures
- B. Construction Progress Schedules
- C. Proposed Products List
- D. Product Data
- E. Samples
- F. Manufacturers' Instructions
- G. Manufacturers' Certificates
- H. Construction Photographs

1.2 RELATED SECTIONS

- A. Section 01340 – Shop Drawings
- B. Section 01400 – Quality Control
- C. Section 01700 – Contract Closeout

1.3 SUBMITTAL PROCEDURES

- A. Prepare a complete listing of all submittals required for the project noting the number of each submittal and the date each submittal is to be submitted. The Contractor shall identify submittals that are time critical to completion of the project. The listing shall be submitted within 7 days of Award of the Contract and shall be a prerequisite to the first partial payment.

- B. Transmit each submittal with Engineer accepted form. Submit the number of copies which the Contractor requires plus two (2) copies for the Engineer and two (2) copies for the Owner.
- C. Sequentially number the submittals using the section and sequential number (e.g., 03300-1, 03300-2). Resubmittals shall have the same submittal number with a sequential letter designation for each succeeding resubmittal (e.g., 03300-1-A, 03300-1-B).
- D. Identify Project, Contractor, Subcontractor or supplier; pertinent Drawing sheet and detail number(s), and specification Section number, as appropriate.
- E. Apply Contractor's stamp, signed or initialled certifying that review, verification of Products required, field dimensions, adjacent construction Work, and coordination of information, is in accordance with the requirements of the Work and Contract Documents.
- F. Schedule submittals to expedite the Project, and deliver to Engineer's business address. Coordinate submission of related items such that a complete review of the submittal can be performed. Incomplete submittals or submittals not fully coordinated will not be reviewed. The Contractor will be advised in writing of the reasons for the Engineer's action.
- G. Identify variations from Contract Documents and Product or system limitations which may be detrimental to successful performance of the completed Work.
- H. Provide space for Contractor and Engineer review stamps.
- I. Revise and resubmit submittals as required, identify all changes made since previous submittal.
- J. Distribute copies of reviewed submittals to concerned parties. Instruct parties to promptly report any inability to comply with provisions.
- K. The Contractor shall allow a minimum of 10 working days for the Engineer to review each submittal. The Engineer will endeavor to complete the review of all submittals as soon as possible in accordance with the Contractor's assigned priority to each submittal. Failure by the Contractor to make submittals on time or failure to allow sufficient time for review of any and all submittals will not relieve him of the responsibility to complete the project in the specified time.

1.4 CONSTRUCTION WORK SCHEDULES

- A. Submit initial construction work schedule in duplicate within 5 days after date of Owner-Contractor Agreement for Engineer review.
- B. Revise as required and resubmit with each request for payment. Payment requests will not be processed without a revised construction work schedule.
- C. Show complete sequence of construction by activity, identifying Work of separate stages and other logically grouped activities. Indicate the early and late start, early and late finish, total and free float dates, and activity durations.
- D. Indicate estimated percentage of completion for each item of Work at each submission.
- E. Indicate submittal dates required for shop drawings, product data, samples, and product delivery dates, including those furnished by Owner and under Allowances.

1.5 PROPOSED PRODUCTS LIST

- A. Within 15 days after date of Owner-Contractor Agreement, submit complete list of major products proposed for use, with name of manufacturer, trade name, and model number of each product. This can be coordinated with Paragraph 1.3 of this Section.
- B. For products specified only by reference standards, give manufacturer, trade name, model or catalog designation, and reference standards.

1.6 PRODUCT DATA

- A. Submit the number of copies which the Contractor requires, plus two (2) copies which will be retained by the Engineer and one (1) copy to be forwarded to the Owner.
- B. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information unique to this Project.
- C. After review, distribute in accordance with Article on Procedures above and provide copies for Record Documents described in Section 01700 - Contract Closeout.

1.7 SAMPLES

- A. Submit samples to illustrate functional and aesthetic characteristics of the Product, with integral parts and attachment devices. Coordinate sample submittals to ensure approval will not interfere with construction sequence.
- B. Submit samples of finishes from the full range of manufacturers' standard colors, textures, and patterns for Owner's and/or Engineer's selection.
- C. Include identification on each sample, with full Project information.
- D. Submit the number of samples specified in individual specification Sections; one of which will be retained by Engineer.
- E. Reviewed samples which may be used in the Work are indicated in individual specification Sections.

1.8 MANUFACTURER'S INSTRUCTIONS

- A. When specified in individual specification Sections, submit manufacturers' printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing, in quantities specified for Product Data.
- B. Identify conflicts between manufacturers' instructions and Contract Documents.

1.9 MANUFACTURER'S CERTIFICATES

- A. When specified in individual specification Sections, submit manufacturers' certificate to Engineer for review, in quantities specified for Product Data.
- B. Indicate material or product conforms to or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.
- C. Certificates may be recent or previous test results on material or Product, but must be acceptable to Engineer.

1.10 CONSTRUCTION PHOTOGRAPHS

- A. Photography
 - 1. Provide photographs of site and construction throughout progress of Work produced by an experienced photographer, acceptable to Engineer.

2. Take photographs on date for each Application for Payment; and as follows:

- a. Site clearing, grubbing, and topsoil stripping
- b. Subgrade fill
- c. Gas venting layer installation
- d. Flexible liner installation
- e. Barrier protection layer installation
- f. Seep Collection Drain
- g. Sediment basin
- h. Wetland mitigation
- i. Final completion

B. Prints

1. Color; three prints of each view.
2. Paper – Single weight, neutral black image tone, white base.
3. Finish – Smooth surface, glossy.
4. Size – 8 x 10-inch.
5. Identify each print on back. Identify name of Project, Contract No. orientation of view, date and time of view, name and address of photographer, and photographer's numbered identification of exposure.

C. Negatives

1. Negatives shall be provided to and become the property of the Owner.

D. Technique

1. Provide factual presentation.
2. Provide correct exposure and focus, high resolution and sharpness, maximum depth of field, and minimum distortion.

E. Views

1. Provide non-aerial photographs from two (2) views of each construction item at each specified time, until Date of Substantial Completion.
2. Consult with Engineer for instructions on views required.

F. Submittals

1. Deliver prints within three working days of each Application for Payment. Application for Payment will not be processed unless complete and includes construction photographs.

1.11 TEST RESULTS

- A. The Contractor shall submit results of quality control testing in writing to the Engineer for approval.
- B. Test results shall be submitted within 48 hours of performance of test.
- C. The Engineer will not approve any work prior to receipt of written test results.

2. PART 2 – PRODUCTS

Not Used

3. PART 3 – EXECUTION

Not Used

END OF SECTION

SUBMITTALS 01300

-6-

10.006.5/94.02260.CS

SECTION 01340 SHOP DRAWINGS

1. PART 1 – GENERAL

1.1 SECTION INCLUDES

- A. Shop Drawings
- B. Review Procedures

1.2 RELATED SECTIONS

- A. Section 01300 – Submittals

1.3 PROCEDURE FOR SHOP DRAWING SUBMISSION

- A. The Contractor shall prepare and submit to the Engineer for his review a tabulation of all principal items of material to be purchased under the Contract, with appropriate spaces to insert the following listed information:
 - 1. Date on which shop drawings are requested from manufacturer.
 - 2. Date on which shop drawings are received from manufacturer.
 - 3. Date on which shop drawings are submitted to Engineer.
 - 4. Date on which shop drawings are returned by Engineer for revision.
 - 5. Date on which shop drawings are revised by manufacturer.
 - 6. Date on which shop drawings are resubmitted to Engineer.
 - 7. Date on which shop drawings are returned by Engineer marked "Approved" or "Approved as Noted."
 - 8. Date on which reviewed shop drawings are transmitted to manufacturer.

9. Final revised date of manufacturer's scheduled delivery.
10. Date on which delivery is actually made.
- B. A black-on-white print of this tabulation shall be brought up to date bi-weekly and submitted to the Engineer upon request. This submission shall also be prerequisite to any partial estimate and shall be included with each request for payment. Request for payment will not be processed unless complete.
- C. The Contractor, on approval from the Engineer, may submit manufacturer's literature as a substitute for, or supplement to, the shop drawings. The minimum size for any submission shall be 8-1/2 inches by 11 inches, and the maximum size shall not exceed 24 inches by 36 inches. All shop drawings and printed matter submitted shall clearly indicate the Section of the Contract Documents to which they correspond (e.g., Section 02150).
- D. Shop drawings or printed matter shall give all dimensions and sizes to enable the Engineer to pass on the suitability of the material or layout for the purpose intended. The shop drawings shall, where needed for clarity, include outline and sectional views, and detailed working dimensions and designations of the kind of materials and kinds of machine work and finishes required. Shop drawings for submission shall be coordinated by the Contractor with shop drawings previously submitted, with shop drawings being prepared, and with the design and function of any equipment or structure.
- E. If the shop drawings show variances from the requirements of the Contract because of standard shop practice or other reason, the Contractor shall make specific mention of such variation in his letter of transmittal in order that, if acceptable, suitable action may be taken for proper adjustment; otherwise the Contractor will not be relieved of the responsibility for executing the work in accordance with the Contract even though such shop drawings have been approved by the Engineer.
- F. Material shall not be purchased or fabricated for equipment or structures until the Engineer has reviewed the shop drawings, which shall represent all materials and work involved in the construction. No materials or equipment for which a submittal of a shop drawing is required shall be delivered to the site unless they are in conformance with the shop drawings which have been "Approved."
- G. Work shall not be done upon any part of a structure, the design or construction of which is dependent upon the design of equipment or other features, for which approval is required, until such approval has been received from the Engineer.
- H. All major construction items, shop drawings, and shop drawings essential for the operation of the facility shall be submitted within 20 days from Notice to Proceed. Shop drawings shall include those items necessary for the operation of the facility.

- I. If the shop drawing submission is in reasonable conformance to the requirements of the Contract Documents, the Engineer will return the required mark sets and comments within ten (10) days to two (2) weeks.

1.4 PROCEDURE FOR REVIEW

- A. Submit the number of copies which the Contractor requires plus two (2) copies which will be retained by the Engineer, plus one (1) copy to be forwarded to the Owner. By submitting the shop drawing, the Contractor thereby represents that he has determined and verified all field measurements, field construction criteria, materials, catalog numbers and similar data, or will do so, and that he has checked and coordinated each shop drawing with the requirements of the work and of the Contract Documents.
- B. The Contractor shall review all drawings or literature submitted to him by subcontractors and manufacturers for correctness and adequacy of data prior to submitting such shop drawings and literature to the Engineer for approval. The Contractor shall be responsible for the prompt submission of all shop drawings, so that there shall be no delay to the work due to the absence of such drawings.
- C. The Engineer will review the shop drawings, but only for conformance with the design concept of the project and with the information given in the Contract Documents.
- D. Two (2) copies of the shop drawings or printed matter will be retained by the Engineer plus one (1) copy to be forwarded to the Owner. The remaining copies will be returned to the Contractor marked in one of the following ways, all subject to Contract requirements:
 1. "Approved," which means that no exceptions are taken. Any approval by the Engineer of such, or part of such, shop drawings, manufacturer's literature, or other data relative to the work or material to be furnished for the Contract shall not be construed in any way as relieving the Contractor from his responsibility for errors or omissions in the shop drawings or from any of his other responsibilities under the terms of the Contract, but shall be interpreted only to mean that an examination of the exhibits has been made, that no variation from the Contract requirements has been discovered, and that no criticism is offered. The Engineer's approval of a separate item shall not indicate approval of an assembly in which the item functions.
 2. "Approved as Noted," which means that minor corrections as noted and/or indicated on the submittal shall be made. Resubmittal is required as directed by the Engineer.

3. "Revise and Resubmit," which means that major corrections are noted and/or indicated on the submittal and resubmittal is required.
 4. "Not Approved," which means that the submittal is completely rejected and a resubmittal is required. The Contractor shall direct specific attention, in writing or on resubmitted shop drawings, to revisions other than the corrections noted and/or indicated by the Engineer on previous submission.
- E. The Contractor shall be responsible for the prompt submission of all shop drawings, so that there shall be no delay to the work due to the absence of such drawings.
- F. Any approval by the Engineer of such, or parts of such, shop drawings, manufacturer's literature, or other data relative to the work or material to be furnished for the Contract shall not be construed in any way as relieving the Contractor from his full responsibilities under the terms of the Contract, but shall be interpreted only to mean that an examination of the exhibits has been made, that no variation from the Contract requirements has been discovered, and that no criticism is offered. Approval of a separate item shall not indicate approval of an assembly in which the item functions.

1.5 CERTIFIED SHOP TEST REPORTS

- A. Each piece of equipment for which pressure, duty, capacity, rating, efficiency, performance, function or special requirements are specified shall be tested in the shop of the manufacturer in a manner which shall conclusively prove that its characteristics comply fully with the requirements of the Contract Documents. Tests shall be conducted in accordance with the test codes of the ASME, NEMA, and other applicable standards.
- B. Equipment shall not be shipped to the work until the Engineer notified the Contractor in writing that the results of the shop tests are acceptable.
- C. When the Specifications require witness shop tests at the point of manufacture, the only tests which will be accepted are those made in the presence of the Engineer or his representative. The Contractor shall give the Engineer written notice ten (10) days in advance of the time when the equipment will be ready for the witness shop tests, or as required by the Specifications. This notification shall include a diagram of the testing setup and a list of the instruments the manufacturer proposes to use for the tests. All instruments shall be ranges suitable for the quantities to be measured, with approved laboratory calibration. Five (5) copies of the witness shop test data and interpreted results thereof, accompanied by a certificate of authenticity sworn to by a responsible official of the manufacturing company, shall be forwarded to the Engineer.

2. PART 2 – PRODUCTS

Not Used

3. PART 3 – EXECUTION

Not Used

END OF SECTION

SECTION 01400 QUALITY CONTROL

1. PART 1 – GENERAL

1.1 SECTION INCLUDES

- A. Quality assurance and control of installation
- B. References
- C. Field samples
- D. Inspection and testing laboratory services
- E. Manufacturers' field services and reports
- F. This section pertains to quality control testing which is required of the Contractor as described in other specification sections, that is separate from testing by the Engineer.

1.2 RELATED SECTIONS

- A. Section 01090 – Reference Standards
- B. Section 01300 – Submittals
- C. Section 01340 – Shop Drawings
- D. Section 01410 – Testing Laboratory Services
- E. Section 01420 – Inspection Services
- F. Section 01600 – Material and Equipment

1.3 QUALITY ASSURANCE/CONTROL OF INSTALLATION

- A. Monitor quality control over suppliers, manufacturers, Products, services, site conditions, and workmanship, to produce Work of specified quality.

- B. Comply fully with manufacturers' instructions, including each step in sequence.
- C. Should manufacturers' instructions conflict with Contract Documents, request clarification from Engineer before proceeding.
- D. Comply with specified standards as a minimum quality for the Work except when more stringent tolerances, codes, or manufacturer's specified requirements indicate higher standards or more precise workmanship.
- E. Work is to be performed by persons qualified to produce workmanship of specified quality.
- F. Secure Products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion or disfigurement.

1.4 REFERENCES

- A. Conform to reference standard by date of issue current on date of Contract Documents.
- B. Should specified reference standards conflict with Contract Documents, request clarification for Engineer before proceeding.
- C. The contractual relationship of the parties to the Contract shall not be altered from the Contract Documents by mention or inference otherwise in any reference document.

1.5 FIELD SAMPLES

- A. Install field samples at the site as required by individual specifications Sections for review.
- B. Acceptable samples represent a quality level for the Work.
- C. Where field sample is specified in individual Sections to be removed when directed by the Engineer remove the sample and restore the area as specified.

1.6 INSPECTION AND TESTING LABORATORY SERVICES

- A. The Contractor will appoint, employ, and pay for services of an independent firm to perform inspection and testing as required by each technical specification.

- B. The independent firm will perform inspections, tests, and other services specified in individual specification Sections and as required by the Engineer.
- C. Reports will be submitted by the independent firm to the Engineer, in duplicate, indicating observations and results of tests and indicating compliance or non-compliance with Contract Documents.
- D. Cooperate with independent firm; furnish samples of materials, equipment, tools, storage and assistance as requested.
 - 1. Notify Engineer and independent firm 48 hours (not including Saturday, Sunday and Holidays), prior to expected time for operations requiring services.
 - 2. Make arrangements with independent firm and pay for samples and tests required for Contractor's use.
- E. Retesting required because of non-conformance to specified requirements shall be performed by the same independent firm on instructions by the Engineer. Payment for retesting will be the responsibility of the Contractor responsible for the non-conforming work.

1.7 MANUFACTURERS' FIELD SERVICES AND REPORTS

- A. When specified in individual specification Sections, require material or Product suppliers or manufacturers to provide qualified staff personnel to observe site conditions, conditions of surfaces and installation, quality of workmanship, start-up of equipment, test, adjust, and balance of equipment as applicable, and to initiate instructions when necessary.
- B. Individuals to report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturers' written instructions.
- C. Submit report in duplicate within 30 days of observation to Engineer for review.

2. PART 2 – PRODUCTS

Not Used

3. PART 3 – EXECUTION

3.1 QUALITY CONTROL BY CONTRACTOR

- A. The Contractor is responsible for all quality control testing defined within the Technical Specifications.

3.2 QUALITY ASSURANCE TESTING BY ENGINEER

- A. The Engineer will perform random testing for the purpose of quality assurance at an approximate average frequency of one test for every eight tests specified. For materials with a total aggregate number of tests less than eight, the Engineer shall perform a minimum of one test.
- B. The Engineer may perform additional testing as necessary to assure work is in conformance with the Technical Specifications.

END OF SECTION

SECTION 01410

TESTING LABORATORY SERVICES

1. PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Selection and Payment
- B. Quality Assurance
- C. Contractor Submittals
- D. Laboratory Responsibilities
- E. Laboratory Reports
- F. Contractor Responsibilities
- G. Certificates of Manufacturers

1.2 RELATED SECTIONS

- A. Section 01400 - Quality Control
- B. Section 01420 - Inspection Services
- C. Section 01700 - Contract Closeout

1.3 REFERENCES

- A. ANSI/ASTM D3740 - Practice for Evaluation of Agencies Engaged in Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction.
- B. ANSI/ASTM E329 - Recommended Practice for Inspection and Testing Agencies for Concrete, Steel, and Bituminous Materials as Used in Construction.

1.4 SELECTION AND PAYMENT

- A. Each Contractor shall employ and pay for services of an independent testing laboratory to perform specified testing as required to be performed by the Contractor by each technical specification or as elected to be performed by the Contractor.
- B. Employment of testing laboratory shall in no way relieve Contractor of obligation to perform work in accordance with requirements of Contract Documents.

1.5 QUALITY ASSURANCE

- A. Comply with requirements of ANSI/ASTM E329 and ANSI/ASTM D3740.
- B. Laboratory - Authorized to operate in state where project is located.
- C. Testing Equipment - Calibrated at reasonable intervals with devices of an accuracy traceable to either National Bureau of Standards (NBS) or accepted values of natural physical constants.

1.6 CONTRACTOR SUBMITTALS

- A. Prior to start of Work, submit testing laboratory name, address, telephone number, qualifications, experience, and names of full time responsible officer to Engineer for approval.

1.7 LABORATORY RESPONSIBILITIES

- A. Test samples of materials submitted by Contractor.
- B. Provide qualified personnel. Cooperate with Engineer and Contractor in performance of services.
- C. Perform specified inspection, sampling, and testing of Products in accordance with specified standards.
- D. Ascertain compliance of materials and mixes with requirements of Contract Documents.
- E. Promptly notify Engineer and Contractor of observed irregularities or non-conformance of Work or Products.
- F. Perform additional inspections and tests required by Engineer.

1.8 LABORATORY REPORTS

- A. After each inspection and test, within 48 hours, submit two (2) copies of laboratory report to Engineer, and to Owner.
- B. Include:
 - 1. Date issued
 - 2. Project title and number
 - 3. Name of inspector
 - 4. Date and time of sampling or inspection
 - 5. Identification of product and Specifications Section
 - 6. Location in the Project
 - 7. Type of inspection or test
 - 8. Date of test
 - 9. Results of tests
 - 10. Conformance with Contract Documents
- C. When requested by Engineer, provide interpretation of test results.

1.9 CONTRACTOR RESPONSIBILITIES

- A. Deliver to laboratory at designated location, adequate samples of materials proposed to be used which require testing, along with proposed mix designs.
- B. Cooperate with laboratory personnel, and provide access to the Work.
- C. Provide incidental labor and facilities to provide access to Work to be tested, to obtain and handle samples at the site or at source of products to be tested, to facilitate tests and inspections, storage and curing of test samples.
- D. Notify Engineer and laboratory 48 hours (not including Saturday, Sunday, or Holidays), prior to expected time for operations requiring inspection and testing services.

1.10 CERTIFICATES OF MANUFACTURERS

- A. For any materials that are normally tested in the shop by the manufacturer, the Contractor shall furnish the Engineer certified records of physical, chemical and other pertinent tests, and/or certified statements from the manufacturer that the materials have been manufactured and tested in conformity with the Specifications. Where such a small quantity of material is required as to make physical tests or chemical analyses impractical, a certificate from the manufacturer stating the results of such tests or analyses of similar materials, which were concurrently produced, may, at the discretion of the Engineer, be considered as the basis for the acceptance of such materials.

2. PART 2 – PRODUCTS

Not Used

3. PART 3 – EXECUTION

Not Used

END OF SECTION

SECTION 01420 INSPECTION SERVICES

1. PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Related Sections
- B. Requirements

1.2 RELATED SECTIONS

- A. Section 01400 - Quality Control
- B. Section 01410 - Testing Laboratory Services

1.3 REQUIREMENTS

- A. Inspection - The Contractor agrees to a thorough inspection of the work by the Engineer, including all labor performed and materials furnished, delivered, or intended to be used in the work, and including manufacture, preparations and testing at such times as the Owner's representatives or the Engineer desire. The Contractor shall not use any material which has not been inspected or tested, and accepted. The Contractor shall keep the Engineer advised of the progress of the work away from the site requiring inspection or witnessing of tests, so that arrangements may be made for inspection at the proper time.
- B. Inspection, tests, or acceptance of any material prior to shipment shall not be deemed as a final acceptance of the materials. The Engineer may inspect or require tests or analyses of any portion of the materials at any time after delivery to the site either before or after installation, and any material which is found to be defective or which does not otherwise conform to the requirements of the Contract Documents will be rejected and shall be removed forthwith from the site, as provided in the Contract.
- C. The performance of such inspections and acceptance of the work by the Owner's representatives or the Engineer will in no way release the Contractor of his complete responsibility for construction means, methods and techniques, and for performing the work in accordance with the Contract Documents.

- D. Significance of Tests - Test results shall be binding on both the Contractor and the Owner, and shall be considered irrefutable evidence of compliance or non-compliance with the Specification requirements, unless supplementary testing shall prove, to the satisfaction of the Engineer, that the initial samples were not representative of actual conditions.
- E. Supplementary and Other Testing - Nothing shall restrict the Contractor from conducting tests they may require. Shall the Contractor at any time request the Owner to consider such test results, the test reports shall be certified by an independent testing laboratory acceptable to the Owner. Testing of this nature shall be conducted at the Contractor's expense.

2. PART 2 - PRODUCTS

Not Used

3. PART 3 - EXECUTION

Not Used

END OF SECTION

SECTION 01500 CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

1. PART 1 – GENERAL

1.1 SECTION INCLUDES

- A. Temporary Utilities – Electricity, lighting, heat, ventilation, telephone service, water, and sanitary facilities.
- B. Temporary Controls – Barriers, enclosures and fencing, protection of the Work, and water control.
- C. Construction Facilities – Access roads, parking, progress cleaning, project signage, and temporary buildings.

1.2 RELATED SECTIONS

- A. Section 01090 – Reference Standards
- B. Section 01501 – Health and Safety Provisions
- C. Section 01502 – Environmental Protection
- D. Section 01700 – Contract Closeout
- E. Section 02110 – Site Clearing
- F. Section 02140 – Dewatering

1.3 TEMPORARY ELECTRICITY

- A. The Contractor shall be responsible for providing temporary electric power for construction. He shall coordinate requirements of other contractors, arrange for payments, and contact the electric utility to provide the service for the temporary power.
- B. The Contractor shall install a meter and pay for all expenses for electrical service used during the course of the Work.

1.4 TELEPHONE SERVICE

- A. Contractor shall arrange with the local telephone company for all telephone service for construction needs at locations as required.
- B. Contractor shall provide an adequate number of service lines for his needs and coin-operated instruments for use by construction personnel.
- C. Provide, maintain and pay for private telephone service with two incoming lines to Engineer's field office commencing at time of project mobilization.
- D. The Contractor shall also provide an answering machine for the Engineer's use.
- E. Provide one (1) plain paper facsimile machine. Provide all necessary paper, toner, and maintenance during the course of the Contract.

1.5 TEMPORARY WATER SERVICE

- A. Contractor shall provide temporary water service for construction purposes, sanitary facilities, fire protection, and for cleaning.
- B. Potable water shall be furnished for construction personnel by portable containers.
- C. Water service shall be protected from freezing, and the service shall be extended and relocated as necessary to meet temporary water requirements.
- D. The Contractor shall install a meter and pay for all expenses associated with temporary water service during the course of the Work, including furnishing all necessary permits and fees required for temporary water service.
- E. Comply with all applicable codes and arrange for all necessary inspections and approvals.
- F. Upon completion of all work, the Contractor shall disconnect and remove all temporary connections and fixtures.

1.6 TEMPORARY SANITARY FACILITIES

- A. Contractor shall provide at the site suitable enclosed toilet facilities for the use of construction personnel. The Contractor shall observe and enforce all sanitary regulations and maintain satisfactory sanitary conditions around and on all parts of the work.
- B. Adequate washing facilities shall be provided for the construction personnel.

- C. Contractor shall maintain service and clean and disinfect facilities in a satisfactory manner and enforce proper use of the sanitary facilities.
- D. Contractor shall be subject to a fine and prosecution if any human excrement is deposited in or around the construction site.
- E. The Contractor shall pay for all expenses associated with temporary sanitary facilities during the course of the Work, including furnishing all necessary permits and fees required for temporary sanitary facilities.
- F. Comply with all applicable codes and arrange for all necessary inspections and approvals.

1.7 FIRST-AID FACILITIES AND ACCIDENTS

A. First-Aid Facilities

- 1. The Contractor shall provide, at the site, such equipment and facilities as are necessary to supply first-aid to any of his personnel who may be injured in connection with the work.

B. Accident

- 1. The Contractor shall within 24 hours report in writing to the Owner and Engineer all accidents and whatsoever arising out of, or in connection with, the performance of the work, whether on or adjacent to the site, which cause death, personal injury or property damage, giving full details and statements of witnesses.
- 2. If death or serious injuries or serious damages are caused, the accident shall be reported immediately by telephone or messenger to both the Owner and the Engineer.
- 3. If any claim is made by anyone against the Contractor or a subcontractor on account of any accidents, the Contractor shall promptly report the facts in writing to the Engineer, giving full details of the claim.

1.8 WATER CONTROL

- A. Grade site to drain. Maintain excavations free of water. Provide, operate, and maintain pumping equipment.
- B. Protect site from puddling or running water. Provide water barriers as required to protect site from soil erosion.

- C. Provide temporary control of surface water, stormwater runoff, and discharge from pumping in accordance with Contractor's approved soil erosion and sediment control plan.

1.9 SECURITY

- A. Provide security and facilities to protect Work, and existing facilities, and Owner's operations from unauthorized entry, vandalism, or theft.
- B. Coordinate with Owner's security program.
- C. Furnish security during the course of the Work.
- D. The Contractor is responsible for the security of his own equipment, materials, and personnel. The Contractor will keep the existing entrance gate locked during non-working hours.

1.10 ACCESS ROADS

- A. Maintain temporary roads accessing construction area as shown on the Construction Plans.
- B. Extend and relocate as Work progress requires. Provide detours necessary for unimpeded traffic flow.
- C. Provide and maintain access to fire hydrants, free of obstructions.
- D. Provide means of removing mud from vehicle wheels before entering public and private streets. Clean all mud and debris from construction traffic at no additional expense to Owner. Comply with all State and local regulations.
- E. Designated existing on-site roads may be used for construction traffic, as directed by Owner and Engineer.

1.11 PARKING

- A. Provide temporary gravel surface parking areas to accommodate construction personnel.
- B. When site space is not adequate, provide additional off-site parking.
- C. Do not allow vehicle parking on existing pavement.

- D. Designate one parking space for the Owner and one for the Engineer.

1.12 PROGRESS CLEANING

- A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition.
- B. Remove waste materials, debris, and rubbish from site weekly and dispose off-site.

1.13 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

- A. Remove temporary above grade or buried utilities, equipment, facilities, materials, prior to Final Application for Payment inspection.
- B. Remove underground installations outside of the limit of the landfill to a minimum depth of 2 feet. Grade site as indicated.
- C. Clean and repair damage caused by installation or use of temporary work.
- D. Restore existing facilities used during construction to original condition. Restore permanent facilities used during construction to specified condition.

2. PART 2 – PRODUCTS

Not Used

3. PART 3 – EXECUTION

Not Used

END OF SECTION

SECTION 01501 HEALTH AND SAFETY PROVISIONS

1. PART 1 - GENERAL

1.1 REQUIREMENTS

- A. The Contractor shall be responsible to maintain a safe workplace and to monitor working conditions at all times during construction and, as necessary, to provide appropriate protective clothing, equipment and facilities for his personnel, and/or to establish workplace procedures to ensure their safety, and to enforce the use of these procedures, equipment and/or facilities in accordance with the following guidelines:
1. Safety and Health Regulations Promulgated by the U.S. Department of Labor OSHA, 29 CFR 1910 - Occupational Safety and Health Standards, and 29 CFR 1920 - Safety and Health Regulations for Construction.
 2. U.S. Environmental Protection Agency Interim Standard Operating Safety Guides - Office of Emergency and Remedial Response - Hazardous Response Support Division, Rev. September 1982.
 3. U.S. Environmental Protection Agency Medical Monitoring Program Guidelines.
- B. If, at any time, the Owner or the Engineer is apprised of a safety hazard which demands immediate attention because of its high potential for harm to public travel, persons on or about the work, or public or private property, the Owner or the Engineer shall have the right to order such safeguards to be erected and such precautions to be taken as necessary and the Contractor shall comply with such orders. If, under such circumstances, the Contractor does not or cannot immediately put the work into proper and approved condition, or if the Contractor or his representative is not upon the site so that he can be notified immediately of the insufficiency of safety precautions, then the Owner may put the work into such a condition that it shall be, in his opinion, in all respects safe, and the Contractor shall pay all expenses of such labor and materials as may have been used for this purpose by him or by the Owner. The fact that the Owner or the Engineer does not observe a safety hazard or does not order the Contractor to take remedial measures shall in no way relieve the Contractor of the entire responsibility for any costs or claims for loss, damage, or injury by or against any party sustained on account of the insufficiency of the safety precautions taken by him or by the Owner acting under authority of this Section.

- C. It is the responsibility of the Contractor to take appropriate safety precautions to meet whatever conditions of hazard may be present during the performance of the work, whether reasonably foreseeable or not. The Contractor is alerted to the fact that it shall be his sole responsibility to anticipate and provide such additional safety precautions, facilities, personnel and equipment as shall be necessary to protect life and property from whatsoever conditions of hazard are present or may be present.
- D. The Contractor shall prepare and submit a Health and Safety Plan (Plan) and the Community Protection Plan for work involving excavation, scraping, and regrading of soils. The Plan shall include precautionary and monitoring measures and procedures for working with detected hazards. The Plan shall be submitted for review by the Engineer and must meet, at a minimum, the requirements of the Engineer's Site Safety Plan. However, this review and conformance with this Plan by the Contractor in no way relieves the Contractor of his responsibility for safety during all work. Before the Contractor begins work at the site, the Site Safety Plan must be distributed to all personnel, and discussed with them.
- E. As a minimum, the Health and Safety Plan must:
1. Identify key personnel such as the Health and Safety Officer, Project Manager, Site Supervisor, and individuals on-site with authority to change protection levels (one person may fill all these roles).
 2. Define the roles of key personnel and their responsibilities related to the site safety plan.
 3. Describe site location in terms of size, surroundings, operations, facilities, etc. (include map of site location).
 4. Discuss site history.
 5. Identify various site operations.
 6. Describe potential health and safety hazards along with appropriate precautions or Standard Operating Procedures.
 7. Verify that all operation employees have participated in health and safety training in compliance with OSHA 29 CFR 1910.120(e). Briefly discuss the components of the training program.
 8. Select Levels of Protection to be worn by personnel during site operations based on previous analytical results and direct reading instruments (i.e., respirable dust monitor) in the breathing zone. Specify equipment needed for each level of protection required on site (i.e., clothing, respirators, hearing protection, hard hats, etc.).

9. Verify that all employees involved in the project will participate in a medical surveillance program under the direction of an occupational physician. Briefly describe the content of the medical surveillance program and the location and accessibility of the employees medical records.
10. Implement a program for periodic air monitoring. A discussion of site air monitoring shall consist of:
 - a. Type and frequency of air monitoring.
 - b. Action levels for upgrading and downgrading level of PPE based on air monitoring results.
 - c. Calibration procedures such as type of check gas and frequency of the calibration check.
 - d. A brief discussion of any sampling procedures, if appropriate.
 - e. If personal monitoring is used include specific procedures, frequency, and sample analysis turnaround time.
11. Include a site map designating work area.
12. Establish decontamination procedures for personnel and equipment.
13. Establish guidelines and standard operating procedures for conducting 1) routine site activities including safe work practices and communication among work parties; and 2) special activities such as confined space entry, boating, and drum sampling.
14. Discuss possible emergencies due to physical factors such as heat stress, cold stress, fire/explosion. Establish a contingency plan that identifies the names and phone numbers of emergency service facilities (i.e., medical, fire, ambulance, etc.), and identifies first-aid measures in a medical emergency. Include a map and written direction to the nearest hospital.
15. Implement control procedures to prevent access to the site by unauthorized personnel.
16. Establish recordkeeping system for logging personnel and visitors on daily basis.
17. Establish air monitoring data recording system.

F. At a minimum, the Community Protection Plan shall include the following:

1. Maintenance of truck traffic.
2. Dust control.
3. Noise control.
4. Site security.
5. Protection of surroundings; i.e., environmental.

G. The Plan and the Community Protection Plan shall address the needs for its continual review and adjustment to reflect changes in field conditions. The Plan and Community Protection Plan is intended to be a living document in that it will continually evolve as site conditions and knowledge of the site work activities develop further. The Plan and Community Protection Plan shall include procedures for preparing continual updates based upon monitoring and procedures for implementation of any plan adjustments.

2. PART 2 – PRODUCTS

Not Used

3. PART 3 – EXECUTION

Not Used

END OF SECTION

SECTION 01502 ENVIRONMENTAL PROTECTION

1. PART 1 – GENERAL

1.1 WORK INCLUDED

- A. The Contractor shall furnish all labor, equipment, and materials required for environmental protection during and as the result of construction operations under this Contract except for those measures set forth in other provisions of these Specifications. Environmental protection requires consideration of air, water and land, and involves noise and solid waste management as well as other pollutants.

1.2 RELATED SECTIONS

- A. Section 01500 – Construction Facilities and Temporary Controls
- B. Section 02140 – Dewatering

1.3 APPLICABLE REGULATIONS

- A. In order to prevent environmental pollution and to provide for environmental protection arising from construction activities related to the performance of this Contract, the Contractor and his subcontractors shall comply with all applicable Federal, State, and local laws and regulations concerning environmental protection, as well as the specific requirements stated in this Section and elsewhere in the Specifications.

1.4 SUBMITTALS

- A. Implementation Plan

Prior to commencement of the work, the Contractor shall:

- 1. Submit in writing his plans for implementing this Section for environmental protection.

2. Meet with the Engineer to develop mutual understandings relative to compliance with the provisions of this Section and administration of the environmental protection program.

B. Erosion Sedimentation Plan

1. The Contractor shall submit to the Engineer for approval, a detailed erosion and sedimentation plan sufficiently in advance of construction so as not to delay initiation of work. The plan shall include location and construction details of the Contractor's proposed dikes, basins, etc. In addition, the Contractor shall provide and submit his control measures for stockpile material. No site work may commence without an approved plan. Plan should conform to New York State Guidelines for Urban Erosion and Settlement Control.
2. Contractor is to size the erosion and sediment control system consistent with the NOAA Climatological Summary data for Binghamton, New York provided in the Supplementary General Conditions.

2. PART 2 – PRODUCTS

2.1 GENERAL

- A. All materials shall be in accordance with the Contractor's plan for environmental protection.

2.2 MATERIALS

- A. Silt Fence
- B. Hay
- C. Snow Fences
- D. Burlap
- E. Other as necessary

3. PART 3 – EXECUTION

3.1 PROTECTION OF LAND RESOURCES

- A. General – It is intended that the land resources within the project boundaries and outside the limits of permanent work performed under this Contract be preserved in their present condition, or be restored to a condition after completion of construction, that will appear to be natural and not detract from the appearance of the project. The Contractor shall confine his construction activities to areas defined on the Drawings or in the Specifications except with written approval of the property owners and the Engineer.
- B. Prevention of Landscape Defacement – Limits of working areas include areas for storage of construction material, and shall be cleared in a manner which will enable satisfactory restoration and which will not affect the environment during or after the construction period. The Contractor shall not enter beyond the working limits of the working area except with written approval of the Engineer and Owner.
- C. Location of Storage – The location of areas for storage of the Contractor's materials required temporarily in the performance of the work, shall be within the limits of the working area and shall require written approval of the Engineer prior to use. The preservation of the landscape shall be an imperative consideration in the selection of all such sites. Where temporary structures are constructed on sidehills, the Engineer may require cribbing to be used to obtain level foundation. Benching or leveling of earth may not be allowed, depending on the location of the proposed facility.
- D. Post-Construction Cleanup or Obliteration – The Contractor shall obliterate all signs of temporary construction facilities such as haul roads, work areas, structures, foundations of temporary structures, stockpiles of excess or waste materials, or any other vestiges of construction. It is anticipated that excavation, filling and plowing of roadways will be required to restore the area to near natural conditions which permit the growth of vegetation thereon. The disturbed areas shall be graded and filled as required, and topsoil shall be spread to a depth of no less than 6 inches over the entire area and the entire area shall be seeded.

3.2 PROTECTION OF WATER RESOURCES

- A. General – The Contractor shall not pollute streams, lakes or reservoirs with sediments, fuels, oils, bitumens, calcium chlorides, acids, or harmful materials. It is the responsibility of the Contractor to investigate and comply with all applicable Federal, State, County, and Municipal laws concerning pollution of rivers, streams and impounded water. All work under this Contract shall be performed in such

a manner that objectionable conditions will not be created in streams through, or bodies of water adjacent to, the project area.

- B. Erosion - Surface drainage from cuts and fills within the construction limits, whether or not completed, and from borrow and waste disposal areas, shall, if turbidity producing materials are present, be held in suitable sedimentation basins or shall be graded to control erosion within acceptable limits. Temporary erosion and sediment control measures such as berms, dikes, drains, or sedimentation basins, if required to meet the above standards, shall be provided and maintained until permanent drainage and erosion control facilities are completed and operative. The area of bare soil exposed at any one time by construction operations should be held to a minimum.
- C. Apply temporary mulch on denuded ground immediately after rough grading is completed. This shall apply to all areas not subject to appreciable traffic during construction, even those that are to receive some form of construction later if ground is to be exposed 30 days or more.
- D. Upon approval by the Engineer, stream and drainage ditch crossings by fording with equipment shall be limited to control turbidity, and in areas of frequent crossings, temporary culverts or bridge structures shall be installed. Any temporary culverts or bridge structures shall be removed upon completion of the project. Fills and waste areas shall be constructed by selective placement to eliminate silts or clays on the surface that will erode and contaminate adjacent streams. The Contractor shall apply for and obtain any permits which may be necessary prior to the work.
- E. Spillages - At all times of the year, special measures shall be taken to prevent chemicals, fuels, oils, greases, bituminous materials, waste washings, herbicides and insecticides, and cement and surface drainage from entering public waters. Should a spillage into the public waters occur, the Contractor shall immediately notify the proper authorities. The Contractor will be responsible for any and all costs associated with the cleanup of spillages.
- F. Washing and Curing Water - Water used in embankment material processing, aggregate processing, concrete curing, foundation and concrete cleanup, and other wastewaters shall not be allowed to re-enter the waterway if an increase in the turbidity of the waterway will result therefrom. At the point where this water enters the waterway, precautions must be taken to assure that no permanent damage or serious temporary damage is caused by change of the pH factor of the stream or by introduction of nutrients or oxygen-consuming materials. Chemicals shall be added to adjust pH factor, if required.
- G. Disposal - Disposal of any materials, wastes, effluents, trash, garbage, oil, grease, chemicals, etc., in areas adjacent to streams or other waterways shall be strictly prohibited. If any waste material is dumped in unauthorized area, the Contractor

shall remove the material and restore the area to the condition of the adjacent undisturbed area. If necessary, contaminated ground shall be excavated, disposed of as specified hereinbefore, and replaced with suitable fill material, compacted and finished with topsoil, all at the expense of the Contractor.

- H. Muck Excavation Operations - There shall be no discharge of silty, muddy, or polluted water from demucking operations to a natural water course. The Contractor shall ensure waters reaching existing water courses meet or exceed the quality of the water course. To allow sediment to settle out of water that interferes with construction before such water enters any wetlands, streams or ponds, demucking operations shall direct the material as far away from such areas as practical. Care should be taken not to damage or kill vegetation by excessive watering or by damaging silt accumulation in the discharge area. The Contractor shall be responsible for any permits required for discharge of pollutant waters into water courses, or any fines imposed for failing to obtain such permits.

3.3 PROTECTION OF FISH AND WILDLIFE

- A. The Contractor shall at all times perform all work and take such steps required to prevent any interference or disturbance to fish and wildlife. The Contractor will not be permitted to alter water flows or otherwise disturb native habitat adjacent to the project area which, in the opinion of the Engineer, are critical to fish or wildlife. Fouling or polluting of water will not be permitted. Wash waters and wastes shall be processed, filtered, ponded, or otherwise treated prior to their release into streams or other waterways. Should polluting or fouling the water occur, the Contractor shall immediately notify the proper authorities. The Contractor will be responsible for any and all costs associated with the cleanup of polluted or fouled waters.

3.4 MAINTENANCE

- A. The Contractor shall dispose of all discarded debris, aggregate samples and concrete test samples from any source whatsoever, in a manner approved by the Engineer. Toilet facilities shall be kept clean and sanitary at all times. Services shall be performed at such a time and in such a manner to least interfere with the operations. Services shall be accomplished to the satisfaction of the Engineer.
- B. The Contractor shall frequently remove materials no longer required on the site, such as excess excavated material, forms, temporary structures and similar materials and equipment so that, at all times, the site, access routes to the site and any other areas disturbed by his operations shall present a neat, orderly, workmanlike appearance.

- C. Before substantial completion inspection, the Contractor shall remove all surplus material, falsework, temporary structures, including foundations thereof, plant of any description, and debris of every nature resulting from his operations, and put the site in a neat, orderly condition; and restore all areas which have been used for storage of materials and equipment, and all areas which have been disturbed by his operations, to their original condition or to a condition satisfactory to and approved by the Engineer.

3.5 DUST PREVENTION

- A. The Contractor shall maintain all excavations, embankments, stockpiles, haul roads, permanent access roads, waste areas, borrow areas and all other work areas within the project boundaries free from dust which would cause a hazard or nuisance to on-site workers and to others or contaminate surface water.
- B. The Contractor shall be responsible for providing sufficient dust suppression so as to minimize or eliminate the need to upgrade to a level of health and safety requiring respiratory protection as outlined in the Health and Safety Provisions and Site Safety Plan.
- C. The Contractor shall, at his own expense, keep dust under control at all times on all roadways and other areas adjacent to the work or on the site of the work by any means necessary. The responsibility for dust prevention shall continue after working hours to include weekends and holidays.
- D. Methods of dust prevention consisting of motor sweepers, vacuums, spraying water, and a combination of these methods, will be permitted to control dust as approved by the Engineer. Sweepers and vacuums, if used, must be equipped with a high efficiency particulate filter and all materials collected by such devices must be properly disposed of by the Contractor at an appropriate off-site facility. All such devices must also be thoroughly decontaminated prior to their removal from the site. The selected method shall be repeated at such intervals to keep all parts of the disturbed area free from dust at all times to include during excavation, and the Contractor shall have sufficient suitable equipment on the job to accomplish this. Dust control shall be performed continuously as the work proceeds to prevent the occurrence of a dust nuisance or hazard. The determination of the existence of a dust hazard shall be made by the Contractor using procedures described in Technical and Administrative Guidance Memorandum (TAGM) 4031 issued October 27, 1989 by the New York State Department of Environmental Conservation.
- E. All areas undergoing excavation, grading, filling, cutting or subject to other dust-producing activities by vehicles should be subjected to dust-inhibiting practices. All methods must be approved by the Engineer.

- F. To verify that site control procedures are preventing the generation of dust, a monitoring and sampling program shall be established by the Contractor. The work area shall be periodically monitored for air contaminants using direct reading instruments and/or collecting air samples for particulate, gas, or vapor analysis.

3.6 NOISE CONTROL

- A. The Contractor shall use every effort and means possible to minimize or eliminate noise caused by his operation which the Engineer may consider objectionable. The Contractor shall provide working machinery, designed to operate with the least possible noise. The Contractor is responsible for maintaining compliance with all applicable noise regulations and all State and local noise ordinances.

3.7 PESTICIDES AND HERBICIDES

- A. Where pesticides or herbicides are to be used in construction operations, data relative to restrictions on the type or types of material available and approved for application to control or eradicate vegetation, insects or organisms shall be obtained from the State or County agriculture departments. The amount of pesticide applied shall be limited to the recommended dosage. Application equipment shall provide an even distribution of the materials in accordance with the approved rate in terms of pounds per acre. Materials delivered to the site shall be covered and protected from the elements. Contents of the containers shall not be exposed. Application equipment or empty containers shall not be rinsed and discharged to the natural drainage channel. The rinse water shall be disposed of in a manner that would not cause pollution of surface or groundwater. Should pollution of the surface or groundwater occur, the Contractor shall immediately notify the proper authorities. The Contractor will be responsible for any and all expenses associated with the cleanup of the pollution of the surface or groundwater.

3.8 PROHIBITED CONSTRUCTION PROCEDURES

- A. The Contractor is advised that the disposal of excess excavated material in wetlands, stream corridors, and floodplains is strictly prohibited. Any violation of this restriction by the Contractor or any person employed by him, will be brought to the immediate attention of the responsible regulatory agencies, with a request that appropriate action be taken against the offending parties. Therefore, the Contractor will be required to remove the fill at his own expense and restore the area impacted.
- B. The Contractor shall at a minimum be strictly prohibited from performing the following construction procedures:

1. Dumping of spoil material into any stream corridor, any wetlands, any surface waters, or at unspecified locations.
2. Indiscriminate, arbitrary or capricious operation of equipment in any stream corridors, any wetlands or surface waters.
3. Pumping of silt-laden water from trenches or other excavations into any surface waters, any stream corridors or any wetlands.
4. Damaging vegetation adjacent to, or outside of, the access road or the right-of-way.
5. Disposal of trees, brush and other debris in any stream corridors, any wetlands, any surface waters, or at unspecified locations.
6. Permanent or unspecified alteration of the flow line of any stream.
7. Open burning of project debris.
8. Location of storage stockpile areas in environmentally sensitive area.
9. Disposal of excess or unsuitable excavation material in wetlands or floodplains even with permission of the property owner.
10. Discharging silty or muddy water from demucking or dewatering operations into natural water courses.

END OF SECTION

SECTION 01590 FIELD OFFICES AND SHEDS

1. PART 1 – GENERAL

1.1 SECTION INCLUDES

- A. Temporary Field Offices and Sheds.
- B. Maintenance and Cleaning.
- C. Removal.

1.2 RELATED SECTIONS

- A. Section 01010 – Summary of Work
- B. Section 01500 – Construction Facilities and Temporary Controls
- C. Section 01600 – Material and Equipment

1.3 USE OF EXISTING FACILITIES

- A. Existing facilities shall not be used for field offices or for storage.

1.4 USE OF PERMANENT FACILITIES

- A. Permanent facilities shall not be used for field offices or for storage.

2. PART 2 – PRODUCTS

2.1 MATERIALS, EQUIPMENT, FURNISHINGS

- A. Materials, Equipment, Furnishings – Serviceable, new or used, adequate for required purpose.

3. PART 3 – EXECUTION

3.1 PREPARATION

- A. Fill and grade sites for temporary structures to provide drainage away from buildings.

3.2 INSTALLATION

- A. Install office spaces ready for occupancy 15 working days after date fixed in Notice to Proceed.
- B. Parking – Two hard-surfaced parking spaces for use by the Engineer, connected to office by hard-surfaced walk.
- C. Employee Residential Occupancy – Not allowed on Owner's Property.

3.3 CONSTRUCTION

- A. Portable or mobile buildings, or buildings constructed with floors raised above ground, securely fixed to foundations, with steps and landings at entrance doors.
- B. Construction – Structurally sound, secure, weathertight enclosures for office and storage spaces. Maintain during progress of Work; remove at completion of Work.
- C. Temperature Transmission Resistance of Floors, Walls, and Ceilings – Compatible with occupancy and storage requirements.
- D. Exterior Materials – Weather resistant, finished.
- E. Interior Materials in Offices – Sheet type materials for walls and ceilings, pre-finished or painted; resilient floors and bases.
- F. Lighting for Offices – 50 ft-C at desk-top height, exterior lighting at entrance doors.
- G. Fire Extinguishers – Appropriate type fire extinguisher at each office and each storage area.
- H. Interior Materials in Storage Sheds – As required to provide specified conditions for storage of products.

3.4 ENVIRONMENTAL CONTROL

- A. Heating, Cooling, and Ventilating for Offices – Automatic equipment to maintain 68°F heating and 76°F cooling.
- B. Storage Spaces – Heating and Ventilation as needed to maintain products in accordance with Contract Documents; adequate lighting for maintenance and inspection of products.

3.5 CONTRACTOR OFFICE AND FACILITIES

- A. Size – For Contractor's needs and to provide space for project meetings.
- B. Telephone – As specified in Section 01500.
- C. Furnishings in Meeting Area – Conference table and chairs to seat at least 12 persons; racks and files for Contract Documents, submittals, and Project Record Documents.
- D. Other Furnishings – Contractor's option.

3.6 ENGINEER OFFICE

- A. Separate space for sole use of Engineer, with separate entrance door with new lock and five keys.
- B. Area – Minimum 480 sq.ft., minimum dimension 12 feet by 40 feet by 8 feet tall.
- C. Windows – Minimum three; minimum total area of 10 percent of floor area, with operable sash and insect screens.
- D. Electrical Distribution Panel – Two circuits minimum, 110 volt, 60 Hz service.
- E. Minimum six, 110 volt duplex convenience outlets, one on each wall.
- F. Telephone – As specified in Section 01500.
- G. Telephone answering machine
- H. Sanitary Facilities – Refrigerated bottled water drinking fountain and private lavatory-toilet facilities.
- I. Furnishings

1. One desk 54" x 30", with three drawers.
 2. One drafting table 36" x 72", with one equipment drawer and a full width parallel straight edge.
 3. One metal, double-door storage cabinet under table.
 4. Plan rack to hold working Drawings, shop drawings, and Record Documents.
 5. One standard four-drawer legal-size metal filing cabinet with locks and two keys per lock.
 6. Twenty linear feet of metal bookshelves.
 7. Two swivel arm chairs.
 8. Two straight chairs.
 9. One drafting table stool.
 10. One tackboard 36" x 30".
 11. One waste basket per desk and table.
- J. Equipment - Six adjustable band protective helmets for visitors, one recording high/low outdoor weather thermometer, recording high/low barometer, and anemometer.
- K. One plain paper photocopy machine. Provide all necessary paper, toner, and maintenance during course of contract.

3.7 STORAGE AREAS AND SHEDS

- A. Size to storage requirements for products of individual Sections. Allow for access and orderly provision for maintenance and for inspection of products under provisions of Section 01600.

3.8 MAINTENANCE AND CLEANING

- A. Daily janitorial services for offices; periodic cleaning and maintenance for office and storage areas.
- B. Maintain approach walks free of mud, water, and snow.

3.9 REMOVAL

- A. At completion of Work remove buildings, foundations, utility services, and debris.
Restore areas.

END OF SECTION

SECTION 01600 MATERIAL AND EQUIPMENT

1. PART 1 – GENERAL

1.1 SECTION INCLUDES

- A. Products
- B. Transportation and Handling
- C. Storage and Protection
- D. Substitutions

1.2 RELATED SECTIONS

- A. Document – Instructions to Bidders: Product options and substitution procedures.

1.3 PRODUCTS

- A. Products – Means new material, machinery, components, equipment, fixtures, and systems forming the Work. Does not include machinery and equipment used for preparation, fabrication, conveying and erection of the Work. Products may also include existing materials or components required for reuse.
- B. Do not use materials and equipment removed from existing premises, except as specifically permitted by the Contract Documents.
- C. Provide interchangeable components of the same manufacturer, for similar components.

1.4 TRANSPORTATION AND HANDLING

- A. Transport and handle products in accordance with manufacturer's instructions.
- B. Promptly inspect shipments to assure that products comply with requirements, quantities are correct, and products are undamaged.

- C. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage.

1.5 STORAGE AND PROTECTION

- A. Store and protect products in accordance with manufacturer's instructions, with seals and labels intact and legible. Store sensitive products in weather-tight, climate controlled enclosures.
- B. For exterior storage of fabricated products, place on sloped supports, above ground.
- C. Provide off-site storage and protection when site does not permit on-site storage or protection.
- D. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to avoid condensation.
- E. Store loose granular materials on solid flat surfaces in a well-drained area. Prevent mixing with foreign matter.
- F. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.
- G. Arrange storage of products to permit access for inspection. Periodically inspect to assure products are undamaged and are maintained under specified conditions.

1.6 SUBSTITUTIONS

- A. Engineer will consider requests for Substitutions only within 15 days after date of Owner-Contractor Agreement. No substitutions will be considered during the bid period. The Contractor is advised that any substitutions which include a lower unit cost will result in an adjustment in the total cost paid.
- B. Substitutions may be considered when a product becomes unavailable through no fault of the Contractor.
- C. Document each request with complete data substantiating compliance of proposed Substitution with Contract Documents.

D. A request constitutes a representation that the Contractor:

1. Has investigated proposed product and determined that it meets or exceeds the quality level of the specified product. The Contractor shall furnish in writing along with his request, a detailed comparison of the substituted product to the specified product showing the substituted product's ability to meet or exceed all performance criteria of the originally specified product.
2. Will provide the same warranty for the Substitution as for the specified product.
3. Will coordinate installation and make changes to other Work which may be required for the Work to be complete with no additional cost to Owner.
4. Waives claims for additional costs or time extension which may subsequently become apparent.
5. Will reimburse Owner for Engineer's review and/or redesign services and expenses.

E. Substitution will not be considered unless all conditions in Paragraph D above are met.

F. Substitutions will not be considered when they are indicated or implied on shop drawing or product data submittals, without separate written request, or when acceptance will require revision to the Contract Documents.

G. Substitution Submittal Procedure

1. Submit three copies of request for Substitution for consideration. Limit each request to one proposed Substitution.
2. Submit shop drawings, product data, and certified test results attesting to the proposed product equivalence.
3. The Engineer will notify Contractor, in writing, of decision to accept or reject request.

2. PART 2 – PRODUCTS

Not Used

3. PART 3 – EXECUTION

Not Used

END OF SECTION

SECTION 01700 CONTRACT CLOSEOUT

1. PART 1 – GENERAL

1.1 SECTION INCLUDES

- A. Closeout Procedures
- B. Final Cleaning
- C. Project Record Documents

1.2 RELATED SECTIONS

- A. Section 01050 – Field Engineering
- B. Section 01500 – Construction Facilities and Temporary Controls

1.3 CLOSEOUT PROCEDURES

- A. Submit written certification that Contract Documents have been reviewed, Work has been inspected, and that Work is complete in accordance with Contract Documents and ready for Engineer's inspection.
- B. Provide submittals to Engineer and Owner that are required by governing or other authorities.
- C. Submit final Application for Payment identifying total adjusted Contract Sum, previous payments, and sum remaining due.

1.4 FINAL CLEANING

- A. Execute final cleaning prior to final inspection.
- B. Clean site; sweep paved areas, rake clean landscaped surfaces.
- C. Remove waste and surplus materials, rubbish, and construction facilities from the site.

1.5 PROJECT RECORD DOCUMENTS

- A. The following Project Record Documents will be submitted to the Engineer:
 - 1. Contract Drawings with as-built modifications recorded
 - 2. Specifications
 - 3. Addenda
 - 4. Change Orders and other Modifications to the Contract
 - 5. Reviewed shop drawings, product data, and samples
- B. Specifications - Legibly mark and record at each Product section description of actual Products installed, including the following:
 - 1. Substitutions or alternates utilized.
 - 2. Changes made by Addenda and Modifications.
- C. Contract Drawings - Legibly mark each item to record actual construction including:
 - 1. Requirements as noted in Section 01050.
 - 2. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the Work.
 - 3. Field changes of dimension and detail.
 - 4. Details not on original Contract Drawings.
- D. Delete Engineer title block and seal from all documents.
- E. Submit documents to Engineer within 14 days of the Substantial Completion Inspection.

2. PART 2 - PRODUCTS

Not Used

3. PART 3 – EXECUTION

Not Used

END OF SECTION

CONTRACT CLOSEOUT 01700

-3-

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DIVISION 2 - SITE WORK

SECTION 02110 SITE CLEARING

1. PART 1 – GENERAL

1.1 SECTION INCLUDES

- A. The Contractor shall furnish all labor, materials, equipment, tools and appurtenances required to complete the work of clearing, grubbing, and topsoil stripping of the work site as shown, specified, or required.

1.2 RELATED SECTIONS

- A. Section 02140 – Dewatering
- B. Section 02150 – Shoring and Bracing
- C. Section 02220 – Excavation
- D. Section 02228 – Waste Material Disposal
- E. Section 01500 – Construction Facilities and Temporary Controls
- F. Section 01502 – Environmental Protection

1.3 REGULATORY REQUIREMENTS

- A. Conform to applicable code for disposal of debris. No burning debris on-site.
- B. Coordinate clearing work with utility companies.

2. PART 2 – PRODUCTS

2.1 MATERIALS

- A. None under this Section.

3. PART 3 – EXECUTION

3.1 CLEARING AND GRUBBING

- A. No clearing, grubbing, or stripping of topsoil shall commence until the Contractor has staked out the proposed work, except for the work that may be required to complete the stakeout survey.
- B. Except as otherwise directed, the Contractor shall cut, grub, remove and dispose of all objectionable material such as trees, stumps, stones, brush, shrubs, roots, rubbish, and debris within the limits of the clearing as defined on the Construction Plans. All such material shall be removed from areas to be occupied by structures, roads, and pipelines, and from areas designated for stripping. No stumps, trees, limbs or brush shall be buried in any areas designated to receive compacted or structural fill.
- C. When so designated by the Engineer, the Contractor shall protect trees or groups of trees from damage by any construction operations by erecting suitable barriers, or by other approved means. The Contractor shall make every effort not to damage common native trees and shrubs, other than those he is permitted to cut, within or adjacent to the limits of work. Areas outside the limits of clearing shall be protected. No equipment or materials shall be stored in or allowed to damage these areas.
- D. The Contractor will dispose of all trees, brush, stumps and roots on-site. The material shall be buried below the finished grade. Any material that becomes exposed shall be covered by the Contractor at no expense to the Owner.

3.2 STRIPPING

- A. Topsoil shall mean a friable loam material generally dark brown to black in color, containing more than 2.0 percent organic matter, as determined in accordance with AASHTO T194.
- B. Prior to topsoil removal, the Contractor is to obtain the Engineer's approval for the depth of topsoil to be removed.
- C. The Contractor shall strip any and all topsoil from areas to be occupied by pipelines, structures, roadways, and all areas to be excavated or filled. Mixing of topsoil with subsoil shall be avoided, and topsoil shall be stockpiled in areas as defined on the Construction Plans or as designated or approved by the Engineer. Topsoil shall be stockpiled free from brush, trash, large stones, and other extraneous material and protected until it is placed for surface restoration efforts as specified under the applicable section of the Specifications. Any topsoil

remaining after all work is in place shall be disposed of or stockpiled by the Contractor as directed by the Engineer.

- D. Topsoil stockpiled for more than one month shall be seeded in accordance with Section 02936 - Seeding, Part 2 - Temporary Seeding.

3.3 FIELD QUALITY CONTROL

- A. The depth and limit of topsoil removal will be in accordance with the Contract Documents and the Engineer's direction, and will be verified during the course of the operation by the on-site testing representative.

END OF SECTION

SECTION 02140 DEWATERING

1. PART 1 – GENERAL

1.1 SECTION INCLUDES

- A. The Contractor shall furnish all labor, materials, equipment, tools and appurtenances required to complete and maintain the work of lowering and control of groundwater levels, hydrostatic pressures, and surface water to permit all excavations, and construction to be performed as shown, specified or required. The control of all surface water, temporary drainage, ice, and snow, shall be considered as part of this work. The Contractor shall correct all damage resulting from inadequacy of the dewatering system or from flooding of the construction site from other causes.

1.2 RELATED SECTIONS

- A. Section 01300 – Submittals
- B. Section 01500 – Construction Facilities and Temporary Controls
- C. Section 01502 – Environmental Protection
- D. Section 02150 – Shoring and Bracing
- E. Section 02220 – Excavation
- F. Section 02223 – Backfill and Fill

1.3 SUBMITTALS

- A. Prior to starting the work, the Contractor shall submit a plan of the proposed dewatering systems prepared by a specialist having at least 5 years experience in the field of dewatering. The dewatering shall be coordinated with the sheeting and bracing, and other excavation work. Any review or comments by the Engineer shall not relieve the Contractor of his responsibility for dewatering.

2. PART 2 – PRODUCTS

2.1 MATERIALS

- A. Materials shall conform to those included in the Contractor's plan for dewatering.

3. PART 3 – EXECUTION

3.1 REQUIREMENTS

- A. The Contractor shall comply with the following minimum requirements for dewatering:
1. The static water level within the excavation shall be drawn down a minimum of 1 foot below the bottom of the excavation so as to maintain the undisturbed state of the foundation soils and allow the installation of the structure and placement of backfill to the required density.
 2. The pumping water well shall be provided with filters to prevent loss of fine materials. Water that is pumped out shall be passed through a sedimentation tank before discharging to natural drainage courses. No injection of water to areas outside the excavation will be allowed.
 3. The system used shall not cause settlement damage to adjacent structures. The Contractor shall carry out the work by the use of other methods which will not endanger adjacent structures; all such work shall be done at the Contractor's expense. The Contractor shall be responsible for correcting, as necessary, any adverse effects his dewatering may have on existing buildings, wells, utilities, and water courses at no additional cost to the Owner.
 4. Pumping shall be carefully controlled. The Contractor shall observe the elevation of the groundwater in the trench and shall control the pumping as necessary.
 5. The Contractor shall provide sufficient standby equipment for immediate operation. This equipment shall be capable of maintaining dewatering on a continuous basis in the event that all of, or part of, the system should become inadequate or fail, including failure by a power outage.
 6. The release of groundwater to its static level shall be performed in a manner as to maintain the undisturbed state of the soils, prevent disturbance of the backfill and prevent flotation or movement of the structures.

7. There shall be NO discharge of silty, muddy or polluted water from construction or dewatering operations to a natural water course. The Contractor shall ensure that all waters reaching existing water courses meet or exceed the existing quality of the water course. To allow sediment to settle out of water that interferes with construction before such water enters any wetlands, streams or ponds, dewatering operations shall direct pumpage as far away from such areas as practical. Care should be taken not to damage or kill vegetation by excessive watering or by damaging silt accumulation in the discharge area.
8. The Contractor is responsible for all permits and approvals associated with construction dewatering and temporary surface water control.

END OF SECTION

SECTION 02150 SHORING AND BRACING

1. PART 1 – GENERAL

1.1 SECTION INCLUDES

- A. The Contractor shall furnish all labor, materials, equipment, tools and appurtenances required to complete the work of shoring, bracing, and sheeting or sheet piling, necessary to complete the construction, protect structures, and prevent the loss of ground or caving of embankments, as shown, specified or required, and shall meet all applicable building and safety codes.
- B. Pressures on sheeting and the stability of the sheeting and bottom of the excavation are dependent not only on soil conditions but upon many procedures and options available to the Contractor, such as dewatering, staging of excavation and installation of bracing, flexibility of sheeting, construction equipment used, and time of completing the work. All such factors shall be considered investigated in the design of the sheeting and bracing.

1.2 RELATED DOCUMENTS

- A. Recommended Technical Provisions for Shoring and Sloping of Trenches and Excavations, U.S. Department of Commerce.
- B. Construction Safety and Health Regulations, U.S. Department of Labor, Occupational Safety and Health Administration.

1.3 SUBMITTALS

- A. The Contractor shall submit drawings, computations and substantiating data prepared, and signed and sealed by a Professional Engineer licensed in the State, showing his proposed sheeting, sheet piling, and bracing design and method of construction for the information of the Engineer prior to the start of such construction. Any review or comments by the Engineer shall not relieve the Contractor of his responsibility for sheeting and bracing.
- B. Pressures on sheeting and the stability of the sheeting and bottom of the excavation are dependent not only on soil conditions but upon many procedures and options available to the Contractor, such as dewatering, staging of excavation

and installation of bracing, flexibility of sheeting, construction equipment used, and time of completing the work. All such factors shall be considered investigated in the design of the sheeting and bracing.

- C. In trenches, the sheeting shall be designed so that the lowest brace is no closer than 12 inches above the base of the structure to be installed.

1.4 RELATED SECTIONS

- A. Section 02140 – Dewatering
- B. Section 02220 – Excavation
- C. Section 02223 – Backfill and Fill

1.5 QUALITY CONTROL

- A. During the installation of the sheeting and bracing and as long as the excavation is open, the Contractor's Professional Engineer shall monitor the work to insure that it is carried out in accordance with his design and procedures. For this purpose, leveling observations for heave and settlement shall be made in addition to piezometric readings where excavations extend below the water table or through soft cohesive soils.

2. PART 2 – PRODUCTS

2.1 MATERIALS

- A. Steel Sheet Piling

- 1. Steel sheet piling shall conform to the requirements of ASTM A328.

- B. Timber Sheeting

- 1. The timber, unless otherwise noted, may consist of any species which will satisfactorily stand driving. It shall be sawn or hewn with square corners and shall be free from worm holes, loose knots, wind shakes, decayed or unsound portions, or other defects which might impair its strength or tightness.

3. PART 3 – EXECUTION

3.1 VERIFYING EXISTING CONDITIONS

- A. Before commencing work, the Contractor shall check and verify all governing dimensions and elevations, including field measurements of existing and adjoining work on which his work is dependent, to assure proper fit and clearance of each part of the work to the new and existing structures.
- B. The Contractor's attention is drawn to General Conditions for general information for evaluating existing conditions which may affect his work.

3.2 COORDINATION WITH OTHER OPERATIONS

- A. The schedule and progress of the shoring, bracing, and sheeting work shall be coordinated with the dewatering, excavation, and backfilling work. If, during the progress of the excavation, lateral movement of the embankment is discovered, corrective measures shall be taken immediately to prevent further movement.

3.3 INSTALLATION

A. All Sheeting

- 1. All sheeting, whether steel or timber, permanent or temporary, shall be safely designed and shall be carried to adequate depths and braced as necessary for proper performance of the work. Construction shall be such as to permit excavation as required. Interior dimension shall be such as to give sufficient clearance for construction forms and their inspection. Movements of sheeting or bracing which prevent the proper completion of the sub-structure or cause damage to any adjacent structure by undermining or any other change shall be corrected at the sole expense of the Contractor. No part of the sheeting or bracing shall be allowed to extend into the structure without written permission of the Engineer.
- 2. If the Engineer is of the opinion that, at any point, any proper supports have not been provided, he may order additional supports put in at the expense of the Contractor, and compliance with such order shall not relieve or release the Contractor from his responsibility for the sufficiency of such supports. Care shall be taken to prevent voids outside of the sheeting, but if voids are formed, they shall be immediately filled and rammed.

B. Permanent Steel Sheet Piling

1. In locations where sheeting is installed to protect existing structures, it shall remain in place unless otherwise specified. All permanent sheeting shall be steel.
2. Permanent steel sheet piling shall be cut off at 2 feet below the original ground, or as directed by the Engineer. All material cut off shall remain the property of the Contractor and shall be disposed of by him.

C. Temporary Steel or Timber Sheeting

1. Temporary sheeting shall be either steel or timber.
2. Unless otherwise ordered by the Engineer, all parts of the temporary sheeting shall be removed upon completion of the work for which it was provided. The excavation shall be backfilled and properly compacted prior to removal of sheeting unless otherwise permitted by the Engineer. Sheeting may be left in place at the option of the Contractor if so permitted by the Engineer and the cutoffs removed from the site.
3. The Contractor shall leave in place to be embedded in the backfill, any sheeting and bracing which the Engineer may direct him in writing to leave in place at any time, during the progress of the work, for the purpose of preventing injury to structures, utilities, or property, whether public or private. The Engineer may direct that steel or timber used for sheeting and bracing be cut off at any specified elevation.
4. The right of the Engineer to order sheeting and bracing left in place shall not be construed as creating any obligation on his part to issue such orders, and his failure to exercise his right to do so shall not relieve the Contractor from liability for damages to persons or property occurring from or upon the work occasioned by negligence or otherwise, growing out of a failure on the part of the Contractor to leave in place sufficient sheeting and bracing to prevent any caving or moving of the ground.
5. No sheeting is to be completely withdrawn if driven below mid-diameter of any pipe or structure footing, and under no circumstances shall any sheeting be cut off at a level lower than one foot above the top of any pipe.

3.4 REMOVAL OF SHORING AND BRACING MATERIALS

- A. Where the Contractor elects not to remove shoring and bracing material, all such material shall be removed to the extent that the top of the material shall be a

minimum of 5 feet below the proposed finished grade. No shoring or bracing may remain in place within the limit of proposed solid waste placement.

- B. Removal of shoring and bracing shall be carried out in a manner such that no structure shall be disturbed or damaged during or after removal. Protection of structures during the removal of shoring and bracing shall be the sole responsibility of the Contractor, and any disturbance or damage shall be rectified at no expense to the Owner.

3.5 SAFETY

- A. Installation and removal methods of shoring and bracing shall meet, or exceed, the minimum requirements of the applicable codes and safety precautions as outlined in such codes, and shall be enforced by the Contractor.

END OF SECTION

SECTION 02202 ROCK REMOVAL

1. PART 1 – GENERAL

1.1 SECTION INCLUDES

- A. Removal of rock encountered during excavation.

1.2 RELATED SECTIONS

- A. Section 01340 – Shop Drawings
- B. Section 01501 – Health and Safety Provisions
- C. Section 01502 – Environmental Protection
- D. Section 02220 – Excavation

1.3 SUBMITTALS

- A. Submit shop drawings indicating proposed method of removing rock other than as outlined herein.

1.4 DEFINITIONS

- A. Contractor shall be responsible for excavation of all rock as directed by the Engineer. Removal of rock by means of chiseling and clam shell excavation shall be considered part of the Contractor's normal excavation up to the point at which a single pass of the bucket across the rock surface following chiseling fails to remove any rock fragments. All deeper excavation required of the Contractor beyond those just described shall be classified as rock excavation for the purpose of this Work.
- B. The removal of boulders and pieces of rock less than 1 cubic yard, entirely or partly within the excavation, shall not be considered as rock excavation. Such excavation shall be considered as earth excavation, as described in Section 02220 – Excavation.

1.5 SCHEDULING

- A. Schedule Work under the provisions of Section 01039.
- B. Schedule Work to avoid disruption to occupied buildings nearby.

2. PART 2 – PRODUCTS

None Required

3. PART 3 – EXECUTION

3.1 EXAMINATION

- A. Verify site conditions and note subsurface irregularities affecting Work of this Section.

3.2 PREPARATION

- A. Identify required lines, levels, contours, and datum.

3.3 ROCK REMOVAL MECHANICAL METHOD

- A. Excavate and remove rock by the mechanical method. Drill holes and utilize expansive tools and wedges to fracture rock.
- B. Remove shaled layers to provide sound and unshattered base for foundations, pipes, or other structures.
- C. Remove excavated materials from site.

4. PART 4 – QUALITY CONTROL

4.1 FIELD QUALITY CONTROL

- A. Provide for visual inspection of base surfaces and cavities formed by removed rock.

- B. Removal of rock shall be performed to a depth of 3 feet into bedrock plus the point at which a single pass of the bucket across the rock surface following chiseling fails to remove any rock fragments.

END OF SECTION

SECTION 02220 EXCAVATION

1. PART 1 – GENERAL

1.1 SECTION INCLUDES

- A. The Contractor shall furnish all labor, materials, equipment, tools and appurtenances required to complete the work of excavation, disposal of excess and unsuitable materials, and other related and incidental work within the designated area and as required for the construction of other work, as shown, specified or required.
- B. The Contractor shall locate all existing utilities in work areas prior to commencing any excavation activities.

1.2 RELATED SECTIONS

- A. Section 01502 – Environmental Protection
- B. Section 02140 – Dewatering
- C. Section 02150 – Shoring and Bracing
- D. Section 02223 – Backfill and Fill
- E. Section 02228 – Waste Material Disposal

1.3 DEFINITIONS

- A. Excavation shall mean the removal from place of all materials and shall include soil, structures above and below ground, rock, pavements, topsoil, demolition waste material, bulky waste, rubbish, tree stumps, boulders, logs, ashes, cinders or organic material such as peat, humus or organic silt.
- B. Muck excavation shall mean the excavation and removal of soft, wet unsuitable subgrade material to the depth as directed by the Engineer.

1.4 PROTECTION OF PEOPLE AND PROPERTY

- A. The Contractor shall plan and conduct his operations so as to prevent damage to existing structures, safeguard people and property, minimize traffic inconvenience, protect the structures to be installed, and provide safe working conditions.
- B. Excavations, except as specified hereinafter, shall be adequately sheeted and braced. Where the installation of sheeting is impractical or might cause damage, as a result of, but not limited to, vibration, settlement or lateral movement, the Contractor shall utilize other methods.
- C. Excavation may be made without sheeting and bracing within the limitations and requirements of the governmental agencies having jurisdiction, provided that:
 - 1. Hazards, such as described hereinbefore, do not exist in the proximity of the excavation.
 - 2. Work is not in streets or other paved, landscaped or improved areas.
 - 3. Work can be restricted to the land provided for the Contractor's use.
 - 4. Sheeting and bracing are not specifically required by the Contract Documents.
 - 5. The Contractor shall submit a certification by a Professional Engineer licensed in the State of New York, indicating the maximum slope of the sides of the excavation proposed, and that said slopes will be stable under all normal anticipated weather conditions for the period that the excavation will be open. Such certification shall be based on the Contractor's own subsurface exploration and consideration of the options available to the Contractor such as dewatering, construction equipment, and proximity of spoil area. Any review or comments by the Engineer shall not relieve the Contractor of his responsibility arising from the excavation.
- D. In cases where excavation without sheeting and bracing is not permissible solely because of protection of workmen, trench boxes may be used. Such use shall be certified by the Professional Engineer retained by the Contractor.
- E. The Contractor shall not stockpile any material without the Engineer's approval.
- F. Stockpiles that are approved by the Engineer shall be carefully placed and the surrounding area shall be protected by placement of hay or straw bales, or an equivalent erosion control structure in accordance with the New York Guidelines for Urban Erosion and Sediment Control.

1.5 CULTURAL RESOURCES

- A. During on-site activities if Contractor discovers any items of archaeological significance, the contractor will promptly notify the Owner's on-site representative. The Owners on-site representative will contact an archeologist come to the site and evaluate the findings.

2. PART 2 – PRODUCTS

Not Used

3. PART 3 – EXECUTION

3.1 LIMITS OF EXCAVATION

- A. Excavation shall be carried to the dimensions indicated, specified or required or as directed by the Engineer to provide sufficient clearance for the construction and inspection of the structure to be installed.
- B. Excavation carried below the depths shown, specified or required, without written directions from the Engineer, shall be refilled to the proper grade with thoroughly compacted subgrade fill material; all work of this nature shall be at the Contractor's expense.

3.2 STORAGE AND DISPOSAL

- A. Excavated material, which is suitable and approved for backfill and fill shall be placed in stockpiles unless or until it can be placed in the work. It shall not be placed close to the side of excavations, where the weight of the material could create a surcharge on such sides, whether sheeted or not. Places for stockpiles shall be only where shown or approved, and shall avoid environmentally sensitive areas. The Contractor shall provide erosion control methods such as mulching, perimeter hay bales, etc., in accordance with the Contractor's approved erosion and sediment control plan.
- B. Unsuitable material shall be placed in storage piles as directed by the Engineer.
- C. The Contractor shall drain the waste material from muck excavation operations prior to stockpiling. Waste material shall be drained to the point where no gravity-bound water is held. Liquid effluents from draining shall be retained at their point of origin or conveyed as specified in Section 02140 – Dewatering.

3.3 EXCAVATION INSTRUCTIONS

- A. No excavation or muck excavation shall commence until the Contractor has staked out and surveyed the proposed work.
- B. Following excavation for swales, concrete structures, outlets, outfalls, pipes, etc., the Contractor shall regrade and add compacted fill as needed in order to achieve required surface for placement of materials as shown on the Construction Plans. All visible sharp protruding objects shall be removed or covered with a minimum of 12 inches of compacted fill.
- C. In addition, the Contractor shall remove all demolition material (and all objects greater than 6 inches) within 24 inches of a swale and replace same with compacted fill.

3.4 FIELD QUALITY CONTROL

- A. The depth and limit of excavation and muck excavation will be in accordance with these Specifications and the Engineer's direction and will be verified during the course of excavation and muck excavation by the Engineer.

END OF SECTION

SECTION 02223 BACKFILL AND FILL

1. PART 1 – GENERAL

1.1 SECTION INCLUDES

- A. The Contractor shall furnish all labor, materials, equipment, tools, testing and appurtenances required to complete the work of backfill and fill, including backfill, subgrade fill placement, embankments, grading, and other related and incidental work within the designated area and as required for the construction of other work, as shown, specified or required.

1.2 RELATED SECTIONS

- A. Section 02140 – Dewatering
- B. Section 02150 – Shoring and Bracing
- C. Section 02220 – Excavation
- D. Section 02228 – Waste Material Disposal
- E. Section 02236 – Barrier Protection Layer
- F. Section 02595 – Geotextile

1.3 DEFINITION

- A. Backfill shall consist of furnishing material, if necessary, and placing and compacting material within excavated areas.
- B. Subgrade fill placement shall consist of furnishing material and placing and compacting material where designated on the Construction Plans.
- C. Embankments and fill shall consist of furnishing material, if necessary, and placing and compacting material above existing grade and within existing structures where designated.

1.4 PROTECTION OF PEOPLE AND PROPERTY

- A. Protection of people and property shall conform to the requirements of Section 02220 – Excavation.

2. PART 2 – PRODUCTS

2.1 MATERIALS – GENERAL

- A. All backfill and fill materials, unless otherwise specified, shall consist of suitable selected and approved clean well graded granular soil from stockpiled material.
- B. All structural fill materials, unless otherwise specified, shall consist of clean, non-plastic, well drained granular soil from stockpiled material or from borrow areas. The structural fill material shall meet the approval of the Engineer and the requirements of USCS Classification GW, GP, GM, GC, SW, SP, SM.
- C. The maximum particle size shall be no larger than one-half the layer thickness.
- D. Where backfill or subgrade fill density requirements are not specified a minimum density of 90 percent of maximum dry density shall be used as determined by Modified Proctor Test (ASTM D1557), unless otherwise specified.
- E. No frozen earth shall be used for backfill or subgrade fill. All backfill and subgrade fill materials shall be free from all perishable and objectionable materials.
- F. Backfill materials for piped utilities shall be natural soil, not containing deleterious material, refuse, rubble, muck, metal, wood, etc., and no particle greater than 6 inches in size can be used. The backfill shall be compacted in 12-inch lifts.
- G. All required fill materials shall be substantially free from organic materials, wood, trash, and other objectionable materials which may be compressible or which cannot be properly compacted. It shall not contain granite blocks, broken concrete, masonry rubble, or other similar materials. It shall have physical properties such that it can be readily spread and compacted to the specified permeability and/or density. Snow, ice, and frozen soil shall not be permitted.

2.2 SUBGRADE FILL

- A. Materials used as subgrade fill shall be provided by the Contractor from an approved borrow source. The soil to be used shall be tested by the Contractor with the following tests: grain size, Modified Proctor, and natural moisture content. Additionally, the Contractor shall not place fill prior to the completion

B. The Contractor is to designate the intended source facility(ies) for the subgrade fill material required to be provided by these Specifications. The Contractor is to provide a copy of the valid mining permit and certification by the holder of the permit that adequate subgrade fill quantities exist.

A. This material shall be free of any sharp objects which could puncture or otherwise cause damage to piping. It shall be a clean sand with subangular or rounder grains, and a maximum particle size of 1/2-inch. The soil shall be acceptable to the Engineer.

A. The Contractor shall submit to the Engineer for approval suitable evidence that any soils proposed for subgrade fill are appropriate. This information is to be provided for each individual subgrade fill source or when in the opinion of the Engineer the material is different in any way from the originally tested and approved material. This evidence shall include, but not necessarily be limited to, the following testing:

- B. The Contractor shall submit the above evidence along with a minimum of 100 pounds of each different soil and each soil from different sources which are proposed for use as backfill or subgrade fill, borrow, select soil, sandbedding, subsoil, subangular stone, barrier protection, and drainage layer material.

- 10.006.4/94.02260.CS

- D. If in the opinion of the Engineer the Contractor's proposed soil is unsuitable for the proposed application, the Contractor shall submit the above evidence for soil of another type or from another source for consideration by the Engineer.

3. PART 3 – EXECUTION

3.1 PRECAUTIONS

- A. Subgrade fill placement shall not:
 - 1. Be performed with frozen materials.
 - 2. Be placed on snow.
 - 3. Be placed on ice. Ice shall be defined as frozen water on the surface of in situ soils or previously placed material.

3.2 BACKFILLING

- A. Backfill shall not be placed until the structure, pipeline, or other construction component has been inspected in place and approved. The extent of pipe trench left open shall be kept to a minimum.
- B. Unless otherwise directed, excavations shall be backfilled as soon as possible after structures are constructed, pipes are laid and the work is inspected, tested as required and accepted, and permission to backfill has been given by the Engineer. Immediately prior to backfilling, all rubbish, debris, forms and similar materials shall be removed from the excavations.
- C. Backfill shall be brought up evenly on each side of structures, and for their full length. The thickness of each compacted layer shall not exceed that specified under Subpart 2.1 unless specified otherwise or as directed by the Engineer. Care shall be taken to ensure that no damage is done to structures or protective coatings thereon.
- D. Where sheeting is withdrawn, all cavities left thereby shall be filled with select soil, tamped in place so as to fill all voids thoroughly.

3.3 TRENCH BACKFILL PROCEDURES

- A. Pipes shall be bedded and backfilled as shown on the Construction Plans or as directed by the Engineer. Care shall be taken to place and compact material under pipe haunches.
- B. Trenches shall be backfilled by hand to a depth of not less than 12 inches above the top of the pipe, for the full width of the trench. Such backfill shall be uniformly placed in 6-inch maximum layers. Care shall be taken not to damage the pipe. Each layer shall be hand tamped and compacted before the next layer is placed. After the trench has been backfilled to 12 inches above the top of the pipe, backfill may then be placed and compacted in 12-inch lifts.

3.4 COMPACTION OF BACKFILL AND SUBGRADE FILL

- A. All backfill and subgrade fill are to be compacted. The density of all backfill and subgrade fill shall be at least equal to that shown or specified. The moisture content of the backfill and subgrade fill material shall be such that proper compaction shall be obtained. Puddling for compacting will not be permitted.
- B. Hand-operated plate type vibratory tampers or other suitable equipment may be used in areas not accessible to larger rollers or compactors and to avoid damaging pipes.

3.5 FILLING

- A. Areas on which embankments or other fill will be constructed shall be cleared and prepared as for backfilling. Immediately prior to filling, the subgrade shall be proofrolled unless otherwise specified. All unsuitable material as determined by the Engineer shall be removed prior to filling.
- B. Fill shall be brought uniformly throughout the area. The thickness of each compacted layer shall not exceed one foot unless otherwise specified by the Engineer.

3.6 FIELD QUALITY CONTROL

- A. Tests for the subgrade fill materials proposed for construction will be made by a certified testing laboratory employed by the Contractor as listed below. The test information will be submitted to the Engineer for approval before any subgrade fill material is used in construction.

**Test Required
(ASTM Designations)**

Frequency of Tests

During Construction

- | | |
|--|---|
| <ul style="list-style-type: none"> (a) Mechanical Analysis - D422 (b) Liquid Limit - D4318 (c) Plastic Limit - D4318 (d) Maximum Density - D1557 | <p>A minimum of one test of (a), (b), (c) and (d) per 15,000 cubic yards of in-place material and every change in source of material.</p> |
|--|---|

- B. The Contractor is to perform on-site field moisture and density testing on each lift of a 100-foot grid supplied by the Engineer over the entire area of subgrade fill placement. The field density test shall be D3017; the field moisture test shall be D2922.
- C. Each on-site moisture density test will be considered to represent a 100-foot by 100-foot area.
- D. Any areas not meeting the specified compaction will be reworked or replaced and recompactd and retested until a passing test is achieved at every grid point (at no additional cost to the Owner).
- E. On berms or on trench backfill, field density and field moisture testing shall be performed at a frequency of one test of each for every 100 linear feet of berm or trench for every lift of fill or backfill.
- F. In areas where the degree of compaction is doubtful, or the uniformity of materials is not maintained, additional tests will be made as directed by the Engineer.
- G. The Engineer retains the right to perform additional on-site and laboratory testing at the Owner's cost. The results of such testing are binding and may require the Contractor to perform additional work or reworking of the material at no additional cost to the Owner.

END OF SECTION

SECTION 02228 WASTE MATERIAL DISPOSAL

1. PART 1 – GENERAL

1.1 SECTION INCLUDES

- A. The Contractor shall furnish all labor, materials, equipment, tools and appurtenances required to complete the work of properly disposing of all waste materials during and as the result of the construction operations under this Contract, as specified or required.

1.2 RELATED SECTIONS

- A. Section 02110 – Site Clearing
- B. Section 02220 – Excavation
- C. Section 02223 – Backfill and Fill

1.3 APPLICABLE REGULATIONS

- A. In order to prevent environmental pollution arising from the construction activities related to the performance of this Contract, the Contractor and his subcontractors shall comply with all applicable Federal, State, and local laws and regulations concerning waste material disposal, as well as the specific requirements stated in this Section and elsewhere in the Specifications.
- B. The Contractor is advised that the disposal of excess excavated material in wetlands, stream corridors, and plains is strictly prohibited even if the permission of the property owner is obtained. Any violation of this restriction by the Contractor or any person employed by him, will be brought to the immediate attention of the responsible regulatory agencies, with a request that appropriate action be taken against the offending parties. Therefore, the Contractor will be required to remove the fill at his own expense and restore the area impacted.

2. PART 2 - PRODUCTS

Not Used

3. PART 3 - EXECUTION

3.1 GENERAL

- A. Disposal of all waste materials, including but not limited to, refuse, demolition waste material, muck, wood, rock, boulders, floating debris, trash, garbage, etc., shall be by the Contractor at his own expense to an appropriate facility. If any waste or surplus material is dumped in unauthorized areas, the Contractor shall remove the material and restore the area to the condition of the adjacent undisturbed area. If necessary, contaminated ground shall be excavated, properly disposed of, and replaced with suitable fill material, compacted and finished with topsoil, all at the expense of the Contractor. The Contractor is responsible for any fines associated with improper disposal of waste material.
- B. No materials shall be burned at the site.

END OF SECTION

SECTION 02233 SUBANGULAR STONE

1. PART 1 – GENERAL

1.1 SECTION INCLUDES

- A. The Contractor shall furnish all labor, materials, equipment, tools, testing, and appurtenances required to complete the work of furnishing, placing and compacting the subangular stone as shown, specified or required.

1.2 RELATED SECTIONS

- A. Section 02223 – Backfill and Fill
- B. Section 02595 – Geotextile
- C. Section 02597 – Flexible Membrane Liner

2. PART 2 – PRODUCTS

2.1 MATERIAL

- A. Subangular Stone
 - 1. The material shall be clean, sound, tough and durable, non-carbonate subangular, subrounded or round stone with a maximum particle size of 1.5 inches, not lumpy, and free from slag, cinders, ashes, rubbish, or other deleterious material. Material shall meet the requirements of NYSDOT Standard Specifications and construction materials 703-0203 with respect to physical requirements in Table 703-2 and 703-3.
 - 2. The Contractor shall maintain a gradation of subangular stone to satisfy filter criteria based on the actual gradation of soils in contact with the stone used in the construction. The following criteria shall apply:

- a. $D_{15}(\text{Stone})$ shall be less than 4
 $D_{85}(\text{Soil Layer})$
 - b. $D_{15}(\text{Stone})$ shall be greater than 5
 $D_{15}(\text{Soil Layer})$
 - c. $D_{50}(\text{Stone})$ shall be less than or equal to 25
 $D_{50}(\text{Soil Layer})$
- 3. The Contractor shall maintain a gradation of subangular stone to satisfy filter criteria based upon the collection pipe slotting. The following criteria shall apply:
 - a. $D_{50}(\text{Stone})$ shall be greater than or equal to
0.125" 1.2
- 4. The carbonate content of the subangular stone shall be less than 15 percent.
- B. Stone shall be stored in designated areas approved by the Engineer and Owner. The Contractor is responsible for maintaining the stone free of contamination, and any stone determined by the Engineer to be contaminated, shall not be incorporated into the Work.

2.2 TESTING

- A. The Contractor shall submit, to the Engineer for approval, evidence that the material proposed for use as subangular stone is suitable for the proposed application. The necessary evidence shall include, but not necessarily be limited to, the following testing:
 - 1. Grain Size ASTM D422
 - 2. Durability AASHTO T96
 - 3. Carbonate Content ASTM C586
- B. The Contractor shall submit to the Engineer the evidence as specified in Paragraph 2.2.A above along with a minimum 100-pound sample of the proposed soil for each different source of subangular stone.
- C. No material shall be placed unless approved by the Engineer.
- D. If in the opinion of the Engineer the subangular stone is unsuitable for the proposed application then the Contractor shall submit to the Engineer the required

suitable evidence as specified in Paragraph 2.2A above for subangular from a different source.

3. PART 3 – EXECUTION

3.1 PLACEMENT

- A. A uniform layer of subangular stone shall be placed to the lines, depths and grades as shown on the Construction Plans.
- B. Backfilling of subangular stone shall be performed by the Contractor in a manner such that the material is kept clean and free of foreign materials on site: fill, silts, debris, etc.
- C. The Engineer will at any time inspect the stone in stockpiles on-site for contamination and, if necessary, reject all or portions of the stone.

END OF SECTION

SECTION 02235 TOPSOIL

1. PART 1 – GENERAL

1.1 SECTION INCLUDES

- A. Furnish all labor, materials, testing, equipment and incidentals necessary to perform all fill and grading required to complete the placement of topsoil in order to establish vegetation in all areas disturbed during the course of construction and as directed by the Engineer. The work shall include, but not necessarily be limited to, the earthwork required for topsoil placement and all related work.

1.2 RELATED SECTIONS

- A. Section 02223 – Backfill and Fill
- B. Section 02936 – Seeding

2. PART 2 – PRODUCTS

2.1 TOPSOIL

- A. Topsoil used for landfill final cover will be provided by the Contractor from an off-site borrow source. Topsoil used for surface restoration of the borrow area will come from topsoil stockpiled during borrow area clearing operations.
- B. Soil material used as topsoil shall be loam or sandy loam, suitable to support vegetative growth.
- C. Topsoil shall not contain stones, lumps, roots, or similar objects larger than 2 inches in any dimension.
- D. Topsoil shall have a pH between 5.8 and 7.6.
- E. Topsoil shall have a minimum organic content of not less than 2.0 percent by weight.

- F. Topsoil may be supplemented with sewage sludge compost from the Broome County facility. The quantity of sludge shall be in accordance with NYSDEC-approved loading rates based upon actual testing of the sludge and topsoil.

2.2 TESTING

- A. The Contractor shall submit, to the Engineer for approval, evidence that the material proposed for use as topsoil is suitable for the proposed application. The necessary evidence shall include, but not necessarily be limited to, the following testing:
- | | |
|--------------------|------------|
| 1. Grain Size | ASTM D422 |
| 2. pH | ASTM D2976 |
| 3. Organic Content | ASTM D2974 |
- B. Contractor shall submit to the Engineer the evidence as specified in (a) above along with a minimum 50-pound sample of the proposed soil for each different source of topsoil.
- C. No material shall be placed unless approved by the Engineer.
- D. If in the opinion of the Engineer the soil is unsuitable for the proposed application then the Contractor shall submit to the Engineer the required suitable evidence as specified in (a) above for soil from a different source.

3. PART 3 - EXECUTION

3.1 TOPSOIL INSTALLATION

- A. This item shall consist of the placement of topsoil in all areas disturbed during the course of construction and as directed by the Engineer. The Contractor shall provide all the required materials, labor, and equipment to perform the work in accordance with these Specifications.
- B. Topsoil shall be installed in a single, 6-inch lift within the landfill final cover perimeter.
- C. The Contractor shall take care to insure that underlying soil remains intact and does not become mixed with the topsoil during installation.

4. PART 4 – QUALITY CONTROL

4.1 GENERAL

- A. Testing, as described in Item 2.2, shall be performed by the Contractor at a frequency of one test per 5,000 cy.

END OF SECTION

SECTION 02236 BARRIER PROTECTION LAYER

1. PART 1 – GENERAL

1.1 SECTION INCLUDES

- A. Contractor shall furnish all labor, materials, equipment, tools, testing, and appurtenances required to complete the work of furnishing, placing, and compacting the barrier protection layer as shown, specified or required.

1.2 RELATED SECTIONS

- A. Section 02220 – Excavation
- B. Section 02223 – Backfill and Fill
- C. Section 02595 – Geotextile
- D. Section 02597 – Flexible Membrane Liners
- E. Section 02670 – Slotted Corrugated Polyethylene Pipe

1.3 TOLERANCES

- A. The items constructed of the barrier protection layer shall maintain the minimum dimensions shown on the Contract Drawings with a minus tolerance of 0.1-foot and a maximum tolerance consistent with providing minimum slopes and elevations, as specified.

2. PART 2 – PRODUCTS

2.1 MATERIALS

- A. Materials for the barrier protection layer will be furnished by the Owner from designated on-site areas.

- B. Material used as the barrier protection layer shall have a maximum particle size of 8 inches in any dimension.
- C. The soil shall be free of any sharp objects which could tear, puncture, or otherwise damage the flexible membrane liner.
- D. The soil shall be comprised of clean subangular sand material of non-carbonate origin.
- E. Verification of the above specifications shall be made by the Engineer prior to delivery of the material. The Engineer may request the Contractor to supply samples of material being placed, for testing by the Contractor if the Engineer feels the properties of the material have changed or do not conform to the specifications.

3. PART 3 – EXECUTION

3.1 INSTALLATION

- A. The Contractor shall provide all the required materials, labor, and equipment to perform the work in accordance with these Specifications.
- B. The barrier protection layer shall be installed to the lines and grades as illustrated on the Construction Plans.
- C. No material shall be placed until the Engineer has approved the drainage layer or the geocomposite drain, whichever is the case.
- D. After placement of the barrier protection layer, the upper surface shall be proofrolled with a smooth drum roller, with the exception of areas over piping.

4. PART 4 – QUALITY CONTROL

4.1 GENERAL

- A. The Contractor is responsible for implementing a construction control grid. The control grid shall be placed and maintained by a professional surveyor licensed by the State of New York. The control grid shall have defined positions every 50 feet across the area of the proposed final cover. All aspects of construction shall be defined by the control grid, including but not limited to, tops and toes of slope, final cover drainage, berms, roadways, swales, downchutes and culverts. The

construction control grid shall be established in rectangular coordinates, and lie in the same orientation as the New York State Transverse Mercator.

- B. Tests for the barrier protection layer will be performed by the Contractor as follows:

<u>Test Required (ASTM Designations)</u>	<u>Frequency of Tests</u>
(a) Mechanical Analysis - D422	A minimum of one test of (a), (b), and (c) per 10,000 cubic yards of in-place material.
(b) Maximum Density - D1557	A minimum of one test per 10,000 cubic yards of in-place material.

- C. The thickness of the material placed, computed normal to the slope, shall be determined by comparison of as-built survey of the top of the preceding layer to the top of the completed layer at the locations of the established 50-foot control grid.

END OF SECTION

SECTION 02240 DRAINAGE LAYER

1. PART 1 – GENERAL

1.1 SECTION INCLUDES

- A. Contractor shall furnish all labor, material, equipment, tools, testing, and appurtenances required to complete the work of furnishing, placing and grading drainage material as part of the final cover drainage layer, if this alternative is selected, otherwise the Contractor shall place a geosynthetic drainage layer as detailed in Section 02599 – Geocomposite Drain.

1.2 RELATED SECTIONS

- A. Section 02220 – Excavation
- B. Section 02223 – Backfill and Fill
- C. Section 02233 – Subangular Stone
- D. Section 02595 – Geotextile
- E. Section 02597 – Flexible Membrane Liners
- F. Section 02599 – Geocomposite Drain
- G. Section 02670 – Slotted Corrugated Polyethylene Pipe

1.3 TOLERANCES

- A. Tolerance for finished elevation is plus 0.5-foot with no minus tolerance.
- B. Minimum thickness of the final cover sand drainage layer is 1.0-foot, with elevation tolerance as in Paragraph 1.3.A above.

2. PART 2 – PRODUCTS

2.1 FINAL COVER SAND DRAINAGE LAYER

- A. The minimum permeability for material used for the final cover drainage layer shall be 1×10^{-3} cm/sec when compacted to 50 percent relative density or greater.
- B. The final cover drainage layer shall be comprised of clean subangular material of durable non-carbonate origin (less than 15 percent carbonate content) and be free from material capable of damaging the flexible membrane liner.

2.2 TESTING

- A. The Contractor will be responsible for all testing of the drainage materials obtained from the borrow area or from approved off-site sources. The testing required shall include, but not be limited to:
 - 1. Grain Size ASTM D422
 - 2. Permeability USCOE EM1110-2-1906
 - 3. Relative Density ASTM D4254
 - 4. Carbonate Content ASTM D3042
- B. No material shall be placed unless approved by the Engineer.
- C. Testing during construction shall be performed in accordance with Part 4 of this Section.

3. PART 3 – EXECUTION

3.1 INSTALLATION – FINAL COVER DRAINAGE LAYER

- A. This item shall consist of the placement of a drainage layer over the flexible membrane liner component of the final cover.
- B. The drainage layer shall be installed as shown by the details on the Construction Plans, and shall be a minimum thickness of 12 inches.
- C. No material shall be placed until the Engineer has approved the installation of the underlying flexible membrane liner.

- D. PCPE drainage pipe shall be placed during installation of the drainage layer, as required by the Engineer.
- E. The Contractor shall use extreme care in the placing of the drainage layer material over flexible membrane liner. The material shall be placed in a manner that will maintain a minimum thickness of 1-foot of material between the FML and the spreading equipment. All equipment to be used in this operation shall be low ground pressure equipment and be approved by the Engineer. All filling operations will proceed from the bottom of the slope to the top, unless otherwise approved.
- F. The Contractor shall take care to ensure that:
 - 1. The synthetic liners remain intact during the installation of the drainage layer material.
 - 2. No foreign material is mixed into the drainage layer material that may produce clogging or restrict its ability of the layer to transmit water.
 - 3. No vehicles shall drive on the uncovered FML.
- G. The Contractor shall ensure that the drainage layer material is free of any foreign objects to the complete satisfaction of the Engineer prior to covering.
- H. After placement of the drainage layer material, the upper surface shall be proofrolled using a single pass with a smooth drum roller, with the exception of areas over the drainage piping.

4. PART 4 – QUALITY CONTROL

4.1 GENERAL

- A. The Contractor is responsible for implementing a construction control grid as provided by the Engineer. The control grid shall be placed and maintained by a professional surveyor licensed by the State. The control grid shall have defined positions every 50 feet across the area of the proposed final cover. All aspects of construction shall be defined by the control grid including, but not limited to, tops and toes of slope, final cover drainage piping, berms, manholes, roadways, and culverts.
- B. The permeability and soils classification of the final cover drainage layer material shall be tested at a minimum frequency of one sample for every 5,000 cubic yards of in-place material by the Contractor.

- C. Particle grain-size analysis shall be performed on the drainage layer material at a minimum frequency of one sample for every 2,000 cy, or at each time when a change in the material occurs as determined by the Engineer by the Contractor.
- D. The thickness of the drainage layer shall be determined by comparison of the record survey of the top of the preceding layer to the top of the completed, compacted drainage layer at the locations of the established 50-foot control grid.

END OF SECTION

SECTION 02241 GAS VENTING LAYER

1. PART 1 – GENERAL

1.1 SECTION INCLUDES

- A. Contractor shall furnish all labor, material, equipment, tools, testing, and appurtenances required to complete the work of furnishing, and placing material for the gas venting layer. Two alternatives are presented on the Construction Plans for this component; either a 6-inch soil layer overlying geotextile, or a geosynthetic layer as detailed in Section 02599 – Geocomposite Drain.

1.2 RELATED SECTIONS

- A. Section 02220 – Excavation
- B. Section 02223 – Backfill and Fill
- C. Section 02233 – Subangular Stone
- D. Section 02595 – Geotextile
- E. Section 02597 – Flexible Membrane Liners
- F. Section 02599 – Geocomposite Drain
- G. Section 02670 – Slotted Corrugated Polyethylene Pipe

1.3 TOLERANCES

- A. Tolerance for finished elevation is plus 0.5-foot with no minus tolerance.
- B. Minimum thickness of the gas venting soil layer is 0.5-foot, with elevation tolerance as in Paragraph 1.3.A above.

2. PART 2 – PRODUCTS

2.1 GAS VENTING LAYER

- A. The minimum permeability for material used for the gas venting layer shall be 2×10^{-3} cm/sec when compacted to 50 percent relative density or greater.
- B. The gas venting layer shall be comprised of clean subangular material of durable non-carbonate origin (less than 15 percent carbonate content) and be free from material capable of damaging the flexible membrane liner.
- C. The material shall have a gradation such that no more than 10 percent passes through the No. 200 sieve.

2.2 TESTING

- A. The Contractor will be responsible for all testing of the drainage materials obtained from the borrow area or from approved off-site sources. The testing required shall include, but not be limited to:
 - 1. Grain Size ASTM D422
 - 2. Permeability USCOE EM1110-2-1906
 - 3. Relative Density ASTM D4254
- B. No material shall be placed unless approved by the Engineer.
- C. Testing during construction shall be performed in accordance with Part 4 of this Section.

3. PART 3 – EXECUTION

3.1 INSTALLATION – GAS VENTING LAYER

- A. This item shall consist of the placement of a gas venting layer beneath the flexible membrane liner component of the final cover.
- B. The gas venting layer shall be installed as shown by the details on the Construction Plans, and shall be a minimum thickness of 6 inches.

- C. No material shall be placed until the Engineer has approved the regrading of the existing cover soils and the excavation of the gas collection trenches.
- D. PCPE pipe shall be placed within the trenches and surrounded by subangular stone or recycled glass, as shown in the Construction Plans.
- E. The Contractor shall take care to ensure that:
 - 1. The gas collection piping remains intact during the installation of the gas venting layer material.
 - 2. No foreign material is mixed into the gas venting layer material that may produce clogging or restrict its ability of the layer to transmit gas.
- F. The Contractor shall ensure that the gas venting layer material is free of any foreign objects to the complete satisfaction of the Engineer prior to covering.
- G. After placement of the gas venting layer material, the upper surface shall be proofrolled using a single pass with a smooth drum roller, with the exception of areas over the drainage piping.

4. PART 4 - QUALITY CONTROL

4.1 GENERAL

- A. The Contractor is responsible for implementing a construction control grid as provided by the Engineer. The control grid shall be placed and maintained by a professional surveyor licensed by the State. The control grid shall have defined positions every 50 feet across the area of the proposed final cover. All aspects of construction shall be defined by the control grid including, but not limited to, tops and toes of slope, gas collection piping, berms, roadways, and culverts.
- B. The permeability and soils classification of the final cover drainage layer material shall be tested at a minimum frequency of one sample for every 5,000 cubic yards of in-place material by the Contractor.
- C. Particle grain-size analysis shall be performed on the gas venting layer material at a minimum frequency of one sample for every 2,000 cy, or at each time when a change in the material occurs as determined by the Engineer by the Contractor.
- D. The thickness of the gas venting layer shall be determined by comparison of the record survey of the top of the preceding layer to the top of the completed, compacted drainage layer at the locations of the established 50-foot control grid.

END OF SECTION

SECTION 02271 STONE RIP-RAP

1. PART 1 – GENERAL

1.1 SECTION INCLUDES

- A. The Contractor shall furnish all labor, materials, equipment, tools, testing, and appurtenances required to complete the work of furnishing and placing stone rip-rap, as shown, specified or required.

1.2 RELATED SECTIONS

- A. Section 02220 – Excavation
- B. Section 02223 – Backfill and Fill
- C. Section 02595 – Geotextile
- D. Section 02597 – Flexible Membrane Liner

2. PART 2 – PRODUCTS

2.1 MATERIALS

- A. Stone rip-rap shall consist of hard, durable, sharp, clean material. It shall be free from any considerable amount of flat, laminated or elongated particles; and shall be free from cracks, overburden shells, clay, organic matter, coal, limestone, dolomitic material, shale or other deleterious matter.
- B. The stone rip-rap shall sustain a loss of not more than 40 percent after 500 revolutions in the ASTM abrasion test (Los Angeles machine – ASTM C535), and shall sustain a loss of not more than 10 percent after 12 cycles of freezing and thawing (AASHTO Test 103 for Ledge Rock Procedure A). Stone rip-rap shall have a minimum specific gravity of 2.50, as defined by ASTM C127). The Contractor shall submit test reports for abrasion tests, freeze/thawing tests, and specific gravity to the Engineer at least 3 weeks prior to delivery of material to the site. A minimum of three stone rip-rap samples shall be tested and results submitted to

the Engineer for type from each source of supply. The tests will be performed by a testing laboratory employed by the Contractor.

C. Stone rip-rap shall be supplied graded as follows:

50 percent by weight greater than or equal to the D₅₀ designation as shown on the Construction Plans.

D. The breadth or thickness of a single stone shall not be less than 1/3 its length.

3. PART 3 – EXECUTION

3.1 INSTALLATION

A. Stone rip-rap shall be placed to minimum thicknesses as indicated on Construction Plans.

END OF SECTION

SECTION 02272 GABIONS

1. PART 1 – GENERAL

1.1 SECTION INCLUDES

- A. Under this item, the Contractor shall furnish, assemble, and fill with stone, PVC-coated heavily galvanized steel wire mesh baskets of approved sizes, as supplied by Maccaferri Gabions, Inc., (or Owner-approved equivalent). Their sizes shall be as specified herein, manufactured in accordance with these specifications and placed in accordance with the lines, grades, and dimensions shown on the Plans, or as required by the Engineer.
- B. The assembly and erection of gabions shall be in accordance with the manufacturer's instructions.

1.2 RELATED SECTIONS

- A. Section 02220 – Excavation
- B. Section 02223 – Backfill and Fill
- C. Section 02271 – Stone Rip-Rap
- D. Section 02595 – Geotextile

1.3 DELIVERY, STORAGE AND HANDLING

- A. Gabions shall be delivered to the site folded flat, tied in pairs, and packed in bundles.
- B. Gabions shall be stored on-site in a location and manner approved by the Engineer and Owner, and in accordance with the manufacturer's instructions.
- C. Gabions shall be stored on a level area free from standing water or mud.
- D. Gabions shall be stored indoors or covered prior to using with canvas tarpaulin.

- E. Gabions and gabion bundles shall be handled in accordance with the manufacturer's instructions.

1.4 SUBMITTALS

- A. The manufacturer shall provide certification to the Engineer stating the wire size, galvanizing, and PVC coating are in accordance with the Specifications.

2. PART 2 – PRODUCTS

2.1 MANUFACTURING

- A. Gabions shall be manufactured in such a manner that their sides, ends, lid and diaphragm(s) can be assembled to form rectangular units of the specified dimensions.
- B. Gabions shall be of a single unit construction. The front, base, back and lid shall be woven into a single unit. The ends and diaphragm(s) shall be factory-connected to the base.
- C. All perimeter edges of the mesh forming the gabion shall be securely selvaged so that the joints obtained have at least the same strength as the wire mesh itself.
- D. The gabion length shall be 2, 3, or 4 times its horizontal width. The horizontal width shall not be less than 36 inches. Where the gabion length exceeds 1½ times its horizontal width, the gabion shall be divided into cells by diaphragm(s) of the same mesh and gauge as the gabion body.

2.2 GABION MATERIALS

- A. Mesh – Mesh openings shall be hexagonal in shape, measuring approximately three and one-quarter inches (3-1/4) by four and one-half inches (4-1/2), uniform size.
- B. Mesh Joints – All joints shall be flexible and double twisted to prevent unravelling.
- C. Galvanizing – All steel wire used shall be zinc-coated (galvanized) having a minimum amount of zinc coating of 0.80 oz./sq.ft. of wire, and complying with Federal Specification (QQ-W-461 H, Class 3). Binding wire shall have a coating of not less than 0.70 oz./sq.ft.

All dimensions are subject to a tolerance limit of $\pm 5\%$ of manufacturer's specified sizes.

2.3 PVC COATING

- A. PVC Coating - All zinc-coated steel wire shall be additionally coated with a minimum of 0.020 inches of grey PVC, which shall be suitable to resist destructive effects of immersion in acidic, salt, or polluted water, exposure to ultraviolet light and abrasion, and retain these characteristics under test in accordance with ASTM Specifications B117-73, D1499-64(77) and D1203-74 (ISO 176-1976). The PVC shall possess the following typical properties:

<u>Property</u>	<u>Test Method</u>	<u>Value</u>
Thickness, mils minimum	ASTM D1593 Para 8.1.3	15
Specific Gravity (minimum)	ASTM D792 Method A	1.3
Minimum Tensile Properties		
1. Breaking Factor (kg/cm^2)	ASTM D412	210
2. Elongation at Break (percent)	ASTM D412	200-280
3. Modulus (force) at 100% Elongation (kg/cm^2)	ASTM D412	190
Volatile Loss (percent loss maximum)	ASTM D1203 Method A	
	105° C - 24 Hr	2
	105° C - 240 Hr	6
Durometer Harness (Shore D)	ASTM D2240	50-60
Brittleness Temperature		
Cold Bend Temperature	BSS-2782-104A	-30° C
Cold Flex Temperature	BSS-2782-150B	15° C

- B. Mesh Wire - The nominal diameter of the steel wire mesh shall be 0.1063 inches (U.S. Gauge No. 12) after zinc coating, and an overall nominal diameter (core wire plus PVC coating) of 0.1453 inches.
- C. Selvedge Wire - The nominal diameter of the selvedge wire, running through all the edges (perimeter wire), shall be 0.1339 inches (U.S. Gauge No. 10) after zinc coating, and an overall nominal diameter (core wire plus PVC coating) of 0.1739 inches.
- D. Lacing Wire - The nominal diameter of the wire, necessary for assembling and lacing the gabion units, shall be 0.0866 inches (U.S. Gauge No. 13) after zinc coating, and an overall nominal diameter (core wire plus PVC coating) of 0.1266 inches.

All wire gauges are subject to tolerances in accordance with ASTM 641A-71A, Table 3.

- E. Tensile Strength of all wire used for manufacturing the gabions and lacing wire shall be in accordance with ASTM A641, measured before fabrication of netting.
- F. Load Test shall be conducted in accordance with Federal Specifications (QQ-W-451 H, Class 3).
- G. Elongation Test shall be conducted in accordance with Federal Specifications (QQ-W-451 H, Class 3).

The steel wire diameters are based on the french wire gauges and are approximately the U.S. gauge numbers stated.

3. PART 3 - EXECUTION

3.1 ASSEMBLY

- A. Gabions are supplied folded flat, tied in pairs, and packed in bundles. Single gabions shall be removed from the bundle, unfolded flat on the ground, and all kinks and bends flattened.
- B. The gabion unit shall then be assembled individually, by erecting the sides (front and back), ends and diaphragm(s), ensuring that all creases are in the correct position and the tops of all sides level.
- C. The four corners of the gabion unit shall be laced first, followed by the edges of internal diaphragm(s) to the sides.

- D. The recommended lacing procedure consists of cutting a length of lacing wire (approximately 1-1/2 times the distance to be laced - not to exceed 5 feet). Secure the wire terminal at the corner by looping and twisting, then proceed to lace with alternating single and double loops at approximately five,5-inch intervals. Securely fasten the other lacing wire terminal.

3.2 INSTALLATION

- A. The assembled gabion units are carried to the job site and placed in their proper location. For structural integrity, all adjoining empty gabions must be laced along the perimeter of their contact surfaces in order to obtain a monolithic structure.

3.3 FILLING

- A. Gabion units shall be filled with hard, durable, clean stone meeting the requirements of Section 02271, Part 2, 2.1.A-B from 3 to 8 inches in size, as identified in the Table, or as approved by the Engineer.

Gablon Thickness (Inches)	Stone Size (Inches)
6	3-4
9	3-6
12	4-6
18	4-8

- B. Gabions may be filled by almost any type of earth-handling equipment such as: backhoe, gradall, crane, etc.
- C. Care shall be taken when placing fill material to assure that the sheathing on PVC-coated gabions will not be broken or damaged.
- D. Gabion shall be filled in three layers, one foot at a time. Two connecting wires shall be placed between each layer in all cells along all exposed faces of the gabion structure. All connecting wires shall be looped around two mesh openings and the wire terminals shall be securely twisted to prevent their loosening.
- E. The cells in any row shall be filled in stages so that local deformation may be avoided. That is, at no time shall any cell be filled to a depth exceeding one foot more than the adjoining cell.

- F. Along all exposed gabion faces, the outer layer of stone shall be carefully placed and packed by hand in order to ensure proper alignment and a neat, compact, square appearance.
- G. The last layer of stone shall be levelled with the top of the gabion to allow proper closing of the lid and provide an even surface for the next course.
- H. It is good practice to place backfill to gabion walls simultaneously with the gabion filling operation.
- I. Well packed filling without undue bulging, and secure lacing, is essential in all structures.

3.4 LID CLOSING

- A. The lids shall be stretched tight over the filling, using crowbars or lid-closing tools, until the lid meets the perimeter edges of the front and end panels.
- B. The lid shall then be tightly laced along all edges, ends, and diaphragm(s) in the same manner as described above for assembling.
- C. Well packed filling without undue bulging, and secure lacing, is essential in all structures.

3.5 CUTTING AND FOLDING MESH

- A. Where shown on the Drawings, or otherwise directed by the Engineer, the gabion mesh shall be cut, folded, and wired together to suit existing site conditions. The mesh must be cleanly cut and the surplus mesh cut out completely, or folded back and neatly wired to an adjacent gabion face. The cut edges of the mesh shall be securely laced together with lacing wire in the manner described above for assembling.
- B. The assembling, installation, filling, and lid closing of the reshaped gabions shall be carried out as specified above.

END OF SECTION

SECTION 02280 RECYCLED GLASS

1. PART 1 – GENERAL

1.1 SECTION INCLUDES

- A. The Contractor shall furnish all labor, materials, equipment, tools and appurtenances required to complete the work of furnishing and placing recycled glass as shown, specified or required.

1.2 RELATED SECTIONS

- A. Section 02220 – Excavation
- B. Section 02223 – Backfill and Fill
- C. Section 02241 – Gas Venting Layer
- D. Section 02595 – Geotextile
- E. Section 02597 – Flexible Membrane Liner
- F. Section 02599 – Geocomposite Drain
- G. Section 02670 – Slotted Corrugated Polyethylene Pipe

1.3 TOLERANCES

- A. Tolerance for finished final slopes is ± 0.3 feet. The tolerance for final cover drainage channels is ± 0.2 feet.
- B. The maximum acceptable lift thickness is 2 feet for all areas.

1.4 DELIVERY, STORAGE AND HANDLING

- A. All recycled glass shall be delivered, stored, and handled in a manner to prevent contamination by other soil or new soil materials.

- B. Access to all glass stockpiles shall be limited by a temporary fence.

2. PART 2 – PRODUCTS

2.1 RECYCLED GLASS

- A. Recycled glass means clean, broken glass originating from Broome County Recycling Facility. No other source of material may be utilized by the Contractor without the prior approval of the Owner.
- B. The recycled glass shall, when placed, have an in-place permeability no less than 1×10^{-3} cm/sec.
- C. The recycled glass shall have a maximum particle size of 1.5 inches.
- D. The recycled glass shall have an organic content less than 5% as determined by Loss on Ignition.
- E. All recycled glass shall be substantially free from organic materials, wood, trash, and other objectionable materials which may be compressible or which cannot be properly compacted. It shall not contain granite blocks, broken concrete, masonry rubble, or other similar materials. It shall have physical properties such that it can be readily spread and compacted to the specified permeability and/or density. Snow, ice, and frozen material shall not be permitted.
- F. The recycled glass may contain trace amounts of plastic, metal, and paper such as bottle caps or labels which cannot be readily removed by hand picking. In no case shall the percentage of plastic, metal, or paper exceed 5 percent by weight.
- G. The Contractor shall submit to the Engineer, for his approval, evidence that the in-place material meets the requirements in the Contract Documents. This evidence shall include, but not necessarily be limited to, the following test results performed on samples from the in-place material:

Grain Size	ASTM D422
Permeability	USACOE EM 1110-2-1906
Loss on Ignition	

- H. If there is any variation in the approved material during construction, or material is obtained from an alternate source, additional testing will be required as noted in (G) above.

3. PART 3 – EXECUTION

3.1 PLACEMENT

- A. Prior to the start of operations, the Contractor shall supply the Engineer with a survey drawing showing the elevations of the subgrade, performed by a surveyor licensed by the State. The Engineer may check the grades as required, and no material placement shall begin prior to approval of the subgrade by the Engineer. The Contractor shall note any discrepancies and shall plan his operations so that upon completion of the recycled glass installation, the top grades conform with the proposed landfill final cover grades. Hydraulic conductivity, organic content, and grain-size analysis shall be tested at a frequency of one per 5,000 cy.
- B. The recycled glass shall be placed around the pipe as shown on the Construction Plans. Care shall be taken to ensure that no damage to the pipe occurs. The Contractor shall replace all pipe that is damaged at no cost to the Owner.
- C. The Contractor shall continue to place and compact lifts to form a uniform upper surface to the lines and grades as shown on the Construction Plans.
- D. The finished surface shall be covered with a geotextile Type B cushion.
- E. The Contractor shall restrict all vehicular traffic or equipment operation on finished areas except as required for redressing or other necessary construction activities. Those areas which are completed and approved by the Engineer shall be marked along the perimeters by lathe and flagging or other suitable means.
- F. No material shall be placed in a frozen state or on any material that has become frozen.
- G. All material that after placement and prior to covering is determined by the Engineer to be unsuitable shall be repaired by the Contractor to the satisfaction of the Engineer and in conformance with all the provisions in the Contract Documents at no cost to the Owner.

END OF SECTION

SECTION 02292 GAS VENTS

1. PART 1 – GENERAL

1.1 SECTION INCLUDES

- A. Contractor shall furnish all labor, material, equipment, tools, and appurtenances required to complete the work of installing gas vents as shown in the Construction Plans and as directed by the Engineer.

1.2 RELATED SECTIONS

- A. Section 02223 – Graded Filter
- B. Section 02291 – Sand Grading Layer
- C. Section 02597 – Flexible Membrane Liners
- D. Section 02670 – Perforated Corrugated Polyethylene Pipe

2. PART 2 – MATERIALS

2.1 POLYVINYL CHLORIDE (PVC) PIPE AND FITTINGS

- A. Gas vent pipe shall be Schedule 80 PVC solvent welded pipe conforming to ASTM Standards D1784 and D1785, as manufactured by Certainteed Corporation or approved equal.
- B. Pipe for gas vents shall be solid. Pipe shall have a nominal diameter as shown on Construction Plans.
- C. All pipe fittings shall be Schedule 80 socket type and conform to ASTM Standards D1784 and D2467, except for transition or special couplers as noted on the Plans.

- D. PVC primers conforming to ASTM F656, and PVC solvent cement conforming to ASTM D2564 as produced by Plastic Piping Systems or approved equal, shall be used for socket type connections.
- E. Gas vents shall extend a minimum of 3 feet into waste.
- F. Contractor shall place field concrete as shown, to support gas vent riser.

3. PART 3 – EXECUTION

3.1 INSPECTION

- A. The Engineer shall inspect each length of pipe and all fittings. All materials not meeting the requirements of these Specifications or otherwise found defective or unsatisfactory by the Engineer, shall be rejected and immediately marked and removed from the job-site on the same working day as so discovered.

3.2 PIPE INSTALLATION

- A. All of the items specified under Part 2 – Materials, shall be installed according to applicable manufacturer's recommendations, the details shown in the Construction Plans, and as specified under this Section.
- B. The pipe and fittings shall be installed so that there shall be no deviation at the joints, and so that inverts present a smooth surface. Pipe and fittings which do not fit together to form a tight fitting joint are not permitted.
- C. The pipe and the fitting interiors shall be thoroughly cleaned and shall be maintained clean throughout the work.
- D. For PVC pipe and fittings, section of pipe shall be jointed by hand only, without the use of levers or other mechanical aids. For solvent welded joints, both ends shall be thoroughly cleaned with the primer described in this Section; both ends shall then be coated with the PVC solvent cement described in this Section and joined together following the manufacturer's recommendations.

3.3 PIPE CONNECTIONS

- A. Connections between PVC and corrugated HDPE pipe shall be made with HDPE pipe couplings specifically manufactured for joining dissimilar pipe materials. Joints shall be fixed with stainless steel screws to prevent separation during construction.

3.4 FIELD QUALITY CONTROL

- A. The gas vent installation will be in accordance with the Contract Documents and the Engineer's direction, and will be verified during the course of the operation by the Engineer.

END OF SECTION

SECTION 02595 GEOTEXTILE

1. PART 1 – GENERAL

1.1 WORK INCLUDED

- A. The Contractor shall furnish all labor, materials, equipment, tools, testing, and appurtenances required to complete the work of furnishing, and placing geotextile filter fabric, complete with appurtenances, as shown, specified or required.

1.2 RELATED SECTIONS

- A. Section 02223 – Backfill and Fill
- B. Section 02240 – Drainage Layer
- C. Section 02241 – Gas Venting Layer

1.3 SUBMITTALS

- A. The Contractor shall furnish a mill certificate from the company manufacturing the fabric attesting that the fabric meets the chemical, physical, and manufacturing requirements specified. Fabric will be rejected if it is found to have defects, rips, holes, flaws, deterioration or other damage.

1.4 PRODUCT HANDLING

- A. The Contractor shall protect the work described in this Section before, during, and after installation, and shall protect the installed work covered by other Sections.
- B. The Contractor shall, during all periods of shipment and storage, protect the fabric from direct sunlight, ultraviolet rays, temperatures greater than 120°F, mud, dirt, dust, debris and other deleterious sources. The fabric shall be maintained, wrapped in heavy-duty protective covering until it is installed.

- C. If the Engineer determines material is damaged or has excessive sunlight exposure, the Contractor shall immediately make all repairs and replacements, at no additional cost to the Owner.

1.5 DEFINITIONS

- A. On the Construction Plans and in the Specifications the words geotextile and filter fabric are used interchangeably and refer to a filter fabric type.

2. PART 2 - MATERIALS

2.1 TYPE A - GEOTEXTILE

- A. The filter fabric shall be Style 4545 as produced by Amoco, or approved equal, and shall generally conform to the following requirements:

<u>Property</u>	<u>Minimum Requirements</u>	<u>Test Method</u>
Mass/Area	5 oz/sy	ASTM D3776
Tensile Strength	100 lbs	ASTM D1682
Elongation	50%	ASTM D1682
Permeability	0.2 cm/sec	ASTM D4491
Burst Strength	215 psi	ASTM D3786
Equivalent Opening Size Sieve No.	70	CW-02215

2.2 TYPE B - GEOTEXTILE

- A. The filter fabric, if required, as a cushion between the primary drainage layer and the flexible membrane liner shall be Style 4516 as manufactured by Amoco, or approved equal, and shall generally conform with the following requirements:

<u>Property</u>	<u>Minimum Requirements</u>	<u>Test Method</u>
Mass/Area	16 oz/sy	ASTM D3776
Trapezoidal Tear Strength	130 lbs	ASTM D4533
Elongation	55%	ASTM D1682
Permittivity	0.7 sec ⁻¹	ASTM D4491
Burst Strength	750 psi	ASTM D3786

Equivalent Opening Size	70	CW-02215
Ultraviolet Resistance	70%	ASTM D4355

- B. The filter fabric required to separate the graded filter of the secondary collection system and the primary recompacted clay liner shall be the same as specified hereinbefore in Subpart 2.2.A.

2.3 WIDTH OF FABRIC

- A. To keep the number of overlays to a minimum, the fabric shall be provided in sections not less than 12 feet wide. Seams, if used, shall be made at the factory and shall be tested in accordance with ASTM D1682. The strength shall not be less than the required tensile strength of the fabric in any principal direction.

3. PART 3 – EXECUTION

3.1 SITE PREPARATION

- A. Geotextile subgrade preparations shall conform to the requirements of this Section, and Section 02223 – Backfill and Fill.
- B. The base surface shall be cleared of sharp objects, boulders, stumps, or any materials that may contribute to fabric punctures, shearing, rupturing or tearing. The subgrade shall be inspected for unstable areas or soft spots, before the fabric is placed and additional fill shall be placed and compacted to eliminate those unstable areas.

3.2 INSTALLATION

- A. The fabric shall be placed in the manner and at the locations shown. When placing the geotextile filter fabric, fabric sections shall be field-sewn, or heat-fused, as recommended by the manufacturer. Fabric placed on slopes shall be placed so that the upper strip of fabric overlaps the next lower strip. Fabric shall be laid smooth and free of tension, stress, folds, wrinkles, or creases.
- B. During backdumping and spreading of soil over the geotextile, a minimum depth of 12 inches of soil shall be maintained over the geotextile at all times between the fabric and wheel, or truckloads and bucket. Dozer buckets or blades shall not be in direct contact with the fabric.

- C. If geotextile should be damaged during any step of installation, a piece of geotextile material shall be cut and placed over the damaged area and overlap the undamaged material a minimum of 3 feet in each direction.
- D. Soil shall be spread in the direction of fabric overlap. The soil shall be compacted with smooth drum vibrating compactors.

3.3 PROTECTION

- A. Any fabric damaged during its installation or during placement of cover materials shall be replaced by the Contractor at no additional cost to the Owner.
- B. The work shall be scheduled so that the covering of the fabric with a layer of the cover material is accomplished within 30 days after placement of the fabric. Failure to comply with this requirement shall require replacement of the fabric.

END OF SECTION

SECTION 02597 FLEXIBLE MEMBRANE LINERS

1. PART 1 – GENERAL

1.1 SECTION INCLUDES

- A. Installation of textured and smooth flexible membrane liners, liner components, and pipe boots must be completed by an experienced Liner Contractor fully qualified to complete the work in this Section.
- B. Textured and smooth VLDPE flexible membrane liner (FML) shall be installed as part of the landfill final cover construction. The following technical specifications shall govern the manufacturing, transport, testing, and installation of the membrane liner component of the final cover system.
- C. The work to be performed under this Section also includes the requirements, materials, and methods of installing the FML pipe boots on all entrance and exit piping as indicated on the Construction Plans.
- D. The Liner Contractor shall be responsible for the manufacturing, transport, testing, and installation of the membrane liner components of the final cover system, including all pipe boots. The Liner Contractor is to insure the watertight integrity of all necessary penetrations through the FML. The Liner Contractor shall also be responsible for supplying all necessary appurtenances to install the pipe boots. The Liner Contractor shall provide shop drawings and a written description detailing the proposed methods to be employed for performing this work. All materials, equipment and supplies to be incorporated in the work shall be described, including seaming plans, installation procedures, quality control programs, and any other information needed to show his proposed method of conforming to the Construction Plans and Specifications.

1.2 RELATED SECTIONS

- A. Section 02220 – Excavation
- B. Section 02223 – Backfill and Fill
- C. Section 02233 – Subangular Stone
- D. Section 02236 – Barrier Protection Layer

- E. Section 02240 - Drainage Layer
- F. Section 02595 - Geotextile
- G. Section 02599 - Geocomposite Drain
- H. Section 02601 - Manholes, Pump Chambers, Valve Chambers, and Appurtenances
- I. Section 02660 - HDPE Pipe and Fittings
- J. Section 02670 - Slotted Corrugated Polyethylene Pipe
- K. Section 02720 - Reinforced Concrete Pipe

1.3 SUBMITTALS

- A. The Liner Contractor shall submit to the Engineer all items described in subsequent sections as outlined by the following schedule:
 - 1. Prior to Lining Material Delivery to the Project Site
 - a. Resumes of all liner crews, including prior experience in installing textured and smooth FML. Liner crew staff will be subject to approval by the Engineer.
 - b. Shop drawings, including panel layout and details of all work, including: extrusion welding process, pipe boots and details of sealing around all necessary FML penetrations.
 - c. Quality assurance testing of manufactured polyethylene sheet for specified parameters (as referenced in Part 2).
 - d. Laboratory test data to demonstrate that the interface friction angle with adjacent construction materials is as indicated in Part 2.2 of this Section.
 - e. Origin and certification stating geomembrane roll numbers, and base resin type and lot from which it was produced.
 - f. Manufacturer's sheet inspection diagram for all material panels.
 - g. Completed Form No. 1 (see Appendices for appropriate form).

2. Prior to Installation

- a. Submit to the Engineer for approval, a schedule of operations, including means and methods of installation.
- b. Completed Form No. 2 (see Appendices for appropriate subgrade acceptance form).

3. During Installation Submitted Daily

- a. Daily construction progress reports clearly showing FML placed by date.
- b. Daily weld test records, including welder start-up testing.
- c. Daily records of field seam testing, destructive and non-destructive for the FML liner components of the final cover system.
- d. Laboratory test results on seam testing must be submitted via Fax or other original hard copy to the Engineer within 24 hours of testing, or work will not be permitted to continue.

4. Upon Completion

- a. As-built panel layout diagram (4 prints, and 1 reproducible).
- b. Summary and log of all laboratory quality control completed by the liner contractor.
- c. Summary and log of all field quality control work completed by the Liner Contractor.
- d. Certification that material installation is complete and in accordance with the Specifications.
- e. Statement of warranty.

- B. The above-noted requirements shall apply to all shop-fabricated materials as well as those items specified for fabrication in the field.

2. PART 2 – PRODUCTS

2.1 RESIN

- A. The smooth and textured VLDPE sheets shall be manufactured from pure virgin resin, having a minimum density of .890 to .910 g/cm³ or an approved equivalent. The pure virgin resin shall be mixed with 2 to 3 percent carbon black. The carbon black is to be pre-blended according to specifications of the manufacturer. While more than one resin may be suitable and will be considered, the Liner Contractor is cautioned that the Engineer considers resin selection crucial to the successful completion of the project and proposed resins will be most thoroughly and carefully reviewed. The resin utilized will be from the same supplier.
- B. Prior to the delivery of the material to the site, the Liner Contractor will be required to provide the Engineer with a written certification that the product to be delivered has been extruded from an approved resin for that density of polyethylene specified (refer to attached Form No. 1). No material will be permitted to be stored on site until this certification has been delivered to the Engineer.

2.2 MANUFACTURING

- A. The manufacturer of the membrane sheet must be approved by the Engineer and have satisfactory experience in extruding a minimum of 150 acres of textured and smooth VLDPE materials with a reputation for producing a high quality product. The Liner Contractor shall submit the manufacturing company, address, and employee contact to the Engineer. The manufacturer shall have manufactured liner used in at least one currently permitted Part 360 landfill in New York State.
- B. The sheet materials shall be formulated from the appropriate polymers and compounding ingredients to form FML sheet material that meets all requirements for the specified end use of the product(s). All FML rolls delivered to the site shall be from one batch of resin, unless otherwise approved of in writing by the Engineer. The sheet material shall be capable of being bonded to itself by thermal bonding in accordance with the sheet manufacturer's recommendations and instructions.
- C. Extruded sheets shall be at least 15 feet in width. Each roll shall be identified by a number and date of manufacture. Paint or markers used for identification markers shall be of a type which will not degrade the liner material.
- D. The textured FML material to be used shall have a minimum demonstrated interface friction angle of 27 degrees with the construction materials to be used adjacent to the FML as shown on the Construction Plans. The interface friction

shall be determined by direct shear ASTM 3080. The test shall be performed saturated with confining pressures of 1.5, 3.0, and 4.5 pounds per square inch.

- E. The delivered VLDPE membrane sheets for construction of the final cover system must conform to the following minimum properties:

Property	Test Method	Value		Units
		Smooth Liner	Textured Liner	
1. Thickness (minimum average)	ASTM D374 ϕ	40	40	Mils
Thickness (lowest individual)		36	36	
2. Density (maximum sheet)	ASTM D1505	.935	.935	g/cm ³
3. Minimum Tensile Properties (each direction)	ASTM D638			
a. Tensile Strength at Break		128	55	lb/in width
b. Elongation at Break		625	300	%
4. 2% Secant Modulus (maximum)	ASTM D638	35,000	35,000	lbs/in ²
5. Tear Resistance (min)	ASTM D1004 Die C	16	16	lbs
6. Low Temperature Brittleness	ASTM D746 Procedure B	-60	-60	°C
7. Dimensional Stability (each direction, maximum)	ASTM D1204 212°F 15 min.	±3	±2	% change
8. Environmental Stress Crack	ASTM D1693*	1,500+	1,500+	hours
9. Puncture Resistance	FTMS 101 (2065)	52	38	lbs

Property	Test Method	Value		Units
		Smooth Liner	Textured Liner	
10. Carbon Black Content Allowable Range	ASTM D1603	2.0-3.0	2.0-3.0	%
11. Carbon Black Depression Acceptable Levels	ASTM D3015*	A1,A2 or B1	A1,A2 or B1	

ϕ Ratcheting ball micrometer with 1/32-inch diameter pressure foot.

* See "procedure modification", "National Sanitation Foundation Standard 54 for Flexible Membrane Liners," National Sanitation Foundation, Appendix A, November 1985, or update.

2.3 MEMBRANE LINER PENETRATION BOOTS AND APPURTENANCES

- A. The Liner Contractor shall furnish all liner penetration boots and other appropriate material required to complete the installation of the liner. All liner boots shall be of the same sheet density and nominal thickness as the liner being welded to.
- B. Liner penetrations are to be minimized. The Liner Contractor is cautioned that no deviation in the quantity or configuration of liner penetrations will be accepted without the advance written approval of the Engineer.
- C. All penetrations through the membrane liner shall be thoroughly and securely sealed. The seal between the membrane liner and any pipe, structure, etc., shall be without any detectable leakage.
- D. Membrane liner penetration boots shall be shop fabricated of non-textured material. The manufacturer shall provide a statement of hydraulic or pneumatic testing of the fabricated boot prior to its acceptance for use at the project site.
- E. Field-fabricated liner penetration boots will be accepted only if a prefabricated fitting is not feasible due to design configurations and if the Liner Contractor can provide adequate field testing. Field-fabricated boots will be accepted only if advance written approval is obtained from the Engineer of both the penetration fabrication and test methodology.
- F. In attaching the membrane liner penetration boot in the field, no field seams or welds will be allowed in locations or configurations which do not allow for quality

control testing. Visual observation is not considered a sole acceptable method for in-field quality control.

- G. Where clamps, fasteners, gaskets, seals or sealants are used, the Liner Contractor shall use only materials which are compatible with the membrane lining material and the proposed material to be contained.
- H. The Liner Contractor shall provide suitable documentation to indicate that the clamps or fasteners will maintain their seal through adverse temperature cycles.

2.4 MATERIAL TRANSPORT

- A. The Liner Contractor shall be responsible for the protection of the geosynthetic material against damage during transportation to the site, during storage at the site, and prior to placement of subsequent construction materials (e.g., sand etc. with respect to the membrane components of the final geomembrane cover). Only non-damaged geosynthetic materials shall be included within the construction. Any damaged material, as determined by the Engineer, shall be replaced by the Liner Contractor at no cost to the Owner.

3. PART 3 – EXECUTION

3.1 SEAMING METHODS

- A. For the membrane components of the final geomembrane cover, field seams shall be of one of the following types:
 - 1. Dual or Split Hot Wedge or Knife – A seam produced by melting the two intimate surfaces by running a hot metal wedge between the surfaces followed immediately by pressure to form a homogeneous bond. This seam has an integral air channel for non-destructive testing of the seam. All areas which are to become seam interfaces are to be free of dust, dirt, and excess moisture.
 - 2. Extrusion Weld – A seam produced by extruding molten parent VLDPE resin between or at the edge of two overlapped VLDPE panels, respectively. A bonded seam is completed when extruded hot resins melt adjacent sheet resins to form a homogeneous weld. All areas which are to become seam interfaces are to be free of dust, dirt, and excess moisture.
- B. For the FML components of the final cover construction, FML liner panels shall be staggered such that cross seams between panels are not continuous across the landfill final cover.

- C. Prior to delivery of the FML to the site, the Contractor shall provide the Engineer, panel diagrams indicating the proposed FML panel layout for his approval for the final cover geomembrane panels. These diagrams should be in sufficient detail to provide an accurate representation of the field seaming that will be performed. Any revision to the panel diagrams shall be approved by the Engineer in writing prior to further installation operations.
- D. The Engineer shall review the proposed method for field seaming the sheets of VLDPE. The Liner Contractor must provide all of the necessary information with respect to proposed seaming method(s) to permit the Engineer to evaluate the intended technique. No deviation from the ultimately approved seaming method will be permitted.
- E. The Liner Contractor shall utilize the specified methods for the non-destructive testing of the field seams. The testing method utilized by the Contractor does not exclude the Owner or Engineer from performing their own tests. The Liner Contractor shall work closely with the Owner and Engineer in assisting them to perform independent tests or observe the testing performed by the Liner Contractor. The Liner Contractor is cautioned that field seaming will be thoroughly inspected. No consideration will be given for extra costs that may be incurred due to delays in the independent testing being performed by the Owner/Engineer or by the Owner/Engineer observing and reviewing the testing being performed by the Contractor.
- F. The Liner Contractor shall have previous experience in the installation of VLDPE FML. The Liner Contractor will be required to provide satisfactory evidence demonstrating the successful installation of a minimum 100 acres of VLDPE membrane material prior to the start of this project. Additionally, the Liner Contractor must also have experience in successfully completing welds around liner penetration and in forming membrane liners around other appurtenances.
- G. The installation supervisor shall have installed a minimum of 50 acres of VLDPE FML, and shall have installed a minimum of 50 acres of polyethylene FML in New York State under Part 360 regulations.
- H. Field seams are to be minimized, especially on the sideslopes.
- I. All field seams within the area of an excavated slope shall be made perpendicular to the toe of slope.
- J. Field seams parallel to the toe of slope, made near the bottom of an excavated slope, shall be made no closer than 5 feet to the toe of slope.
- K. Seams are to be parallel to the line of maximum slope (i.e., not across the slope).

3.2 FIELD INSTALLATION

- A. Based on the approved final cover panel installation diagrams and material certifications, the individual panels will be numbered and seams will be identified by using the numbers of the sheets which create the seam. The proposed layout of panels shall be set and approved, assuring efficiency of material, minimization of welds and proper placement of welds. Welds should be placed where normally applied stresses will be minimal. Any variation from the panel diagram must be approved by the Engineer in writing. Should a variance be obtained, the Liner Contractor shall modify the panel diagram to the "As-Built" configuration. The prime considerations in seaming shall be to minimize the number of seams made under unfavorable conditions. All overlaps for field seams shall be shingled in a downslope direction.
- B. During installation and any other period of exposure of membrane liner, pedestrian and equipment activity over the liner shall be kept to a minimum and restricted to that which is necessary for liner construction. Construction workers shall take precautions not to damage the liner surface, including use of smooth-soled footwear, care not to drag tools across the liner surface, all large tools are to have smooth base plates or shoes. Construction and landfill staff shall be informed of the restricted access to areas of liner placement, barriers, and signs shall be posted as necessary. No vehicles shall be permitted on the membrane prior to placement of adequate soil cover. No tracked equipment or other equipment which may pose a risk of puncturing, tearing or otherwise damaging the liner, will be permitted for use in construction of the liner or placement of material directly over the exposed liner.
- C. The Liner Contractor shall present a schedule of operations to the Engineer and obtain the Engineer's approval in writing of the same. This schedule shall be submitted sufficiently in advance of the proposed work as to afford a reasonable amount of time for the Engineer to review and approve the schedule. The Engineer requires that the Liner Contractor for the membrane installation attend a pre-construction meeting at the site to discuss project procedures, schedule, sequence of installation, methods of quality control testing, and personnel to be used.
- D. The Engineer shall provide one representative to observe installation of the membrane. If the Liner Contractor wishes to concurrently perform two or more activities which require observation by the Engineer (i.e., pre-seaming preparation, seaming, vacuum testing, seam testing, and probe testing), the Liner Contractor must submit in writing to the Engineer, a request for additional representatives no less than 48 hours in advance of any such construction activities.
- E. The Liner Contractor shall inform the Engineer of his planned construction activities at the commencement of each work day.

F. For the membrane components of the final cover construction, the Liner Contractor and Engineer shall approve the subbase before the installation. No membrane shall be placed on unsuitable subgrade. The Liner Contractor shall furnish a Form 2 prior to the installation of each panel indicating acceptance of the subgrade. The following conditions shall be minimum for the subgrade:

1. No stones or sharp objects shall be present on the area to be lined.
2. The subgrade surfaces will have a smooth, finished surface. The surface should not be pebbly or tracked and rutted by equipment and shall be free from pockets, holes, and discontinuities which will cause bridging which would, in the judgment of the Engineer, overstress the liner.
3. Surface moisture shall not be excessively wet or dry or in any condition which will impede proper installation. Under no condition shall the membrane be placed over standing water on the subgrade.
4. All surfaces to be overlain by the final cover geomembrane shall be complete and accepted by the Engineer prior to geomembrane placement.

G. The Liner Contractor shall maintain daily foreman reports and copies shall be provided to the Engineer daily. These reports will contain, at a minimum:

- Weather conditions
- Areas worked
- Daily production
- Manpower on site
- Equipment used
- Type and results of quality control testing completed by the Liner Contractor
- Problems encountered during construction
- Resolution of problems

The Liner Contractor shall prepare a standard daily report form for approval by the Engineer prior to placement of any membrane at the site.

H. The Engineer initially will visually inspect all field seams and sheets as installed. Any questionable areas or observed changes in physical installation characteristics will be immediately called to the attention of the Contractor's designated representative and reinspected with the representative. With regard to the membrane seams of the final cover, if the area is questionable in any manner after the initial field inspection, a field sample may be required and laboratory tests conducted in accordance with Part 4 of this Section. While destructive sampling will be minimized, random samples of seams representing different conditions may be taken for testing to examine the weld and its effect, if any, on the adjacent material. If, after subsequent field inspection and testing, the seams remain

questionable, then the area shall be reworked or removed, and replaced at the discretion of the Engineer without extra cost to the Owner.

- I. The Liner Contractor shall perform quality control tests and procedures as required and indicated in Part 4 of this Section.
- J. The Liner Contractor shall prepare the "As-Built" panel diagram locating and identifying seams, individual rolls and panels as they have been placed as part of the installation. The Contractor shall also indicate in that diagram the date on which each seam was performed, the patches and repairs, and the dates each were performed.
- K. Upon completion of the membrane installation, the Liner Contractor shall provide a letter of certification that the installation was properly performed and in compliance with all Construction Plans and Specifications. An "As-Built" detailed panel diagram shall accompany this certification, as well as all the data indicated in Part 4 of this Section.
- L. No vehicles shall be permitted on the final cover membrane prior to placement of the drainage layer, or geocomposite drain, whichever is the case.
- M. Placement of the membrane shall be done such that good fit (thermal expansion or contraction shall be considered), without bridging, is provided in all corners and grade changes. Excessive slack shall be avoided to minimize rippling during the placement of the drainage layer.
- N. Membrane shall not be installed when ambient temperatures are below 40°F or above 104°F, during precipitation or when winds exceed 20 mph. The Contractor, under the conditions of Part 3.3 of this Specification, may submit procedures and acceptable evidence that demonstrate performance standards can be maintained under adverse conditions. This information will be presented to the NYSDEC by the Engineer to seek approval for continued welding operation.
- O. The Liner Contractor shall use whatever methods he deems necessary to prevent water or wind from getting under the partially installed membrane. This could include, but not be limited to, installing temporary dikes and sand bags along the exposed edges. Should excessive moisture become trapped below the membrane or wind damage incurred, the Liner Contractor, at no extra cost to the Owner, will be required to perform all work, including removing and replacing as much of the in-place membrane as the Engineer directs, to assure that the integrity of the membrane liner and the underlying subbase or sand has not been compromised.
- P. The Liner Contractor shall be responsible for excavating the anchor trench as illustrated on the Construction Plans. All anchor trenches shall be backfilled during the cool of the day, early morning preferably. Prior to backfilling the anchor trench, the deployed membrane liner shall be exposed to normal climatic

thermal cycles for a minimum of 24 hours. No backfilling of a trench containing standing water will be permitted.

- Q. Penetrations of the final cover membrane liners shall be provided as shown on the Construction Plans. Piping shall be in-place at the membrane liner penetration locations prior to placement of the membrane liner. Shop-fabricated, non-textured FML pipe boots shall be provided at all FML penetrations. All seaming for boot installation shall be in accordance with these Specifications. Clamps will be provided at each boot, as shown in the details.
- R. All seams that cannot be subjected to quality control testing must be overcapped.

3.3 COLD WEATHER SEAMING

- A. Cold weather for the purpose of this project occurs when ambient air temperature is less than 50°F.
- B. Prior to the start of construction, the Contractor shall submit to the Engineer a construction schedule, in writing. This schedule will be updated each month in conjunction with payment request submittals. If, at any time, the Contractor's projected work schedule indicates geomembrane seaming will be performed during seasons of the year when daily temperatures are expected to be below 50°F, then the Contractor shall prepare and submit to the Engineer for review and approval, a written cold weather seaming plan describing the procedures and precautions to be taken when seaming geomembrane during cold weather.
- C. The Contractor's cold weather seaming plan shall include details of seaming procedures and precautions to be implemented at temperatures of:
 - 1. Less than 50°F
 - 2. Less than 40°F
 - 3. Less than 32°F
- D. If seaming is anticipated to be performed below 40°F, the Contractor must request that the Engineer submit a request for variance from 6 NYCRR Part 360-2.13(k)(2)(ix) which prohibits seaming below 40°F. The variance request will be prepared based upon the Contractor's proposed cold weather seaming plan.
- E. Specific components of the Contractor's plan shall include:
 - 1. Increased frequency of "pre-weld" test seams, an increased monitoring of temperature and wind speed when ambient temperatures fall below 50°F.

2. Implementation of wind-blocking enclosures when ambient temperatures fall below 40°F.
3. Pre-heating the ambient air and geomembrane sheet within enclosures when ambient temperatures fall below 32°F. The Liner Contractor shall confirm that pre-heating results in a sheet and air temperature of more than 40°F.

4. PART 4 – QUALITY CONTROL

4.1 GENERAL

- A. The Liner Contractor, before installation begins, shall appoint an experienced individual who will be on-site at all times during the installation, to represent him in all matters relevant to this work. This appointment shall be subject to approval by the Engineer.
- B. Before installation begins, and at least weekly thereafter, more often if determined necessary by the Engineer, project coordination meetings shall be held with the designated representative of the Liner Contractor, Engineer, and Owner in attendance to review the following information. This information shall be submitted to the Engineer by the Liner Contractor in writing, during or before this meeting:
 1. Progress of the work.
 2. Adherence to the Specifications.
 3. Adherence to the Quality Control Program, including the timely submission of the pertinent forms.
 4. Planned work and methods for the ensuing week, including estimate of time remaining to completion of the work.
- C. All of the Forms specified and required must be submitted in a timely fashion.
- D. Any changes in the proposed method of work, subcontractors to be utilized, membrane resin or manufacturing must be approved in advance by the Owner and Engineer. The Liner Contractor assumes all responsibility relevant to providing an acceptable product.

4.2 QUALITY CONTROL DURING MANUFACTURING

- A. Random sampling of the extruded sheet material shall be performed by the manufacturer at the cost of the Liner Contractor to assure proper quality control. The minimum frequency of such sampling shall be as follows:
 - 1. One (1) sample taken from each day's production; and,
 - 2. Samples selected randomly by the Engineer subsequent to material delivery; or,
 - 3. Other as proposed by the Liner Contractor and approved by the Engineer.
- B. The samples shall be tested for the following properties:
 - 1. Uniformity - Visual inspection to assure the material is free of holes, blisters, undispersed raw material, or foreign matter is mandatory.
 - 2. Thickness - Measurement along the sample to assure that the sheet is within the specified tolerances.
 - 3. Carbon Black - The proper amount, grade, and degree of dispersion are imperative to assure proper U.V. radiation protection (ASTM D1248).
 - 4. Tensile Properties - One (1) dimensional tensile testing which measures tensile strength at yield and at break, and elongation at yield and at break shall be made (ASTM D638).
- C. The Liner Contractor shall provide the Owner and Engineer with certified copies of the manufacturer's test results. No material shall be installed prior to furnishing the required test results.
- D. The Owner and Engineer, at their discretion, may obtain additional random samples of the membrane sheets for further confirmatory testing. This testing will be at the expense of the Owner. This testing may also include all properties specified in Subpart 2.2 of this Section and need not be limited to the testing required by the manufacturer. The Liner Contractor shall, however, at no additional cost, provide whatever reasonable assistance the Owner or Engineer may require in obtaining the samples.
- E. The Liner Contractor shall be solely responsible for the quality of the material provided. Should any of the tests performed on the material yield unsatisfactory results, the Liner Contractor will be responsible for replacing the material with satisfactory materials without delay to the project or cost to the Owner.

4.3 QUALITY CONTROL DURING INSTALLATION

- A. The Liner Contractor will be required to conduct both destructive and non-destructive testing during the membrane installation as part of the quality control program.
- B. The Engineer and Liner Contractor shall visually inspect all material to be included in the work for transport damage and uniformity and compare sheet identification numbers with those on the certification provided by the manufacturer to assure delivery of the appropriate material.
- C. The Engineer and Liner Contractor shall also visually inspect the material for any damage incurred as a result of on-site storage.
- D. At the start and midpoint of each work day and after each break in seaming of one hour or more, or that results in an equipment shutdown, a start-up field test of the seaming equipment and operator shall be performed on a test strip at or near the work location. The test strip shall be a minimum of 10 feet in length for self-propelled seaming devices, and a minimum of 3 feet for hand-held seaming devices. The material for the test strips and test fixture for making the field test shall be provided by the Liner Contractor at no additional cost. One inch (1") wide cutouts of the test strip seams will be subject to shear and peel adhesion testing at the site. A minimum of three cutouts will be tested for shear, and an additional three cutouts will be tested for peel. All seam tests must be acceptable or the test strip will be repeated until all seam tests from a given test strip are found acceptable. The testing shall be observed by the Engineer. A seam test will be considered a failure if:
 - 1. In the one-dimensional linear tension test, the bonded thickness of the seam fails before the adjacent sheet material for one or more of the three test specimens tested from each sample.
 - 2. In the peel adhesion test, the two sheets comprising the seam separate at the bond interface before tearing an individual sheet (not a film tearing bond) for one or more of the three test specimens tested from each sample.
 - 3. Upon visual inspection, the weld shows:
 - a. Excessive deformation; stepping of the bottom sheet when viewed in cross-section.
 - b. Discoloration of the sheet.
 - c. Inadequate or excessively narrow or flat weld bead.
 - d. Water blisters in weld bead.

- e. Misaligned weld bead, i.e., weld not reasonably centered with respect to overlap.
 - f. Thinning of the sheet adjacent to the weld.
- E. The fixture used for making the specified tests in the field shall be strong enough to permit the operator to determine that the seam is at least as strong as either sheet.
- F. Random test strip seam samples shall be provided to the Engineer upon request. The Liner Contractor shall retain one-half of the sample which is provided to the Engineer and the Contractor shall perform laboratory tensile and peel tests on the remaining half. These tests will be performed at an experienced test laboratory approved by the Engineer. The tests shall be conducted as follows:
- 1. The tensile test shall be in accordance with ASTM D3083. Paragraph 9.3 of that ASTM standard as modified to permit either Method A or Method B of ASTM D882. Also, a specimen 1-inch wide shall be used with a grip separation of 4 inches plus the width of the seam. The seam is to be centered between the clamps. The rate of grip separation shall be 20.0 inches per minute for VLDPE FML.
 - 2. The peel adhesion test shall be in accordance with ASTM D413. That standard shall be modified to be: Strip specimen Type A, 90° peel, modified to be 1-inch sample width pulled at a rate of 2.0 inches per minute.
- G. The lab tensile test result shall be reported in "ppi" (pounds-per-inch of width); the minimum bonded seam strength and peel values shall be as follows:

Field Seam Requirements

Property	Test Method	Value	Units
Bonded Seam Strength Minimum Shear	ASTM D4437 (as modified in Annex A)	44 or 14	lbs/in. width inches elongation
Seam Peel Adhesion Minimum Peel	ASTM D4437 (as modified in Annex A)	40 or 10	lbs/in. width inches elongation

The peel test will be considered a failure if the two sheets comprising the seam separate at the bond interface before tearing an individual sheet (either sheet

delaminates from the other or the weld for one or more of the five test specimens tested per sample).

- H. Field cutouts of installed membrane will be made of the field seams during installation of the membrane components of the landfill final cover. For a minimum of every 500 linear feet of field seam, or as directed by the Engineer, a sample of the fabricated seam shall be cut from the installed lining and tested as specified above for the test strip seams, including the field and laboratory tests. The cut-out sections shall be 12 inches wide by 45 inches long with the seam centered lengthwise. One, 1-inch wide strip shall be cut from each end of the sample and these shall be tested in the field as specified above for peel and shear. The remaining sample shall be cut into three parts and distributed as follows:

- One 12-inch by 15-inch to the installer for laboratory testing.
- One 12-inch by 15-inch to the Engineer for independent laboratory testing.
- One 12-inch by 15-inch to the Owner for archive storage.

Each of the 12-inch by 15-inch samples for laboratory testing shall provide 10 specimens: five for shear and five for peel. The resulting hole shall be patched with an oval shaped piece of 40 mil smooth VLDPE, or 40 mil textured VLDPE final cover sheet material, as appropriate, and seamed in accordance with these Specifications. The Liner Contractor shall provide the Engineer with written results of laboratory testing within 24 hours of seaming.

The Contractor shall not place the geocomposite drain, protective soil cover, or any other final cover components until the Engineer has approved the written test results of the Liner Contractor.

- I. A log shall be maintained by the Liner Contractor for the purpose of recording all test results. In addition, should the Engineer, at any time during the installation, believe the seaming process may not be performing adequately, he may, to avoid destructive sampling of the installed membrane, request additional test strips. This shall be done by the Liner Contractor at no additional cost. If the test strip seams fail at the site, the reason for the failure shall be resolved before any seaming of the membrane continues within the facility.
- J. No membrane will be covered by the Contractor until such time as the Engineer has reviewed the test results required by these Specifications. At a minimum, the pre-delivery testing, the daily log of test strip seam results, laboratory results, as-built drawings of the completed area, and approval of the seams in place will be reviewed. The Liner Contractor shall be held responsible for protection of the installed final cover membrane prior to placement of any subsequent construction materials.
- K. The Engineer and Liner Contractor shall visually inspect all membrane seams. In addition, with regard to the membrane components of the landfill final cover, the

Liner Contractor shall test all seams along the entire length, in the manner approved prior to installation, in the presence of the Engineer's representative. The recommended test methods are as follows:

1. Pressurized Dual Seam - All field seams made by a double hot wedge welding device will be tested by applying air pressure to a sealed length of seam and monitoring the pressure over time. After making the seam between two adjacent liner panels, each end of the air channel in the weld is to be sealed. Air is to be introduced from one end of the seam into the air channel, and pressurized to a minimum of 25 psig. The channel is then to be sealed and monitored for a period of 5 minutes with an air pressure gauge calibrated in 1 psi increments. The seam shall be considered passing if the pressure drop in 5 minutes is less than 2 psi.

A pressure gauge shall be inserted into the far end of the air channel to check for continuity in the air channel. Alternately, the far end of the seam may be cut to relieve the air pressure. An audible rush of air shall serve as an indicator that the test represents the entire length of seam. Air channels which do not hold the minimum specified air pressure, shall be further inspected to identify the location and nature of any unbonded sections of seam. The seam will then be repaired and retested.

If the seam cannot maintain pressure within 1 psi for the test period but demonstrates a stable pressure of greater than 10 psi, then the Contractor may retest the seam as follows:

- Remove all excessive material (overlap) from the seam area, taking care not to scar the sheet underneath.
- Apply a solution of water and soap to the seam area.
- Apply and maintain a pressure of from 25 to 30 psi on the air channel.
- Observe the seam for leakage.

If no leaks are detected then the seam is acceptable. If leaks are detected then the leaks shall be repaired and the seam retested. If the seam can maintain less than 10 psi then the seam shall be divided and tested until the leak is identified.

2. Vacuum Box Testing - All field seams with the exception of hot wedge seams shall be inspected for unbonded areas by applying a vacuum to a soaped section of seam. The vacuum shall be applied by a vacuum box equipped with a vacuum gage, a clear glass view panel in the top, and a soft rubber gasket on the periphery of the open bottom. The vacuum box shall be similar to the Series A 100 Straight Seam Tester as supplied by the American Parts and Service Company, 2201 West Commonwealth Avenue, PO Box 702, Alhambra, California 91802.

A section of the seam shall be soaped thoroughly and the inspection box shall be placed over the soaped seam section and the gasket sealed to the liner. A vacuum of between four and eight inches of Mercury (Hg) shall be applied to the box by use of a gasoline or electric driven power-vacuum pump apparatus. The applied vacuum will show bubbles over unbonded areas and the unbonded areas will then be marked by the Liner Contractor for repair by the Liner Contractor.

3. Impact Test Probe - All panel seams, made by extrusion welders that introduce the extruded parent material between the geomembrane sheets, shall be tested with an impact test probe, in addition to testing with the vacuum box. The test probe shall be suitably strong so as to detect unbonded areas of seam. The test probe should also be suitably blunt so as to not score or puncture the geomembrane lining material.

The impact test probe is to be inserted between the sheet overlap after the seam is made and moved along 100 percent of the seam to determine if the seam is suitably bonded. All seam imperfections shall be repaired and retested.

All inadequate seams or portions thereof shall be corrected in accordance with the method approved by the Engineer. Should differences of opinion between the Liner Contractor and the Engineer develop during the installation relevant to seam integrity, the Engineer may, at his discretion, obtain samples of the seams in dispute for field and/or laboratory testing. The Liner Contractor will be responsible for patching the resulting void in accordance with the previously approved procedures.

- L. All welds shall be observed for traces of deformation to the liner panels. Any welds which, in the opinion of the Engineer have caused excessive deformation or show visual signs of overheating of the liner panels, shall be repaired at no additional cost to the Owner regardless of the result of any destructive testing on the seam. The deficient seam shall be cut out, the liner panels again overlapped and welded, or the seam overcapped.
- M. Field Seam Sampling and Testing Report - The Liner Contractor shall provide a report to the Owner and the Engineer at the conclusion of the work which shall include the following:
 1. Complete identification of membrane liner system, including type of resin, sheet, source, and thickness.
 2. Pre-delivery inspection forms for membrane sheets.

3. Complete identification of field seaming system used including material, method, temperatures, seam width, cure or aging time, and date of fabrication of field seams.
4. The quality control tests used as specified and/or directed.
5. Complete description of field sampling procedure, number of test specimens, size of test specimens.
6. Conditioning procedure prior to destructive seam testing.
7. Type of test machine used, grip separation, and crosshead speed.
8. Method of recording loading and determining average load for destructive/laboratory test methods.
9. Peel and tensile load values for individual specimens in pounds per inch of width, and also the average load value for each group of specimens.
10. Type of failure in the tests, that is, within the seam within the sheet material, clamp edge or seam edge, for each individual specimen.
11. For non-destructive testing, type of non-destructive test, and number of apparent failures and repairs of seams. For the membrane components of the final cover, the number of apparent failures and repairs should be reported on a 100 lineal feet of seam basis.
12. Log of all quality control work.
13. As-built drawings.

4.4 WARRANTY

- A. The Liner Contractor shall warranty all work, including materials and installation of, flexible membrane liner material, and pipe boots in the final cover for a period of one year after substantial completion and acceptance.

END OF SECTION

FORM NO. 1
FLEXIBLE MEMBRANE LINER
MEMBRANE ACCEPTANCE FORM

I, _____, being _____
(bidder) (title)

and duly authorized to act on behalf of _____
_____, hereby certify that
(company)

the accompanying Bid has been predicated upon utilization of the following high density polyethylene geomembrane materials, manufacturing, installation, and field testing techniques. I understand that any deviation from the Specifications must be approved by the Owner and Engineer, and performed or provided at no additional cost.

A. Installer

The following firms will be on-site to perform or assist in the installation and/or field testing and/or training of the Contractor's personnel (include resumes of all participating individuals from each firm listed):

B. Attach hereto, your qualifications and experience, as well as qualifications and experience for all firms listed above.

FORM NO. 1 (Page 2)
FLEXIBLE MEMBRANE LINER
MEMBRANE ACCEPTANCE FORM

C. Resins

The material will be manufactured from the resins listed below:

<u>Identification</u>	<u>Manufacturer</u>	<u>Density (w/o Carbon Black)</u>	<u>Melt Flow Index</u>	<u>Oxidative Induction Time (Minutes)</u>
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1. _____

D. Manufacturer

The following manufacturer will be utilized to manufacture the sheets:

<u>Company</u>	<u>Address</u>	<u>Person to Contact*</u>	<u>Telephone Number</u>
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- * The Owner and Engineer must satisfy themselves as to the ability of the Manufacturer to produce a quality product. Information relevant to the process and experience of each Manufacturer will be requested and reviewed. Failure to obtain this information will disqualify the Company from consideration.

FORM NO. 1 (Page 3)
FLEXIBLE MEMBRANE LINER
MEMBRANE ACCEPTANCE FORM

E. Seaming Process

The following represents how each type of seam will be made and tested. Include written procedure on welding temperature, speed, extrudate feed material (if applicable), etc.:

**Equipment and
Operating
Procedure**

Testing

1. Parallel Panels on Relatively Flat Surfaces
2. Parallel Panels on Sideslopes
3. Abutting Panels
4. Patches
5. Repair of Seams Failing QC Testing
6. Other (Specify)

(Attach additional information
as necessary)

(Company)

(Signature)

(Title)

**FORM NO. 2
FLEXIBLE MEMBRANE LINER
SUBGRADE ACCEPTANCE FORM**

I hereby certify that I have inspected the subgrade soil or manhole or tank wall and find the condition of this subgrade to be acceptable for placement of the geomembrane panel identified below.

Roll Number

Panel Number

(Company)

(Signature)

(Title)

(Date)

SECTION 02599 GEOCOMPOSITE DRAIN

1. PART 1 – GENERAL

1.1 SECTION INCLUDES

- A. Geocomposite drain shall be installed as part of the landfill final cover construction shown in the Construction Plans. The geocomposite drain shall consist of an HDPE geonet with geotextile fused to both sides. The following technical specifications shall govern the manufacturing, transport, and installation of the geocomposite drain components.
- B. Installation of geocomposite drain must be completed by an experienced installer or contractor fully qualified to complete the work in this Section.

1.2 RELATED SECTIONS

- A. Section 02223 – Backfill and Fill
- B. Section 02597 – Flexible Membrane Liner
- C. Section 02233 – Subangular Stone

1.3 SUBMISSIONS

- A. The Contractor shall submit to the Engineer all items described in subsequent sections as outlined by the following schedule:
 - 1. Prior to Delivery to the Site
 - a. Shop drawings including details of all work including details of all overlapping attachments and anchoring.
 - b. Geocomposite drain specifications.
 - c. Certification stating geonet roll numbers and base resin type and lot from which it was produced.

- d. The Contractor shall furnish a mill certificate from the company manufacturing the fabric attesting that the fabric meets the chemical, physical, and manufacturing requirements specified. Fabric will be rejected if it is found to have defects, rips, holes, flaws, deterioration or other damage.
 - e. Manufacturers geocomposite drain roll inspection diagram for all material panels.
- 2. Prior to Installation
 - a. Submit to the Engineer for approval a schedule of operations including means and methods of installation.
- 3. During Installation Submitted Daily
 - a. Daily construction progress reports clearly showing geocomposite drain panels placed by date.
- 4. Upon Completion
 - a. Summary and log of all laboratory quality control completed by geocomposite drain Contractor.
 - b. Certification that geonet installation is complete and in accordance with these specifications.
 - c. Statement of warranty.

2. PART 2 – PRODUCTS

2.1 GEONET

- A. The geonet shall be manufactured from pure virgin resin, having a minimum density of 0.935 g/cm³, or an approved equivalent. The pure virgin resin shall be mixed with 2 to 3 percent carbon black. The carbon black is to be pre-blended according to specifications of the manufacturer. While more than one resin may be suitable and will be considered, the Contractor is cautioned that the Engineer considers resin selection crucial to the successful completion of the project and proposed resins will be most thoroughly and carefully reviewed.

- B. Prior to the delivery of the geonet material to the site, the Contractor will be required to provide the Engineer with a written certification that the product to be delivered has been extruded from an approved resin. No material will be permitted to be stored on site until this certification has been delivered to the Engineer.
- C. The manufacturer of the geonet must be approved by the Engineer and have satisfactory experience in extruding geonet with a reputation for producing a high quality product. The Contractor shall submit the manufacturing company, address, and employee contact to the Engineer in writing. The geonet shall be formulated from the appropriate polymers and compounding ingredients to form geonet that meets all requirements for the specified end use of the product.
- D. Geonet rolls shall be a minimum of 4 feet in width. Each roll shall be identified by a number and date of manufacture.
- E. The geonet is to be manufactured of pure, high-density polyethylene resin, having a minimum density of 0.935 g/cm^3 , and shall possess the following typical properties:

<u>Property</u>	<u>Test Method</u>	<u>Value</u>	<u>Units</u>
1. Specific Gravity	ASTM D1505	0.94	g/cm^3
2. Thickness (minimum) (strand int.)	ASTM D374	200-265	mils
3. Percent Carbon Black	ASTM D1603	2	%
4. Transmissivity (0.25 gradient at 10,000 psf)	ASTM D4716	2×10^{-3}	m^2/sec

2.2 GEOCOMPOSITE DRAIN

- A. Geocomposite drain shall have a continuous filament geotextile fabric heat bonded to both sides of the net conforming to the following minimum requirements:

<u>Property</u>	<u>Requirements</u>	<u>Test Method</u>
1. Thickness	200 - 300 mils	ASTM D374
2. Peel Strength of Bond	500 g/in.	ASTM F904

- | | | | |
|----|---|---|------------|
| 3. | Transmissivity
(0.25 gradient
at 10,000 psf
normal stress) | $1 \times 10^{-4} \text{ m}^2/\text{sec}$ | ASTM D4716 |
| 4. | Tensile Strength | 200 ppi | ASTM 638 |
- B. The geotextile shall be a needle punched non-woven polyester with a minimum mass per unit area of 10 oz per square yard.

2.3 MATERIAL TRANSPORT

- A. The Contractor shall be responsible for the protection of the geocomposite rolls against damage during transportation to the site, during storage at the site, and prior to placement of subsequent construction materials. Only non-damaged geonet shall be included within the construction. Any damaged material, as determined by the Engineer, shall be replaced by the Contractor at no cost to the Owner.

3. PART 3 – EXECUTION

3.1 GEOCOMPOSITE DRAIN INSTALLATION

- A. A geocomposite drain, as described in Part 2 of this Section, will be installed as shown on the Plans. Contractor shall install the geocomposite drain layer to the lines and grades shown on the Construction Plans in accordance with the manufacturer's recommendations.
- B. Rolls shall be butt-joined in both directions. Geocomposite drain rolls shall be staggered such that cross seams between panels are not continuous.
- C. Butt connections shall be made by sewing the fabric overlap of adjacent geocomposite drain panels by an approved method. Welding of the geonet to the membrane liner shall not be permitted. All connections shall be inspected and approved by the Engineer. The Engineer shall reject any connections he deems insufficient and shall require these joints to be redone at no additional cost to the Owner.
- D. The Contractor shall be responsible for the protection of the membrane liner during the installation of the geocomposite drain layer. No equipment shall be permitted to operate on the liner at any time. In no way shall any tracked equipment or any other equipment which may pose a risk of puncturing, tearing,

or otherwise damaging the liner be permitted for use during this phase of construction.

4. PART 4 – QUALITY CONTROL

4.1 GENERAL

- A. The Contractor, before installation begins, shall appoint an experienced individual who will be on-site at all times during the installation, to represent him in all matters relevant to this work. This appointment shall be subject to approval by the Engineer.
- B. Before installation begins, and at least weekly thereafter, more often if determined necessary by the Engineer, project coordination meetings shall be held with the designated representative of the Contractor, Engineer, and Owner in attendance to review the following information. This information shall be submitted to the Engineer by the Contractor in writing, during or before this meeting:
 - 1. Progress of the work.
 - 2. Adherence to the Specifications.
 - 3. Adherence to the Quality Control Program, including the timely submission of the pertinent forms.
 - 4. Planned work and methods for the ensuing week, including estimate of time remaining to completion of the work.
- C. All of the Forms specified and required must be submitted in a timely fashion.
- D. Any changes in the proposed method of work, subcontractors to be utilized, resin or manufacturing must be approved in advance by the Owner and Engineer. The Contractor assumes all responsibility relevant to providing an acceptable product.

4.2 QUALITY CONTROL DURING MANUFACTURING

- A. Random sampling of the extruded geocomposite drain shall be performed by the manufacturer at the cost of the Contractor to assure proper quality control. The minimum frequency of such sampling shall be as follows:
 - 1. One (1) sample taken from each day's production, and

2. Samples selected randomly by the Engineer subsequent to material delivery, or
 3. Other as proposed by the Contractor and approved by the Engineer.
- B. The samples shall be tested for the following properties
1. Uniformity - Visual inspection to assure the material is free of holes, blisters, undispersed raw material, or foreign matter is mandatory.
 2. Thickness - Measurement along the sample to assure that the geonet is within the specified tolerances.
 3. Carbon Black - The proper amount, grade, and degree of dispersion are imperative to assure proper U.V. radiation protection (ASTM D1248).
 4. Tensile Properties - One (1) dimensional tensile testing which measures tensile strength at yield and at break, and elongation at yield and at break shall be made (ASTM D638).
 5. Transmissivity - Constant head hydraulic transmissivity within the manufactured plane of the geonet under varying normal compressive stresses (ASTM D4716).
- C. The Contractor shall provide the Owner and Engineer with certified copies of the manufacturer's test results. No material shall be installed prior to furnishing the required test results.
- D. The Owner and Engineer, at their discretion, may obtain additional random samples of the geonet for further confirmatory testing. This testing will be at the expense of the Owner. This testing may also include all properties specified in Part 2 of this Section and need not be limited to the testing required by the manufacturer. The Contractor shall, however, at no additional cost, provide whatever reasonable assistance the Owner or Engineer may require in obtaining the samples.
- E. The Contractor shall be solely responsible for the quality of the material provided. Should any of the tests performed on the material yield unsatisfactory results, the Contractor will be responsible for replacing the material with satisfactory materials without delay to the project or cost to the Owner.

4.3 QUALITY CONTROL DURING INSTALLATION

- A. The Engineer and Contractor shall visually inspect all material to be included in the work for transport damage and uniformity and compare roll identification

numbers with those on the certification provided by the manufacturer to assure delivery of the appropriate material.

- B. The Engineer and Contractor shall also visually inspect the material for any damage incurred as a result of handling or on-site storage.

4.4 WARRANTY

- A. The Contractor shall warranty all work, including materials and installation of geocomposite drain for a minimum period of one year.

END OF SECTION

SECTION 02670 SLOTTED CORRUGATED POLYETHYLENE PIPE

1. PART 1 – GENERAL

1.1 GENERAL

- A. This section pertains to installation of 6-inch diameter slotted, 6-inch diameter gas collection piping in the final cover system. The work shall consist of the Contractor providing all the required materials, labor, and equipment to perform work in accordance with these Specifications.

1.2 RELATED SECTIONS

- A. Section 02223 – Backfill and Fill
- B. Section 02233 – Subangular Stone
- C. Section 02276 – Flexible Membrane Liners
- D. Section 02599 – Geocomposite Drain

2. PART 2 – PRODUCTS

2.1 MATERIAL REQUIREMENTS

- A. The pipe to be installed shall be nominal 6-inch diameter slotted corrugated, polyethylene drainage piping with fittings.
- B. The pipe shall exhibit a minimum stiffness as determined by AASHTO M252 of five percent deflection at 35 psi.
- C. The pipe shall exhibit a minimum of 4 square inches of open perforation area per foot of length.

3. PART 3 – EXECUTION

3.1 INSTALLATION

- A. The Contractor shall be responsible for the protection of the pipe against damage during transportation to the site, during storage at the site, and during installation. Only non-damaged pipe shall be included within the construction. Any damaged material, as determined by the Engineer, shall be replaced by the Contractor at no cost to the Owner.
- B. The pipe shall be laid to the lines and grades shown on the Construction Plans.
- C. A split coupling shall be used where two pipe sections are to be coupled together.
- D. The Contractor shall be responsible for keeping the interior of the pipe free of silt, soil or debris during construction.
- E. All fittings, couplings, elbows, tees, etc., shall be of the same material as the pipe and manufactured by the same manufacturer.

END OF SECTION

SECTION 02730 CORRUGATED METAL PIPE

1. PART 1 – GENERAL

1.1 SECTION INCLUDES

- A. Storm drainage piping, fittings, and accessories.

1.2 RELATED SECTIONS

- A. Section 01340 – Shop Drawings
- B. Section 02200 – Excavation
- C. Section 02223 – Backfill and Fill

1.3 REFERENCES

- A. NYSDOT Standard Specifications, Sections 707-02 and 707-10.

1.4 REGULATORY REQUIREMENTS

- A. Conform to applicable code for materials and installation of the Work of this Section.

1.5 SUBMITTALS

- A. Submit shop drawings under provisions of Section 01340.
- B. Submit shop drawings indicating dimensions, layout of piping, gradient of slope between corners and intersections, locations and elevations of catch basins, manholes, cleanouts, and culverts.
- C. Submit product data under provisions of Section 01300.
- D. Submit product data indicating pipe, pipe accessories.

- E. Submit manufacturer's installation instructions under provisions of Section 01300.

1.6 PROJECT RECORD DOCUMENTS

- A. Submit documents under provisions of Section 01700.
- B. Accurately record location of pipe runs, connections, and invert elevations.
- C. Identify and describe unexpected variations to subsoil conditions or discovery of uncharted utilities.

2. PART 2 – PRODUCTS

2.1 MATERIALS

- A. Corrugated Metal Pipe (CMP)
 - 1. Corrugated metal pipe shall conform to the requirements of NYSDOT Standard Specifications, Section 707-02.

3. PART 3 – EXECUTION

3.1 EXAMINATION

- A. Verify that trench cut excavation base is ready to receive work, and excavations, dimensions, and elevations are as indicated on Drawings.
- B. Beginning of installation means acceptance of existing conditions.

3.2 PREPARATION

- A. Hand trim excavations to required elevations. Correct over excavation with fill material.
- B. Remove large stones or other hard matter which could damage pipe or impede consistent backfilling or compaction.

3.3 INSTALLATION - PIPE

A. Handling and Protection of Pipes

1. All pipes, fittings, and appurtenances to be used in this work shall be handled with extreme care. Proper and suitable tools and appliances for safe convenient handling and laying of the pipes shall be used, and care shall be taken to prevent pipe coatings from being damaged. This applies particularly to coatings inside pipes. All pipes shall be carefully examined for defects, and no pipe or other castings shall be laid if known to be defective. If any defective pipe or other casting is discovered after being laid, removal and replacement with a sound pipe or casting at the expense of the Contractor will be required.
2. Under no condition shall groundwater be allowed to enter drainage pipe already laid. The open end of these pipes shall be kept plugged. Rubber or metal pipe stoppers shall be made available and the Contractor shall have at least two of proper size on the job, to be used when pipe in trench is unattended.
3. Whenever pipes require cutting, a wheel cutter, hydraulic cutter or pipe saw, satisfactory to the Engineer, shall be used. Cutting pipes with a cold chisel or cold cutter will not be allowed.

B. Pipe Bedding and Haunching

1. Shall be in accordance with Section 02720, Part 3.3, B.

3.4 FIELD QUALITY CONTROL

- #### A.
- Field inspection will be performed under the provisions of Section 01400 - Quality Control.

END OF SECTION

SECTION 02831 CHAIN LINK FENCES AND GATES

1. PART 1 – GENERAL

1.1 SECTION INCLUDES

- A. Fence framework, fabric, and accessories.
- B. Excavation for post bases and concrete foundations for post.
- C. Manual gates and related hardware.
- D. Warning signs.

1.2 RELATED SECTIONS

- A. Section 03002 – Field Concrete

1.3 REFERENCES

- A. ANSI/ASTM A123 – Zinc (Hot Dip Galvanized) Coatings on Iron and Steel Products.
- B. ANSI/ASTM F567 – Installation of Chain Link Fence.
- C. ASTM A116 – Zinc-Coated (Galvanized) Steel Woven Wire Fence Fabric.
- D. ASTM A120 – Pipe, Steel, Black and Hot-Dipped Zinc-Coated (Galvanized) Welded and Seamless, for Ordinary Uses.
- E. ASTM A121 – Zinc-Coated (Galvanized) Steel Barbed Wire.
- F. ASTM A153 – Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
- G. ASTM A392 – Zinc-Coated Steel Chain Link Fence Fabric.
- H. ASTM C94 – Ready-mixed Concrete.
- I. Chain Link Fence Manufacturers Institute (CLFMI) – Product Manual.

- J. FS RRF-191 – Fencing, Wire and Post Metal (and Gates, Chain Link Fence Fabric, and Accessories).

1.4 SYSTEM DESCRIPTION

- A. Fence Height ~ 6 feet nominal (as indicated in the Construction Plans).
- B. Line Post Spacing – At intervals not exceeding 8 feet.

1.5 SUBMITTALS

- A. Shop Drawings – Indicate plan layout, spacing of components, post foundation dimensions, hardware anchorage, and schedule of components.
- B. Product Data ~ Provide data on fabric, posts, accessories, fittings and hardware.
- C. Manufacturer's Installation Instructions – Indicate installation requirements (post foundation anchor bolt templates, etc.)

1.6 QUALITY ASSURANCE

- A. Perform work in accordance with manufacturer's instructions.

1.7 QUALIFICATIONS

- A. Manufacturer ~ Company specializing in manufacturing the products specified in this Section with minimum 5 years (documented) experience.

1.8 FIELD MEASUREMENTS

- A. Verify that field measurements are as on shop drawings.

2. PART 2 – PRODUCTS

2.1 MATERIALS

- A. Framing (Steel) – ASTM A120; Schedule 40 steel pipe, standard weight, one piece without joints.

- B. Fabric Wire (Steel) – FS RR-F-191 Type I – zinc-coated steel.
- C. Barbed Wire – ASTM A121 galvanized steel, 12-gauge, 2.5 mm-thick wire, 3 strands, points at 3-inch o.c.
- D. Metal Lattice – Aluminum.

2.2 COMPONENTS

- A. Line Posts – 2-inch nominal diameter.
- B. Corner and Terminal Posts – 3-inch nominal diameter.
- C. Gate Posts – 3-inch nominal diameter.
- D. Top, Bottom and Brace Rail – 1-5/8-inch diameter, plain end, sleeve coupled.
- E. Gate Frame – 1-5/8-inch diameter for welded fittings and truss rod fabrication.
- F. Fabric – 2-inch diamond mesh interwoven wire, 9 gauge, top selvage twisted tight, bottom selvage knuckle end closed.
- G. Tie Wire – Aluminum alloy steel wire.

2.3 ACCESSORIES

- A. Caps – Cast steel galvanized, sized to post diameter, set screw retainer.
- B. Fittings – Sleeves, bands, clips, rail ends, tension bars, fasteners and fittings; steel.
- C. Extension Arms – Cast steel galvanized to accommodate 3 strands of barbed wire, single arm, sloped to 45 degrees.
- D. Gate Hardware – Center gate stop (double gate only) and drop rod with mechanical keepers; two, 180-degree gate hinges per leaf (and hardware for padlock).
- E. Signage – OSHA-approved signs with standard wording. Butyrate metal-backed material. Two, 10-inch by 7-inch signs with the words "Danger, Do Not Enter, Authorized Personnel Only;" two, 10-inch by 7-inch signs with the words "Danger, No Smoking;" and one, 10-inch by 7-inch sign with the words "Danger, Propane;" two, 9-inch by 12-inch signs with the words "Fire Extinguisher" shall be provided.

2.4 FINISHES

- A. Components and Fabric - Galvanized to ASNI/ASTM A123; 2.0 oz/sq ft coating.
- B. Hardware - Galvanized to ASTM A153, 2.0 oz/sq ft coating.
- C. Accessories - Same finish as framing fabric.

3. PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install framework, fabric, accessories and gates in accordance with manufacturer's instructions.
- B. Set intermediate, terminal and gate posts plumb in concrete footings with top of footing 2 inches above finish grade. Slope top of concrete for water runoff.
- C. Footing depth below finish grade - ANSI/ASTM F567, 3 feet.
- D. Brace each gate and corner post to adjacent line post with horizontal center brace rail (and diagonal truss rods). Install brace rail, one bay from end and gate posts.
- E. Provide top and bottom rails through line post tops and splice with 6-inch long rail sleeves.
- F. Install center and bottom brace rail on corner gate leaves.
- G. Stretch fabric between terminal posts.
- H. Position bottom of fabric 2 inches above finished grade.
- I. Fasten fabric to top rail, line posts, braces, and bottom tension wire with tie wire at maximum 15 inches on centers.
- J. Attach fabric to end, corner, and gate posts with tension bars and tension bar clips.
- K. Install bottom tension strap stretched taut between terminal posts.
- L. Install support arms sloped outward and attach barbed wire; tension and secure.
- M. Install gate with fabric and barbed wire overhand to match fence. Install three hinges per leaf, latch, catches, drop bolt (foot bolts and sockets), retainer and locking clamp.

- N. Provide concrete center drop to fitting depth and drop rod retainers at center of double gate openings.
- O. Provide and install aluminum metal lattice woven through the fence fabric as recommended by the manufacturer.
- P. Provide and install appropriate signage to the fence fabric at each gate, at the propane tank, and at each fire extinguisher.

3.2 ERECTION TOLERANCES

- A. Maximum Variation from Plumb – 1/4-inch.
- B. Maximum Offset from True Position – 1-inch.
- C. Components shall not infringe on adjacent property lines.

END OF SECTION

SECTION 02936 SEEDING

1. PART 1 – GENERAL

1.1 SECTION INCLUDES

- A. The Contractor shall furnish all labor, materials, equipment, tools, and appurtenances required to complete the seeding of all areas disturbed during the course of construction which are outside of the lined landfill.

1.2 RELATED SECTIONS

- A. Section 02223 – Backfill and Fill
- B. Section 02235 – Topsoil

1.3 REFERENCES

- A. FS O-F-241 - Fertilizers, Mixed, Commercial.

1.4 DEFINITIONS

- A. Weeds – Includes Dandelion, Jimsonweed, Quackgrass, Horsetail, Morning Glory, Rush Grass, Mustard, Lambsquarter, Chickweed, Cress, Crabgrass, Canadian Thistle, Nutgrass, Poison Oak, Blackberry, Tansy Ragwort, Bermuda Grass, Johnson Grass, Poison Ivy, Nut Sedge, Nimble Will, Bindweed, Bent Grass, Wild Garlic, Perennial Sorrel, and Broome Grass.

1.5 REGULATORY REQUIREMENTS

- A. Comply with regulatory agencies for fertilizer and herbicide composition.

1.6 TESTS

- A. Provide analysis of soil suitable to sustain vegetation. Analyze to ascertain percentage of nitrogen, phosphorus, potash, soluble salt content, organic matter content, and pH value.

1.7 MAINTENANCE

- A. Submit maintenance data for continuing Owner maintenance. Include maintenance instructions, cutting method and maximum grass height; types, application frequency, and recommended coverage of fertilizer.

1.8 DELIVERY, STORAGE, AND HANDLING

- A. Deliver grass seed mixture in sealed containers showing weight, seed mix, year of production, date of packaging, and location of packaging. Seed in damaged packaging is not acceptable.
- B. Deliver fertilizer in waterproof bags showing weight, chemical analysis, and name of manufacturer. Fertilizer in damaged packaging is not acceptable.

2. PART 2 – PRODUCTS

2.1 SEED MIXTURE

Type	Amount (lbs/acre)
A. Temporary Seedings	
Ryegrass ¹ (annual or perennial)	30
Certified Arrowstock	100
B. Permanent Seedings	
Empire Birdsfoot Trefoil ² or Common White Clover ²	8
Tall Fescue	20
Redtop or Ryegrass	5

Notes:

- 1 Use winter rye if seeding in October/November
- 2 Inoculate legume seeds immediately prior to seeding
- 3 Reference: New York State Guidelines for Urban Erosion and Sediment control, October 1991, Page 3.3.

2.2 ACCESSORIES

- A. Mulching Material – Oat or wheat straw, free from weeds, foreign matter detrimental to plant life, and dry. Hay or chopped cornstalks are not acceptable.
- B. Mulching Material – Hemlock species wood cellulose fiber, chip form, free of growth or germination inhibiting ingredients.
- C. Fertilizer – FS O-F-24, Type I, Grade A; recommended for grass, with 50 percent of the elements derived from organic sources; of proportion necessary to eliminate any deficiencies of topsoil (as indicated in analysis) to the following proportions: nitrogen, 10 percent; phosphoric acid, 10 percent; soluble potash, 10 percent.
- D. Water – Clean, fresh and free of substances or matter which could inhibit vigorous growth of grass.

3. PART 3 – EXECUTION

3.1 INSPECTION

- A. Verify that prepared soil base is ready to receive the work of this Section.

3.2 FERTILIZING

- A. Apply fertilizer in accordance with manufacturer's instructions.
- B. Apply after smoothing of soil and prior to roller compaction.
- C. Do not apply fertilizer at same time or with same machine as will be used to apply seed unless hydroseeding.
- D. Mix thoroughly into upper 2 inches of soil.
- E. Lightly water to aid the dissipation of fertilizer.

3.3 SEEDING

- A. Apply seed at rate recommended by local USDA soil conservation service evenly in two intersecting directions. Rake in lightly. Do not seed area in excess of that which can be mulched on same day.
- B. Planting Season: Time of Seeding - Best results are attained from seedings done in the Spring from April 15 to May 15, or in the Fall from August 15 to September 15. If seeding is done during dry periods (May 15 - August 15) irrigation may be necessary to ensure successful establishment.
- C. Do not sow immediately following rain, when ground is too dry, or during windy periods.

3.4 HYDROSEEDING

- A. This method is best for steep, inaccessible areas. When applying seed, lime, fertilizer, or mulch materials with the hydroseeder, do not use more than 100 to 150 pounds of solids per 100 gallons of water. A low pH is detrimental to the legume inoculant. If inoculant is in a seed, fertilizer, and lime slurry, it should be used within three to four hours, or a fresh supply of inoculant should be added. When legume is to be included in a slurry mixture containing fertilizer, the amount of inoculant added to the tank should be four times the rate prescribed by the manufacturer for dry seed application. It is preferable to hydroseed when the soil is moist.

END OF SECTION

SECTION 02950 WETLAND MITIGATION

1. PART 1 – GENERAL

1.1 SECTION INCLUDES

- A. This Section pertains to the creation of compensation wetlands in the borrow area. The mitigation of the site includes grading of the borrow area, placement of a low permeability soil liner, revegetation of species in the density and distribution shown, and replacement of species as required after one growing season.

1.2 RELATED SECTIONS

- A. Section 02220 – Excavation
- B. Section 02223 – Backfill and Fill
- C. Section 02235 – Topsoil

2. PART 2 – PRODUCTS

2.1 TOPSOIL

- A. Topsoil for regrading the mitigation area shall come from stockpiles developed during borrow area operation.

2.2 VEGETATION

- A. The species, density, and distribution of vegetation shall be as stated in Colesville Landfill wetland Mitigation Compensation Wetlands Plan, prepared for Broome County Division of Solid Waste Management and GAF Corporation, by Wehran-New York, Inc., dated March 1994.

2.3 LOW PERMEABILITY SOIL LINER

- A. The Contractor may elect to construct the low permeability soil liners with either natural clay soil or soil amended with bentonite, from an off-site source.
- B. Natural clay soil means a fine-grain soil containing sufficient plastic fines (No. 200 sieve), on the order of 20 percent or greater such that the soil acts as a clay and will achieve the required degree of impermeability. The soil is typically classified as a CL or CH (Unified Soil Classification System), with a liquid limit between 30 to 60, placed above the A-line on the plasticity chart and a minimum plastic index of 15.
- C. Soil to be amended with bentonite will be from off-site and shall, when amended, be in conformance with all requirements of this Section.
- D. Bentonite to be mixed with soil for use as low permeability soil liner shall be tested for the following properties, and the results shall be supplied to the Engineer by the Contractor for approval:
 - 1. Swelling index
 - 2. Layer permeability
 - 3. Colloidal yield
- E. Soil Component
 - 1. The soil or soil/bentonite mix used for the low permeability soil liners shall, when placed, have an in-place permeability no greater than 1×10^{-7} cm/sec.
 - 2. The soil or soil/bentonite mix used for the low permeability soil liners shall have a maximum particle size of 6 inches.
 - 3. All required fill materials shall be substantially free from organic materials, wood, trash, and other objectionable materials which may be compressible or which cannot be properly compacted. It shall not contain granite blocks, broken concrete, masonry rubble, or other similar materials. It shall have physical properties such that it can be readily spread and compacted to the specified permeability and/or density. Snow, ice, and frozen soil shall not be permitted.
 - 4. The Contractor shall submit to the Engineer, for his approval, evidence that the proposed soil or soil/bentonite mix for the low permeability soil liner meets the requirements of this Specification. This evidence shall include, but not necessarily be limited to, the following test results performed on three samples from the proposed borrow source:

Atterberg Limits	ASTM D4318
Grain Size	ASTM D422
Natural Moisture Content	ASTM D221
Classification	ASTM D2487
Specific Gravity	ASTM D854
pH	ASTM D2976
Modified Proctor	ASTM D1557
Permeability (including wet density, dry density, moisture content and porosity)	USACOE EM 1110-2-1906

Additionally, if the Contractor is proposing to use a soil/bentonite mix, the above tests shall be performed on the proposed soil bentonite mix and shall include bentonite content in terms of weight of bentonite per weight of soil by dry weight.

5. No soil shall be used prior to the Engineer's approval of data submitted by the Contractor. If the Engineer determines the proposed soil is not suitable for use in constructing the low permeability soil liners, then the Contractor shall submit information as noted in (D) above for soil, from an alternative borrow source.
6. Upon approval of the soil by the Engineer, the Contractor shall develop the moisture-density/permeability relationship. The Engineer shall review and approve the moisture-density/permeability relationship and acceptability envelope for moisture-density testing.
7. No soil shall be used prior to the Engineer providing the Contractor with the moisture-density/permeability relationship and acceptability envelope for moisture-density.
8. If there is any variation in the approved material during construction, or material is obtained from an alternate source, additional testing will be required as noted in (D) and (F) above.
9. If in the opinion of the Engineer the soil is not suitable for use as low permeability soil liner, the Contractor shall submit testing as noted in (D) above for an alternate soil source.

F. Water

1. Water used to adjust the moisture content of the low permeability soil liner shall, at a minimum, be clean, fresh water, odorless, with a pH range of between 5.5 and 9.5 and a total dissolved solids content of less than

400 mg/l, and be free of any other substances which may be deleterious to the soil liner.

3. PART 3 – EXECUTION

3.1 VEGETATION PLANTING

- A. The species, density, and distribution of vegetation shall be as stated in Colesville Landfill Wetland Mitigation Compensation Wetland Plan prepared for Broome County Division of Solid Waste Management and GAF Corporation, by Wehran-New York, Inc., dated March 1994.

3.2 LOW PERMEABILITY SOIL PLACEMENT

- A. Prior to the start of any lining operations, the Contractor shall supply the Engineer with a survey drawing showing the elevations of the landfill floor, subgrade, performed by a surveyor licensed by the State. The Engineer may check the grades as required, and no lining shall begin prior to approval of the subgrade by the Engineer. The Contractor shall note any discrepancies and shall plan his operations so that upon completion of the liner, the top grades conform with the proposed landfill floor grades.
- B. The permeability of the liner shall not exceed 1×10^{-7} cm/sec. The moisture-density/permeability relationship for the soil will be established through laboratory testing. The necessary compaction at specific moisture contents will be determined for the proposed soil. While these values are likely to be consistent for the remaining portion of construction, the Engineer reserves the right to perform further testing on the actual material to be included in the liner prior to and during construction to further define the moisture-density/ permeability relationship.
- C. All moisture-density testing shall be performed by the Contractor on a 50-foot grid, but not less than one test for each day of placement, using methods described in ASTM D2922 and ASTM D3017, and the locations shall be accurately recorded. Any liner determined to have unacceptable moisture or density test results (results not within the envelope of acceptable moisture and density value combinations as determined from the established moisture-density/permeability relationship for the material used, shall be reworked (further compact and/or hydrate) or removed and replaced as directed by the Engineer at no cost to the Owner.
- D. Routine moisture and density testing will be confirmed by actual permeability tests on undisturbed Shelby tube samples performed by the Contractor. One such permeability test shall be performed per acre of completed lift of liner. The

samples shall be taken in the locations as directed by the Engineer. Additional testing, if required, will be performed as directed by the Engineer. The Contractor shall rework, or remove and replace, as directed by the Engineer, any material with a permeability greater than 1×10^{-7} cm/sec at no cost to the Owner. Testing for Atterberg limits, gradation, and specific gravity will also be performed on each sample tested for permeability.

- E. The Contractor shall seal all penetrations in the liner resulting from a nuclear moisture and density testing and Shelby tube sampling with a water bentonite mixture prepared in the following proportions:

One gallon water
One and one-half pounds bentonite

- F. The soil shall be placed by mechanical spreaders and compacted with a smooth drum vibratory compactor. A maximum placement lift thickness shall be 12 inches. The Contractor shall place and compact the liner material in lifts not to exceed this maximum. All large surface rocks shall be removed. Complying with this maximum lift thickness shall in no way relieve the Contractor of his responsibility for the permeability of the liner.
- G. The Contractor shall restrict all vehicular traffic or equipment operation on finished soil liner areas except as required for redressing or other necessary construction activities. Those areas which are completed and approved by the Engineer shall be marked along the perimeters by lathe and flagging or other suitable means. The Contractor shall keep the Landfill Supervisor informed of the progress of the work so that the landfill's employees or other subcontractors are aware of the vehicular restriction. Any deformation of the liner caused by traffic shall be reworked, or removed and replaced.
- H. No liner material shall be placed in a frozen state or on any material that has become frozen. Said frozen material shall be completely removed prior to placement of additional soil liner.
- I. Hauling and spreading equipment will not be considered as compaction equipment.
- J. Compacted soil liner material in place which fails to meet the required thickness, compaction or moisture content requirements, or exhibits cracking, drying, or suffers any material damage prior to certification, shall be reworked, or removed and replaced by the Contractor according to the Specifications at no cost to the Owner.
- K. All soil liner that after placement and prior to covering is determined by the Engineer to be unsuitable, i.e., too wet, too dry or otherwise compromised, shall be repaired by the Contractor to the satisfaction of the Engineer and in

conformance with all the provisions of these Specifications at no cost to the Owner.

3.3 SOIL/BENTONITE MIXING

- A. If the Contractor has chosen to construct the low permeability soil liner of soil amended with bentonite, the following shall be required.
- B. Either a batch or continuous method for mixing the bentonite with the soil may be employed. The selected mixing method shall ensure complete and uniform mixing of the liner material to meet the specified permeability for the liner. The Contractor shall submit, for engineering approval, a complete plan for construction of the soil/bentonite liner. This plan shall include, but not be limited to, drawings depicting the method in which the Contractor plans to progress his work, manufacturer's information on the type of equipment to be used, and a written narrative of the procedures proposed for bentonite addition, mixing, moisture adjustment, and placement of the soil/bentonite liner material.
- C. The process chosen for mixing shall have a method for determining and metering the quantities of bentonite and soil used. This method shall also have provisions for adjusting a moisture content within the range determined by the soil testing.
- D. The Contractor shall supply samples of the proposed water for adjusting moisture content to the bentonite manufacturer for testing to determine suitability for use with their bentonite product. The results of this testing shall be made available to the Engineer.

3.4 QUALITY CONTROL

- A. After one growing season the Engineer, or a qualified representative, shall inventory the mitigation area in regard to species density and distribution and, if necessary, determine the quantity to be revegetated by the Contractor.
- B. The Contractor shall be responsible for revegetating as necessary after one growing season, the mitigation area in order to be in accordance with the density and distribution as described in this Part. All costs associated with any replanting shall be the responsibility of the Contractor.

4. PART 4 – QUALITY CONTROL

4.1 GENERAL

- A. The Engineer will issue a construction control grid. The control grid shall be placed and maintained by a professional surveyor licensed by the State in the employ of the Contractor. The control grid shall have defined positions every 50 feet across the area of the proposed liner. All aspects of construction shall be defined by the control grid, including but not limited to, tops and toes of slope, leachate collection headers, laterals and cleanout risers, berms, manholes, roadways and culverts. The construction control grid shall be established in rectangular coordinates, and lie in the same orientation as the New York Transverse Mercator.
- B. Hydraulic conductivity, Atterberg limits, and grain-size analysis shall be tested as described in Paragraph 3.2 of this Section.
- C. Moisture and density shall be measured routinely as described in Paragraph 3.2 of this Section at the locations of the established 50-foot control grid.
- D. The thickness of the soil liner or soil/bentonite liner shall be determined by comparison of Record Survey Drawings of the top of the previous prepared surface to the top of the completed, compacted liner at the locations of the established 50-foot control grid.

END OF SECTION

SECTION 02960 PUMPING WELL CONNECTION

1. PART 1 – GENERAL

1.1 SECTION INCLUDES

- A. Work covered by this Section includes the requirements, materials, and methods for installing well pump pitless adaptor, 1-inch diameter solid HDPE piping and fittings, including all appurtenant items to complete the installation of the discharge piping for pumping well PW-12 below the FML.
- B. The Contractor shall furnish and install the pipeline and appurtenant work as indicated in the Plans and as specified herein, or as reasonably required to produce a complete, proper, and functional installation in accordance with the intent of these Construction Documents.

1.2 RELATED SECTIONS

- A. Section 02150 – Shoring and Bracing
- B. Section 02220 – Excavation
- C. Section 02223 – Backfill and Fill
- D. Section 02597 – Flexible Membrane Liner

1.3 SUBMITTALS

- A. Shop Drawings shall be submitted in accordance with Section 01300 of these Specifications. They shall give complete details of components, ratings, dimensions, and connections.
- B. Drawings pertaining to well pump pitless adaptor shall detail proposed penetration through, and connection to, well casing and connections to discharge piping.
- C. Drawings, data sheets and pertinent literature submitted for approval shall be arranged, identified, and bound in sequence. Suitable index shall be provided to identify components.

1.4 QUALITY ASSURANCE

- A. Pipe installation shall be performed by skilled workers. Each pipe laying crew shall have a pipe laying foreman.
- B. Pipe shall be accurately installed to the lines and grades shown on the Drawings, or as approved by the Engineer, so that inverts are smooth.
- C. When requested by the Engineer, a qualified field representative of the manufacturer shall be present at the jobsite for the first day of pipe laying and during leakage testing to assure that proper procedures are followed.
- D. The Engineer shall be notified in advance whenever an existing pipeline location conflicts with the proposed locations of the work.
- E. Pipe and fittings of the same type shall be the products of a single manufacturer.
- F. Pipe Adaptors - Join pipes of different materials with adaptors specifically manufactured for that purpose and as approved by the Engineer, or as detailed in the Plans.
- G. All piping shall be of the type and size as shown in the Plans and described in this Section of the Specifications.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. All pipes and fittings shall be carefully handled when loading and unloading. Lift by hoists or lower on slidways in a manner to avoid shock.
- B. Where required, due to weight of material and for the safety and protection of workmen, materials, equipment, property, and the work, use derricks, ropes, or other suitable equipment for lowering pipe into trenches. Take particular care to avoid damaging the pipe.
- C. For convenience of handling, HDPE pipe shall be protected from sunlight exposure (unless restrained in racks) to prevent possible bowing of the pipe as a result of expansion and contraction caused by uneven heating. Such protection shall consist of canvas covering, or other material as recommended by the manufacturer. Plastic sheets shall not be used which may allow excessive temperatures to develop where the pipe is stored.
- D. HDPE pipe and fittings shall be protected from damage by sharp objects through all phases of work.

- E. If any defective pipe is discovered after being laid or placed, removal and replacement with a sound pipe will be required without cost to the Owner.

2. PART 2 – MATERIALS

2.1 HIGH-DENSITY POLYETHYLENE (HDPE) PIPE AND FITTINGS

- A. All HDPE pipe and fittings shall be manufactured from virgin polyethylene resin, PE 3408 or approved equal, and shall conform to ASTM D3350.
- B. All polyethylene fittings shall have a pressure rating equal to or higher than the pressure rating of the pipe.
- C. Unless noted otherwise, all pipe and fittings shall be SDR 11 rated at 160 psi, and shall be Phillips Driscopipe 1000 or approved equal.
- D. All piping and valves shall be supported by the size and style supports shown in the Plans or an approved equal.

2.2 WELL PUMP PITLESS ADAPTOR

- A. Well pump pitless adaptor shall be 1-inch electroless nickel-plated brass coupling. Model N10A, as manufactured by EPG Companies, Mapel Grove, Minnesota, or approved equal.
- B. Unit shall have a 1-inch NPT pipe size, overall height of 3½ inches, overall width of 2-7/8 inches, and an overall depth of 4¼ inches. It shall be suitable for installation and operation in a 8-inch diameter well casing.
- C. The pitless adaptor shall have a pressure rating of 150 psi and shall be provided with a Teflon O-ring assembly. It shall be suitable for carrying the entire pump and pipe weight, but should be capable of maintaining its seat during operation regardless of whether or not it is supporting the weight of the attached pump/pipe assembly.
- D. The pitless adaptor shall be provided with a standard NPT female tapping for a pull rod.

2.3 PIPE BEDDING

- A. Pipe bedding shall be clean sand with a maximum particle size of ½-inch and a maximum of 10 percent passing the No. 200 sieve.
- B. Pipe bedding shall be free of angular materials and sharp objects which could puncture or otherwise damage the pipe.

3. PART 3 – EXECUTION

3.1 INSPECTION – GENERAL.

- A. All pipe and fittings shall be carefully inspected prior to lowering into trench. All materials not meeting the requirements of these Specifications, or otherwise found defective or unsatisfactory by the Engineer, shall be rejected and immediately marked and removed from the jobsite by the Contractor on the same working day as so discovered.
- B. Bedding, sub-bedding, and other trench conditions shall be carefully inspected prior to laying pipe in each stretch of open trench. All conditions shall be made available to the Engineer for inspection purposes, and the Engineer shall be further advised where, in the Contractor's opinion, unstable or otherwise deleterious conditions exist.
- C. Each stretch of completed pipeline shall be inspected prior to backfilling. Backfilling operations shall not be initiated prior to inspection by the Engineer.
- D. If any defective pipe is discovered after being placed, removal and replacement with sound pipe will be required at no cost to the Owner.

3.2 INSTALLATION OF WELL PUMP PITLESS ADAPTOR

- A. Install well pitless adaptor coupling through sidewall of well casing as shown on the Drawings, in accordance with manufacturer's recommendations and in accordance with the approved shop drawings.
- B. Installation shall ensure the ability to remove the pump from the well without obstruction and without requiring any disassembly of the piping.

3.3 PREPARATION

- A. Pipe and fitting interiors, joint surfaces, and gaskets shall be thoroughly cleaned prior to installation. Pipes and fittings shall be maintained clean. For HDPE pipe, a clean cotton cloth shall be employed for cleaning; polyester-type materials shall not be used as they may melt during fusion procedures and stick to the heater.

3.4 PIPE INSTALLATION

- A. Pipes and fittings shall be carefully lowered into the trench.
- B. Pipe and fittings shall be installed so that there will be no deviation at the joints and so that inverts present a smooth surface. Pipe and fittings which do not fit together to form a tight fitting joint are not permitted.
- C. Pipes shall be installed in the locations and to the required lines and grades as shown in the Plans and provided in these Specifications, using an approved method of control. The Engineer has the authority to order the removal or relaying of all pipe laid contrary to the specifications, his instructions, or during his absence.
- D. Excavations shall be maintained free of water during the progress of the work. No pipes shall be laid in water nor shall there be any joints made up in water. All slides or cave-ins of the trenches or cuts shall be remedied to the satisfaction of the Engineer.
- E. Cleanliness of installed pipe and fitting interiors shall be maintained throughout the Work.
- F. Pipe shall be installed a minimum of 48 inches below the FML cover grade. All adjustments to the line and grade of pipe laid on earth foundation shall be done by scraping away or compacted filling of the earth under the barrel of the pipe, and not by blocking or wedging. For pipes where excavation has been carried too deep but not in excess of 6 inches, the Contractor may replace with suitable earth and hand tamp same to provide a firm foundation. Wherever the excavation has been carried to a depth in excess of 6 inches, due to the Contractor's negligence, the Engineer may order crushed stone or gravel fill. In all cases, the trench under the joint shall be excavated to permit an even bearing for the barrel of the pipe.
- G. When unsuitable materials and/or conditions are encountered, the Engineer may direct the excavation to continue below grade and the trench filled with gravel or crushed stone foundation, or the Engineer may order other corrective measures.
- H. Fittings shall be installed as required and in accordance with the Plans and Specifications. The installation of fittings after the pipeline has been laid will not

be permitted without the written approval of the Engineer. In such cases, complete details pertaining to the proposed type of fittings and the installation procedure shall be submitted by the Contractor to the Engineer for review before approval will be considered.

- I. Approval by the Engineer is required prior to changing the location of any of the work due to field conditions. Changes in pipe sizes are prohibited without a written consent from the Engineer.
- J. All installed piping shall form completely connected systems including connections to valves and appurtenances specified in other sections to result in a satisfactorily operating installation.
- K. Pipe shall extend from pumping well PW-12 to a point beyond the edge of final cover. Pipe termination shall be suitably capped and marked for future tie-in.

3.5 CONNECTIONS TO STRUCTURES

- A. Where noted in the Plans or as directed by the Engineer, the Contractor shall make connections to well casing. The use of excessive force or blunt instruments is prohibited in installing the pipe through the casing. The structure shall be maintained in good repair. The Contractor shall provide approved flexible and watertight connections at the wall. The installation of HDPE and pipe booting requirements are addressed in Section 02597 - Flexible Membrane Liners of these Specifications.

4. PART 4 - TESTING

4.1 PRESSURE TESTING

- A. The Contractor shall be responsible for providing hydrostatic pressure testing of HDPE line. The tests shall be made when the pipe bedding, pipe and appurtenances have been installed and the trench has been partially backfilled. The pipe shall be partially backfilled on 40-foot center. The test shall be made a second time when the trench has been completely backfilled to insure proper connections.
- B. Prior to testing, the pipe shall be thoroughly flushed with clean water. Before applying the specified test pressure, all air shall be expelled from the section being tested. Each pipe to be tested shall be slowly filled with clean water and a test pressure shall be applied by means of a pump connected to the transmission line in a manner satisfactory to the Engineer.

- C. All exposed pipes, fittings, and other appurtenances shall be carefully examined during the partially open trench test. All sections showing visible leaks shall be repaired and made watertight. Any cracked or defective pipe or fitting discovered as a result of the pressure tests, shall be removed and replaced by the Contractor with new sound material, and the hydrostatic pressure test shall be repeated until results satisfactory to the Engineer are achieved.
- D. The pressure tests shall be performed at a test pressure of 40 psi for a duration of 1 hour, unless otherwise approved by the Engineer. No leakage whatsoever shall be permitted from the pipes and appurtenances at the specified test pressure. That is, once the pipe has been filled with clean water, and the air expelled from the pipe line, a constant test pressure must be maintained throughout the test duration without the need for makeup water. No installation will be accepted with leakage.
- E. During the test duration, the maximum pressure drop for the 40 psi test shall be 2 psi. Pressure drops greater than these limits will require the Contractor to inspect the line for leakage. If leakage is found, the test shall be repeated, after repairs, and the results made available to the Engineer.
- F. The test results shall be to the satisfaction of the Engineer prior to acceptance of the pipe installation.
- G. Ends of sections being tested shall be tightly closed by plugs, blind flanges, gates, or otherwise for the duration of the tests. The Contractor shall furnish all such material, supplies, apparatus, labor, and equipment as necessary for carrying out the tests, and shall make all necessary arrangements for securing and furnishing water for test purposes. Proposed test procedures shall be submitted to and approved by the Engineer prior to testing.

END OF SECTION

DIVISION 3 - CONCRETE

SECTION 03002 FIELD CONCRETE

1. PART 1 – GENERAL

1.1 SECTION INCLUDES

- A. Work covered by this Section includes supplying and installing field concrete to be used in concrete anchor for gas vents and North Creek downchute. All concrete shall be installed in accordance with the details shown on the Construction Plans and as specified in this Section.

1.2 RELATED SECTIONS

- A. Section 02220 - Excavation
- B. Section 02223 - Backfill and Fill

1.3 REFERENCES

- A. The following standards form a part of this specification:

American Concrete Institute (ACI)

ACI 305	Recommended Practice for Hot Weather Concreting
ACI 306	Recommended Practice for Cold Weather Concreting
ACI 315	Details and Detailing of Concrete Reinforcement
ACI 318	Building Code Requirements for Reinforced Concrete

American Society for Testing and Materials (ASTM)

ASTM C33	Concrete Aggregates
ASTM C40	Test for Organic Impurities in Fine Aggregates for Concrete
ASTM C94	Ready-Mixed Concrete

ASTM C143	Test for Slump of Portland Cement Concrete
ASTM C150	Portland Cement
ASTM C260	Air Entraining Admixtures for Concrete
ASTM A615	Deformed and Plain Billet-Steel Bars for Concrete Reinforcement

2. PART 2 - MATERIALS

2.1 CONCRETE

- A. All concrete, reinforced or non-reinforced shall have a 28-day compressive strength of 3,500 psi unless otherwise noted on the Construction Plans.
- B. No additional admixtures shall be used unless approved by the Engineer.
- C. No additional water, except for the amount indicated by the design mix, shall be added to the concrete without the prior permission of the Engineer.

2.2 REINFORCING

- A. Reinforcing, as shown on the plans or as directed by the Engineer, shall conform to ACI 315, 318, and ASTM A615. All steel reinforcing bars shall be Grade 60.

2.3 CEMENT

- A. The cement shall be an approved brand of American manufactured Portland Cement Type II, conforming to the applicable requirements of ASTM C150.

2.4 AGGREGATES

- A. Except as otherwise noted, aggregate shall conform to the requirements of ASTM C33.
- B. Maximum size aggregate shall be 3/4-inch.
- C. Fine aggregate shall conform to ASTM C40.

2.5 ADMIXTURES

- A. All concrete (unless otherwise directed) shall contain an air entraining agent. Air entrained concrete shall have air content by volume of 4 to 8 percent for 3/4-inch aggregate.
- B. Air entraining agent shall be in accordance with ASTM C260 and shall be Darex AEA, as manufactured by Dewey and Almy Chemical Division; W.R. Grace and Company, Pacewel (air entraining type) as manufactured by Johns Manville; Sika Aer as manufactured by Sika Chemical Company, or an approved equal product.
- C. Water reducing agent shall be WRDA, as manufactured by Dewey and Almy, Placewel (non-air entraining type, as manufactured by Johns Manville; Sika Plastiment, as manufactured by Sika Chemical Company, or an approved equal product.
- D. Water reducing agent-retarder shall be "Daratard", as manufactured by Dewey and Almy, Sika Plastiment as manufactured by Sika Chemical Company, WR-77 by Chem-Masters Corp., or an approved equal product.

3. PART 3 – EXECUTION

3.1 PREPARATION

- A. Before placing concrete, forms and the space to be occupied by the concrete shall be thoroughly cleaned, and reinforcing steel and embedded metal shall be free from dirt, oil, mill scale, loose rust, paint or the material which would tend to reduce the bond.
- B. Earth, concrete, masonry, or other water permeable material against which concrete is to be placed shall be thoroughly saturated with water immediately before concrete is placed. Concrete anchor collars shall be placed against undisturbed earth. Felt roofing paper shall be placed to protect joints. No concrete will be placed so as to cover bolts or nuts, or to interfere with the removal of the joints.
- C. No concrete shall be placed until the consolidation of the ground and the arrangement and details of forms and reinforcing have been expected and approved by the Engineer.

3.2 CONCRETE PLACING DURING COLD WEATHER

- A. Concrete shall not be placed on frozen ground, and no frozen material or material containing ice shall be used. Materials for concrete shall be heated when temperature is below 40°F, or is expected to fall to below 40°F within 72 hours, and the concrete after placing shall be protected by covering, heat, or both.
- B. All details of Contractor's handling and protecting of concrete during freezing weather shall be subject to the approval and direction of the Engineer. All procedures shall be in accordance with provisions of ACI 306.

3.3 CONCRETE PLACING DURING HOT WEATHER

- A. Concrete just placed shall be protected from the direct rays of the sun, and the forms and reinforcement just prior to placing shall be sprinkled with cold water. The Contractor shall make every effort to minimize delays which will result in excessive mixing of the concrete after arrival on the job.
- B. During periods of excessively hot weather (90°F or above), ingredients in the concrete shall be cooled insofar as possible, and cold mixing water shall be used to maintain the temperature of the concrete at permissible levels all in accordance with the provisions of ACI 305. Any concrete with a temperature above 90°F, when ready for placement, will not be acceptable and will be rejected.

3.4 FIELD QUALITY CONTROL

- A. Concrete inspection and testing shall be performed by the Contractor or by an inspection laboratory approved by the Engineer, engaged and paid for by the Contractor. Testing equipment shall be supplied by the laboratory, and the preparation of samples and all testing shall be performed by the laboratory personnel. Full assistance and cooperation, concrete for samples, and such auxiliary personnel and equipment as needed, shall be provided by the Contractor.
- B. At least four standard compression test cylinders may be made and tested, and one slump test from each day's placement of concrete. A minimum of four compression test cylinders shall be made and tested for each 100 cubic yards of each type and design strength of concrete placed. Two cylinders shall be tested at 7 days, and two at 28 days. If job experience indicates additional cylinder tests or other tests are required for proper control or determination of concrete quality, such tests shall be made.
- C. The Engineer shall have the right to reject concrete represented by low strength tests. Rejected concrete shall be promptly removed and replaced with concrete

conforming to the Specifications. The decision of the Engineer as to whether substandard concrete is to be accepted or rejected shall be final.

END OF SECTION

SECTION 03300 CAST-IN-PLACE CONCRETE

1. PART 1 – GENERAL

1.1 SECTION INCLUDES

- A. Cast-in-place concrete for North Creek downchute if elements are not precast.

1.2 RELATED SECTIONS

- A. Section 02220 – Excavation
- B. Section 02223 – Backfill and Fill
- C. Section 03002 – Field Concrete
- D. Section 03200 – Concrete Reinforcement

1.3 REFERENCES

- A. ACI 301 – Structural Concrete for Buildings.
- B. ACI 302 – Guide for Concrete Floor and Slab Construction.
- C. ACI 304 – Recommended Practice for Measuring, Mixing, Transporting and Placing Concrete.
- D. ACI 305R – Hot Weather Concreting.
- E. ACI 306R – Cold Weather Concreting.
- F. ACI 308 – Standard Practice for Curing Concrete.
- G. ACI 318-89 – Building Code Requirements for Reinforced Concrete.
- H. ANSI/ASTM D994 – Preformed Expansion Joint Filler for Concrete (Bituminous Type).
- I. ANSI/ASTM D1190 – Concrete Joint Sealer, Hot-Poured Elastic Type.

- J. ANSI/ASTM D1751 - Preformed Expansion Joint Fillers for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types).
- K. ANSI/ASTM D1752 - Preformed Sponge Rubber and Cork Expansion Joint Fillers for Concrete Paving and Structural Construction.
- L. ASTM B221 - Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Shapes and Tubes.
- M. ASTM C33 - Concrete Aggregates.
- N. ASTM C94 - Ready-Mixed Concrete.
- O. ASTM C150 - Portland Cement.
- P. ASTM C260 - Air Entraining Admixtures for Concrete.
- Q. ASTM C31-88 - Standard Practice for Making and Curing Concrete Test Specimens in the Field
- R. ASTM C143-78 - Standard Test Method for Slump of Portland Cement

1.4 SUBMITTALS

- A. Tests shall be made to assure that the concrete conforms to the requirements of this Specification. The Contractor shall engage a testing laboratory approved by the Engineer in writing to perform tests on aggregates, non-potable water, and the design mix as listed below.
- B. Test reports shall be prepared and certified by the Testing Laboratory and submitted in duplicate to the Engineer. The cost of the Contractor's Testing Laboratory shall be borne by the Contractor.
- C. Non-potable water, if used, shall be qualified by testing mortar cubes prepared with the water, in accordance with ASTM C109. The Contractor shall submit a report of the test results.
- D. Each design mix proposed for use shall be tested. The Contractor shall submit a report stating quantity per cubic yard of concrete and brand or source of cement, aggregates, admixtures, and water. The report shall include the results of 7-28-day compressive strength tests per ASTM C39, air content tests per ASTM C173 or ASTM C231, and slump tests per ASTM C143 made by testing laboratory. The report shall indicate the dosage of air entraining admixture required to produce the specified air content.

- E. Construction joints proposed by the Contractor shall be shown on a sketch, submitted to the Engineer for approval. The sketch shall show all proposed construction joints not shown in the Construction Plans, in addition to those shown. The Drawings shall show slabs in plan and walls in elevation to a scale not less than $1/4" = 1'0"$. The type of each joint shall be clearly labeled using the terminology in the Construction Plans. No concrete shall be placed before these drawings are approved. In lieu of separate drawings, the joints may be indicated on concrete reinforcement shop drawings.

1.5 PROJECT RECORD DOCUMENTS

- A. Accurately record actual locations of embedded utilities and components which are concealed from view.

1.6 QUALITY ASSURANCE

- A. Concrete ingredients shall be procured from an approved batching plant. Such plant shall have been batching ready-mixed concrete continuously for at least the two previous years. The plant shall have the capacity to supply the quantities of concrete required for each day's concreting. Only one plant shall be used throughout the entire job.
- B. Ready-mixed concrete shall be truck-mixed at the site.
- C. Equipment for measuring and controlling the quantities of materials shall be of approved design and shall be tested before use.
- D. Equipment for measuring the amount of water used in the concrete mix shall be readily adjustable and capable of measuring water in variable amounts within a tolerance of 1 percent.

1.7 JOB CONDITIONS

- A. Cold weather concreting shall be in accordance with the requirements of "Recommended Practice for Cold Weather Concreting (ACI 306-78)." These requirements are generally applicable between the dates of the earliest recorded first frost and the latest recorded last frost for the region. Concrete shall not be placed between these dates unless preparations satisfactory to the Engineer have been made. All methods and materials used shall be subject to the approval of the Engineer.

- B. Hot weather concreting shall be in accordance with the requirements of "Recommended Practice for Hot Weather Concreting (ACI 605-59)." All methods and materials used shall be subject to the approval of the Engineer.

2. PART 2 – PRODUCTS

2.1 MATERIALS

A. Aggregates

1. Coarse and fine aggregates shall be of natural origin conforming to ASTM C33. Aggregates which are deleteriously reactive with the alkalies in cement as defined by ASTM C289 shall not be used.
2. Aggregates must be kept clean and free from all foreign matter during transportation and handling and kept separate until placed in the mixer. Bins or platforms protected from precipitation and having hard clean surfaces shall be provided for storage. Suitable precautions shall be taken during hauling, piling, and handling to prevent segregation of the coarse and fine particles of the aggregates.
3. Fine Aggregate – The fine aggregate or sand used in the concrete masonry shall be clean, hard, durable, uncoated siliceous sand, having not more than three percent by weight of foreign matter such as loam, clay, dirt or other impurities. When subjected to the colorimetric test for organic impurities and producing a color darker than the standard, it shall be rejected unless when tested in accordance with the Standard Mortar Making Properties of Fine Aggregate (ASTM Designation C87-69) the mortar develops a satisfactory compressive strength.

Fine aggregate shall be well-graded from coarse to fine, and when tested by means of standard laboratory sieves shall conform to the following requirements:

With respect to organic impurities, sand, when tested by ASTM methods, Designation C40-79 shall give a color lighter than the standard.

With reference to sizes, aggregate shall conform to the following:

<u>Passing</u>	<u>Percentages by Weight</u>
3/8-inch sieve	100
No. 4 sieve	95 to 100
No. 16 sieve	50 to 85
No. 50 sieve	10 to 30
No. 100 sieve	2 to 10

4. Coarse Aggregate - Coarse aggregate shall be composed of clean, hard, strong, durable broken stone or crushed gravel. It shall be free from adherent coatings, and the quantity of contained deleterious substances shall not exceed the following:

	<u>Maximum Percent by Weight</u>
Soft fragments	3.0
Coal and Lignite	0.5
Material finer than No. 200 sieve	1.0
Other deleterious substances	3.0
Total of the above	4.0

Aggregate shall be graded between the following limits:

<u>Passing</u>	<u>Percentages by Weight</u>
3/4-inch sieve	90 to 100
1/2-inch sieve	50 to 70
3/8-inch sieve	10 to 30
1/4-inch sieve	0 to 10

5. After acceptance of grading of aggregates, a variation in the quantities passing any sieve size shall not exceed 10 percent.
6. The fine sand and coarse aggregate when subjected to five alterations of the sodium sulfate soundness test (ASTM Designation C88-76) shall show an average weighted loss of not more than 10 percent. The coarse aggregate shall have a loss not greater than 30 percent when subjected to 500 revolutions of the Los Angeles Rattler Test (ASTM C131-76).

7. The methods used in piling and handling of aggregate shall be such that segregation of the several sized particles will not occur. Fine and coarse aggregates shall be kept separate prior to their admission into the concrete mixer, and shall be kept clean and free from foreign substances. Fine aggregate shall be stockpiled at least 24 hours before use. Adequate storage capacity shall be provided at the source of supply or at the site of the work so that sufficient aggregate of each kind is available at all times.
8. When aggregates to be employed have been approved, the Contractor shall secure his entire supply from the same source so as to maintain the same quality and grading throughout the work. Should it become necessary to change the source of characteristics of the material to be used, this should only be done as additional proportioning and other tests have been completed for the new material and the same have been approved.

B. Cement

1. Portland cement shall be an approved domestic brand conforming to ASTM C150. Type II or III cement shall be used. The product of only one plant shall be used. Cement shall be stored well off the ground in a dry weatherproof structure.

C. Water

1. Water shall be potable, except that nonpotable water may be used if mortar cubes made with the water in question have 7-14-28-day strengths equal to at least 90 percent of the strength of similar specimens made with potable water, when tested in accordance with ASTM C109.

D. Admixtures

1. Air entraining admixture shall conform to ASTM C260. Air entraining agent, approved by Engineer, shall be added to concrete mix. As an alternative, air entraining Portland Cement may be used.
2. Densifying admixture shall be a non-air entraining, normal setting type conforming to ASTM C494, Type A. The admixture shall be Plastocrete as manufactured by Sika Chemical Corp. or approved equal. Densifying admixture shall be used per the manufacturer's printed instructions.
3. No admixture containing calcium chloride will be acceptable.
4. Any admixture to be used in concrete shall have approval of Engineer prior to use.

E. Concrete

1. Normal weight concrete mix weighing approximately 145 pounds per cubic foot shall be prepared with Portland cement, fine and coarse aggregate, water and densifying admixture. Concrete exposed to weather after completion of the project, shall also contain air-entraining admixture. The constituents of the mix used and proportions thereof shall be those of a design mix approved by the Engineer. The design mix shall be proportioned to satisfy the requirements of the table below. The exact proportions of materials used in the mix shall not be changed without the Engineer's written approval. If the proportions or materials are changed, additional tests will be required. The addition or deletion of an admixture shall be considered a change in materials.
2. The Contractor shall adjust the air content of the mix as directed by the Engineer and shall have sufficient air-entraining admixture at the job site to make such adjustments.

Concrete Mix Requirements

<u>Concrete Type</u>	<u>Minimum 28-Day Compression Strength (psi)</u>	<u>Water-Cement Ratio (absolute)</u>	<u>Air Content % by Volume</u>
All	4,000	.35	4 to 6

3. Consistency of the concrete as measured by the ASTM designation C143 shall be as follows:

<u>Portion of Structure</u>	<u>Slump (Inches)</u>
Slab-on-Grade	3-4"
All Others	2-3"

4. Water content of each design mix shall be based on a curve showing the relationship between water content and 7- 14- 28-day compressive strengths of concrete made using the proposed materials. The curves shall be determined by four or more points, each representing an average value of at least three test specimens at each age, and shall have a range of values sufficient to yield the desired data, including all the specified compressive strengths without extrapolation. The exact water content of the concrete to be used, as determined from the curve, shall correspond to a strength stated above.

5. Concrete deposited in hot weather shall have a placing temperature which will not cause difficulty from loss of slump, flash set, or cold joints and in no event shall be greater than 80°F at the time of placing.
6. In cold weather, temperature of dry ingredients of the mix shall not exceed 80°F, and that of added water shall not exceed 100°F. Temperature of the mix shall not exceed 80°F. The temperature of the concrete placed shall not be lower than 50°F.
7. All concrete shall be truck-mixed at the site in accordance with ASTM C94 unless approved otherwise in writing by the Engineer. Concrete batches shall be mixed for a minimum of 3 minutes. All concrete must be placed in the work not more than 90 minutes after water is first added to the dry ingredients. The truck mixers shall be of the revolving drum type which will thoroughly mix the concrete and discharge the same without separation. Each batch shall be mixed by revolving the drum not more than 125 revolutions and not less than 50 revolutions at a rate specified by the equipment manufacturer.

3. PART 3 – EXECUTION

3.1 MEASURING MATERIALS

- A. Materials shall be measured by weight except as otherwise specified or where other methods are specifically authorized by the Engineer. The apparatus provided for weighing the aggregates and cement shall be suitably designed and constructed for this purpose. Scales shall have been certified by the local Sealer of Weights and Measures within one year of use. Each size of aggregate and the cement shall be weighed separately. The accuracy of all weighing devices shall be such that successive quantities can be measured to within 1 percent of the desired amount. Cement in standard packages (sacks) need not be weighed, but bulk cement and fractional packages shall be weighed.
- B. Water shall be measured by volume or by weight. The water-measuring device shall be capable of control to 1/2 percent accuracy. All measuring devices shall be subject to approval. Admixtures shall be dispensed either manually with use of calibrated containers or measuring tanks, or by means of an approved automatic dispenser designed by the manufacturer of the specific admixture.

3.2 INSPECTION

- A. Not less than one working day shall be allowed for the inspection of formwork and reinforcing by the Engineer before concrete is poured.

3.3 CONCRETE MIXING

- A. Concrete shall be ready-mixed or transit-mixed, as produced by equipment acceptable to the Engineer. No hand-mixing will be permitted. Adding water in controlled amounts during the mixing cycle shall be done only with the express approval of, and under the direction of, the Engineer.
- B. Ready-mix or transit-mixed concrete shall be transported to the site in watertight agitator or mixer trucks loaded not in excess of rated capacities for the respective conditions as stated on the nameplate. Discharge at the site shall be within 1½ hours after cement was first introduced into the mix. Central mixed concrete shall be plant-mixed a minimum of 1½ minutes per batch and then shall be truck-mixed or agitated a minimum of 8 minutes. Agitation shall begin immediately after the pre-mixed concrete is placed in the truck and shall continue without interruption until discharge. Transit-mixed concrete shall be mixed at mixing speed for at least 10 minutes, followed by agitation without interruption until discharged.
- C. All central plant and rolling stock equipment and methods shall conform to the latest Truck Mixer and Agitator Standards of the Truck Mixer Manufacturer's Bureau of the National Ready-Mixed Concrete Association, as well as ACI Standard 614-69 and ASTM Specification C94.
- D. The retempering of concrete which has partially hardened, that is, mixing with or without additional cement, aggregate, or water, will not be permitted.
- E. The Contractor shall schedule the dispatching of trucks from the batching plant so that they shall arrive at the site of the work just before the concrete is required. Excessive mixing of concrete while waiting or delays in placing successive layers of concrete in the forms will not be permitted.

3.4 PREPARATION

- A. Joints in Concrete
 - 1. Construction joints shall be made only where shown in the Construction Plans or where permitted by the Engineer. Construction joints shall be made in accordance with the details shown in the Construction Plans. All joints subject to hydrostatic pressure shall be provided with continuous waterstops. No reinforcement, concrete, pipe, conduit or other rigid material shall run continuously through an expansion joint.
 - 2. Construction joints in new concrete shall be made at the locations shown in the Construction Plans and at the locations established by the Contractor

with the approval of Engineer. At least three days shall elapse before casting units upon or adjacent to construction joints in walls.

3. Surfaces of set concrete shall be cleaned of all foreign matter and loose particles before depositing new concrete. The forms shall be thoroughly retightened against adjacent previously placed concrete.

B. Built-in Items

1. Built-in items such as pipe, conduit, sleeves, anchor bolts, and other embedded items shall be secured in place before concrete placing commences. All embedded aluminum parts shall have two coats of zinc chromate paint. No conduits shall be routed within the concrete enclosing water containment areas.
2. Waterstops shall be virgin polyvinyl chloride (PVC) as shown in the Construction Plans or specified herein. PVC waterstops shall be tied to the reinforcement so that they are securely and rigidly supported in the proper position during the placement of concrete. PVC waterstop intersections such as tees, crosses, and ells shall be preformed at the factory or bench fabricated in the field.

C. Weather Conditions

1. Weather conditions shall be suitable for the placement of concrete. Concrete shall not be placed when, in the opinion of the Engineer, weather conditions are not suitable for the proper placing, finishing, or curing of the concrete. Unless otherwise approved by the Engineer, concrete shall be placed only in dry weather. In the event of sudden rainstorms, freshly placed concrete shall be adequately protected in an approved manner.
2. All materials necessary to protect the concrete in the event of adverse weather shall be on hand, ready for use, when concrete is being placed. All costs in connection with protecting the concrete from adverse weather shall be borne by the Contractor.

D. Formwork

1. Forms shall be of plywood, plywood faced, or metal, and shall conform to the shape, lines and dimensions of the concrete as shown in the Construction Plans, and shall be substantial and sufficiently tight to prevent leakage of mortar. The Contractor shall be solely responsible for the design and engineering of the formwork as well as its construction. The inside of forms shall be coated with non-staining mineral oil or other approved material to prevent adhesion of concrete to the forms.

2. Edges and corners in the finished work shall be straight and true. All external corners shall have 1-inch chamfer unless noted otherwise. For all faces which are exposed in the finished work, forms shall be smooth and so built and treated that, when removed, the concrete will be left with smooth, presentable surfaces, free from offsets, ridges, discoloration, or other unsightly defects. Deformed or otherwise defective forms shall be removed from the work. The methods and materials used for tying forms in place shall be subject to approval. Form ties shall be bolts and rods of such design that the end of the internal member will be recessed by a removable cone.
3. Concrete shall not be placed until all forms, bracing, and reinforcement are in final secure position. Formwork shall be completed and inspected prior to the placing of concrete. Temporary openings shall be provided near the base of wall forms and at other points where necessary to facilitate cleaning, inspection and placement of concrete.
4. Immediately before placing concrete, the forms shall be thoroughly cleaned and wet, and the space to be occupied by concrete shall be free from all dirt, chips, and foreign material.
5. Before form material is reused, all surfaces in contact with concrete shall be thoroughly cleaned, all damaged places repaired, all projecting nails withdrawn, and all protrusions smoothed.
6. Earth forms shall be used subject to approval by Engineer.

3.5 INSTALLATION

A. Placement of Concrete

1. Concrete shall be placed only when the Engineer is present. The Contractor shall give the Engineer one working day's notice before concrete is placed. No concrete shall be placed at night without permission of the Engineer. The Contractor shall give at least one working day's notice to the Engineer if he wishes to place concrete at night. Every precaution shall be taken to make all concrete solid, compact, watertight and smooth, to prevent the formation of laitance, and to avoid cold joints. All foundation concrete shall be placed on undisturbed soil or on concrete fill which is placed on undisturbed soil unless shown or noted otherwise in the Construction Plans. No additional payment will be made for fill concrete used to meet this requirement.
2. Place no concrete until reinforcing steel, pipes, conduits, sleeves, weepholes, hangers, anchors and other work required to be built into concrete have been inspected and approved by the Engineer. Remove water and foreign

- matter from forms and excavation. All soil bottom for slabs and footings shall be approved by the Engineer before placing forms and concrete.
3. Transport concrete from mixer to place of final deposit as rapidly and as practicable by methods which prevent separation of ingredients and displacement of reinforcement, and which avoid rehandling. Deposit no partially hardened concrete.
 4. Concrete placement shall be directed to prevent cold joints resulting from placing concrete upon previously placed concrete which has reached its initial set. Each concrete pour shall be directed to avoid cold joints by using an appropriate pouring sequence to prevent revibration of the previously placed concrete with the fresh concrete to form a monolithic mass free of cold joints.
 5. At construction joints, the surfaces of the concrete already placed, including vertical and inclined surfaces, shall be thoroughly cleaned of foreign materials, and weak concrete and roughened with suitable tools to expose a fresh face. At least two hours before and again shortly before the new concrete is deposited, the joints shall be saturated with water. After glistening water disappears, the joints shall be given a thorough coating of neat cement slurry mixed to the consistency of very heavy paste. The surfaces shall receive a coating at least 1/8-inch thick, well scrubbed-in by means of stiff bristle brushes whenever possible. New concrete shall be deposited before the neat cement dries.
 6. The Engineer reserves the right to order removal and replacement of concrete with cold joints, at the expense of the Contractor.
 7. Distribution of concrete shall be done only by approved methods. Chutes shall be designed with proper slopes and supports to permit efficient handling of the concrete without requiring an increase in the water content of the mix. If open troughs and chutes are permitted, they shall be of metal or metal lined. Concrete shall not be permitted to free fall more than four feet. "Elephant trunks" or pour pockets shall be used to prevent excessive free fall and splashing on forms and reinforcement.
 8. Concrete, during and immediately after depositing, shall be thoroughly compacted by means of suitable tools. Internal type mechanical vibrators shall be employed to produce required quality of finish. Vibration shall be done by experienced operators under close supervision and shall be carried on long enough to produce homogeneity and optimum consolidation without permitting segregation of the solid constituents as "pumping" or migration of air. All vibrators shall be supplemented by proper wooden spade puddling adjacent to forms to remove included bubbles and honeycomb. This is essential for the top lifts of walls. All vibrators shall travel at least

10,000 rpm and be of adequate capacity. At least one vibrator shall be used for every 10 cy of concrete placed per hour. In addition, one spare vibrator in operating condition shall be kept on site.

9. The placed concrete shall be maintained at a temperature between 50°F and 70°F for a temperature protection period of at least 7 days after placing. Concrete which has been moist cured shall be allowed to dry for at least 24 hours before the end of the temperature protection period. Provision shall be made to ensure that the ambient temperature will not fall more than 30°F in the 24 hours following the temperature protection period.

B. Foundations shall not be placed in freezing weather or on frozen soil. The use of salts or chemicals to melt ice or snow in the forms or on the ground will not be permitted.

C. Curing

1. Exposed surfaces of concrete shall be kept constantly moist by covering with moist burlap, applying a curing compound, or by such other means as may be approved, for a period of not less than 7 days.
2. Reinforcement, keyways, surfaces of construction and expansion joints and other surfaces on which curing compounds would have an effect deleterious to further construction or finishing operations shall be protected from the application of curing compounds.
3. Temperature rise on surfaces exposed to the sun during warm weather shall be minimized by use of white reflective curing compound. Manufactured curing materials shall be applied in accordance with the manufacturer's instructions.

D. Removing Forms

1. Forms shall be removed in such a manner as to ensure the complete safety of the structure. In no case shall the supporting forms or shoring be removed until the members have acquired sufficient strength to support safely their weight and the load thereon. The results of suitable control tests may be used as evidence that the concrete has attained such sufficient strength. The removal of forms shall be subject to the Engineer's approval.

3.6 FIELD QUALITY CONTROL

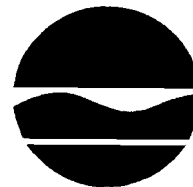
- A. The Owner may employ the services of a Testing Laboratory to do concrete inspection. The Engineer may designate this testing laboratory as his representative in which case the Contractor shall regard the directives of the

testing laboratory as if given by the Engineer. The Contractor shall give at least 24 hours notice to the Engineer's Testing Laboratory before placing concrete.

- B. Sets of three field control cylinder specimens will be taken at random by the Contractor's personnel under the direction of the Engineer during the progress of the work, in conformity with ASTM Designation C31. The total number of specimens taken on the project shall average one set per 30 cubic yards, and in general not less than one set of specimens will be taken on any one day. When the average 28-day strength of control cylinders in any set falls below the required strength or below proportional minimum 7-day strengths, where proper relation between 7-28-day strengths have been established by tests, then proportions, water content, or temperature conditions shall be changed to secure the required strength.
- C. The Contractor shall allow free access to the work for selection of samples, shall provide cylinders and all other field testing apparatus, shall provide heated moist storage facilities for specimens, shall protect the specimens against injury or loss through his operations, and shall furnish labor for taking concrete cylinder samples. The Contractor shall also provide curing boxes and shipping boxes. All shipping and testing of specimens will be paid by the Contractor.
- D. Slump tests will be made in the field by the Engineer and/or Testing Laboratory personnel, with assistance as necessary by the Contractor's personnel.
- E. Concrete and concrete work which, in the opinion of the Engineer, does not meet with the requirements of this Specification or which does not represent good workmanship, shall be removed from the site at the sole expense of the Contractor.
- F. Concrete that is damaged during the course of the work shall be repaired or replaced at the Contractor's expense.

END OF SECTION

New York State Department of Environmental Conservation
50 Wolf Road, Albany, New York 12233-7010



Langdon Marsh
Commissioner

Mr. Timothy M. Grippen
County Executive
Broome County Office Building
PO Box 1766
Binghamton, New York

JUL 14 1994

Mr. Mark Buckstein
General Counsel
International Specialty Products
1361 Alps Road
Wayne, NJ 07470

Dear Sirs:

RE: Colesville Landfill - Site No. 704010
Contract No. 1 - Final Design
Dated July 11, 1994

The Final Engineering Design Report, Construction Plans, Bid Documents and Technical Specifications for the Closure Action at the Colesville Landfill (Contract No. 1) have been determined to be acceptable. Therefore, the Department authorizes Broome County to proceed with the advertisement for bids for Contract No. 1.

Please note that the following is required before the County can award Contract No. 1:

1. All contract addenda must be reviewed and approved by the Department before bid opening.
2. A legal opinion that any property access and easements necessary for Contract No. 1 have been obtained.
3. The engineering contract with Metcalf and Eddy must be executed and approved by the Department.
4. Authorization to award must be issued by the Department.
5. A bid tabulation of all bids received including the engineer's pre-bid estimate, certified by a registered New York State Professional Engineer.

6. A copy of the apparent low bid, including a signed copy of the proposed Affirmative Action Work Plan (Please note that DEC Bureau of Affirmative Action approval of the Affirmative Action Work Plan is a condition of award).
7. Evidence of intent of surety to issue necessary performance and labor and material bonds and evidence of intent to obtain the required insurance for the apparent low bidder.
8. A statement from the authorized municipal official indicating the names of the bidders to whom contracts are to be awarded, the amount of the contracts and discussion of bid and recommendation for award.
9. Proof of advertising indicating the circulation of the publication and time allowed for preparation and receipt of bids.
10. A copy of each addendum issued during the bidding period and acknowledgement of receipt by all the bidders.
11. Signed copies of the certification by the apparent low bidder regarding compliance with non-collusive bidding requirements.
12. An explanation and evaluation of any substantial variance from the pre-bid estimate.
13. Other documents required to conform with applicable state and local laws and ordinances.

The Department recommends obtaining approval of the executed engineering contract with Metcalf and Eddy as soon as possible in order to ensure the eligibility of costs.

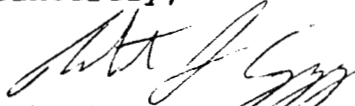
At this juncture, all project management responsibilities for Contract No. 1 will be assumed by Mr. Lech Dolata of the Bureau of Construction Services. Mr. Brian Davidson will be responsible for Contract No. 2 project management until that contract is approved.

Mr. Timothy M. Grippen
Mr. Mark Buckstein

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If you have any questions regarding Contract No. 1, please
contact Mr. Lech Dolata at 518-457-9280.

Sincerely,



Robert J. Cozzy, P.E.
Chief

Municipal Projects Section
Bureau of Central Remedial Action
Division of Hazardous Waste
Remediation

cc: E. Gonzalez, USEPA
N. Kaye, ISP
R. Standish, Broome Co.
R. Benke, Broome Co.
C. Jones-Rafferty, NYSDOH
M. O'Hara, Wehran