CENAB-EN-HN

U.S. Army Corps of Engineers
Baltimore District

Phase I Interim Removal Action
Component 2 — Phase 1
Former Lake Ontario Ordnance Works
Lewiston and Porter
Niagara County, New York

Final Contract Specifications

100% Design

Contract Number DACA31-96-D-0006
Delivery Order 0002

June 1998

Prepared for:

U.S. ARMY CORPS OF ENGINEERS
Baltimore District
10 South Howard Street
Baltimore, Maryland 21201

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Prepared by:

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PHASE I INTERIM REMOVAL ACTION
COMPONENT 2—PHASE 1
FORMER LAKE ONTARIO ORDNANCE WORKS
LEWISTON AND PORTER
NIAGARA COUNTY, NEW YORK

FINAL CONTRACT SPECIFICATIONS

100% DESIGN

Prepared for

U.S. ARMY CORPS OF ENGINEERS
BALTIMORE DISTRICT
10 South Howard Street
Baltimore, Maryland 21202

June 1998

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LIST OF ATTACHMENTS

DIVISION 1

SPECIAL CLAUSES

LAKE ONTARIO ORDNANCE WORKS
LEWISTON AND PORTER, NY

SECTION 01010

SUMMARY OF WORK

PART I GENERAL

1.1 SUMMARY

1.1.1 General

The Contractor shall furnish all labor, materials, equipment, and services necessary to complete the work required in these specifications and as shown on the Drawings. This work includes the removal of loose asbestos and site restoration in Buildings 6-01, 6-02, 6-03, and 30A. Asbestos abatement shall also be performed for temporary Buildings T-1 and T-2, and the pipe bridge. This work includes removal of 6 inches of asbestos-containing soils and backfill with clean soils in Area A1 (courtyard and surrounding soils of Building 6-01), area surrounding temporary Buildings T-1 and T-2, and the western end of the pipe bridge. In addition, the Contractor shall remove and properly dispose of miscellaneous liquids and oils, as described on the Drawings and in these specifications. The work included under Component 2 Phase 1 is all within the Somerset Property, located at the former Lake Ontario Ordnance Works (LOOW) site in the towns of Lewiston and Porter, NY. The Contractor shall perform the work in strict accordance with these specifications and the Drawings, and subject to the terms and conditions of the contract. The work required under this contract includes, but is not limited to, the items described herein.

1.1.2 Miscellaneous Chemicals and Loose Asbestos

Miscellaneous chemicals and loose asbestos-containing materials (ACM) that have been identified and delineated within Buildings 6-01, 6-02, 6-03, and 30A, on the pipe bridge, and within designated areas of asbestos-containing soils in Area A1, Buildings T-1 and T-2, and the pipe bridge on the Somerset Property shall be properly removed, managed, and disposed by the Contractor.

a. Several containers of miscellaneous liquids and oils have been identified on the Somerset Property that was part of the LOOW site. Some containers show evidence of deterioration. All containers and their contents shall be transferred to approved containers for transport and final disposal as specified in Section 02144, MISCELLANEOUS LIQUIDS AND OILS, and Section 02120, TRANSPORTATION AND DISPOSAL OF HAZARDOUS AND NON-HAZARDOUS MATERIALS.

b. Loose ACM has been identified in the form of corrugated panels/panel fragments, pipe insulation, hopper insulation, and bags of asbestos-containing mortar. An asbestos removal survey was conducted to delineate materials for remediation, and is provided as an attachment to Section 02080, ASBESTOS ABATEMENT. Loose ACM within the areas delineated on the Drawings and in these specifications shall be removed, managed, and disposed by the Contractor as specified in Section 02080, ASBESTOS ABATEMENT.

1.1.3 Additional Work

It is possible that during the performance of the remediation work specified that the Contractor may uncover or otherwise discover areas for which the anticipated remediation approach should be altered

or additional contaminated areas that need remediation. When such areas are discovered, they shall be inspected concurrently by the Contractor and the Contracting Officer (CO). The CO will promptly make a determination of the action to be taken.

1.2 SEQUENCING AND SCHEDULING

Should the Contractor fail to maintain a satisfactory rate of progress, the CO may require that additional personnel and equipment be placed on the work and weekend and overtime work be performed, in order that the work be brought up to schedule and maintained.

1.3 CONTRACTOR USE OF PREMISES

1.3.1 Haul Routes

The Contractor shall use the haul routes designated by the Contracting Officer.

1.3.2 On-Site Storage Areas

The Contractor shall indicate the location of on-site area(s) for storage of equipment and materials, laydown areas for equipment and materials removed from the buildings designated for asbestos abatement, clean soil stockpile area, and excavated asbesos-containing material stockpiling area during the life of the project in the Site Operations Plan. The Contracting Officer will approve the Contractor's proposed storage areas.

1.4 CONTRACTOR'S RECEIPT OF SUPPLIES

The Contractor shall be responsible for all arrangements for the receipt of materials and supplies at the job site. Government personnel are not permitted to receive or sign for items delivered.

1.5 REGULATORY REQUIREMENTS

1.5.1 Compliance with Federal, State, and Local Regulations

The Contractor shall conduct the work in accordance with all applicable laws and regulations, and shall be responsible for coordinating with Federal, state, and local authorities. The Contractor shall be responsible to obtain all permits and comply with all order of conditions for the work.

a. PL 96-510, Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).

b. PL 99-499, Superfund Amendments and Reauthorization Act (SARA).

c. PL 98-212, DOD Appropriation Act, Environmental Restoration.

d. PL 99-190, DOD Appropriation Act, Environmental Restoration.

e. 29 CFR 1910, Occupational Safety and Health Administration (OSHA) General Industry Standards.

f. 29 CFR 1910.120, OSHA, Hazardous Waste Site Operations and Emergency Response.

g. 29 CFR 1910.1001, Occupational Safety and Health Standards, Asbestos, Including Appendices A through I.

h. 29 CFR 1910.134, OSHA, General Industry Respirator Requirements.

i. 29 CFR 1926, OSHA, Construction Industry Standards.

j. 29 CFR 1926.1101, Safety and Health Regulations for Construction, Asbestos.

k. 34 CFR, Part 231, Appendix C, Procedures for Containing and Removing Building Materials Containing Asbestos.

l. 40 CFR Part 61, Subpart M: U.S. Environmental Protection Agency, National Emission Standards for Hazardous Air Pollutants (NESHAP), Asbestos.

m. AR 200-1, Environmental Quality, Environmental Protection and Enhancement.

n. AR 385 series.

o. ER 385 series.

p. EM 385-1-1, USACE, Safety and Health Requirements Manual.

q. 40 CFR Part 262, RCRA - Standards Applicable to Generators of Hazardous Waste.

r. RCRA - Hazardous Waste Management (40 CFR Part 264), Subpart C - Preparedness and Prevention (40 CFR 264.30 - 264.37), Subpart D - Contingency Plan and Emergency Procedures (40 CFR 264.50 - 264.56).

s. 40 CFR Part 50, CAA - National Ambient Air Quality Standards (NAAQS) for Particulate Matter.

t. PL 94-469, Toxic Substances Control Act, Including Amendments (PL 97-129).

u. 40 CFR Part 761 - TSCA PCBs.

v. 6 NYCRR Part 360, Solid Waste Management Facilities.

w. 6 NYCRR Part 370, 371, 372, 373, Hazardous Waste Management.

x. 6 NYCRR Part 376, Land Disposal Restrictions.

y. 10 NYCRR Part 73, Asbestos Safety Program Requirements.

z. 6 NYCRR Part 700-705—Water Quality Regulations.

aa. NYSDEC, Division of Hazardous Waste Remediation, TAGM HWR-92-4046, "Determination of Soil Cleanup Objectives and Cleanup Levels."

bb. NYSDEC, Division of Hazardous Substances Regulations, TAGM HSR-92-3028, "Contained-In Criteria for Environmental Media."

cc. NYS TOGS 1.1.1—Ambient Water Quality Standards and Guidance Values.

dd. New York State Code Rule 56 - 12 NYCRR Part 56.

1.6 PRECONSTRUCTION CONFERENCE

The CO will conduct a Preconstruction Plan Review Conference to reinforce contract conditions with the Contractor, and discuss the comments received on the Site Operations Plan, Site Safety and Health Plan, Safety and Occupational Health Program, Accident Prevention Plan, Negative Exposure Assessment, and Asbestos Hazard Abatement Plan. The purpose of this conference is to review the requirements for submittals, safety, payrolls, labor relations, environmental protection, notifications of construction activities, progress schedules, and payment and procurement of materials. The principal features of work will also be reviewed, avenues of ingress and egress will be identified, and any questions regarding the contract and work site will be addressed. At this Preconstruction Plan Review Conference, the Contractor shall inform the CO of the overall planning and methods the Contractor intends to use to accomplish the work that has been described in the Site Operations Plan, Negative Exposure Assessment, and Asbestos Hazard Abatement Plan. It is mandatory that this Preconstruction Plan Review Conference be attended by the Contractor or his representative and his on-site construction manager prior to beginning any work on the contract.

PART 2 PRODUCTS

2.1 MATERIALS

2.1.1 Use of Brand Names

If items called for by this specification have been identified by a "brand name" description, such identification is intended to be descriptive, but not restrictive, and is to indicate the quality and characteristics of products that will be satisfactory, unless otherwise specifically provided in this contract.

PART 3 EXECUTION (NOT APPLICABLE)

- End of Section -

SECTION 01030

JOB CONDITIONS

PART 1 LAYOUT OF WORK (NOV 1993)

The Contractor shall lay out its work indicated on the Drawings, and shall be responsible for all measurements in connection with the layout. The Contractor shall furnish, at his own expense, all stakes, templates, platforms, equipment, tools, materials, and labor required to lay out any part of the work. The Contractor shall be responsible for executing the work to the lines and grades that may be established or indicated by the Contracting Officer. The Contractor shall also be responsible for maintaining and preserving all stakes and other marks established by the Contracting Officer until authorized to remove them. If such marks are destroyed by the Contractor or through its negligence before their removal is authorized, the Contracting Officer may replace them and deduct the expense of the replacement from any amounts due or to become due the Contractor. (CENAB)

PART 2 PHYSICAL DATA (APR 1984)

Data and information furnished or referred to below is for the Contractor's information. The Government shall not be responsible for any interpretation or conclusion drawn from the data or information by the Contractor. (CENAB)

2.1 (TRANSPORTATION FACILITIES) OMITTED

2.2 EXPLORATIONS

The physical conditions indicated on the Drawings and in the specifications are the result of site investigations by visual surveys and hand auger borings. Analytical test results of loose asbestos-containing materials and soils in the Somerset Property are summarized in the Asbestos Survey Report provided as an attachment to Section 02080, ASBESTOS ABATEMENT.

2.3 PREVIOUS EXPLORATION

In addition to the asbestos survey and miscellaneous chemicals information shown on the Drawings, other investigations were made for the Site Assessment, Remedial, and Preliminary Remedial Design Investigations. An asbestos survey was completed for Component 2 (Somerset Property). The results of this survey are included as an attachment to Section 02080, ASBESTOS ABATEMENT. The location of these and the field laboratory data for previous investigations are available for inspection in the Office of the Design Engineer, U.S. Army Engineer District, Baltimore, Corps of Engineers, City Cresent Building, 10 South Howard Street, Baltimore, Maryland 21201.

PART 3 UTILITIES

3.1 AVAILABILITY OF UTILITIES INCLUDING LAVATORY FACILITIES (JUN 1980)

It shall be the responsibility of the Contractor to locate and confirm utility line locations and to provide all utilities he may require during the entire life of the contract. He shall make his own investigation and determinations as to the availability and adequacy of utilities for his use for construction purposes and domestic consumption. He shall install and maintain all necessary supply lines, connections, piping, and meters if required, but only at such locations and in such manner as approved by the Contracting

Officer and Property Owner (where applicable). Before final acceptance of work under this contract, all temporary supply lines, connections, and piping installed by the Contractor shall be removed by him in a manner satisfactory to the Contracting Officer. (CENAB)

3.2 INTERRUPTION OF UTILITIES (1972)

3.2.1 No utility services shall be interrupted by the Contractor to locate and confirm utility line locations and to make connections, to relocate, or for any purpose without approval of the Contracting Officer.

3.2.2 Request for permission to shut down services shall be submitted in writing to the Contracting Officer not less than 17 days prior to date of proposed interruption. The request shall give the following information:

3.2.2.1 Nature of utility (L.P. or H.P., water, etc.).

3.2.2.2 Size of line and location of shutoff.

3.2.2.3 Buildings and services affected.

3.2.2.4 Hours and date of shutoff.

3.2.2.5 Estimated length of time service will be interrupted.

3.2.3 Services will not be shut off until receipt of approval of the proposed hours and date from the Contracting Officer and Property Owners.

3.2.4 Shutoffs that will cause interruption of Property Owner work operations, as determined by the Contracting Officer, shall be accomplished during regular non-work hours or on non-work days of the Using Agency without any additional cost to the Government.

3.2.5 Operation of valves on water mains will be by Property Owner personnel. Where shutoff of water lines interrupts service to fire hydrants or fire sprinkler systems, the Contractor shall arrange his operations and have sufficient material and personnel available to complete the work without undue delay or to restore service without delay in event of emergency.

3.3 ALTERATIONS TO UTILITIES (AUG 1968)

Where changes and relocations of utility lines are noted to be performed by others, the Contractor shall give the Contracting Officer at least thirty days' written notice in advance of the time that the change or relocation is required. In the event that, after the expiration of thirty days after the receipt of such notice by the Contracting Officer, such utility lines have not been changed or relocated and delay is occasioned to the completion of the work under this contract, the Contractor will be entitled to a time extension equal to the period of time lost by the Contractor after the expiration of said thirty-day period. Any modification to existing or relocated lines required as a result of the Contractor's method of operation shall be made wholly at the Contractor's expense, and no additional time will be allowed for delays incurred by such modifications. (CENAB)

PART 4 DISPOSAL OF EXISTING MATERIAL AND EQUIPMENT (DEC 1975)

All removed, dismantled, or demolished material and/or equipment including rubble, scrap, and debris not specified or indicated to be returned to the building(s) from which it was removed for decontamination, Government salvaged, reinstalled under this contract, or otherwise retained for disposal on Government land, will become the property of the Contractor and shall be promptly removed from the site and disposed of by the Contractor at his own expense and responsibility. (CENAB)

PART 5 COMPLIANCE WITH PROPERTY OWNER SITE RULES AND SAFETY PROCEDURES (JUL 1980)

The site of the work is on private property, and all rules and safety procedures issued by the Property Owner covering general safety, security, sanitary requirements, pollution control, traffic regulations, and parking shall be observed by the Contractor. Information regarding these requirements may be obtained by contacting the Property Owner or Contracting Officer, who will provide such information or assist in obtaining same from the Property Owners. (MEMO)

Somerset Property Contact:
Somerset Group, Inc.
Attn: Mr. John Syms
Lew-Port Industrial Park
Balmer Road
Youngstown, NY 14174
Telephone: (716) 754-4303

PART 6 MAINTENANCE OF ACCESS (DEC 1975)

The Contractor shall not block passage through sidewalks, roads, alleys, or other entranceways to the building, roadways, and monitoring points during performance of work under this contract. In addition, the Contractor shall at all times maintain safe and clear passage through interior corridors and doorways. No equipment or new materials are to be stored in the building except those items that are necessary for progress of the immediate work. All existing equipment, materials, and debris removed during the work that are not to be reinstalled shall be removed daily by the Contractor from the building, roadways, and monitoring points. (CENAB)

PART 7 PROTECTION OF GOVERNMENT AND PRIVATE PROPERTY AND PERSONNEL (DEC 1975)

7.1 EQUIPMENT

All existing Government or Property Owner owned equipment within the work area shall be protected by the Contractor from damage caused by construction operations. Existing work damaged by construction operations shall be promptly repaired by the Contractor at his own expense.

7.2 PERSONNEL

The Contractor shall protect the Property Owner and visitors by installing safety rails and/or barricades as applicable to prevent injury from unauthorized entry of personnel into work areas. Warning signs shall be erected as necessary to indicate construction areas or hazardous zones. Work shall proceed in such manner as to prevent the undue spread of dust and flying particles. The Contractor shall also prepare a notification plan for Property Owner personnel in the event of an emergency or spill.

7.3 ADDITIONAL MEASURES

The Contractor shall take such additional measures as may be directed by the Contracting Officer to prevent damage or injury to Government and private property or personnel. (CENAB)

PART 8 STREET CLOSINGS (MAY 1978)

When operations in connection with contract work necessitate the closing of streets, it shall be the Contractor's responsibility to arrange in advance with the Contracting Officer and Property Owner for such street closings and to provide appropriate barricades, signs, markers, flares, and other devices as

may be required by the Contracting Officer's Representative and Property Owner for traffic guides and public safety. (CENAB)

PART 9 ORDER OF WORK AND COORDINATION WITH OTHER CONTRACTORS (FEB 1979)

Other Contractors may be working in the same area. After award of this contract, a meeting will be held with all Contractor representatives and the Contracting Officer to develop a plan of work coordination. In case of disagreement regarding use of an area, the decision of the Contracting Officer will control. (CENAB)

PART 10 OMITTED

PART 11 OMITTED

PART 12 MAINTENANCE OF UTILITIES (FEB 1985)

Throughout construction, the Contractor shall provide and/or maintain temporary toilet facilities for Government personnel. (CENAB)

PART 13 ASBESTOS (JAN 1985, REV NOV 1993)

13.1 WARNING

THE CONTRACTOR IS WARNED THAT EXPOSURE TO AIRBORNE ASBESTOS HAS BEEN ASSOCIATED WITH FOUR DISEASES: LUNG CANCER, CERTAIN GASTROINTESTINAL CANCERS, PLEURAL OR PERITONEAL MESOTHELIOMA, AND ASBESTOSIS. Studies indicate there are significantly increased health dangers to persons exposed to asbestos who smoke and, further, to family members and other persons who become indirectly exposed as a result of the exposed worker bringing asbestos-laden work clothing home to be laundered.

13.2 FRIABLE/NONFRIABLE ASBESTOS

The Contractor is advised that friable and/or nonfriable asbestos-containing material has been identified in area(s) where contract work is to be performed. Friable asbestos-containing material means any material that contains more than 1 percent asbestos by weight that hand pressure can crumble, pulverize, or reduce to powder when dry. Nonfriable asbestos-containing materials do not release airborne asbestos fiber during routine handling and end-use; however, excessive fiber concentrations may be produced during uncontrolled abrading, sanding, drilling, cutting, machining, removal, demolition, or other similar activities. Whether asbestos is friable or nonfriable, care must be taken to avoid releasing or causing to be released, asbestos fibers into the atmosphere where they may be inhaled or ingested.

13.3 PROTECTION

When contract work activities are carried out in locations where the potential exists for exposure to airborne asbestos fibers as described in Paragraph 13.2 or where asbestos waste will be generated, the Contractor shall ensure that all measures necessary to provide effective protection to persons from exposure to asbestos fibers and prevention of contamination to property, materials, supplies, equipment, and the internal and external environment are effectively instituted. The Contractor shall conduct asbestos-related activities in accordance with Section 02080, ASBESTOS ABATEMENT.

13.4 REQUIRED FORMS

The Contractor shall complete and return to the Contracting Officer within 15 working days after the completion of all airborne asbestos monitoring conducted under this contract, a "Summarization of Airborne Asbestos Sampling Results" form provided by the Government. This completed summarization

form is to be used by the U.S. Army Corps of Engineers for statistical information purposes and does not relieve the Contractor from his recordkeeping requirements as specified in Section 02080, ASBESTOS ABATEMENT. A copy of this summarization form is attached to the end of this section.

13.5 COMPLETED SURVEYS

An asbestos survey was conducted in the contract work to identify the presence of asbestos-containing materials as described in Paragraph 13.2. The data collected are contained in the ASBESTOS SURVEY REPORT (Acres, 1998) provided as an attachment to Section 02080, ASBESTOS ABATEMENT.

13.6 ADDITIONAL SURVEYS

The asbestos survey described in Paragraph 13.5 may not have identified all asbestos-containing materials in the contract work area(s). When contract work area(s) appears to have asbestos-containing material not identified in the ASBESTOS SURVEY REPORT, the Contractor shall conduct an asbestos survey to identify such material(s) in a manner similar to that described in the ASBESTOS SURVEY REPORT. (CENAB)

The points of contact follow:

1. OSHA: (410) 962-2840

2. EPA, Region 2: 1-212-637-5000

3. New York State Department of Environmental Conservation (NYSDEC): (518) 474-2121

4. New York State Department of Labor (Industrial Code Rule 56): (518) 457-9000

ALTERNATE 3: OMITTED

PART 14 OMITTED

PART 15 OMITTED

PART 16 OMITTED

PART 17 OMITTED

PART 18 PHOTOGRAPHIC COVERAGE (SEPT 85)

The Contractor shall provide photographic coverage under the contract. These services shall be for ten commercial grade color photographs from the beginning of the contract until acceptance of the completed work. At a minimum, photographs shall be taken at onset, once during construction, and once at completion. These photographs shall be in 8" x 10" size and shall be taken at intervals and at the place designated by the Contracting Officer. Negatives from all of the above photographs shall be given to and become property of the Government. (CENAB-CO)

--End of Section--

SECTION 01300

SUBMITTAL PROCEDURES 12/94

PART 1 GENERAL

Definitions of submittals used in Corps of Engineers guide specifications (CEGS-Series) are as follows:

SD-01 Data

Submittals that provide calculations, descriptions, or documentation regarding the work.

SD-04 Drawings

Submittals that graphically show relationship of various components of the work, schematic diagrams of systems, details of fabrication, layouts of particular elements, connections, and other relational aspects of the work.

SD-06 Instructions

Preprinted material describing installation of a product, system, or material, including special notices and Material Safety Data Sheets, if any, concerning impedances, hazards, and safety precautions.

SD-07 Schedules

Tabular lists showing location, features, or other pertinent information regarding products, materials, equipment, or components to be used in the work.

SD-08 Statements

A document, required of the Contractor, or through the Contractor, from a supplier, installer, manufacturer, or other lower tier Contractor, the purpose of which is to confirm the quality or orderly progression of a portion of the work by documenting procedures, acceptability of methods or personnel, qualifications, or other verifications of quality.

SD-09 Reports

Reports of inspections or tests, including analysis and interpretation of test results. Each report shall be properly identified. Test methods used shall be identified, and test results shall be recorded.

SD-13 Certificates

Statement signed by an official authorized to certify on behalf of the manufacturer of a product, system, or material, attesting that the product, system, or material meets specified requirements. The statement must be dated after the award of the contract, must state the Contractor's name and address, must name the project and location, and must list the specific requirements that are being certified.

SD-14 Samples

Samples, including both fabricated and unfabricated physical examples of materials, products, and units of work as complete units or as portions of units of work.

SD-18 Records

Documentation to record compliance with technical or administrative requirements.

SD-19 Operation and Maintenance Manuals

Data that form a part of an operation and maintenance manual.

1.1 SUBMITTAL CLASSIFICATION

Submittals are identified with submittal description (SD) numbers and are classified as follows:

1.1.1 Government Approved (GA)

Governmental approval is required for extensions of design, critical materials, deviations, equipment whose compatibility with the entire system must be checked, and other items as designated by the Contracting Officer. Within the terms of the Contract Clause entitled "Specifications and Drawings for Construction," they are considered to be "shop drawings."

1.1.2 Information Only (FIO)

All submittals not requiring Government approval will be for information only. They are not considered to be "shop drawings" within the terms of the Contract Clause referred to above.

1.2 APPROVED SUBMITTALS

The Contracting Officer's approval of submittals shall not be construed as a complete check, but will indicate only that the general method of construction, materials, detailing, and other information are satisfactory. Approval will not relieve the Contractor of the responsibility for any error that may exist, since the Contractor under the CQC requirements of this contract is responsible for dimensions, the design of adequate connections and details, and the satisfactory construction of all work. After submittals have been approved by the Contracting Officer, no resubmittal for the purpose of substituting materials or equipment will be considered unless accompanied by an explanation of why a substitution is necessary.

1.3 DISAPPROVED SUBMITTALS

The Contractor shall make all corrections required by the Contracting Officer and promptly furnish a corrected submittal in the form and number of copies specified for the initial submittal. If the Contractor considers any correction indicated on the submittals to constitute a change to the contract, a notice in accordance with the Contract Clause "Changes" shall be given promptly to the Contracting Officer.

1.4 WITHHOLDING OF PAYMENT

Payment for materials incorporated in the work will not be made if required approvals have not been obtained.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION

3.1 GENERAL

The Contractor shall make submittals as required by the specifications. The Contracting Officer may request submittals in addition to those specified when deemed necessary to adequately describe the work covered in the respective sections. Units of weights and measures used on all submittals shall be the same as those used in the contract drawings. Each submittal shall be complete and in sufficient detail to allow ready determination of compliance with contract requirements. Prior to submittal, all items shall be checked and approved by the Contractor's Quality Control (CQC) representative, and each item shall be stamped, signed, and dated by the CQC representative indicating action taken. Proposed deviations from the contract requirements shall be clearly identified. Submittals shall include items such as: Contractor's, manufacturer's, or fabricator's drawings; descriptive literature including (but not limited to) catalog cuts, diagrams, operating charts or curves; test reports; test cylinders; samples; O&M manuals (including parts list); certifications; warranties; and other such required submittals. Submittals requiring Government approval shall be scheduled and made prior to the acquisition of the material or equipment covered thereby. Samples remaining upon completion of the work shall be picked up and disposed of in accordance with manufacturer's Material Safety Data Sheets (MSDSs) and in compliance with existing laws and regulations.

3.2 SUBMITTAL REGISTER (ENG FORM 4288)

At the end of this section is one set of ENG Form 4288 (Attachment 1) listing items of equipment and materials for which submittals are required by the specifications; this list may not be all inclusive and additional submittals may be required. The Contractor will also be given the Submittal Register as a diskette containing the computerized ENG Form 4288 and instructions on the use of the diskette. Columns "d" through "q" have been completed by the Government; the Contractor shall complete columns "a" and "r" through "t" and submit the forms (hard copy plus associated electronic file) to the Contracting Officer for approval within 30 calendar days after Notice to Proceed. The Contractor shall keep this diskette up-to-date and shall submit it to the Government together with the monthly payment request. The approved Submittal Register will become the scheduling document and will be used to control submittals throughout the life of the contract. The Submittal Register and the progress schedules shall be coordinated.

3.3 SCHEDULING

Submittals covering component items forming a system or items that are interrelated shall be scheduled to be coordinated and submitted concurrently. Certifications to be submitted with the pertinent drawings shall be so scheduled. Adequate time (a minimum of 30 calendar days exclusive of mailing time) shall be allowed and shown on the register for review and approval. No delay damages or time extensions will be allowed for time lost in late submittals.

3.4 TRANSMITTAL FORM (ENG FORM 4025)

The sample transmittal form (ENG Form 4025) attached to this section (Atttachment 2) shall be used for submitting both Government approved and information only submittals in accordance with the instructions on the reverse side of the form. These forms will be furnished to the Contractor. This form shall be properly completed by filling out all the heading blank spaces and identifying each item submitted. Special care shall be exercised to ensure proper listing of the specification paragraph and/or sheet number of the contract drawings pertinent to the data submitted for each item. If this form is available under the RMS system, the Contractor will be required to generate it and process it electronically.

3.5 SUBMITTAL PROCEDURE

Submittals shall be made as follows:

3.5.1 Procedures

At the Quality Control Coordination meeting, or preconstruction conference, the Contractor shall ascertain the name and address of each individual, agency, or firm who is designated to normally receive items for approval, for information or samples. The Contractor shall complete ENG Form 4025, entering each item requiring a separate approval action as a separate item on the form, for each transmittal. A transmittal may consist of one or more 4025 sheets. The transmittal, consisting of ENG Form 4025 plus all applicable sumittals, is then sent to the appropriate individual. On critical items, the Contractor is encouraged to confirm receipt via telephone.

The Contractor shall submit to the Contracting Officer a total of 8 copies, unless otherwise specified, of each submittal listed in ENG Form 4025. Where specified, the Contractor shall provide additional copies to the distribution list presented in Attachment 3.

3.5.2 Deviations

For submittals that include proposed deviations requested by the Contractor, the column "variation" of ENG Form 4025 shall be checked. The Contractor shall set forth in writing the reason for any deviations and annotate such deviations on the submittal. The Government reserves the right to rescind inadvertent approval of submittals containing unnoted deviations.

3.6 CONTROL OF SUBMITTALS

The Contractor shall carefully control his procurement operations to ensure that each individual submittal is made on or before the Contractor scheduled submittal date shown on the approved "Submittal Register."

3.7 GOVERNMENT-APPROVED SUBMITTALS

Upon completion of review of submittals requiring Government approval, the submittals will be identified as having received approval by being so stamped and dated. Six copies of the submittal will be retained by the Contracting Officer and 2 copies of the submittal will be returned to the Contractor.

3.8 INFORMATION ONLY SUBMITTALS

Normally submittals for information only will not be returned. Approval of the Contracting Officer is not required on information only submittals. The Government reserves the right to require the Contractor to resubmit any item found not to comply with the contract. This does not relieve the Contractor from the obligation to furnish material conforming to the plans and specifications; will not prevent the Contracting Officer from requiring removal and replacement of nonconforming material incorporated in the work; and does not relieve the Contractor of the requirement to furnish samples for testing by the Government laboratory or for check testing by the Government in those instances where the technical specifications so prescribe.

3.9 STAMPS

Stamps used by the Contractor on the submittal data to certify that the submittal meets contract requirements shall be similar to the following:

CONTRACTOR

(Firm Name)

_____ Approved

_____ Approved with corrections as noted on submittal data and/or attached sheets (s).

SIGNATURE: _____

TITLE: _____

DATE: _____

-- End of Section --

ATTACHMENTS

ATTACHMENT 1 - ENG FORM 4288

ATTACHMENT 2 - ENG FORM 4025

ATTACHMENT 3 - SUPPLEMENTAL DISTRIBUTION LIST

SUBMITTAL REGISTER
(ER 415-1-10)

CONTRACT NO.

TITLE AND LOCATION
REMEDIAL DESIGN FOR INTERIM REMOVAL ACTIONS
FORMER LAKE ONTARIO ORDNANCE WORKS
LEWISTON AND PORTER, NIAGARA COUNTY, NEW YORK

CONTRACTOR

SPECIFICATION SECTION
01030

TRANS-MITTAL NO. a.	ITEM NO. b.	SPECIFICATION PARAGRAPH NO. c.	DESCRIPTION OF ITEM SUBMITTED d.	TYPE OF SUBMITTAL: DATA e.	DRAWINGS f.	INSTRUCTIONS g.	SCHEDULES h.	STATEMENTS i.	REPORTS j.	CERTIFICATES k.	SAMPLES l.	RECORDS m.	CLASSIFICATION: INFO ONLY n.	CLASSIFICATION: GOV. APPROVED o.	REVIEWER p.	CONTRACTOR SCHEDULE DATES: SUBMIT q.	APPROVAL NEEDED BY r.	MATERIAL NEEDED BY s.	CONTRACTOR ACTION: CODE t.	DATE u.	SUBMIT TO GOVERN-MENT v.	GOVERNMENT ACTION: CODE w.	DATE x.	REMARKS y.
		3.2.2	Shut Down Request				x							x										
		3.3	Advance Notice				x						x												
		13.4	Summarization of Airborne Asbestos Sampling Results	x									x												

SUBMITTAL REGISTER
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REMEDIAL DESIGN FOR INTERIM REMOVAL ACTIONS
FORMER LAKE ONTARIO ORDNANCE WORKS
LEWISTON AND PORTER, NIAGARA COUNTY, NEW YORK

CONTRACTOR

SPECIFICATION SECTION
01300

TRANS-MITTAL NO. a.	ITEM NO. b.	SPECIFICATION PARAGRAPH NO. c.	DESCRIPTION OF ITEM SUBMITTED d.	TYPE OF SUBMITTAL: DATA e.	DRAWINGS f.	INSTRUCTIONS g.	SCHEDULES h.	STATEMENTS i.	REPORTS j.	CERTIFICATES k.	SAMPLES l.	RECORDS m.	CLASSIFICATION: INFO ONLY n.	CLASSIFICATION: GOV. APPROVED o.	REVIEWER p.	CONTRACTOR SCHEDULE DATES: SUBMIT q.	APPROVAL NEEDED BY r.	MATERIAL NEEDED BY s.	CONTRACTOR ACTION: CODE t.	CONTRACTOR ACTION: DATE u.	SUBMIT TO GOVERN-MENT v.	GOVERNMENT ACTION: CODE w.	GOVERNMENT ACTION: DATE x.	REMARKS y.
		3.2	Submittal Register (Form 4288)				x							x											
		3.2	Diskette	x									x												

SUBMITTAL REGISTER (ER 415-1-10)																								CONTRACT NO.
TITLE AND LOCATION REMEDIAL DESIGN FOR INTERIM REMOVAL ACTIONS FORMER LAKE ONTARIO ORDNANCE WORKS LEWISTON AND PORTER, NIAGARA COUNTY, NEW YORK														CONTRACTOR									SPECIFICATION SECTION 01310	
				TYPE OF SUBMITTAL									CLASSI-FICATION			CONTRACTOR SCHEDULE DATES			CONTRACTOR ACTION			GOVERNMENT ACTION		
TRANS-MITTAL NO.	ITEM NO.	SPECIFICATION PARAGRAPH NO.	DESCRIPTION OF ITEM SUBMITTED	DATA	DRAWINGS	INSTRUCTIONS	SCHEDULES	STATEMENTS	REPORTS	CERTIFICATES	SAMPLES	RECORDS	INFO ONLY	GOV. APPROVED	REVIEWER	SUBMIT	APPROVAL NEEDED BY	MATERIAL NEEDED BY	CODE	DATE	SUBMIT TO GOVERN-MENT	CODE	DATE	REMARKS
a.	b.	c.	d.	e.	f.	g.	h.	i.	j.	k.	l.	m.	n.	o.	p.	q.	r.	s.	t.	u.	v.	w.	x.	y.
		3.1.1	Project Schedule				x							x										
		3.1.2	Weekly Schedule Updates						x					x										
		3.7.1	Requests for Time Extensions									x	x											

SUBMITTAL REGISTER
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REMEDIAL DESIGN FOR INTERIM REMOVAL ACTIONS
FORMER LAKE ONTARIO ORDNANCE WORKS
LEWISTON AND PORTER, NIAGARA COUNTY, NEW YORK

CONTRACTOR

SPECIFICATION SECTION
01440

TRANS-MITTAL NO.	ITEM NO.	SPECIFICATION PARAGRAPH NO.	DESCRIPTION OF ITEM SUBMITTED	TYPE OF SUBMITTAL									CLASSI-FICATION			CONTRACTOR SCHEDULE DATES			CONTRACTOR ACTION			GOVERNMENT ACTION		REMARKS
				DATA	DRAWINGS	INSTRUCTIONS	SCHEDULES	STATEMENTS	REPORTS	CERTIFICATES	SAMPLES	RECORDS	INFO ONLY	GOV. APPROVED	REVIEWER	SUBMIT	APPROVAL NEEDED BY	MATERIAL NEEDED BY	CODE	DATE	SUBMIT TO GOVERN-MENT	CODE	DATE	
a.	b.	c.	d.	e.	f.	g.	h.	i.	j.	k.	l.	m.	n.	o.	p.	q.	r.	s.	t.	u.	v.	w.	x.	y.
		3.2.1	Contractor's Quality Control Plan	x										x										
		3.2.4	Notification of Changes					x						x										
		3.7.1	Testing Procedure					x						x										
		3.8.1	Punch List						x					x										
		3.9	Project Records										x	x										
		3.10	CQC Report • List of Outstanding Deficiencies • CQC Test Report List • Record of Prep. and Initial Inspections						x					x										

SUBMITTAL REGISTER
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CONTRACT NO.

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REMEDIAL DESIGN FOR INTERIM REMOVAL ACTIONS
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LEWISTON AND PORTER, NIAGARA COUNTY, NEW YORK

CONTRACTOR

SPECIFICATION SECTION
01500

TRANS-MITTAL NO. a.	ITEM NO. b.	SPECIFICATION PARAGRAPH NO. c.	DESCRIPTION OF ITEM SUBMITTED d.	TYPE OF SUBMITTAL: DATA e.	DRAWINGS f.	INSTRUCTIONS g.	SCHEDULES h.	STATEMENTS i.	REPORTS j.	CERTIFICATES k.	SAMPLES l.	RECORDS m.	CLASSIFICATION: INFO ONLY n.	GOV. APPROVED o.	REVIEWER p.	CONTRACTOR SCHEDULE DATES: SUBMIT q.	APPROVAL NEEDED BY r.	MATERIAL NEEDED BY s.	CONTRACTOR ACTION: CODE t.	DATE u.	SUBMIT TO GOVERN-MENT v.	GOVERNMENT ACTION: CODE w.	DATE x.	REMARKS y.
		1.1.1	Site Operations Plan • Temp. Facilities Plan • E&S Control Plan • Utility Hook-up Plan • Soil Backfill Grading Plan • Decontamination Facility Plan	x	x									x											
		1.2.2	Connections					x						x											
		1.11	Protection of Monitoring Wells					x						x											

SUBMITTAL REGISTER (ER 415-1-10)																								CONTRACT NO.
TITLE AND LOCATION REMEDIAL DESIGN FOR INTERIM REMOVAL ACTIONS FORMER LAKE ONTARIO ORDNANCE WORKS LEWISTON AND PORTER, NIAGARA COUNTY, NEW YORK														CONTRACTOR										SPECIFICATION SECTION 01561
				TYPE OF SUBMITTAL									CLASSI-FICATION			CONTRACTOR SCHEDULE DATES			CONTRACTOR ACTION			GOVERNMENT ACTION			
TRANS-MITTAL NO.	ITEM NO.	SPECIFICATION PARAGRAPH NO.	DESCRIPTION OF ITEM SUBMITTED	DATA	DRAWINGS	INSTRUCTIONS	SCHEDULES	STATEMENTS	REPORTS	CERTIFICATES	SAMPLES	RECORDS	INFO ONLY	GOV. APPROVED	REVIEWER	SUBMIT	APPROVAL NEEDED BY	MATERIAL NEEDED BY	CODE	DATE	SUBMIT TO GOVERN-MENT	CODE	DATE	REMARKS
a.	b.	c.	d.	e.	f.	g.	h.	i.	j.	k.	l.	m.	n.	o.	p.	q.	r.	s.	t.	u.	v.	w.	x.	y.
		6	Erosion & Sed. Control Plan (Part of Oper. Plan—see Section 01500)	x	x									x										

SUBMITTAL REGISTER
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CONTRACT NO.

TITLE AND LOCATION
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FORMER LAKE ONTARIO ORDNANCE WORKS
LEWISTON AND PORTER, NIAGARA COUNTY, NEW YORK

CONTRACTOR

SPECIFICATION SECTION
02080

TRANSMITTAL NO. a.	ITEM NO. b.	SPECIFICATION PARAGRAPH NO. c.	DESCRIPTION OF ITEM SUBMITTED d.	TYPE OF SUBMITTAL: DATA e.	DRAWINGS f.	INSTRUCTIONS g.	SCHEDULES h.	STATEMENTS i.	REPORTS j.	CERTIFICATES k.	SAMPLES l.	RECORDS m.	CLASSIFICATION: INFO ONLY n.	GOV. APPROVED o.	REVIEWER p.	CONTRACTOR SCHEDULE DATES: SUBMIT q.	APPROVAL NEEDED BY r.	MATERIAL NEEDED BY s.	CONTRACTOR ACTION: CODE t.	DATE u.	SUBMIT TO GOVERNMENT v.	GOVERNMENT ACTION: CODE w.	DATE x.	REMARKS y.
		1.11	Materials and Equipment	x										x										
		1.11	Safety and Occupation Health					x						x										
		1.11	Accident Prevention Plan (APP)	x										x										
		1.11	Negative Exposure Assessment	x										x										
		1.11	Asbestos Hazard Abatement Plan	x										x										
		1.11	Site Layout		x									x										
		1.11	Qualifications and Organization					x						x										
		1.11	Landfill and Transporter					x						x										
		1.11	Employee Training & Certification					x		x				x										
		1.11	Certification of Medical					x		x				x										
		1.11	Field Tests						x				x											
		1.11	Air Sampling Results						x					x										
		1.11	Pressure Differential Recordings						x				x											
		1.11	Notifications					x						x										
		1.11	Certifications—Vacuum, Filtration							x			x											
		1.11	Respirator Program									x		x										
		1.11	Asbestos Waste Shipment									x		x										

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(ER 415-1-10)

CONTRACT NO.

TITLE AND LOCATION
REMEDIAL DESIGN FOR INTERIM REMOVAL ACTIONS
FORMER LAKE ONTARIO ORDNANCE WORKS
LEWISTON AND PORTER, NIAGARA COUNTY, NEW YORK

CONTRACTOR

SPECIFICATION SECTION
02120

TRANS-MITTAL NO. a.	ITEM NO. b.	SPECIFICATION PARAGRAPH NO. c.	DESCRIPTION OF ITEM SUBMITTED d.	TYPE OF SUBMITTAL: DATA e.	DRAWINGS f.	INSTRUCTIONS g.	SCHEDULES h.	STATEMENTS i.	REPORTS j.	CERTIFICATES k.	SAMPLES l.	RECORDS m.	CLASSIFICATION: INFO ONLY n.	GOV. APPROVED o.	REVIEWER p.	CONTRACTOR SCHEDULE DATES: SUBMIT q.	APPROVAL NEEDED BY r.	MATERIAL NEEDED BY s.	CONTRACTOR ACTION: CODE t.	DATE u.	SUBMIT TO GOVERN-MENT v.	GOVERNMENT ACTION: CODE w.	DATE x.	REMARKS y.
		1.2	Off-Site/On-Site Hazardous Waste Management	x										x										
		1.2	Off-Site/On-Site Non-Hazardous Waste Management	x										x										
		1.2	Recordkeeping						x					x										
		1.2	Spill Response						x				x											
		1.2	Exception Reports						x					x										
		1.2	Qualifications							x			x											
		1.2	Off-Site Policy Compliance Certification							x			x											
		1.2	Certificates of Disposal							x			x											
		1.2	Packagings Certification							x				x										
		1.2	Notices of Non-Compliance and Violation									x	x											

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TITLE AND LOCATION REMEDIAL DESIGN FOR INTERIM REMOVAL ACTIONS FORMER LAKE ONTARIO ORDNANCE WORKS LEWISTON AND PORTER, NIAGARA COUNTY, NEW YORK													CONTRACTOR										SPECIFICATION SECTION 02143
				TYPE OF SUBMITTAL									CLASSI-FICATION			CONTRACTOR SCHEDULE DATES			CONTRACTOR ACTION			GOVERNMENT ACTION		
TRANS-MITTAL NO.	ITEM NO.	SPECIFICATION PARAGRAPH NO.	DESCRIPTION OF ITEM SUBMITTED	DATA	DRAWINGS	INSTRUCTIONS	SCHEDULES	STATEMENTS	REPORTS	CERTIFICATES	SAMPLES	RECORDS	INFO ONLY	GOV. APPROVED	REVIEWER	SUBMIT	APPROVAL NEEDED BY	MATERIAL NEEDED BY	CODE	DATE	SUBMIT TO GOVERN-MENT	CODE	DATE	REMARKS
a.	b.	c.	d.	e.	f.	g.	h.	i.	j.	k.	l.	m.	n.	o.	p.	q.	r.	s.	t.	u.	v.	w.	x.	y.
		3.1.3	Decontamination Facility Plan	x	x									x										

SUBMITTAL REGISTER
(ER 415-1-10)

CONTRACT NO.

TITLE AND LOCATION
REMEDIAL DESIGN FOR INTERIM REMOVAL ACTIONS
FORMER LAKE ONTARIO ORDNANCE WORKS
LEWISTON AND PORTER, NIAGARA COUNTY, NEW YORK

CONTRACTOR

SPECIFICATION SECTION
02210

TRANS-MITTAL NO. a.	ITEM NO. b.	SPECIFICATION PARAGRAPH NO. c.	DESCRIPTION OF ITEM SUBMITTED d.	TYPE OF SUBMITTAL: DATA e.	DRAWINGS f.	INSTRUCTIONS g.	SCHEDULES h.	STATEMENTS i.	REPORTS j.	CERTIFICATES k.	SAMPLES l.	RECORDS m.	CLASSIFICATION: INFO ONLY n.	CLASSIFICATION: GOV. APPROVED o.	REVIEWER p.	CONTRACTOR SCHEDULE DATES: SUBMIT q.	APPROVAL NEEDED BY r.	MATERIAL NEEDED BY s.	CONTRACTOR ACTION: CODE t.	CONTRACTOR ACTION: DATE u.	SUBMIT TO GOVERN-MENT v.	GOVERNMENT ACTION: CODE w.	GOVERNMENT ACTION: DATE x.	REMARKS y.
		1.4.1	Backfilling Grading Plan	X										X										
		1.4.2	Field Testing Control					X						X										
		1.4.3	Field Testing Control						X					X										
		1.4.3	Satisfactory Materials						X					X										

SUBMITTAL REGISTER (ER 415-1-10)																								CONTRACT NO.
TITLE AND LOCATION REMEDIAL DESIGN FOR INTERIM REMOVAL ACTIONS FORMER LAKE ONTARIO ORDNANCE WORKS LEWISTON AND PORTER, NIAGARA COUNTY, NEW YORK													CONTRACTOR										SPECIFICATION SECTION 02241
				TYPE OF SUBMITTAL									CLASSI-FICATION			CONTRACTOR SCHEDULE DATES			CONTRACTOR ACTION			GOVERNMENT ACTION			
TRANS-MITTAL NO.	ITEM NO.	SPECIFICATION PARAGRAPH NO.	DESCRIPTION OF ITEM SUBMITTED	DATA	DRAWINGS	INSTRUCTIONS	SCHEDULES	STATEMENTS	REPORTS	CERTIFICATES	SAMPLES	RECORDS	INFO ONLY	GOV. APPROVED	REVIEWER	SUBMIT	APPROVAL NEEDED BY	MATERIAL NEEDED BY	CODE	DATE	SUBMIT TO GOVERN-MENT	CODE	DATE	REMARKS
a.	b.	c.	d.	e.	f.	g.	h.	i.	j.	k.	l.	m.	n.	o.	p.	q.	r.	s.	t	u.	v.	w.	x.	y.
		1.5	Plant, Equipment, Machines and Tools	x									x											
		1.5	Sampling and Testing						x					x											
		1.5	Field Density						x					x											
		1.5	Waybills and Delivery Tickets									x	x												
		1.5	Coarse Aggregate									x	x												

SUBMITTAL REGISTER
(ER 415-1-10)

CONTRACT NO.

TITLE AND LOCATION
REMEDIAL DESIGN FOR INTERIM REMOVAL ACTIONS
FORMER LAKE ONTARIO ORDNANCE WORKS
LEWISTON AND PORTER, NIAGARA COUNTY, NEW YORK

CONTRACTOR

SPECIFICATION SECTION
02271

				TYPE OF SUBMITTAL									CLASSIFICATION			CONTRACTOR SCHEDULE DATES			CONTRACTOR ACTION			GOVERNMENT ACTION		
TRANSMITTAL NO.	ITEM NO.	SPECIFICATION PARAGRAPH NO.	DESCRIPTION OF ITEM SUBMITTED	DATA	DRAWINGS	INSTRUCTIONS	SCHEDULES	STATEMENTS	REPORTS	CERTIFICATES	SAMPLES	RECORDS	INFO ONLY	GOV. APPROVED	REVIEWER	SUBMIT	APPROVAL NEEDED BY	MATERIAL NEEDED BY	CODE	DATE	SUBMIT TO GOVERNMENT	CODE	DATE	REMARKS
a.	b.	c.	d.	e.	f.	g	h.	i.	j.	k.	l.	m.	n.	o.	p.	q.	r.	s.	t.	u.	v.	w.	x.	y.
		1.5.1	Sheet Material, Data Sheets & Quality Control Certificates	x									x											
		1.5.2	Manufacturing, Sampling and Testing/Manufacturer's QC Manual			x							x											
		1.5.3	Installer's Quality Control Manual			x							x											
		1.5.4	Warranty for Geomembrane Workmanship							x			x											
		1.5.5	Surface Preparation Acceptance							x			x											

SUBMITTAL REGISTER (ER 415-1-10)																								CONTRACT NO.
TITLE AND LOCATION REMEDIAL DESIGN FOR INTERIM REMOVAL ACTIONS FORMER LAKE ONTARIO ORDNANCE WORKS LEWISTON AND PORTER, NIAGARA COUNTY, NEW YORK														CONTRACTOR										SPECIFICATION SECTION 02272
				TYPE OF SUBMITTAL									CLASSI-FICATION			CONTRACTOR SCHEDULE DATES			CONTRACTOR ACTION			GOVERNMENT ACTION			
TRANS-MITTAL NO.	ITEM NO.	SPECIFICATION PARAGRAPH NO.	DESCRIPTION OF ITEM SUBMITTED	DATA	DRAWINGS	INSTRUCTIONS	SCHEDULES	STATEMENTS	REPORTS	CERTIFICATES	SAMPLES	RECORDS	INFO ONLY	GOV. APPROVED	REVIEWER	SUBMIT	APPROVAL NEEDED BY	MATERIAL NEEDED BY	CODE	DATE	SUBMIT TO GOVERN-MENT	CODE	DATE	REMARKS
a.	b.	c.	d.	e.	f.	g.	h.	i.	j.	k.	l.	m.	n.	o.	p.	q.	r.	s.	t.	u.	v.	w.	x.	y.
		1.5	Manufacturing, Sampling and Testing/Manufacturer's QC Manual			x							x											
		1.5	Manufacturer's Certificate of Compliance							x			x											

SUBMITTAL REGISTER
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CONTRACT NO.

TITLE AND LOCATION
REMEDIAL DESIGN FOR INTERIM REMOVAL ACTIONS
FORMER LAKE ONTARIO ORDNANCE WORKS
LEWISTON AND PORTER, NIAGARA COUNTY, NEW YORK

CONTRACTOR

SPECIFICATION SECTION
02935

TRANS-MITTAL NO. a.	ITEM NO. b.	SPECIFICATION PARAGRAPH NO. c.	DESCRIPTION OF ITEM SUBMITTED d.	TYPE OF SUBMITTAL: DATA e.	DRAWINGS f.	INSTRUCTIONS g.	SCHEDULES h.	STATEMENTS i.	REPORTS j.	CERTIFICATES k.	SAMPLES l.	RECORDS m.	CLASSIFICATION: INFO ONLY n.	GOV. APPROVED o.	REVIEWER p.	CONTRACTOR SCHEDULE DATES: SUBMIT q.	APPROVAL NEEDED BY r.	MATERIAL NEEDED BY s.	CONTRACTOR ACTION: CODE t.	DATE u.	SUBMIT TO GOVERN-MENT v.	GOVERNMENT ACTION: CODE w.	DATE x.	REMARKS y.
		1.2	Manufacturer's Literature	x									x											
		1.2	Equipment List				x						x											
		1.2	Delivery Schedule							x			x											
		1.2	Seed—Certificate of Compliance							x			x											
		1.2	Fertilizer—Certificate of Compliance							x			x											
		1.2	Agricultural Limestone—Certificate of Compliance							x			x											
		1.2	Topsoil—Certificate of Compliance							x			x											

TRANSMITTAL OF SHOP DRAWINGS, EQUIPMENT DATA, MATERIAL SAMPLES, OR MANUFACTURER'S CERTIFICATES OF COMPLIANCE

(Read Instructions on the reverse side prior to initiating this form)

DATE

TRANSMITTAL NO

SECTION I - REQUEST FOR APPROVAL OF THE FOLLOWING ITEMS *(This section will be initiated by the contractor)*

O.	FROM:	CONTRACT NO.	CHECK ONE: ☐ THIS IS A NEW TRANSMITTAL ☐ THIS IS A RESUBMITTAL OF TRANSMITTAL _____
PECIFICATION SEC. NO. (Cover only one section with each ansmittal)	PROJECT TITLE AND LOCATION		

ITEM NO. a	DESCRIPTION OF ITEM SUBMITTED *(Type size, model number/etc.)* b.	MFG OR CONTR. CAT., CURVE DRAWING OR BROCHURE NO. *(See instruction no. 8)* c.	NO. OF COPIES d.	CONTRACT REFERENCE DOCUMENT		FOR CONTRACTOR USE CODE g.	VARIATION *(See instruction No. 6)* h.	FOR CE USE CODE i.
				SPEC. PARA. NO. e.	DRAWING SHEET NO. f.			

EMARKS

I certify that the above submitted items have been reviewed in detail and are correct and in strict conformance with the contract drawings and specifications except as other wise stated.

_____

NAME AND SIGNATURE OF CONTRACTOR

SECTION II - APPROVAL ACTION

ICLOSURES RETURNED (List by Item No.)	NAME, TITLE AND SIGNATURE OF APPROVING AUTHORITY	DATE

INSTRUCTIONS

1. Section I will be initiated by the Contractor in the required number of copies.

2. Each transmittal shall be numbered consecutively in the space provided for "Transmittal No.". This number, in addition to the contract number, will form a serial number for identifying each submittal. For new submittals or resubmittals mark the appropriate box; on resubmittals, insert transmittal number of last submission as well as the new submittal number.

3. The "Item No." will be the same "Item No." as indicated on ENG FORM 4288 for each entry on this form.

4. Submittals requiring expeditious handling will be submitted on a separate form.

5. Separate transmittal form will be used for submittals under separate sections of the specifications.

6. A check shall be placed in the "Variation" column when a submittal is not in accordance with the plans and specifications--also, a written statement to that effect shall be included in the space provided for "Remarks".

7. Form is self-transmittal, letter of transmittal is not required.

8. When a sample of material or Manufacturer's Certificate of Compliance is transmitted, indicate "Sample" or "Certificate" in column c, Section I.

9. U.S. Army Corps of Engineers approving authority will assign action codes as indicated below in space provided in Section I, column i to each item submitted. In addition they will ensure enclosures are indicated and attached to the form prior to return to the contractor. The Contractor will assign action codes as indicated below in Section I, column g, to each item submitted.

THE FOLLOWING ACTION CODES ARE GIVEN TO ITEMS SUBMITTED

A -- Approved as submitted

B -- Approved, except as noted on drawings.

C -- Approved, except as noted on drawings. Refer to attached sheet resubmission required.

D -- Will be returned by separate correspondence.

E -- Disapproved (See attached)

F -- Receipt acknowledged

FX -- Receipt acknowledged, does not comply as noted with contract requirements

G -- Other *(Specify)*

10. Approval of items does not relieve the contractor from complying with all the requirements of the contract plans and specifications.

SUPPLEMENTAL DISTRIBUTION SHEET LIST

(To Be Provided by the USACE Buffalo, NY District Office)

SECTION 01310

PROJECT SCHEDULE
12/94

PART 1 GENERAL

1.1 SUBMITTALS

Government approval is required for submittals with a "GA" designation; submittals having an "FIO" designation are for information only. The following shall be submitted in accordance with Section 01300, SUBMITTAL PROCEDURES:

SD-07 Schedules

Progress Schedule Bar Chart; GA. Preliminary Project Schedule; GA. Periodic Schedule Updates; GA.

Eight (8) copies of the schedules, as required.

SD-08 Statements

Schedule Reports; GA.

Eight (8) copies of the reports showing descriptions, dates, interdependencies, float, starts, finishes, durations, sequences, etc., as required.

1.2 QUALIFICATIONS

The Contractor shall designate an authorized representative who shall be responsible for the preparation of all required project schedule reports.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION

3.1 PROGRESS SCHEDULING AND REPORTING (JUN 1975)

The Contractor shall, within thirty days, or as otherwise determined by the Contracting Officer, after date of Notice to Proceed, submit for approval a practicable progress schedule showing the manner in which he intends to execute the work. NADB Form 1153 ("Physical Construction Progress Chart") or format as approved by the Contracting Officer will be furnished upon request for use in preparing this schedule. If a Contractor form is used, the information as required by the Contracting Officer shall be provided. Preparation and updating of the schedule shall be as follows.

3.1.1 Preparation

The progress schedule shall be prepared in the form of time-scaled bar chart graphically indicating the sequence proposed to accomplish each work activity or operation, and appropriate interdependencies between the various activities. The bar chart shall show the starting and completion dates of all activities on a linear horizontal time scale beginning with the dates of Notice to Proceed and indicating calendar days to completion. Each activity in the construction shall be represented by a bar. The arrangement

of bars shall be such that they flow from left to right. Each bar representing an activity shall be annotated to show the activity description, duration, and cost. The Contractor shall indicate on the bar chart the important work activities that are critical to the timely overall completion of the project. Key dates for important features or portions of work features are milestone dates and shall be so indicated on the chart. Based on this chart, the Contractor shall prepare an earnings-time curve ("S" Curve) showing the rate of progress in terms of money and percent completion. Schedule progress may not include the value of materials or equipment delivered to the job site, but not yet incorporated into the work. This schedule shall be the medium through which the timeliness of the Contractor's construction effort is appraised.

3.1.2 Updating

The Contractor shall update the schedule by entering actual progress thereon at weekly intervals. The status of activities completed or partially completed as of the end of each period shall be shown, as well as the percentage of work completed. In computing actual progress, the value of material and equipment on-site, but not incorporated into the work, may not be considered. When changes are authorized that result in contract time extensions, the Contractor shall submit a modified chart for approval by the Contracting Officer.

3.2 PERIODIC PROGRESS MEETINGS

Progress meetings to discuss payment shall include a weekly on-site meeting or other regular intervals mutually agreed to at the preconstruction conference. During this meeting, the Contractor will describe, on an activity-by-activity basis, all proposed revisions and adjustments to the project schedule required to reflect the current status of the project. The Contracting Officer will approve activity progress, proposed revisions, and adjustments as appropriate.

3.2.1 Meeting Attendance

The Contractor's Project Manager or Project Superintendent who is responsible for meeting schedule and overall contract requirements shall attend the regular progress meeting.

3.2.2 Update Submission Following Progress Meeting

A complete update of the project schedule containing all approved progress, revisions, and adjustments, based on the regular progress meeting, shall be submitted not later than 1 working day prior to the next weekly progress meeting.

3.2.3 Progress Meeting Contents

Update information, including Actual Start Dates, Actual Finish Dates, Remaining Durations, and Cost to Date shall be subject to the approval of the Contracting Officer. The Contractor shall address the following minimum set of items on an activity-by-activity basis, during each progress meeting.

3.2.3.1 Start and Finish Dates

The Actual Start and Actual Finish dates for each activity currently in-progress or completed activities.

3.2.3.2 Time Completion

The estimated Remaining Duration for each activity in-progress. Time-based progress calculations must be based on Remaining Duration for each activity.

3.2.3.3 Cost Completion

The earnings for each activity started. Payment shall be based on earnings for each in-progress or completed activity. Payment for individual activities shall not be made for work that contains quality defects. A portion of the overall project amount may be retained based on delays of activities.

3.2.3.4 Other Changes

Other changes required due to delays in completion of any activity or group of activities are those delays beyond the Contractor's control such as strikes and unusual weather. Also included are delays encountered due to submittals, Government activities, deliveries or work stoppage that makes re-planning the work necessary, and when the schedule does not represent the actual prosecution and progress of the work.

3.3 REQUESTS FOR TIME EXTENSIONS

In the event the Contractor requests an extension of the contract completion date, he shall furnish such justification, project schedule data, and supporting evidence as the Contracting Officer may deem necessary for a determination as to whether or not the Contractor is entitled to an extension of time under the provisions of the contract. Submission of proof of delay, based on revised activity logic, duration, and costs (updated to the specific date that the delay occurred), is obligatory to any approvals.

3.3.1 Justification of Delay

The project schedule must clearly display that the Contractor has used, in full, all the float time available for the work involved with this request. The Contracting Officer's determination as to the number of allowable days of contract extension shall be based on the project schedule updates in effect for the time period in question and other factual information. Actual delays that are found to be caused by the Contractor's own actions, which result in the extension of the schedule, shall not be a cause for a time extension to the contract completion date.

3.3.2 Submission Requirements

The Contractor shall submit a justification for each request for a change in the contract completion date of under two weeks based on the most recent schedule update at the time of the Notice to Proceed or constructive direction issued for the change. Such a request shall be in accordance with the requirements of other appropriate Contract Clauses and shall include, as a minimum:

a. A list of affected activities, with their associated project schedule activity number.

b. A brief explanation of the causes of the change.

c. An analysis of the overall impact of the changes proposed.

Activities impacted in each justification for change shall be identified.

3.3.3 Additional Submission Requirements

For any request for time extension for over 2 weeks, the Contracting Officer may request an interim update with revised activities for a specific change request.

3.4 DIRECTED CHANGES

If Notice to Proceed (NTP) is issued for changes prior to settlement of price and/or time, the Contractor shall submit proposed schedule revisions to the Contracting Officer within 2 weeks of the

NTP being issued. The proposed revisions to the schedule will be approved by the Contracting Officer prior to inclusion of those changes within the project schedule. If the Contractor fails to submit the proposed revisions, the Contracting Officer may furnish the Contractor suggested revisions to the project schedule. The Contractor shall include these revisions in the project schedule until the Contractor submits revisions, and final changes and impacts have been negotiated. If the Contractor has any objections to the revisions furnished by the Contracting Officer, then the Contractor shall advise the Contracting Officer within 2 weeks of receipt of the revisions. Regardless of the objections, the Contractor will continue to update their schedule with the Contracting Officer's revisions until a mutual agreement in the revisions may be made. If the Contractor fails to submit alternative revisions within 2 weeks of receipt of the Contracting Officer's proposed revisions, the Contractor will be deemed to have concurred with the Contracting Officer's proposed revisions. The proposed revisions will then be the basis for an equitable adjustment for performance of the work.

3.5 OWNERSHIP OF FLOAT

Float available in the schedule, at any time, shall not be considered for the exclusive use of either the Government or the Contractor.

-- End of Section --

LAKE ONTARIO ORDNANCE WORKS
LEWISTON AND PORTER, NY

SECTION 01440

CONTRACTOR QUALITY CONTROL
10/94

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM D 3740 (1994a) Minimum Requirements for Agencies Engaged in the Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction

ASTM E 329 (1993b) Agencies Engaged in the Testing and/or Inspection of Materials Used in Construction

1.2 PAYMENT

Separate payment will not be made for providing and maintaining an effective Quality Control program, and all costs associated therewith shall be included in the applicable unit prices or lump-sum prices contained in the Bidding Schedule.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION

3.1 GENERAL

The Contractor is responsible for quality control and shall establish and maintain an effective quality control system in compliance with the Contract Clause entitled "Inspection of Construction." The quality control system shall consist of plans, procedures, and organization necessary to produce an end product that complies with the contract requirements. The system shall cover all construction operations, both on-site and off-site, and shall be keyed to the proposed construction sequence. The project superintendent will be held responsible for the quality of work on the job and is subject to removal by the Contracting Officer for non-compliance with quality requirements specified in the contract. The project superintendent in this context shall mean the individual with the responsibility for the overall management of the project including quality and production.

3.2 QUALITY CONTROL PLAN

3.2.1 General

The Contractor shall furnish for review by the Government, not later than 30 days after receipt of Notice to Proceed, the Contractor Quality Control (CQC) Plan proposed to implement the requirements of the Contract Clause entitled "Inspection of Construction." The plan shall identify personnel, procedures, control, instructions, test, records, and forms to be used. The Government will consider an interim plan for the first 7 days of operation. Construction will be permitted to begin only after acceptance of the CQC Plan or acceptance of an interim plan applicable to the particular feature of

work to be started. Work outside the features of work included in an accepted interim plan will not be permitted to begin until acceptance of a CQC Plan or another interim plan containing the additional features of work to be started.

3.2.2 Content of the CQC Plan

The CQC Plan shall include, as a minimum, the following to cover all construction operations, both on-site and off-site, including work by subcontractors, fabricators, suppliers, and purchasing agents:

a. A description of the quality control organization, including a chart showing lines of authority and acknowledgment that the CQC staff shall implement the three phase control system for all aspects of the work specified. The staff shall include a CQC System Manager who shall report to the project superintendent.

b. The name, qualifications (in resume format), duties, responsibilities, and authorities of each person assigned a CQC function.

c. A copy of the letter to the CQC System Manager signed by an authorized official of the firm that describes the responsibilities and delegates sufficient authorities to adequately perform the functions of the CQC System Manager, including authority to stop work which is not in compliance with the contract. The CQC System Manager shall issue letters of direction to all other various quality control representatives outlining duties, authorities, and responsibilities. Copies of these letters will also be furnished to the Government.

d. Procedures for scheduling, reviewing, certifying, and managing submittals, including those of subcontractors, analytical laboratories, off-site fabricators, suppliers, and purchasing agents. These procedures shall be in accordance with Section 01300, SUBMITTAL PROCEDURES.

e. Control, verification, and acceptance of laboratory testing procedures for each specific test to include the test name, specification paragraph requiring test, feature of work to be tested, test frequency, and person responsible for each test. (Laboratory facilities will be approved by the Contracting Officer.)

f. Procedures for tracking preparatory, initial, and follow-up control phases, and control, verification, and acceptance tests including documentation.

g. Procedures for tracking construction deficiencies from identification through acceptable corrective action. These procedures will establish verification that identified deficiencies have been corrected.

h. Reporting procedures, including proposed reporting formats.

i. A list of the definable features of work. A definable feature of work is a task that is separate and distinct from other tasks and has separate control requirements. It could be identified by different trades or disciplines, or it could be work by the same trade in a different environment. Although each section of the specifications may generally be considered as a definable feature of work, there are frequently more than one definable feature under a particular section. This list will be agreed upon during the coordination meeting.

3.2.3 Acceptance of Plan

Acceptance of the Contractor's plan is required prior to the start of construction. Acceptance is conditional and will be predicated on satisfactory performance during the construction. The Government reserves the right to require the Contractor to make changes in his CQC Plan and operations including removal of personnel, as necessary, to obtain the quality specified.

3.2.4 Notification of Changes

After acceptance of the CQC Plan, the Contractor shall notify the Contracting Officer in writing of any proposed change. Proposed changes are subject to acceptance by the Contracting Officer.

3.3 COORDINATION MEETING

After the Preconstruction Conference, before start of construction, and prior to acceptance by the Government of the CQC Plan, the Contractor shall meet with the Contracting Officer or authorized representative and discuss the Contractor's quality control system. The CQC Plan shall be submitted for review a minimum of 14 calendar days prior to the Coordination Meeting. During the meeting, a mutual understanding of the system details shall be developed, including the forms for recording the CQC operations, control activities, testing, administration of the system for both on-site and off-site work, and the interrelationship of Contractor's Management and control with the Government's Quality Assurance. Minutes of the meeting shall be prepared by the Government and signed by both the Contractor and the Contracting Officer. The minutes shall become a part of the contract file. There may be occasions when subsequent conferences will be called by either party to reconfirm mutual understandings and/or address deficiencies in the CQC system or procedures that may require corrective action by the Contractor.

3.4 QUALITY CONTROL ORGANIZATION

3.4.1 General

The requirements for the CQC organization are a CQC System Manager and sufficient number of additional qualified personnel to ensure contract compliance. The Contractor shall provide a CQC organization, which shall be at the site at all times during progress of the work and with complete authority to take any action necessary to ensure compliance with the contract. All CQC staff members shall be subject to acceptance by the Contracting Officer.

3.4.2 CQC System Manager

The Contractor shall identify as CQC System Manager an individual within his organization at the site of the work who shall be responsible for overall management of CQC and have the authority to act in all CQC matters for the Contractor. The CQC System Manager shall be a degreed engineer or scientist, or a graduate of construction management, with a minimum of 3 years construction experience on construction similar to this contract. The CQC System Manager may also be a construction person with a minimum of 5 years in related work. This CQC System Manager shall be on the site at all times during construction and will be employed by the prime Contractor. The CQC System Manager shall be assigned as System Manager, but may have other duties including project superintendent in addition to quality control. An alternate for the CQC System Manager will be identified in the plan to serve in the event of the System Manager's absence. The requirements for the alternate will be the same as for the designated CQC System Manager.

3.4.3 CQC Personnel

Experience Matrix

a. Soils, Backfill Material, and Topsoil	Technician with 2 years of experience for the appropriate area (soil compaction, soil material properties, topsoil requirements)

3.4.4 Additional Requirements

QC requirements for asbestos removal activities are specified in Section 02080, ASBESTOS ABATEMENT.

3.4.5 Organizational Changes

The Contractor shall maintain his CQC staff at full strength at all times. When it is necessary to make changes to the CQC staff, the Contractor shall revise the CQC Plan to reflect the changes and submit the changes to the Contracting Officer for acceptance.

3.5 SUBMITTALS

Submittals shall be made as specified in Section 01300, SUBMITTAL PROCEDURES. The CQC organization shall be responsible for certifying that all submittals are in compliance with the contract requirements.

3.6 CONTROL

Contractor quality control is the means by which the Contractor ensures that the construction, to include that of subcontractors and suppliers, complies with the requirements of the contract. At least three phases of control shall be conducted by the CQC System Manager for each definable feature of work as follows.

3.6.1 Preparatory Phase

This phase shall be performed prior to beginning work on each definable feature of work, after all required plans/documents/materials are approved/accepted, and after copies are at the work site. This phase shall include:

a. A review of each paragraph of applicable specifications.

b. A review of the contract drawings.

c. A check to ensure that all materials and/or equipment have been tested, submitted, and approved.

d. Review of provisions that have been made to provide required control inspection and testing.

e. Examination of the work area to ensure that all required preliminary work has been completed and is in compliance with the contract.

f. A physical examination of required materials, equipment, and sample work to ensure that they are on hand, conform to approved shop drawings or submitted data, and are properly stored.

g. A review of the appropriate activity hazard analysis to ensure safety requirements are met.

h. Discussion of procedures for controlling quality of the work including repetitive deficiencies. Document construction tolerances and workmanship standards for that feature of work.

i. A check to ensure that the portion of the plan for the work to be performed has been accepted by the Contracting Officer.

j. Discussion of the initial control phase.

k. The Government shall be notified at least 48 hours in advance of beginning the preparatory control phase. This phase shall include a meeting conducted by the CQC System Manager and attended by the superintendent, other CQC personnel (as applicable), and the foreman responsible for the definable feature. The results of the preparatory phase actions shall be documented by separate minutes prepared by the CQC System Manager and attached to the

daily CQC report. The Contractor shall instruct applicable workers as to the acceptable level of workmanship required in order to meet contract specifications.

3.6.2 Initial Phase

This phase shall be accomplished at the beginning of a definable feature of work. The following shall be accomplished:

a. A check of work to ensure that it is in full compliance with contract requirements. Review minutes of the preparatory meeting.

b. Verify adequacy of controls to ensure full contract compliance. Verify required control inspection and testing.

c. Establish level of workmanship and verify that it meets minimum acceptable workmanship standards. Compare with required sample panels as appropriate.

d. Resolve all differences.

e. Check safety to include compliance with and upgrading of the safety plan and activity hazard analysis. Review the activity analysis with each worker.

f. The Government shall be notified at least 48 hours in advance of beginning the initial phase. Separate minutes of this phase shall be prepared by the CQC System Manager and attached to the daily CQC report. Exact location of initial phase shall be indicated for future reference and comparison with follow-up phases.

g. The initial phase should be repeated for each new crew to work on-site, or any time acceptable specified quality standards are not being met.

3.6.3 Follow-up Phase

Daily checks shall be performed to ensure control activities, including control testing, are providing continued compliance with contract requirements, until completion of the particular feature of work. The checks shall be made a matter of record in the CQC documentation. Final follow-up checks shall be conducted and all deficiencies corrected prior to the start of additional features of work that may be affected by the deficient work. The Contractor shall not build upon or conceal non-conforming work.

3.6.4 Additional Preparatory and Initial Phases

Additional preparatory and initial phases shall be conducted on the same definable features of work if the quality of on-going work is unacceptable; if there are changes in the applicable CQC staff, on-site production supervision, or work crew; if work on a definable feature is resumed after a substantial period of inactivity; or if other problems develop.

3.6.5 Definable Feature of Work: Definition and Discussion

A Definable Feature of Work (DFW) is a portion of work consisting of materials, equipment, supplies, and procedures that are closely related to each other, have the same control, and will be accomplished by the same work crew to completion. A DFW must be sufficiently small so that control of the work (i.e., communication of requirements to workers, inspection of materials and workmanship, and correction of deficiencies) will be easily accomplished. Some examples are:

- Setting up of decontamination area, exclusion zones, and standard safety procedures for asbestos removal.

- Asbestos removal and disposal procedures.
- Chemical Data Acquisition.
- Preparation, removal, and disposal of contaminated material.
- Disposal.

3.7 TESTS

3.7.1 Testing Procedure

The Contractor shall perform specified or required tests to verify that control measures are adequate to provide a product which conforms to contract requirements. Upon request, the Contractor shall furnish to the Government duplicate samples of test specimens for possible testing by the Government. Testing includes operation and/or acceptance tests when specified. The Contractor shall procure the services of a Corps of Engineers approved testing laboratory or establish an approved testing laboratory at the project site. The Contractor shall perform the following activities, and record and provide the following data:

a. Verify that testing procedures comply with contract requirements, the requirement of the disposal facility, and with applicable Federal and state regulations.

b. Verify that facilities and testing equipment are available and comply with testing standards.

c. Check test instrument calibration data against certified standards.

d. Verify that recording forms and test identification control number system, including all of the test documentation requirements, have been prepared.

e. Results of all tests taken, both passing and failing tests, will be recorded on the CQC report for the date taken. Specification paragraph reference, location where tests were taken, and the sequential control number identifying the test will be given. If approved by the Contracting Officer, actual test reports may be submitted later with a reference to the test number and date taken. An information copy of tests performed by an off-site or commercial test facility will be provided directly to the Contracting Officer. Failure to submit timely test reports as stated may result in nonpayment for related work performed and disapproval of the test facility for this contract.

3.7.2 Testing Laboratories

3.7.2.1 Capability Check

The Government reserves the right to check laboratory equipment in the proposed laboratory for compliance with the standards set forth in the contract specifications and to check the laboratory technician's testing procedures and techniques. Laboratories utilized for testing soils, concrete, asphalt, and steel shall meet criteria detailed in ASTM D 3740 and ASTM E 329.

3.7.2.2 Capability Recheck

If the selected laboratory fails the capability check, the Contractor will be assessed a charge of $1,500 to reimburse the Government for each succeeding recheck of the laboratory or the checking of a subsequently selected laboratory. Such costs will be deducted from the contract amount due the Contractor.

3.7.3 On-Site Laboratory

The Government reserves the right to utilize the Contractor's control testing laboratory and equipment to make assurance tests and to check the Contractor's testing procedures, techniques, and test results at no additional cost to the Government.

3.7.4 Furnishing or Transportation of Samples for Testing

Costs incidental to the transportation of samples or materials will be borne by the Contractor. Samples of materials for test verification and acceptance testing by the Government shall be delivered to the Corps of Engineers Division Laboratory, f.o.b., at the following address:

For delivery by mail: [____]

For other deliveries: [____]

Coordination for each specific test, exact delivery location, and dates will be made through the Area Office.

3.8 COMPLETION INSPECTION

3.8.1 Punch-List Inspection

Near the completion of all work or any increment thereof established by a completion time stated in the Special Clause entitled "Commencement, Prosecution, and Completion of Work," or stated elsewhere in the specifications, the CQC System Manager shall conduct an inspection of the work and develop a "punch list" of items that do not conform to the approved drawings and specifications. Such a list of deficiencies shall be included in the CQC documentation, as required by Paragraph 3.9 DOCUMENTATION, and shall include the estimated date by which the deficiencies will be corrected. The CQC System Manager or staff shall make a second inspection to ascertain that all deficiencies have been corrected. Once this is accomplished, the Contractor shall notify the Government that the facility is ready for the Government "Pre-Final" inspection.

3.8.2 Pre-Final Inspection

The Government will perform this inspection to verify that all waste generated during the IRA has been removed and properly transported for disposal, staging areas verified cleaned, confirmation that sampling results have been properly reported, and stockpile/staging areas and remediated areas have been restored to final grades and a vegetated cover or other designated cover has been established/installed in accordance with the specifications/drawings. A Government "Pre-Final Punch List" may be developed as a result of this inspection. The Contractor's CQC System Manager shall ensure that all items on this list have been corrected and so notify the Government so that a "Final" inspection with the customer can be scheduled. Any items noted on the "Pre-Final" inspection shall be corrected in a timely manner. These inspections and any deficiency corrections required by this paragraph will be accomplished within the time slated for completion of the entire work or any particular increment thereof if the project is divided into increments by separate completion dates.

3.8.3 Final Acceptance Inspection

The Contractor's quality control inspection personnel, his superintendent or other primary management person and the Contracting Officer's Representative will be in attendance at this inspection. Additional Government personnel including, but not limited to, those from Property Owners and NYSDEC may also be in attendance. The final acceptance inspection will be formally scheduled by the Contracting Officer based on results of the Pre-Final inspection. Notice will be given to the Contracting Officer at least 14 days prior to the final acceptance inspection and must include the Contractor's assurance that

all specific items previously identified to the Contractor as being unacceptable, along with all remaining work performed under the contract, will be complete and acceptable by the date scheduled for the final acceptance inspection. Failure of the Contractor to have all contract work acceptably complete for this inspection will be cause for the Contracting Officer to bill the Contractor for the Government's additional inspection cost in accordance with the contract clause entitled "Inspection of Construction."

3.9 DOCUMENTATION

The Contractor shall maintain current records providing factual evidence that required quality control activities and/or tests have been performed. These records shall include the work of subcontractors and suppliers, and shall be on an acceptable form that includes, as a minimum, the following information:

a. Contractor/subcontractor and their area of responsibility.

b. Operating plant/equipment with hours worked, idle, or down for repair.

c. Work performed each day, giving location, description, and by whom.

d. Test and/or control activities performed with results and references to specifications/drawings requirements. The control phase should be identified (Preparatory, Initial, Follow-up). List deficiencies noted along with corrective action.

e. Quantity of materials received at the site with statement as to acceptability, storage, and reference to specifications/drawings requirements.

f. Submittals reviewed, with contract reference, by whom, and action taken.

g. Off-site surveillance activities, including actions taken.

h. Job safety evaluations stating what was checked, results, and instructions or corrective actions.

i. Instructions given/received and conflicts in plans and/or specifications.

j. Contractor's verification statement.

These records shall indicate a description of trades working on the project, the number of personnel working, weather conditions encountered, and any delays encountered. These records shall cover both conforming and deficient features, and shall include a statement that equipment and materials incorporated in the work and workmanship comply with the contract. The original and one copy of these records in report form shall be furnished to the Government daily within 16 hours after the date(s) covered by the report, except that reports need not be submitted for days on which no work is performed. As a minimum, one report shall be prepared and submitted for every seven days of no work and on the last day of a no work period. All calendar days shall be accounted for throughout the life of the contract. The first report following a day of no work shall be for that day only. Reports shall be signed and dated by the CQC System Manager. The report from the CQC System Manager shall include copies of test reports and copies of reports prepared by all subordinate quality control personnel. All documentation is expected to be literate, legible, and complete.

3.10 SAMPLE FORMS

Sample forms to be used include the following:

a. The 2-page form at the end of the section will be used for the basic CQC report (Attachment 1). CQC personnel shall attach continuation sheets as required for any entries that cannot fit on the basic form. Preparatory and Initial Inspections, when performed, shall be indicated on

the basic CQC report and minutes for each inspection shall be attached. Minutes will consist of a list of specific requirements for materials, procedures, or equipment to be employed, and shall also include any understanding reached or items of special importance discussed.

b. In addition, outstanding deficiencies shall be listed on the form "List of Outstanding Deficiencies" (Attachment 2 at the end of this section) and shall be attached to each CQC report. As deficiencies are corrected, they are to be acknowledged on the basic CQC report and shall be deleted from the list.

c. Form at the end of this section entitled "CQC Test Report List" (Attachment 3) shall be used by the Contractor to track testing to be done as the project progresses, and also to summarize the Contractor's quality control testing to be reported on the CQC Plan.

d. Form "Record of Preparatory and Initial Inspections" (Attachment 4 at the end of this section) shall be used by the Contractor to track Preparatory and Initial Inspections as the project progresses and also to summarize these required inspections as part of the CQC Plan.

e. Additional reporting forms pertaining to specialized activities may be included herein or elsewhere in the contract, and shall be used for reporting as indicated.

3.11 NOTIFICATION OF NONCOMPLIANCE

The Contracting Officer will notify the Contractor of any detected noncompliance with the foregoing requirements. The Contractor shall take immediate corrective action after receipt of such notice. Such notice, when delivered to the Contractor at the work site, shall be deemed sufficient for the purpose of notification. If the Contractor fails or refuses to comply promptly, the Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No part of the time lost due to such stop orders shall be made the subject of claim for extension of time or for excess costs or damages by the Contractor. Deficiencies cited and verbal instructions given to the Contractor by the Government Representative shall be entered into that day's CQC report.

(Forms Follow)

-- End of Section --

ATTACHMENTS

ATTACHMENT 1 - CQC REPORT

ATTACHMENT 2 - LIST OF OUTSTANDING DEFICIENCIES

ATTACHMENT 3 - CQC TEST REPORT LIST

ATTACHMENT 4 - RECORD OF PREPARATORY AND INITIAL INSPECTION

1. Project Title: _____

Location: _____ Contract No.: _____

2. List Contractors and Subs Working This Day and Areas of Responsibility of each:

_____

_____

_____

3. Weather:

_____

4. Description and Location of Work of the Project
(Also Indicate Days of No Work and reasons for Delay)

_____

_____

_____

_____

_____

5. Labor and Equipment Breakdown by Trade (Attach Continuation)

_____

_____

_____

6. Follow-Up Inspections Performed, Results and Corrective Actions Taken:

_____

_____

_____

_____

_____

_____

_____

_____

_____

7. Job Safety. Indicate What Was Checked, Results, Instructions Received and corrective Actions:

8. Additional Activities and Remarks (Check Appropriate Box)

[ ] a. Prep or Initial Insp. Held. Attach Minutes.
[ ] b. Testing Performed. Attach Results.
[ ] c. Outstanding Deficiencies. See Attached List
[ ] d. Verbal Instructions Received.
[ ] e. Delivery of Equipment and Materials.
[ ] f. Submittal Actions.
[ ] g. Misc/Remarks.

Use Space Below To Discribe Checked Items

9. Contractor's Verification: "The above report and attachments are complete and all Supplies, Materials, Equipment and Workmanship incorporated into the work are in full compliance with the contract excepa as noted":

Signed_____ Date_____

CQC Representative

LIST OF OUTSTANDING DEFICIENCIES

SH_____ OF _____ DATE:_____

PROJECT TITLE:_____

CONTRACTOR:_____

LOCATION:_____

CQC REPORT#_____

CONTRACT #:_____

SPEC REF OR DWG#	LOCATION ON PROJECT	DESCRIPTION OF DEFICIENCY	DATE FOUND	DATE TO BE CORRECTED	DATE CORRECTED	REMARKS

NOTE: THIS FORM SHALL BE USED BY THE CONTRACTOR TO TRACK OUTSTANDING CONSTRUCTION DEFICIENCIES

CQC TEST REPORT LIST

CQC REPORT#_____ SH_____ OF _____ DATE:_____

CONTRACTOR:_____ CONTRACT #:_____

PROJECT TITLE:_____ LOCATION:_____

SPEC REF OR DWG#	TYPE OF TEST	DATE PERFORMED	RESULTS	REMARKS

NOTE: THIS FORM SHALL BE USED BY THE CONTRACTOR TO TRACK CQC TESTING.PROVIDE ATTACHMENTS AS REQUIRED.

RECORD OF PREPARATORY AND INITIAL INSPECTIONS

DATE OF INSP	TYPE OF INSP	DEFINABLE FEATURE OF WORK (DESCRIBE)	REPORT NOS		PERSONS ATTENDING INSP	WAS MATL&/OR EQUIPMENT PHYSICALLY INSPECTED ?
			QA	QC		

NAD FORM 826
22 JULY 86

NOTE:THIS FORM SHALL BE USED BY THE CONTRACTOR TO TRACK PREP/INIT INSP'S
ATTACH ADDITIONAL RESULTS OR COMMENTS AS REQUIRED

LAKE ONTARIO ORDNANCE WORKS
LEWISTON AND PORTER, NY

SECTION 01500

TEMPORARY CONSTRUCTION FACILITIES
09/93

PART 1 GENERAL

1.1 GENERAL REQUIREMENTS

1.1.1 Site Operations Plan

Thirty calendar days after Notice to Proceed and following the Preconstruction Conference, the Contractor shall deliver, in person or by independent carrier, 10 copies of the following as directed by the Contracting Officer with at least 1 copy each forwarded to NYSDEC and Somerset Properties:

1.1.1.1 Site Operations Plan, including:

a. Temporary Facilities Plan (Paragraph 1.5)
b. Erosion and Sedimentation Control Plan (Section 01561)
c. Utility Hookup Plan (Paragraph 1.2)
d. Soil Backfill Staging and Grading Plan (Section 02230 and Section 02227)
e. Decontamination Facilities Details (Section 02143)

1.1.1.2 The Contracting Officer will provide comments within 30 calendar days on the above Plans at the Preconstruction Plan Review Conference for incorporation by the Contractor. The Contractor shall submit the final plans with all comments incorporated to the Contracting Officer within 20 calendar days after the Preconstruction Plan Review Conference. The Contractor shall not begin with any work that is included under a required plan unless approval of the final plan has been given by the Contracting Officer. The Final Plan will become part of the Contract Documents.

1.1.2 Identification of Employees

The Contractor shall be responsible for furnishing to each employee and for requiring each employee engaged on the work to display identification as approved and directed by the Contracting Officer. The prescribed identification shall immediately be delivered to the Contracting Officer for cancellation upon release of any employee. When required, the Contractor shall obtain and provide fingerprints of persons employed on the project. Contractor and subcontractor personnel shall wear identifying markings on hard hats clearly identifying the company for whom the employee works. All Contractor's and their subcontractor's vehicles shall have company identification on both sides of the vehicle in large and clear print that can be read from several hundred feet.

1.1.3 Employee Parking

Contractor employees shall park privately owned vehicles in an area designated by the Contracting Officer and approved by the Property Owner. This area will be within reasonable walking distance of the construction site. Contractor employee parking shall not interfere with existing and established parking requirements of the Somerset Property.

1.2 AVAILABILITY AND USE OF UTILITY SERVICES

1.2.1 Payment for Utility Services

The Contractor shall provide all necessary electrical power of sufficient quantity to meet requirements of this project. The Contractor is responsible for the hook-up, metering, necessary connections, the electrical service itself, and any other costs associated with providing electrical service for the scope of work specified under this Contract. The Contractor shall coordinate all electrical hookups with the local utility company and Property Owner. Unless otherwise provided in the contract, the amount of each utility service consumed shall be charged to or paid for by the Contractor. The Contractor shall specify all utilities that will be required, necessary hookups, method of measurement of use, and payment method in his Utility Hook-up Plan. The Contractor shall also have the option to provide electrical power via a generator.

1.2.2 Meters and Temporary Connections

The Contractor, at its expense and in a manner satisfactory to the Contracting Officer and Property Owner, shall provide and maintain necessary temporary connections, distribution lines, and meters required to measure the amount of each utility used for the purpose of determining charges. The Contractor shall notify the Contracting Officer, in writing, 5 working days before final electrical connection is desired. The Contractor shall provide a meter and make the final hot connection after inspection and approval of the Contractor's temporary wiring installation by the Contracting Officer and the Property Owner.

1.2.3 Sanitation

The Contractor shall provide and maintain within the construction area minimum field-type sanitary facilities approved by the Contracting Officer. All sanitary facilities shall be of the chemical toilet type, unless otherwise approved by the Contracting Officer. These facilities shall be supplied by the Contractor. All sanitary wastes will be collected and removed from the site in an appropriate manner and in accordance with applicable state and local regulations, USACE Regulation EM 385-1-1, and OSHA Standard 29 CFR 1910.120. Property Owner toilet facilities will not be available to Contractor's personnel.

1.2.4 Telephone

The Contractor shall make the necessary arrangements with the local telephone company to install equipment and service to meet project requirements. The Contractor shall be responsible for all installation, service, and shutoff costs. At a minimum, one direct line shall be made available at the Contracting Officer's field office. The Contractor shall also have the option to provide cellular service.

1.2.5 Water Supply

The Contractor shall provide the necessary water supply of sufficient volume and pressure to satisfy the project requirements. The Contractor may coordinate the connection to the location water supply. The Contractor shall provide the necessary tapping equipment, fittings, and valves for connection to the local water supply. The Contractor shall be responsible for any cost associated with this activity. The Contractor shall properly abandon the system at the termination of the Contract as directed by the Contracting Officer.

1.3 BULLETIN BOARD, PROJECT SIGN, AND PROJECT SAFETY SIGN

1.3.1 Bulletin Board

Immediately upon beginning of work, the Contractor shall provide a weatherproof glass-covered bulletin board not less than 915 by 1,220 mm (36 by 48 inches) in size for displaying the Equal Employment Opportunity poster, a copy of the wage decision contained in the contract, Wage Rate Information poster, and other information approved by the Contracting Officer. The bulletin board shall be located at the project site in a conspicuous place easily accessible to all employees, as approved by the Contracting Officer. Legible copies of the aforementioned data shall be displayed until work is completed. Upon completion of work, the bulletin board shall be removed by and remain the property of the Contractor.

1.3.2 Project and Safety Signs

The requirements for the signs and their content shall conform to the requirements as shown in Attachments 1 and 2. The signs shall be erected at a location designated by the Contracting Officer within 15 days after receipt of the Notice to Proceed. The data required by the safety sign shall be corrected daily, with light colored metallic or non-metallic numerals. Upon completion of the project, the signs shall be removed from the site.

1.4 PROTECTION AND MAINTENANCE OF TRAFFIC

During construction, the Contractor shall provide access and temporary relocated roads as necessary to maintain traffic. The Contractor shall coordinate traffic of personnel vehicles, company vehicles, subcontractor's vehicles, waste haulers, and deliveries with the Property Owner. The Contractor shall maintain and protect traffic on all affected roads during the construction period except as otherwise specifically directed by the Contracting Officer. Measures for the protection and diversion of traffic, including the provision of watchmen and flagmen, erection of barricades, placing of lights around and in front of equipment and the work, and the erection and maintenance of adequate warning, danger, and direction signs, shall be as required by the Property Owner. The Contractor shall provide snow removal from all work areas as necessary. The traveling public shall be protected from damage to person and property. The Contractor's traffic on roads selected for hauling material to and from the site shall interfere as little as possible with the Property Owner's operations and off-site public traffic. The Contractor shall investigate the adequacy of existing roads and the allowable load limit on these roads. The Contractor shall be responsible for the repair of any damage to roads caused by construction operations.

1.4.1 Haul Roads

The Contractor shall, at its own expense, construct access and haul roads necessary for proper prosecution of the work under this contract. Haul roads shall be constructed with suitable grades and widths; sharp curves, blind corners, and dangerous cross traffic shall be avoided. The Contractor shall provide necessary lighting, signs, barricades, and distinctive markings for the safe movement of traffic. The method of dust control, although optional, shall be adequate to ensure safe operation at all times. Location, grade, width, and alignment of construction and hauling roads shall be subject to approval by the Contracting Officer and Property Owner. Lighting shall be adequate to ensure full and clear visibility for full width of haul road and work areas during any night work operations. Upon completion of the work, haul roads designated by the Contracting Officer shall be removed. The Contractor shall maintain all access and temporary access roads to provide positive drainage, dust control, mud control, and vehicle access. Any damage (e.g., washouts, excessive rutting) shall be promptly repaired by the Contractor. The use of existing paved and unpaved roads for waste hauling, soil borrow hauling, and other heavy load traffic shall be coordinated and approved by the Contracting Officer and Property Owner.

1.4.2 Barricades

The Contractor shall erect and maintain temporary barricades to limit public access to hazardous areas. Such barricades shall be required whenever safe public access to paved areas such as roads, parking areas, or sidewalks is prevented by construction activities or as otherwise necessary to ensure the safety of both pedestrian and vehicular traffic. Barricades shall be securely placed, clearly visible with adequate illumination to provide sufficient visual warning of the hazard during both day and night.

1.4.3 Replacement of Roadways

The Contractor shall replace as specified all roadways that are damaged as part of the remediation. The cost of roadway replacement shall be part of the bid item for the remediation of each area specified.

1.5 CONTRACTOR'S TEMPORARY FACILITIES

1.5.1 Administrative Field Offices

The Contractor shall provide and maintain administrative field office facilities within the construction area at the designated site. Government office and warehouse facilities will not be available to the Contractor's personnel. Temporary buildings, storage sheds, shops, offices, staging, and stockpile, etc., shall be erected by the Contractor only with the approval of the Contracting Officer and the Property Owner, and shall be built with labor and materials furnished by the Contractor without expense to the Government. The Contractor shall provide a plan as part of his Temporary Facilities Plan, showing the location of proposed field offices, waste staging and soil stockpile areas, and other temporary support structures. An approved location for the staging and/or stockpiling of materials is shown on the Drawings.

1.5.2 Storage Area

The Contractor shall provide as part of the Temporary Facilities Plan the location of proposed storage areas for equipment and materials.

1.5.3 Appearance of Trailers

Trailers utilized by the Contractor for administrative or material storage purposes shall present a clean and neat exterior appearance and shall be in a state of good repair. Trailers which, in the opinion of the Contracting Officer, require exterior painting or maintenance will not be allowed on the site.

1.5.4 Maintenance of Storage Area

Should the Contractor elect to traverse with construction equipment or other vehicles grassed or unpaved areas which are not established roadways, such areas shall be covered with a layer of gravel as necessary to prevent rutting and the tracking of mud onto paved or established roadways; gravel gradation shall be at the Contractor's discretion. Grass located within the boundaries of the office trailer and equipment/material storage areas shall be mowed for the duration of the project. Grass and vegetation along fences, buildings, under trailers, and in areas not accessible to mowers shall be edged or trimmed neatly.

1.5.5 New Building

In the event a new building is constructed for the temporary project field office, it shall be a minimum 3.6 meters (12 feet) in width, 4.9 meters (16 feet) in length and have a minimum of 2.1 meters (7 feet) headroom. It shall be equipped with approved electrical wiring, at least one double convenience outlet and the required switches and fuses to provide 110-120 volt power. It shall be provided with a work

table with stool, desk with chair, two additional chairs, and one legal size file cabinet that can be locked. The building shall be waterproof, shall be supplied with heater, shall have a minimum of two doors, electric lights, a telephone, a battery-operated smoke detector alarm, a sufficient number of adjustable windows for adequate light and ventilation, and a supply of approved drinking water. Approved sanitary facilities shall be furnished. The windows and doors shall be screened and the doors provided with dead bolt type locking devices or a padlock and heavy duty hasp bolted to the door. Door hinge pins shall be non-removable. The windows shall be arranged to open and to be securely fastened from the inside. Glass panels in windows shall be protected by bars or heavy mesh screens to prevent easy access to the building through these panels. In warm weather, air conditioning capable of maintaining the office at 50 percent relative humidity and a room temperature 11° C (20° F) below the outside temperature when the outside temperature is 35° C (95° F) shall be furnished. Any new building erected for a temporary field office shall be maintained by the Contractor during the life of the contract and, upon completion and acceptance of the work, shall become the property of the Contractor and shall be removed from the site. All charges for telephone service for the temporary field office shall be borne by the Contractor, including long distance charges up to a maximum of $75.00 per month.

1.5.6 Security Provisions

Adequate outside security lighting shall be provided at the Contractor's temporary facilities. The Contractor shall be responsible for the security of its own equipment. The Contractor shall provide the necessary site security measures at the site to protect his equipment, materials, and supplies. The Government or Property Owners are not responsible for any damage to the Contractor's equipment, vehicles, supplies, etc., due to unauthorized entry.

1.6 GOVERNMENT FIELD OFFICE

1.6.1 Resident Engineer's Office

The Contractor shall provide the Government Resident Engineer with an office, approximately 19 square meters (200 square feet) in floor area, located where directed and providing space heat, electric light and power, and temporary toilet facilities. A mail slot in the door or a lockable mail box mounted on the surface of the door shall be provided. At completion of the project, the office shall remain the property of the Contractor and shall be removed from the site. Utilities shall be connected and disconnected in accordance with local codes and to the satisfaction of the Contracting Officer.

All office facilities shall meet the following performance requirements, as a minimum. Electric light, nonglare type luminaries shall provide a minimum illumination level of 100 foot candles at desk levels. Adequate equipment shall be installed to provide an ambient air temperature of 70 °F. A minimum of one fire extinguisher meeting Underwriters Laboratories, Inc. approved for Class A, Class B, and Class C fires with a minimum rating of 2A, 10B, and 10C shall be placed in each office facility. A supply of potable bottled water will be available. Portable toilet facilities, either in or adjacent to the office facility, shall be ventilated and maintained, complying with applicable sanitary codes. The Contractor shall also maintain the office facility providing janitorial services, including but not limited to, emptying trash, sweeping floors, and periodically washing floors and windows.

1.6.2 Trailer-Type Mobile Office

The Contractor may, at its option, furnish and maintain a trailer-type mobile office acceptable to the Contracting Officer and providing as a minimum the facilities specified above. The trailer shall be securely anchored to the ground at all four corners to guard against movement during high winds. The Contractor may rent, if offered by the Property Owner, available/existing trailer and/or storage sheds/buildings for his use for the project. This option shall be discussed at the Preconstruction Conference.

1.7 PLANT COMMUNICATION

Whenever the Contractor has the individual elements of its plant so located that operation by normal voice between these elements is not satisfactory, the Contractor shall install a satisfactory means of communication, such as telephone or other suitable devices. The devices shall be made available for use by Government personnel.

1.8 TEMPORARY PROJECT SAFETY FENCING

As soon as practicable, but not later than 15 days after the date established for commencement of work, the Contractor shall furnish and erect temporary project safety fencing at the work site. The safety fencing shall be a high visibility orange colored, high density polyethylene grid or approved equal, a minimum of 1.07 meters (42 inches) high, supported and tightly secured to steel posts located on maximum 3 meters (10 foot) centers, constructed at the approved location. The safety fencing shall be maintained by the Contractor during the life of the contract and, upon completion and acceptance of the work, shall become the property of the Contractor and shall be removed from the work site.

1.9 CLEANUP

Construction debris, waste materials, packaging material and the like shall be removed from the work site daily. Any dirt or mud that is tracked onto paved or surfaced roadways shall be cleaned away. Materials resulting from demolition activities that are salvageable shall be stored within the fenced area described above or at the supplemental storage area. Stored material not in trailers, whether new or salvaged, shall be neatly stacked when stored.

1.10 RESTORATION OF STORAGE AREA

Upon completion of the project and after removal of trailers, materials, and equipment from within the areas used by the Contractor for the storage of equipment or material, staging of materials, or other use, these areas shall be restored to the original or better condition. The Contractor shall remove all sediments, liquids, and absorbents from staging and loading areas for subsequent disposal prior to site closeout. Gravel used to traverse grassed areas shall be removed and the area restored to its original condition, including topsoil and seeding as necessary.

1.11 PROTECTION OF MONITORING WELLS

The Contractor shall locate and protect all monitoring wells in his area from damage and abuse. The Contractor is not allowed to remove/abandon any monitoring well unless said Contractor has permission from the Contracting Officer. Any damage to a monitoring well will immediately be reported to the Contracting Officer. The Contracting Officer will notify the Property Owner (if the well is not Government property) of any requests for removal/abandonment of monitoring wells or any damage to the wells caused by the Contractor. If a monitoring well is damaged, the monitoring well shall be restored by the Contractor at no additional expense to the Government following guidelines provided by USACE, Baltimore District. If, in the opinion of the Contracting Officer or Property Owner, the well cannot be repaired, the Contracting Officer shall direct the Contractor (at his own expense) to pull the well casing and properly abandon the well following the above-mentioned requirements. The Contracting Officer shall then direct the Contractor (at his own expense) to install a replacement monitoring well at a similar location as located by the Contracting Officer or Property Owner. The Contractor shall number said replacement well as directed by the Contracting Officer or Property Owner. The Contactor shall supply well specifications for approval prior for replacement.

(Attachments Follow)
-- End of Section --

ATTACHMENTS

Attachment 1 - Project Identification Sign

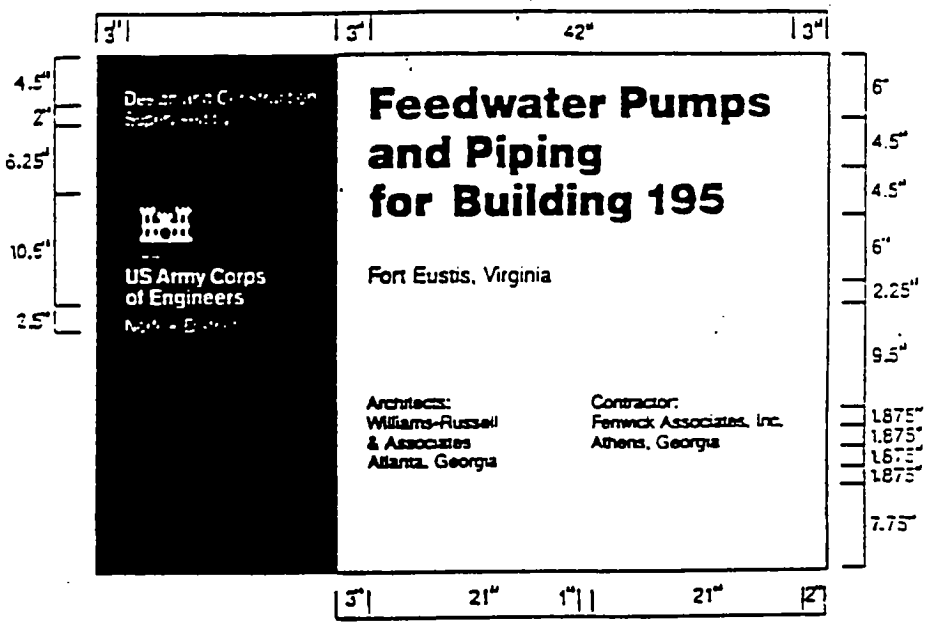
Attachment 2 - Safety Performance Sign

PROJECT IDENTIFICATION SIGN

MILITARY PROJECT

The graphic format for this 4' x 6' sign panel follows the legend guidelines and layout as specified below. The large 4' x 4' section of the panel on the right is to be white with black legend. The 2' x 4' section of the sign on the left with the full Corps signature (reverse version) is to be screen printed Communications Red on the white background. The castle insignia will be furnished by the Government in pressure sensitive vinyl for affixing by the Contractor. See attached sheet for fabrication and mounting guidelines.

SAMPLE:



(Dimensions are in inches)

Legend Group 1: One- to two-line description of Corps relationship to project.
Color: White
Typeface: 1.25" Helvetica Regular
Maximum line length: 19"

Legend Group 2: Division or District Name (optional). Placed below 10.5" Reverse Signature (6" Castle).
Color: White
Typeface: 1.25" Helvetica Regular

Legend Group 3: One- to three-line project title legend describes the work being done under this contract.
Color: Black
Typeface: 3" Helvetica Bold
Maximum line length: 42"

Legend Group 4: One- to two-line identification of project or facility (civil works) or name of sponsoring department (military).
Color: Black
Typeface: 1.5" Helvetica Regular
Maximum line length: 42"

Cross-align the first line of Legend Group 4 with the first line of the Corps Signature (US Army Corps) as shown.

Legend Groups 5a-b: One- to five-line identification of prime contractors including: type (architect, general contractor, etc.), corporate or firm name, city, state. Use of Legend Group 5 is optional.
Color: Black
Typeface: 1.25" Helvetica Regular
Maximum line length: 21"

All typography is flush left and rag right, upper and lower case with initial capitals only as shown. Letter- and word-spacing to follow Corps standards as specified in * Appendix D.

Sign Type	Legend Size	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
CID-01	various	4' x 6'	4" x 4"	HDO-3	48"	WH-RD/BK

* Refers to the U.S. Army Corps of Engineers "Sign Standards Manual", EP-310-1-6.

SAFETY PERFORMANCE SIGN

The graphic format, color, size and type-faces used on the sign are to be reproduced exactly as specified below. The title with First Aid logo in the top section of the sign, and the performance record captions are standard for all signs of this type. Legend Groups 2 and 3 below identify the project and the contractor and are to be placed on the sign as shown. Safety record numbers are mounted on individual metal plates and are screw-mounted to the background to allow for daily revisions to posted safety performance record.

Legend Group 1: Standard two-line title "Safety is a Job Requirement", with (8" od.) Safety Green First Aid logo. Color: To match PMS 347
Typeface: 3" Helvetica Bold
Color: Black

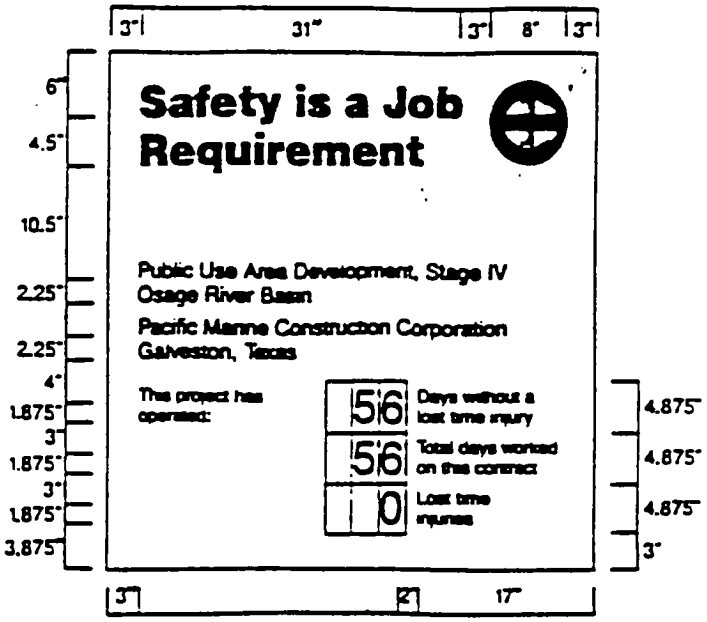
Legend Group 2: One- to two-line project title legend describes the work being done under this contract and name of host project.
Color: Black
Typeface: 1.5" Helvetica Regular
Maximum line length: 42"

Legend Group 3: One- to two-line identification: name of prime contractor and city, state address.
Color: Black
Typeface: 1.5" Helvetica Regular
Maximum line length: 42"

Legend Group 4: Standard safety record captions as shown.
Color: Black
Typeface: 1.25" Helvetica Regular

Replaceable numbers are to be mounted on white .060 aluminum plates and screw-mounted to background.
Color: Black
Typeface: 3" Helvetica Regular
Plate size: 2.5" x .5"

All typography is flush left and rag right, upper and lower case with initial capitals only as shown. Letter- and word-spacing to follow Corps standards as specified in Appendix D. *

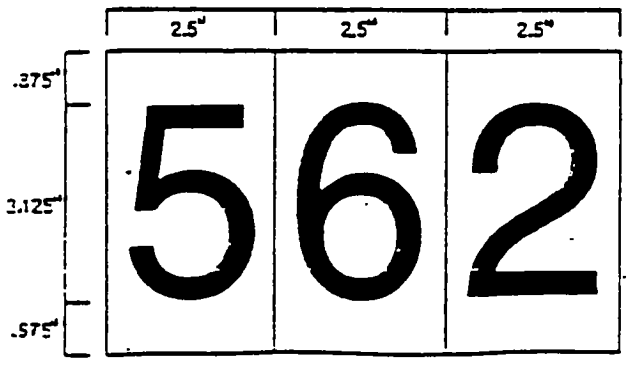


Dimensions in inches.

See attached sheet for fabrication and mounting guidelines.

* Refers to the U.S. Army Corps of Engineers, "Sign Standards Manual", EPS-310-1-6.

Sign Type	Legend Size	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
CID-02	various	4' x 4'	4" x 4"	HDO-3	48"	WH/BK-GR



All Construction Project Identification signs and Safety Performance signs are to be fabricated and installed as described below. The signs are to be erected at a location designated by the contracting officer and shall conform to the size, format, and typographic standards shown on the attached sheets.

The sign panels are to be fabricated from .75" High Density Overlay Plywood. Panel preparation to follow HDO specifications provided in Appendix B. **

Sign graphics to be prepared on a white non-reflective vinyl film with positionable adhesive backing.

All graphics except for the Communications Red background with Corps signature on the project sign are to be die-cut or computer-cut non-reflective vinyl, pre-spaced legends prepared in the sizes and typefaces specified and applied to the background panel following the graphic formats shown on the attached sheets.

The 2' x 4' Communications Red panel (to match PMS-032) with full Corps signature (reverse version) is to be screen printed on the white background. Identification of the District or Division may be applied under the signature with white cut vinyl letters prepared to Corps standards. Large scale reproduction artwork for the signature is provided on page 4.8 (photographically enlarge from 6.875" to 10.5"). **

Drill and insert six (6) .375" T-nuts from the front face of the HDO sign panel. Position holes as shown. Flange of T-nut to be flush with sign face.

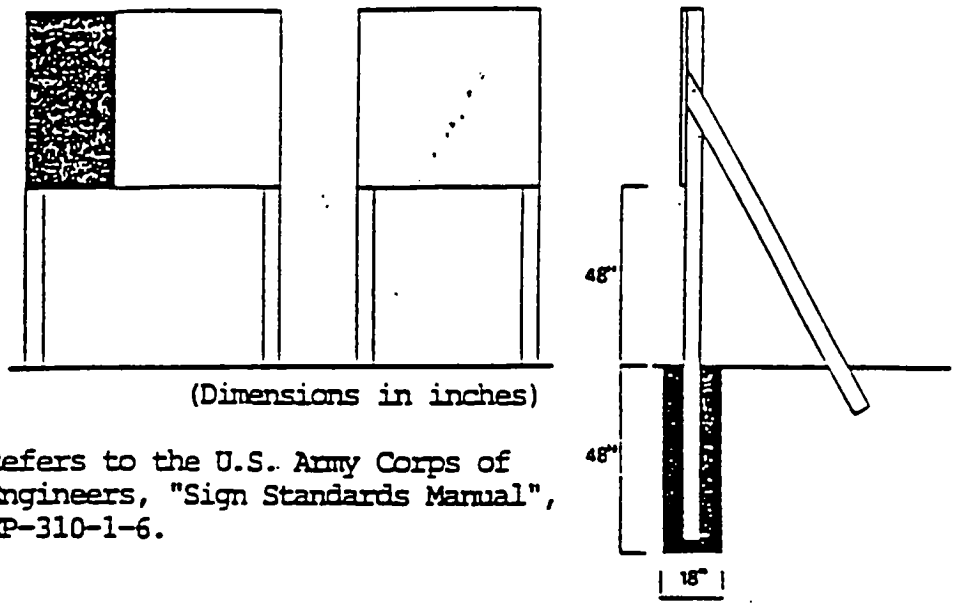
Apply graphic panel to prepared HDO plywood panel following manufacturers' instructions.

Sign uprights to be structural grade 4" x 4" treated Douglas Fir or Southern Yellow Pine, No.1 or better. Post to be 12' long. Drill six (6) .375" mounting holes in uprights to align with T-nuts in sign panel. Countersink (.5") back of hole to accept socket head cap screw (4" x .375").

Assemble sign panel and uprights. Imbed assembled sign panel and uprights in 4' hole. Local soil conditions and/or wind loading may require bolting additional 2" x 4" struts on inside face of uprights to reinforce installation as shown.

Detailed specifications for HDO plywood panel preparation are provided in Appendix B. **

Shown below the mounting diagram is a panel layout grid with spaces provided for project information. Photocopy this page and use as a worksheet when preparing sign legend orders.



(Dimensions in inches)

** Refers to the U.S. Army Corps of Engineers, "Sign Standards Manual", EP-310-1-6.

Construction Project Sign
Legend Group 1: Corps Relationship

1. _____
2. _____

Legend Group 2: Division/District Name

1. _____
2. _____

Legend Group 3: Project Title

1. _____
2. _____
3. _____

Legend Group 4: Facility Name

1. _____
2. _____

Legend Group 5a: Contractor/A&E

1. _____
2. _____
3. _____
4. _____
5. _____

Legend Group 5b: Contractor/A&E

1. _____
2. _____
3. _____
4. _____
5. _____

Safety Performance Sign
Legend Group 1: Project Title

1. _____
2. _____

Legend Group 2: Contractor/A&E

1. _____
2. _____

SECTION 01561

ENVIRONMENTAL PROTECTION

PART 1 GENERAL

The work covered by this section consists of furnishing all labor, materials, and equipment and performing all work required for the prevention of environmental pollution during, and as the result of, construction operations under this contract except for those measures set forth in the Technical Provisions of these specifications. For the purpose of this specification, environmental pollution is defined as the presence of chemical, physical, or biological elements or agents that adversely affect human health or welfare, unfavorably alter ecological balances of importance to human life, or affect other species of importance to man. The control of environmental pollution requires consideration of air, water, and land.

PART 2 APPLICABLE REGULATIONS

The Contractor and his subcontractors in the performance of this contract shall comply with all applicable Federal, state, and local laws and regulations concerning environmental pollution control and abatement in effect on the date of this solicitation, as well as the specific requirements stated elsewhere in the contract specifications.

PART 3 NOTIFICATION

The Contracting Officer will notify the Contractor of any non-compliance with the foregoing provisions and the action to be taken. The Contractor shall, after receipt of such notice, immediately take corrective action. If the Contractor fails or refuses to comply promptly, the Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No part of time lost due to any such stop order shall be made the subject of a claim for extension of time or for excess costs or damages by the Contractor unless it is later determined that the Contractor was in compliance.

PART 4 SUBCONTRACTORS

Compliance with the provisions of this section by subcontractors will be the responsibility of the Contractor.

PART 5 PROTECTION OF WATER RESOURCES

The Contractor shall not pollute streams, lakes, reservoirs, or wetlands with fuels, oils, bitumens, calcium chloride, acid construction wastes, or other harmful materials. All work under this contract shall be performed in such a manner that objectionable conditions will not be created in streams through or adjacent to the project areas.

PART 6 EROSION AND SEDIMENTATION CONTROL

The Contractor shall submit for approval by the Contracting Officer and applicable state and local agencies an Erosion and Sedimentation Control Plan that uses the contract Drawings as guidance. The

Contractor's Erosion and Sedimentation Control Plan shall be submitted as part of the Site Operations Plan (Section 01500, TEMPORARY CONSTRUCTION FACILITIES). The Contractor is responsible for obtaining any necessary approvals and permits to perform the work, including earth disturbance. The Contractor shall use the contract Drawings as a guidance for preparation of his Erosion and Sedimentation Control Plan but shall provide his specific details to reflect his approach to the work. Silt fences and/or straw bale barriers may be used as temporary measures to minimize the movement of soil on-site. Silt fences shall be installed as directed by the manufacturer. Straw bales shall be staked as needed to provide adequate stability.

PART 7 BURNING

No burning will be allowed without prior approval from the Property Owners and the NYSDEC Fire Rangers. The specific time, location, and manner of burning shall be subject to the approval of NYSDEC Fire Ranger and the Contracting Officer. Fires shall be confined to a closed vessel, guarded at all times, and shall be under constant surveillance until they have burned out or have been extinguished unless otherwise permitted by NYSDEC. All burning shall be so thorough that the materials will be reduced to ashes.

PART 8 DUST CONTROL

The Contractor shall maintain all work area free from dust that would contribute to air pollution. Approved temporary methods of stabilization consisting of sprinkling, chemical treatment, light bituminous treatment, or similar methods will be permitted to control dust. Sprinkling, where used, must be repeated at such intervals as to keep all parts of the disturbed area at least damp at all times. Dust control shall be performed as the work proceeds and whenever a dust nuisance or hazard occurs. Dust controls with asbestos abatement areas shall be in accordance with the Contractor's approved Negative Exposure Assessment and Asbestos Hazard Abatement Plan as specified in Section 02080, ASBESTOS ABATEMENT.

PART 9 PROTECTION OF LAND RESOURCES

9.1 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. Insofar as possible, the Contractor shall confine his construction activities to areas defined by the Drawings and Specifications or to be cleared for other operations. The following additional requirements are intended to supplement and clarify the requirements of the CONTRACT CLAUSES.

9.2 PROTECTION OF RETAINED TREES

9.2.1 Protection

The Contractor shall be responsible for the protection of the tops, trunks, and roots of all existing trees that are to be retained on the site outside of areas designated for soil excavation/debris removal. Protection shall be maintained until all work in the vicinity has been completed and shall not be removed without the consent of the Contracting Officer. If the Contracting Officer finds that the protective devices are insufficient, additional protection devices shall be installed.

9.2.2 General Storage

Heavy equipment, vehicular traffic, or stockpiling of any materials shall not be permitted within the drip line of trees to be retained.

9.2.3 Toxic Materials Storage

No toxic materials shall be stored within 100 feet from the drip line of trees to be retained.

9.2.4 Trees and Shrubs

Except for areas shown on the plans to be cleared, the Contractor shall not deface, injure, or destroy trees or shrubs, nor remove or cut them without special authority. Existing nearby trees shall not be used for anchorage unless specifically authorized by the Contracting Officer. Where such special emergency use is permitted, the Contractor shall first adequately protect the trunk with a sufficient thickness of burlap over which softwood cleats shall be tied.

9.2.5 Tree Protection

No protective devices, signs, utility boxes, or other objects shall be nailed to trees to be retained on the site.

9.3 RESTORATION OF LANDSCAPE DAMAGE

Any trees or other landscape feature scarred or damaged by the Contractor's operations outside of areas designated for soil excavation/debris removal shall be restored as nearly as possible to its original condition at the Contractor's expense. The Contracting Officer will decide what method of restoration shall be used, and whether damaged trees shall be treated and healed or removed and disposed of. All scars made on trees, designated on the plans to remain, and all cuts for the removal of limbs larger than 1-inch in diameter shall be coated as soon as possible with an approved tree wound dressing. All trimming or pruning shall be performed in an approved manner by experienced workmen with saws or pruning shears. Tree trimming with axes will not be permitted. Where tree climbing is necessary, the use of climbing spurs will not be permitted. Trees that are to remain, either within or outside established clearing limits, that are subsequently damaged by the Contractor and are beyond saving in the opinion of the Contracting Officer, shall be immediately removed and replaced with a nursery-grown tree of the same species. Replacement trees shall measure no less than 2 inches in diameter at 6 inches above the ground level.

9.4 LOCATION OF STORAGE AND SERVICE FACILITIES

The location on Government property of the Contractor's storage and service facilities, required temporarily in the performance of the work, shall be upon cleared portions of the job site or areas to be cleared. The preservation of the landscape shall be an imperative consideration in the selection of all sites and in the construction of buildings. Plans showing storage and service facilities shall be submitted for approval to the Contracting Officer. Where buildings or platforms are constructed on slopes, the Contracting Officer may require cribbing to be used to obtain level foundations. Benching or leveling of earth may not be allowed, depending on the location of the proposed facility.

9.5 TEMPORARY EXCAVATION AND EMBANKMENTS

If the Contractor proposes to construct temporary roads, embankments, or excavations for work areas, he shall submit a plan for approval prior to scheduled start of such temporary work.

--End of Section--

DIVISION 2

SITE WORK

SECTION 02080

ASBESTOS ABATEMENT
03/92

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

ANSI Z9.2	(1979; R 1991) Fundamentals Governing the Design and Operation of Local Exhaust Systems
ANSI Z87.1	(1989; Errata; Z87.1a) Occupational and Educational Eye and Face Protection
ANSI Z88.2	(1992) Respiratory Protection

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM C 732	(1995; R 1987) Aging Effects of Artificial Weathering on Latex Sealants
ASTM D 522	(1993a) Mandrel Bend Test of Attached Organic Coatings
ASTM D 1331	(1989; R 1995) Surface and Interfacial Tension of Solutions of Surface-Active Agents
ASTM D 2794	(1993) Resistance of Organic Coatings to the Effects of Rapid Deformation (Impact)
ASTM D 4397	(1991) Polyethylene Sheeting for Construction, Industrial, and Agricultural Applications
ASTM E 84	(1995a) Surface Burning Characteristics of Building Materials
ASTM E 96	(1995) Water Vapor Transmission of Materials
ASTM E 119	(1995a) Fire Tests of Building Construction and Materials
ASTM E 736	(1992) Cohesion/Adhesion of Sprayed Fire-Resistive Materials Applied to Structural Members
ASTM E 1368	(1990) Visual Inspection of Asbestos Abatement Projects

CODE OF FEDERAL REGULATIONS (CFR)

29 CFR 1910	Occupational Safety and Health Standards
29 CFR 1926	Safety and Health Regulations for Construction
40 CFR 61	National Emission Standards for Hazardous Air Pollutants
40 CFR 763	Asbestos

COMPRESSED GAS ASSOCIATION (CGA)

CGA G-7	(1990) Compressed Air for Human Respiration
CGA G-7.1	(1989) Commodity Specification for Air

ENVIRONMENTAL PROTECTION AGENCY (EPA)

EPA 340/1-90-018	(1990) Asbestos/NESHAP Regulated Asbestos-Containing Materials Guidance
EPA 340/1-90-019	(1990) Asbestos/NESHAP Adequately Wet Guidance
EPA 560/5-85-024	(1985) Guidance for Controlling Asbestos-Containing Materials in Buildings

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 10	(1994) Portable Fire Extinguishers
NFPA 70	(1996) National Electrical Code
NFPA 90A	(1993) Installation of Air Conditioning and Ventilating Systems
NFPA 101	(1994) Safety to Life from Fire in Buildings and Structures
NFPA 701	(1996) Methods of Fire Test for Flame-Resistant Textiles and Films

NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH (NIOSH)

NIOSH Pub No. 84-100	(1984; Supple 1985, 1987, 1988, and 1990) NIOSH Manual of Analytical Methods

NEW YORK STATE

12 NYCRR Part 56	New York State Code Rule 56

UNDERWRITERS LABORATORIES (UL)

UL 586	(1990; Rev Apr 1995) High-Efficiency, Particulate, Air Filter Units

ENGINEERING MANUALS

EM 385-1-1 (1992) U.S. Army Corps of Engineers Safety and Health Requirements Manual

1.2 DEFINITIONS

1.2.1 Adequately Wet

A term as defined in 40 CFR 61, Subpart M and EPA 340/1-90-019 that means to sufficiently mix or penetrate with liquid to prevent the release of particulates. If visible emissions are observed coming from asbestos-containing material (ACM), then that material has not been adequately wetted; however, the absence of visible emissions is not sufficient evidence of being adequately wetted.

1.2.2 Amended Water

Water containing a wetting agent or surfactant with a surface tension of at least 29 dynes per square centimeter when tested in accordance with ASTM D 1331.

1.2.3 Asbestos-Containing Material (ACM) means any material containing more than 1 percent asbestos.

1.2.4 Class I asbestos work means activities involving the removal of TSI and surfacing ACM and PACM.

1.2.5 Class II asbestos work means activities involving the removal of ACM that is not thermal system insulation or surfacing material. This includes, but is not limited to, the removal of asbestos-containing wallboard, floor tile and sheeting, roofing and siding shingles, and construction mastics.

1.2.6 Class III asbestos work means repair and maintenance operations, where ACM, including thermal system insulation and surfacing material, is likely to be disturbed.

1.2.7 Class IV asbestos work means maintenance and custodial activities during which employees contact ACM and PACM, and activities to clean up waste and debris containing ACM and PACM.

1.2.8 Clean room means an uncontaminated room having facilities for the storage of employees' street clothing and uncontaminated materials and equipment.

1.2.9 Competent person means, in addition to the definition in 29 CFR 126.32(f), one who is capable of identifying existing asbestos hazards in the workplace and selecting the appropriate control strategy for asbestos exposure, who has the authority to take prompt corrective measures to eliminate them, as specified in 29 CFR 1926.32(f): in addition, for Class I and Class II work, who is specially trained in a training course that meets the criteria of EPA's Model Accreditation Plan (40 CFR 763) for project designer or supervisor, or its equivalent and, for Class II and Class IV work, who is trained in an operations and maintenance (O&M) course developed by EPA [40 CFR 763.92(a)(2)].

1.2.10 Critical barrier means one or more layers of plastic sealed over all openings into a work area or any other similarly placed physical barrier sufficient to prevent airborne asbestos in a work area from migrating to an adjacent area.

1.2.11 Decontamination area means an enclosed area adjacent and connected to the regulated area and consisting of an equipment room, shower area, and clean room, which is used for the decontamination of workers, materials, and equipment that are contaminated with asbestos.

1.2.12 Disturbance means contact that releases fibers from ACM or PACM or debris containing ACM or PACM. This term includes activities that disrupt the matrix of ACM or PACM, render ACM or PACM friable, or generate visible debris. Disturbance includes cutting away small amounts of ACM and PACM, no greater than the amount that can be contained in one standard-sized glove bag, or waste bag in order to access a building component. In no event shall the amount of ACM or PACM so disturbed exceed that which can be contained in one glove bag, or waste bag, which shall not exceed 60 inches in length and width.

1.2.13 PACM means "presumed asbestos-containing material." PACM means thermal system insulation and surfacing material found in buildings constructed no later than 1980. The designation of a material as PACM may be rebutted pursuant to paragraph (k)(4) of this section.

1.2.14 Friable ACM

A term as defined in 40 CFR 61, Subpart M, and EPA 340/1-90-018 that means any material containing more than 1 percent asbestos as determined using the method specified in 40 CFR 763, Appendix A, Subpart F, Section 1, Polarized Light Microscopy, that when dry, can be crumbled, pulverized, or reduced to powder by hand pressure. If the asbestos content is less than 10 percent as determined by a method other than point counting by polarized light microscopy (PLM), verify the asbestos content by point counting using PLM.

1.2.15 Nonfriable ACM

A term as defined in 40 CFR 61, Subpart M, and EPA 340/1-90-018 that means any material containing more than 1 percent asbestos as determined using the method specified in 40 CFR 763, Appendix A, Subpart F, Section 1, Polarized Light Microscopy, that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure.

1.2.16 Nonfriable ACM—Category I

A term as defined in 40 CFR 61, Subpart M, and EPA 340/1-90-018 that means asbestos-containing packings, gaskets, resilient floor covering, and asphalt roofing products containing more than 1 percent asbestos as determined using the method specified in 40 CFR 763, Appendix A, Subpart F, Section 1, Polarized Light Microscopy.

1.2.17 Nonfriable ACM—Category II

A term as defined in 40 CFR 61, Subpart M, and EPA 340/1-90-018 that means any material, excluding Category I nonfriable ACM, containing more than 1 percent asbestos as determined using the methods specified in Appendix A, Subpart F, 40 CFR 763, Section 1, Polarized Light Microscopy, that when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure.

1.2.18 Negative Initial Exposure Assessment

A demonstration by the contractor, which complies with 29 CFR 1926.1101(f)(2)(iii), that employee exposure during an operation is expected to be consistently below the PELs.

1.2.19 Regulated Work Area—Asbestos

An asbestos regulated work area is an area contained and controlled either by an enclosed containment (full containment area, single or double bulkhead containment area, mini-containment area), modified containment, glove bag or outdoor techniques, where asbestos-containing material (ACM) operations

are performed and isolated by physical boundaries to prevent the spread of ACM and control access to authorized persons. A full containment, single or double bulkhead containment area, mini-containment area, modified containment, and glove bag work area is isolated within a containment enclosure in which ACM operations are performed. An outdoor regulated work area is not isolated within a containment enclosure, but is otherwise secured by means of physical barriers, boundary warning tape, and signage, etc., to control access by unauthorized persons.

1.2.20 Time-Weighted Average (TWA)

The TWA is an 8-hour time-weighted average of airborne concentration of fibers (longer than 5 micrometers) per cubic centimeter of air, which represents the employee's 8-hour workday as determined by Appendix A of 29 CFR 1926, Section 1926.58.

1.3 DESCRIPTION OF WORK

1.3.1 General

The work covered by this section includes Class I, Class II, and Class IV activities for asbestos-containing materials (ACM). This section also describes procedures and equipment required to protect workers within and adjacent to the work areas from contact with airborne asbestos fibers and ACM dust and debris. The work also includes the disposal of the generated ACM wastes. More specific operational procedures shall be outlined in the required Asbestos Hazard Abatement Plan called for elsewhere in this specification. The specific ACM to be abated is identified on the detailed plans and project drawings. A summary of the work follows.

The Contractor shall submit to the New York State, Department of Labor (NYSDOL), Division of Safety and Health Asbestos Control Bureau, a Project Notification at least 10 days prior to the commencement of the project.

The Contractor shall provide Project Notification to the U.S. EPA Administrator at least 10 days prior to the commencement of the project.

Contractor shall review the Asbestos Survey Report located in Attachment 1 of this section and utilize the report data as part of Contractor's bid and work at site. In addition, Contractor shall visit all sites as described within the Asbestos Survey Report as part of a pre-bid walkover. Contractor shall be given opportunity to ask questions related to the bid specifications as a part of the pre-bid walkover.

Contractor shall only remove ACM that is considered to be a health or environmental risk. The ACM to be removed shall include the following categories:

- ASM fallen to grade within structures.
- ACM fallen to grade outside structures and contained within soil.
- ACM transite panels that have been removed and are at grade.
- TSI that is loose and considered in poor condition.
- ACM that is attached to the structures, but considered loose and which may fall to grade if not removed.

All work areas described below shall include structures, debris piles, and contaminated soils. References to all areas shall be made to Drawing F-833-90-10 (Plate 3) and the Asbestos Survey Report (Attachment 1).

The Contractor shall supply all personnel, equipment, and facilities necessary to perform all interim remedial measures (IRMs), which address asbestos-containing materials (ACM). The Contractor shall contain, transport, and dispose of all ACM specified for removal in accordance with all applicable Federal, state, and local regulations. All equipment and machinery specified for removal from designated buildings and temporarily stored in designated laydown areas shall be labeled at time of removal and shall be returned to the buildings upon completion of the remediation by the Contractor. Debris, scrap, and other non-ACM objects that require removal in order to perform the remediation shall be decontaminated where in contact with ACM and either disposed or sold as scrap metal.

The Contractor shall be licensed by NYSDOL, and all asbestos workers certified by the Department's License and Certificate Unit. The Contractor shall perform all work in accordance with OSHA regulations, 29 CFR 1926.1101, and NYS Industrial Code Rule 56 (ICR 56). Where suitable, the Contractor can utilize "Applicable Variances" or write additional variances as approved by NYSDOL and at Contractor's cost.

The Contractor shall perform the specific work outlined below. Buildings 30, 31, and 41 will not be included as part of this IRM since they are designated beneficial use structures (refer to the *Asbestos Survey Report, Somerset Group Property*, located as Attachment 1 of this section).

1.3.2 Building 6-01

Contractor shall perform the following asbestos abatement and related work at Area A1 and Building 6-01:

- Prior to start of asbestos abatement work, Contractor shall decontaminate and remove all items and equipment stored within Building 6-01 that are non-asbestos. Contractor shall initially clean and decontaminate a laydown area within Building 6-01 where existing building items and equipment can be wet wiped and/or washed down. The laydown area shall be constructed at the first floor area of Building 6-01 and shall be capable of holding runoff water from the equipment wipe down. The laydown area shall have, at a minimum, three layers of 6-mil polyethylene within a berm. All contaminated wash water shall be filtered through a HEPA filter prior to discharge to the sewer or to grade.

- Non-asbestos items and equipment shall include, but not be limited to:

  - Vitreous piping.
  - Electrical insulators within drums.
  - Metal shelving checker plate.
  - Electrical insulators on floor, which must be placed into drums.
  - Window frames.
  - Steel and metal pallets at first floor.
  - Machinery.
  - Loose piping.
  - Bags of mortar (to be placed in drums).
  - Building materials.

- Non-asbestos items to be moved from Building 6-01 shall be brought to the laydown area within

Building 6-01, wet wiped on all exterior and interior surfaces (as feasible), labeled or tagged (machinery and equipment to be returned only), and then transported to a temporary storage area. The Contractor shall tag items including machinery and equipment to be returned to the building after remediation under the direction and approval of the Contracting Officer. The storage area shall be located at least 100 ft from any soil removal areas and shall be free of asbestos. Removed items shall be tarped.

- After non-asbestos items and equipment have been removed, Contractor shall commence work at the second floor level and work its way to the first floor.

- ACM to be removed at Building 6-01 shall include, but not be limited to:

  - All TSI on piping on both floor areas (500 linear ft).

  - All TSI on floors along with miscellaneous debris, which includes all loose friable and non-friable asbestos materials, contaminated soils, leaves, and gravel within building and courtyard (<1.0 cu yd).

  - All transite panels located in stacks inside and outside the building (870 panels).

  - Bagged and loose mortar situated in piles (32 50-lb bags).

  - All transite panel pieces inside and outside the building including those partially covering scrap steel or beneath scrap steel (18.5 cu yd).

  - Roof flashing at second floor level (130 linear ft).

  - Transite panel caulking that is loose.

  - Bituminous expansion joint at second floor level (60 linear ft).

  - TSI covering hoppers at second floor level (10 cu yd).

  - Removal of asbestos-contaminated soils to a depth of 6 inches within Area A1 (810 cu yd).

The courtyard area between the east and west wings of Building 6-01 and the areas within 10 ft of the building concrete pad (designated as Area A1 on the Drawings) shall be cleared and grubbed prior to the removal of up to 6 inches of soil. Excavated areas shall be backfilled with clean soil and a minimum of 3 inches of topsoil. The area shall be graded to match previous elevations and to establish positive drainage to nearest drainage ditch/feature. The area shall then be seeded and mulched as per Section 02935, TURF.

- After all ACM has been removed from the building (as noted above) and soil has been excavated and backfill placed, Contractor shall HEPA vacuum, wet wipe, and/or wash down surfaces within the building to a height of 10 ft at each floor to remove residual asbestos fibers. Contractor shall collect all wash water and HEPA filter prior to discharge to the sewer or to grade.

- Contractor shall perform clearance testing by collecting swipe tests of building interior to determine if asbestos fibers are present. Eight wipe tests shall be performed using approved methods and analyzed in accordance with EPA-approved methods as specified herein. All areas

found to be contaminated shall be wiped and/or washed and swipe testing repeated after surfaces have dried for at least 12 hours.

- Contractor shall retrieve all tagged equipment and machinery from the temporary storage area and return them to Building 6-01 only after all soil has been removed from Area A1 (see Drawings), backfill placed, and clearance is achieved.

All miscellaneous scrap metal and other non-ACM items following decontamination shall be disposed of as non-hazardous waste or recycled as scrap metal, wherever possible.

- Contractor shall be aware of numerous openings at the second floor level and shall be fully responsible to protect its workers and others from falling through the openings. Contractor shall be fully responsible to also protect its workers and others at sidewall areas where siding has been removed from both overhead dangers (i.e., falling objects) and falls.

1.3.3 Buildings 6-02 and 6-03

Contractor shall perform the following asbestos abatement and related work at Buildings 6-02 and 6-03:

- Contractor shall remove piles of transite panels stacked between Buildings 6-02 and 6-03 (138 panels).

- Contractor shall remove all fallen piping TSI within Buildings 6-02 and 6-03 (2 cu yd).

- Contractor shall obtain clearance samples for Buildings 6-02 and 6-03.

1.3.4 Building 30-A

Contractor shall perform the following asbestos abatement and related work at Building 30-A:

- Prior to start of asbestos abatement work, Contractor shall temporarily remove all items and equipment stored within Building 30-A that are non-asbestos. Contractor shall initially clean and decontaminate a laydown area within Building 30-A where Contractor abatement equipment and existing building items and equipment can be wet wiped and/or washed down. The laydown area shall be constructed at the end of Building 30-A and shall be capable of holding runoff water from the equipment wipe down. The layout area shall have, at a minimum, three layers of 6-mil polyethylene within a berm.

- Non-asbestos items and equipment to be removed shall include, but not be limited to:

  - Items in boxes.
  - Power equipment/tools.
  - Benches/furniture/wood panels.
  - Conveyors.
  - Stacked ceiling tile (to be HEPA vacuumed).
  - All other equipment and items stored on the floor or shelves.

- Non-asbestos items to be removed from Building 30-A shall be bought to the laydown area within Building 30-A, wet wiped on all exterior and interior surfaces (as feasible), labeled and/or tagged (if equipment, tools, or machinery are to be returned), and then transported to a temporary storage area. The Contractor shall tag/label items including equipment, tools, and machinery to be returned to the building after remediation under the direction and approval

of the Contracting Officer. The storage area shall be located at least 100 ft from any soil removal areas and shall be free of asbestos. Removed items shall be stored so that they are out of the weather or covered so they are protected from damage.

- After non-asbestos items and equipment have been removed, Contractor shall commence work at Building 30-A.

- ACM to be removed at Building 30-A shall include, but not be limited to:

  - All transite panels (including fallen pieces) that are stacked at grade and near Building 30-A (5 panels).

  - All TSI located within Building 30-A at grade or elevated (100 linear ft).

  - Removal of bags of asbestos-containing mortar mix (5 50-lb bags) and wood paneling with attached asbestos mastic (200 sq ft).

  - Removal of steam line pipe insulation outside building (200 linear ft).

  - Removal of transite duct work outside building and in piles (100 linear ft).

- After Contractor has removed all ACM from Building 30-A, Contractor shall HEPA vacuum, wet wipe, and/or wash down all interior building surfaces to remove residual asbestos fibers. Contractor shall collect all wash water and HEPA filter prior to discharge to the sewer or to grade.

- Contractor shall perform clearance tests of building interior to determine if asbestos fibers are present. All areas found to be contaminated shall be washed and swipe testing repeated after surfaces have dried for at least 12 hours.

- Contractor shall retrieve all tagged equipment, tools, and machinery from the storage area and return to Building 30-A after clearance is achieved. All other non-asbestos miscellaneous materials shall be disposed of as non-hazardous materials or sold as scrap where possible.

1.3.5 Areas T-1 and T-2

Contractor shall perform the following asbestos abatement at Areas T-1 and T-2:

- Removal of transite panels piled in stacks adjacent to Areas T-1 and T-2 (116 sheets).

- Removal of semi-circular transite lap panels in piles at Areas T-1 and T-2 (estimated 15 pieces).

- Removal of all soils surrounding the Areas T-1 and T-2 concrete pads to a distance of 10 ft from the pad and a depth of 6 inches (40 cu yd).

- Excavated areas shall be backfilled with clean soil and a minimum of 3 inches of topsoil placed and graded to match previous grades. Areas shall be graded to establish positive drainage to existing drainage ditches and stormwater control features. The area shall then be seeded and mulched to establish a vegetated cover.

1.3.6 Pipe Bridge

Contractor shall perform the following asbestos abatement at the pipe bridge that spans the drainage ditch along the west side of the property:

- Remove all TSI from piping attached to pipe bridge (100 linear ft).
- Remove all soil at west side of bridge where pipe daylights to a depth of 6 inches and within a distance of approximately 24 inches around the circumference of the pipe (4 cu yd). Any remaining asbestos insulation exposed by this excavation should be removed, and the remaining exposed ends below a depth of 6 inches should be sealed/encapsulated.
- Excavated areas shall be backfilled with clean soil and a minimum of 3 inches of topsoil placed and graded to match previous grades. Areas shall be graded to establish positive drainage to existing drainage ditches and stormwater control features. The area shall then be seeded and mulched to establish a vegetated cover.

1.4 SECURITY

A fenced or taped off area shall be provided for each asbestos-regulated work area. A log book shall be kept documenting entry into and out of the asbestos-regulated work area. Entry into asbestos-regulated work areas shall only be by personnel authorized by the Contractor and Contracting Officer. Personnel authorized to enter asbestos-regulated work areas shall be trained, medically evaluated, and wear the personal protective equipment, as required by this specification, for the specific asbestos-regulated work area to be entered.

1.5 MEDICAL SURVEILLANCE

Medical surveillance shall conform to 29 CFR 1926.1101(m).

1.5.1 Medical Examinations

All workers shall be provided with a comprehensive medical examination as required by 29 CFR 1926.1101(m) and other pertinent state or local requirements. This requirement must have been satisfied within the past year. The same medical examination shall be given on an annual basis to employees engaged in an occupation involving asbestos and within 30 calendar days before or after the termination of employment in such occupation. X-ray films of asbestos workers shall be identified to the consulting radiologist and medical record jackets shall be marked with the word "asbestos."

1.5.2 Medical and Exposure Records

Complete and accurate records shall be maintained of each employee's medical examinations, medical records, and exposure data as required by 29 CFR 1910.20 and 29 CFR 1926.1101(m) for a period of 30 years after termination of employment. Records of the required medical examinations and exposure data shall be made available for inspection and copying to: The Assistant Secretary of Labor for Occupational Safety and Health (OSHA) or authorized representatives of the employee and an employee's physician upon request of the employee or former employee. Maintain on file at the work site for review, as requested by the Contracting Officer, a copy of the required medical certification for each employee.

1.6 TRAINING

All personnel involved with the asbestos work shall have training or annual refresher courses completed within 1 year prior to assignment and commencement of work on this project. Each worker directly involved in handling ACM, ACM generated wastes including packaging and transporting such wastes for disposal, shall take and successfully complete a course of asbestos training as specified by U.S. Environmental Protection Agency (EPA) requirements at 40 CFR 763, Subpart E, Appendix C, and the New York State Industrial Code Rule 56 (12 NYCRR Part 56 and OSHA Regulation 29 CFR 1926.1101). Workers shall take and successfully complete the "Worker" course. On-site supervisors and technical support personnel shall take and successfully complete the "Contractor/Supervisor" course. Worker and Contractor/Supervisor courses taken more than 1 year prior to commencement of work are acceptable provided that the individual has successfully completed the annual refresher training as required by the regulatory agency. Prior to the commencement of work, each worker shall be instructed by the Contractor's industrial hygienist and on-site "competent person" supervisor in the following project-specific training: the hazards and health effects of the specific types of ACM to be abated; the content and requirements of the Contractor's Asbestos Hazard Abatement Plan, Accident Prevention Plan, Hazard Communication Program, Site Safety and Health Plan, work practices, the use requirements and limitations of the personal protective clothing, and equipment to be used; hands-on-training for each asbestos abatement technique to be employed; heat and/or cold stress monitoring specific to this project; personal hygiene and housekeeping requirements; air monitoring program and procedures; medical surveillance including medical and exposure recordkeeping procedures; the association of cigarette smoke and asbestos-related disease; security procedures; emergency response requirements; and all additional requirements of 29 CFR 1926.1101. Each employee shall also have a respirator fit test administered by the Contractor's competent person as required by 29 CFR 1926.1101.

1.7 RESPIRATORY PROTECTION PROGRAM

The Contractor shall provide and implement a respiratory protection program in accordance with 29 CFR 1926.1101, 29 CFR 1910, Section 1910.134, ANSI Z88.2, CGA G-7 and CGA G-7.1. The Contractor's respiratory protection program shall include, but not be limited to, the following elements:

1. The company policy, used for the assignment of individual responsibility, accountability, and implementation of the respiratory protection program.

2. The standard operating procedures covering the selection and use of respirators. Respiratory selection shall be determined by the hazard to which the worker is exposed.

3. Medical evaluation of each employee with a form signed by a medical doctor stating that the worker may be assigned to an activity where respiratory protection is required.

4. Training in the proper use and limitations of respirators.

5. Respirator fit-testing, i.e., quantitative, qualitative, and individual functional fit checks.

6. Regular cleaning and disinfection of respirators.

7. Routine inspection of respirators during cleaning and after each use when designated for emergency use.

8. Storage of respirators in convenient, clean, and sanitary locations.

9. Surveillance of work area conditions and degree of employee exposure (e.g., through air

monitoring).

10. Regular evaluation of the continued effectiveness of the respiratory protection program.

11. Recognition and procedures for the resolution of special problems as they affect respirator use (e.g., no facial hair that comes between the respirator face piece and face or interferes with valve function; prescription eye wear usage; prohibition of wearing contact lenses; etc.).

12. Proper training in donning and doffing procedures.

1.8 HAZARD COMMUNICATION PROGRAM

A hazard communication program shall be established and implemented in accordance with 29 CFR 1926.59.

1.9 SAFETY AND HEALTH COMPLIANCE

In addition to detailed requirements of this specification, the work shall comply with applicable laws, ordinances, criteria, rules, and regulations of Federal, state, regional, and local authorities regarding handling, storing, transporting, and disposing of asbestos waste materials and with the applicable requirements of 29 CFR 1910, 29 CFR 1926, 40 CFR 61, Subpart A and Subpart M, NFPA 10, NFPA 70, NFPA 90A, NFPA 101, and 12 NYCRR Part 56. Matters of interpretation of standards shall be submitted to the appropriate administrative agency for resolution before starting work. Where the requirements of this specification, applicable laws, rules, criteria, ordinances, regulations, and referenced documents vary, the most stringent requirement as defined by the Contracting Officer shall apply.

1.10 PERMITS, LICENSES, AND NOTIFICATIONS

Obtaining all necessary permits, licenses, and variances shall be the responsibility of the Contractor including all paper work submittals and fees. Contractor shall also be responsible for all Federal and state asbestos notifications.

1.11 SUBMITTALS

Government approval is required for submittals with a "GA" designation; submittals having an "FIO" designation are for information only. The following shall be submitted in accordance with Section 01300, SUBMITTAL PROCEDURES.

1.11.1 SD-01 Data

Materials and Equipment; FIO

Manufacturer's catalog data for all materials and equipment to be used in the work, including brand name, model, capacity, performance characteristics, and any other pertinent information. Material Safety Data Sheets for all chemicals to be used on-site in the same format as implemented in the Contractor's Hazard Communication Program.

A. High efficiency filtered local exhaust equipment.

B. Vacuum equipment.

C. Pressure differential monitor.

D. Air monitoring equipment.

E. Respirators.

F. Personal protective clothing and equipment:

(1) Coveralls.
(2) Underclothing.
(3) Other work clothing.
(4) Foot coverings.
(5) Hard hats.
(6) Eye protection.
(7) Other items required and approved by Contractor's IH.

G. Glove bag.

H. Duct tape.

I. Disposal containers:

(1) Disposal bags.
(2) Fiberboard drums.
(3) Paperboard boxes.

J. Sheet plastic:

(1) Polyethylene sheet - general.
(2) Polyethylene sheet - flame resistant.
(3) Polyethylene sheet - reinforced.

K. Wetting agent:

(1) Amended water.
(2) Removal encapsulant.

L. Strippable coating.

M. Prefabricated decontamination unit(s).

N. Other items.

O. Chemical encapsulant.

Q. Material Safety Data Sheets (for all chemicals proposed).

Safety Plan; GA

A written Safety and Occupational Health Program (SHP) and a comprehensive site-specific Accident Prevention Plan (APP) as required by EM 385-1-1 at least 30 days prior to start of work. The APP shall include the submission during the project of Activity Hazard Analyses for each major phase of work. The required respiratory protection and hazard communication program shall be incorporated into the APP. This plan must be accepted in writing by the Contracting Officer prior to start of any site

work.

Negative Exposure Assessment; GA

Contractor shall prepare and submit a negative exposure assessment per requirements of 29 CFR 1926.110(f)(2)(iii). This document must be approved prior to start of work.

Asbestos Hazard Abatement Plan; GA

A detailed plan of the response actions to be taken (ACM items to be abated and method of abatement for each abatement work task - see each RESPONSE ACTION DETAIL SHEET) and the control procedures (containment techniques to include safety precautions and work procedures; see SET-UP DETAIL SHEETS) to be used in the abatement of the ACM. The plan shall take into consideration all the individual ACM abatement work tasks as summarized in paragraph DESCRIPTION OF WORK. The plan shall be prepared by, signed, and dated by the Contractor. Such plan shall include, but not be limited to, the precise personal protective equipment to be used, the location of asbestos regulated work areas including clean and dirty areas, access tunnels, decontamination unit (clean room, shower room, equipment room, storage areas such as load-out unit), abatement method, interface of trades involved in the construction, sequencing of asbestos-related work, disposal procedures and plan, type of wetting agent and asbestos encapsulant to be used, location of local exhaust equipment, planned air monitoring strategies, and a detailed description of the method to be employed in order to control the spread of ACM wastes and airborne fiber concentrations. The plan shall also include both fire and medical emergency response procedures and the specific security procedures to be used for all asbestos-regulated work areas. The plan shall also ensure adequate safety measures are taken when in contact with lead-containing materials as detected during the Asbestos Survey and reported in the Asbestos Survey Report (Attachment 1). The asbestos hazard abatement plan shall be submitted at least 30 days prior to start of work. This plan must be accepted in writing prior to the start of any asbestos abatement work.

1.11.2 SD-04 Drawings

Site Layout; GA

Descriptions, detail project drawings, site layout to include work site containment area techniques, local exhaust ventilation system locations, decontamination and load-out units, other temporary waste storage facility, access tunnels, location of temporary utilities (electrical, water, sewer) and boundaries of each asbestos-regulated work area.

1.11.3 SD-08 Statements

Qualifications; GA

A written qualifications and organization report providing evidence of qualifications of the Contractor, Contractor's on-site supervisor (competent person), Contractor workers, all subcontractors (to include disposal transportation and disposal facility firms), subcontractor supervisors, subcontractor workers, independent testing laboratory, and testing laboratory analysts, to perform asbestos abatement activities as required herein. The report shall specify the Contractor's staff organization to include subcontractors, and testing laboratory chain of command to be used for this project. The report shall be signed by the Contractor and the principals of all subcontractor and testing laboratory firms, and certify that all firms and personnel involved in the asbestos abatement project fully understand the contents of 29 CFR 1926, 40 CFR 61, Subparts M, and the Federal, state and local requirements specified in paragraph SAFETY

AND HEALTH COMPLIANCE. The Contractor's qualifications report shall contain information required below:

A. Evidence that Contractor's full-time on-site supervisor is designated as, and is qualified to be, a "competent person" in accordance with 29 CFR 1926 and is experienced in the administration and supervision of asbestos abatement projects, including work practices, abatement methods, protective measures for personnel, inspection of asbestos abatement work areas, evaluating the integrity of containment barriers, placement and operation of local exhaust systems, ACM generated waste containment and disposal procedures, decontamination units installation and maintenance requirements, site safety and health requirements, etc. This designated "competent person" on-site supervisor shall be responsible for compliance with applicable Federal, state, and local requirements, the Contractor's SHP and APP, and the Asbestos Hazard Abatement Plan. The Contractor shall submit evidence that this person has a minimum of 2 years of on-the-job asbestos abatement supervisory experience.

B. The name, address, and telephone number of each independent testing laboratory selected to perform the sample analyses and report the results. The testing laboratory shall be completely independent from the Contractor as recognized by Federal, state, or local regulations. For each laboratory selected, Contractor shall submit written verification of the following criteria:

(1) The laboratory shall have a current accreditation for specific test methods in "Airborne Asbestos Fiber Analysis" (TEM) and "Bulk Asbestos Fiber Analysis" (PLM) issued by the National Voluntary Laboratory Accreditation Program (NVLAP).

(2) The laboratory shall have a current accreditation issued by the New York State Department of Health under the Environmental Laboratory Accreditation Program (ELAP) for the following asbestos categories:

- Environmental Analysis/Solid Hazardous Waste.
- Environmental Analysis/Air and Emissions.
- Environmental Analysis/Potable Water.

(3) The laboratory shall be fully equipped to perform the following asbestos analyses:

- Phase Contrast Microscopy (PCM) per NIOSH 7400 A-rules.
- Transmission Electron Microscopy (TEM) per NIOSH 7402.
- Polarized Light Microscopy (PLM) per U.S. EPA 600/R-93 and NYSDOH ELAP 198.1.

(4) The laboratory shall have a current accreditation for specific test methods in "Airborne Asbestos Fiber Analysis" (PCM) issued by the American Industrial Hygiene Association (AIHA) Proficiency Analytical Testing (PAT) Program.

Landfill and Transporter Qualifications; GA

Written evidence that the landfill for disposal is approved for asbestos disposal by the U.S. EPA, and state, and local regulatory agencies. Copies of signed agreements between the Contractor and each subcontractor to include transporters and the asbestos waste disposal facility to accept and dispose of all asbestos containing waste generated during the performance of this contract. Qualification resumes of each subcontractor transporter to be used, indicating previous experience in transport and disposal of asbestos waste to include all required state and local waste hauler requirements for asbestos.

Employee Training and Certification of Worker Acknowledgment; GA

The following training documentation for each employee to be engaged in the abatement work who will be potentially exposed to asbestos as determined by their direct handling of the material, entrance into an asbestos regulated work area, or airborne exposure in excess of 0.10 f/cc measured as an 8-hour time-weighted average:

A. Copy of certification of accreditation for completion of handler's course (for workers) or "Contractor/Supervisor" Course (for Contractors and on-site supervisory staff) meeting the requirements of NYSDOL and recent annual refresher training certificate meeting same requirements.

B. A copy of a Contractor generated form entitled Certificate of Workers Acknowledgment shall be completed for each employee in the same format and containing the same information as the example certificate appended to this section.

Certification of Medical Requirements; GA

For each worker, a written medical opinion prepared and signed by a licensed physician indicating the following:

A. Summary of the results of the examination.

B. The potential for an existing physiological condition that would place the employee at an increased risk of health impairment from exposure to asbestos.

C. The ability of the individual to wear personal protective equipment including respirators while performing strenuous work tasks under cold stress and/or heat stress conditions.

D. A statement that the employee has been informed of the results of the examination, been provided a copy of the results, and informed of any medical condition that may result from asbestos exposure.

Field Tests; FIO

A. Air sampling reports.

B. Pressure differential recording local exhaust system.

C. Asbestos disposal waste disposal record report.

Air Sampling Results; GA

Air sample fiber counting shall be completed and results provided within 24 hours after completion of a sampling period. The Contracting Officer shall be notified immediately of any airborne levels of asbestos fibers in excess of established requirements. The air sampling results shall be documented on a Contractor's daily air monitoring log. The daily air monitoring log shall contain the following information for each sample: date sample collected, date sample analyzed, sample number, sample type (P = Personal, A = Area, C = Abatement Clearance, IRWA = Inside Regulated Work Area, ORWA = Outside Regulated Work Area, DU = Decontamination Unit, LOU = Load-Out Unit, AT = Access Tunnel), sample period (start time, stop time, elapsed time (minutes), sampling pump manufacturer - model and serial number, average flow rate (liters per minute (L/min)), total air volume sampled (liters

(L)), sample results (fibers per cubic centimeter (f/cc)) or structures per square millimeter (s/mm square), and location/activity/name where sample collected. In addition, the daily log shall identify the calibration method used to calibrate the sampling pumps, the name and location of the laboratory conducting the sample analyses, print name, signature, and date block for the technician who conducted the sampling and the review verifying the accuracy of the information.

Pressure Differential Recordings; FIO

Pressure differential recordings shall be recorded on a continuous stripchart and made available daily. Readings shall be reviewed by the Contractor's competent person supervisor prior to submittal. Contracting Officer shall be notified immediately of any variance in the pressure differential that could cause adjacent unsealed areas to have asbestos fiber concentrations in excess of 0.01 fiber per cubic centimeter (f/cc) or background, whichever is higher.

Notifications; GA

Contracting Officer and regulatory agencies shall be notified in writing 10 days prior to the start of asbestos work.

1.11.4 D-13 Certificates

Vacuum, Filtration, and Ventilation Equipment; FIO

Manufacturer's certifications showing compliance with ANSI Z9.2 for:

A. Vacuums.

B. Water filtration equipment.

C. Ventilation equipment.

D. Other equipment required to contain airborne asbestos fibers.

1.11.5 SD-18 Records

Respirator Program; GA

Records of the respirator program as required by ANSI Z88.2, 29 CFR 1910, Section 1910.134, 29 CFR 1926.1101.

Asbestos Waste Shipment; GA

Final completed copies of the Waste Shipment Record for all shipments of waste material as specified in 40 CFR 61, Subpart M, and other required state waste manifest shipment records as specified herein. Detailed information of all asbestos waste disposals on the "MANDATORY WASTE SHIPMENT RECORD" form in accordance with revised 40 CFR 61, Subpart M. Such completed forms signed and dated by the agent of the landfill shall be submitted within 3 days after date of delivery of ACM to the landfill.

1.12 PERSONAL PROTECTIVE EQUIPMENT

Three complete sets of personal protective equipment shall be made available to the Contracting Officer, air monitoring technicians, and authorized visitors for entry to the asbestos-regulated work area at all times for inspection of the asbestos-regulated work area. Contracting Officer and authorized visitors shall be provided with training equivalent to that provided to Contractor employees in the selection, fitting, and proof of fit test as required by OSHA 1926.1101 and use of the required personal protective equipment and the site safety and health requirements. Contractor workers shall be provided with personal protective clothing and equipment as specified herein, and the Contractor shall ensure that it is worn properly. The Contractor's designated competent person supervisor shall select and approve all the required personal protective clothing and equipment to be used.

1.12.1 Respirators

Respirators shall be selected and used in accordance with manufacturer's recommendations, and shall be approved by the Mine Safety and Health Administration and the National Institute for Occupational Safety and Health (MSHA/NIOSH) for use in environments containing airborne asbestos fibers. Personnel who handle ACM, enter asbestos regulated work areas that require the wearing of a respirator, or who are otherwise carrying out abatement activities that require the wearing of a respirator shall be provided with approved respirators that are fully protective of the worker at the measured or anticipated airborne asbestos concentration level to be encountered. Before start of work, Contractor must submit a written respiratory protection program manual as required by OSHA 1926.1101. For air-purifying respirators, the particulate filter portion of the cartridges or canister approved for use in airborne asbestos environments shall be Type H, high-efficiency particulate air (HEPA), and color coded in accordance with ANSI Z228.2 (1980). Contractor shall supply a sufficient quantity of respirator filters approved for asbestos, so that workers can change filters during the work day. Require that the respirators be wet-rinsed, and filters discarded each time a worker leaves the work area. Require that new filters be installed each time a worker re-enters the work area. Store respirators and filters at the job site in the changing room and protect totally from exposure to asbestos prior to use. As a minimum, a half-mask respirator shall be worn during the startup of abatement activities, unless otherwise approved in writing by the Contracting Officer. The upgrading or downgrading of respirator type, from the minimum requirements specified for start-up, shall be made by the Contractor based on the measured or anticipated airborne asbestos fiber concentrations to be encountered. The level of respiratory protection that supplies an airborne fiber level inside the respirator, at the breathing zone of the wearer, at or below the permissible exposure limit (PEL) is the minimum level of protection allowed. The 8-hour time-weighted average (TWA) of asbestos fibers to which any worker may be exposed shall not exceed 0.1 fiber per cubic centimeter. For purpose of this section, fibers are defined as all fibers regardless of composition as counted in the OSHA Reference Method (ORM) or NIOSH 1400 procedure. All recommendations made by the Contractor to downgrade respirator type shall be submitted in writing to the Contracting Officer for acceptance. Contractor actions to upgrade respirator type shall be verbally conveyed to the Contracting Officer. Respiratory protection shall comply with 29 CFR 1926 and 29 CFR 1910. A qualitative or quantitative fit test conforming to 29 CFR 1926.1101, Appendix C, shall be conducted by the Contractor for each Contractor worker required to wear a respirator, and for the Contracting Officer and authorized visitors who enter an asbestos regulated work area where respirators are required to be worn. Fit types of respirator to be actually worn by each individual. Allow an individual to use only those respirators for which training and fit testing have been provided.

1.12.2 Whole Body Protection

Personnel exposed to asbestos shall be provided with whole body protection as specified herein and such protection shall be worn properly. The Contractor competent person supervisor shall select and approve

the whole body protection to be used. Disposable whole body protection shall be disposed of as asbestos contaminated waste upon exiting from the asbestos regulated work area. Reusable whole body protection worn shall be properly laundered in accordance with 29 CFR 1926 and as specified in the Contractor's Asbestos Hazard Abatement Plan. Asbestos abatement whole body protection shall not be removed from the work site by a worker to be cleaned. Contractor to provide a sufficient number for all required changes for all workers in the work area.

1.12.2.1 Under Clothing

Disposable underwear shall be provided if requested by workers and shall be worn next to the skin or cloth under clothing.

1.12.2.2 Work Clothing—Remote Decontamination Unit

An additional disposable coverall shall be provided when the abatement and control method employed does not provide for the exit from the asbestos-regulated work area directly into an attached decontamination unit. Worker shall don the disposable coverall over the existing suit upon exiting the work area. Disposable coverall will be removed and disposed of into ACM labeled bags and/or containers upon entering the decontamination unit. Cloth work clothes shall be provided for wear under the protective coverall when work is being conducted in low temperature conditions. Cloth work clothes shall be laundered in accordance with 29 CFR 1926 and as specified in the Contractor's Asbestos Hazard Abatement Plan.

1.12.2.3 Foot Coverings

Cloth socks shall be provided and worn next to the skin. All workers shall wear steel-toe leather work boots. Steel-toed rubber work boots shall be made available to all persons working within or visiting contaminated areas and shall be used in moist or wet areas. All persons exiting areas having ACM shall decontaminate their footwear utilizing a footwash or water spray.

1.12.2.4 Head Covering

Hood type (disposable) or reusable head covering shall be provided as deemed necessary by the competent person and agreed to by the project monitor.

In addition, protective head gear (hard hats) shall be provided as required. Hard hats shall only be removed from the asbestos regulated work area after being thoroughly decontaminated.

1.12.2.5 Protective Eye Wear

Contact lenses shall not be worn in asbestos-regulated work areas. When vision correction is necessary to perform the work task, prescription safety eye wear shall be used. Safety glasses shall be worn by personnel engaged in asbestos-abatement activities in the asbestos-regulated work area. Eye protection provided shall be in accordance with ANSI Z87.1.

1.13 DECONTAMINATION UNIT, LOAD-OUT UNIT, AND ACCESS TUNNEL

Contractor shall provide decontamination unit(s), load-out unit(s), and access tunnel(s) where required under 29 CFR 1926.1101 and 12 NYCRR Part 56 regulations. Contractor shall provide cold and hot water to all showers at all times. In addition, Contractor shall provide adequate change room area, worker (lockable) lockers, ventilation, and lighting as part of the personnel decontamination unit(s). Contractor shall provide sanitary facilities at a location separate from the decontamination unit.

1.13.1 Decontamination Procedures for Remote Decontamination Units

Require all workers to adhere to the following personal decontamination procedures whenever they leave the work area:

(1) Workers shall be HEPA vacuumed when exiting work areas.

(2) Step through boot wash.

(3) Don clean Tyvek over contaminated bodywear.

(4) Still wearing respirators, proceed to the remote decontamination unit. Upon entering the equipment room, remove overboots and discard outer disposable clothing. Then discard disposable under clothing and proceed to showers.

1.13.2 Showering/Changing

Showering is mandatory. Care must be taken to follow reasonable procedures in removing the respirator and filters to avoid asbestos fibers while showering. The following procedure is required as a minimum:

- Thoroughly wet body from neck down.
- Wet hair as thoroughly as possible without wetting the respirator filter if using an air-purifying type respirator.
- Take a deep breath, hold it and/or exhale slowly, complete wetting of hair, thoroughly wetting face, respirator, and filter (air-purifying respirator). While still holding breath, remove respirator and hold it away from face before starting to breathe.
- Dispose of wet filters from air-purifying respirator.
- Carefully wash face piece of respirator inside and out.
- Shower completely with soap and water.
- Rinse thoroughly.
- Rinse shower room walls and floor prior to exit.
- Proceed from shower to Changing Room and change into street clothes or into new disposable work items.

1.14 WARNING SIGNS AND TAPE

Contractor shall ensure that all personnel understand the warning signs. Warning signs and tape printed in English shall be provided at the regulated boundaries and entrances to asbestos regulated work areas. Signs shall be located at such a distance that personnel may read the sign and take the necessary protective steps required before entering the area. Warning signs shall conform to requirements of 29 CFR 1926.1101.

1.15 WARNING LABELS

Warning labels shall be affixed to all asbestos disposal containers used to contain asbestos materials, scrap, waste debris, and other products contaminated with asbestos. Containers with preprinted warning labels conforming to requirements specified herein are acceptable. Warning labels conform to 29 CFR 1926.1101.

1.16 LOCAL EXHAUST SYSTEM

If negative air equipment is needed at the ACM work sites, Contractor shall ensure all equipment and equipment installations conform to the requirements of 29 CFR 1926.1101 and 12 NYCRR Part 56.

1.17 TOOLS

Vacuums shall be leak proof to the filter, equipped with HEPA filters, be of sufficient capacity, and provide the necessary capture velocity at the nozzle or nozzle attachment to efficiently collect, transport, and retain the ACM waste material. Power tools shall not be used to remove ACM unless the tool is equipped with effective, integral HEPA filtered exhaust ventilation capture and collection system, or has otherwise been approved for use by the Contracting Officer. All residual asbestos shall be removed from reusable tools prior to storage and reuse. Reusable tools shall be thoroughly decontaminated prior to being removed from asbestos regulated work areas.

1.18 RENTAL EQUIPMENT

If rental equipment is to be used, written notification shall be provided to the rental agency concerning the intended use of the equipment, the possibility of asbestos contamination of the equipment, and the steps that will be taken to decontaminate such equipment. A written acceptance of the terms of the Contractor's notification shall be obtained from the rental agency.

1.19 AIR MONITORING EQUIPMENT

A. The Contractor shall select and approve the air monitoring equipment to monitor airborne asbestos within the work areas per 29 CFR 1926.1101 and 12 NYCRR Part 56. The equipment shall include, but not be limited to:

1. High-volume sampling pumps that can be calibrated and operated at a constant air flow up to approximately 10 liters per minute when equipped with a sampling train of tubing and filter cassette.

2. Low-volume, battery-powered, body-attachable, portable personal pumps that can be calibrated to a constant air flow up to approximately 3.5 liters per minute when equipped with a sampling train of tubing and filter cassette, and a self-contained rechargeable power pack capable of sustaining the calibrated flow rate for a minimum of 10 hours. The pumps shall also be equipped with an automatic flow control unit, which shall maintain a constant flow even as filter resistance increases due to accumulation of fiber and debris on the filter surface.

3. Standard 25 millimeter diameter, 0.8 micrometer (micron) pore size, mixed cellulose ester membrane filters and cassettes with nonconductive barrels and shrink bands, to be used with low flow pumps in accordance with 29 CFR 1926, for personal air sampling.

4. Standard 25 millimeter diameter, 0.45 micrometer (micron) pore size, mixed cellulose ester

membrane filters and cassettes with non-conductive barrels and shrink bands, to be used with high flow pumps when conducting environmental area sampling using NIOSH Pub No. 84-100 Methods 7400 and 7402 and the transmission electric microscopy method specified in 40 CFR 763.

5. Appropriate plastic tubing to connect the air sampling pump to the selected filter cassette.

6. A flow calibrator capable of calibration to within plus or minus 2 percent of reading over a temperature range of -20° C (-4° F) to +60° C (140° F) and traceable to a National Institute for Standards and Technology (NIST) primary standard.

1.20 EXPENDABLE SUPPLIES

1.20.1 Glove Bag

Glove bags shall be provided as described in 29 CFR 1926.1101.

1.20.2 Duct Tape

Industrial grade duct tape shall be provided in 2-inch and 3-inch widths, and shall be suitable for bonding sheet plastic and disposal containers specified herein.

1.20.3 Disposal Containers

Contractor shall provide leak-tight disposal containers for ACM generated wastes. Leak-tight means that solids, liquids, or dust cannot escape or spill out. All disposal containers shall be either pre-labeled or affixed with OSHA warning labels as specified in 29 CFR 1926.1101, and shall be secure from vandals and unauthorized personnel.

1.20.4 Disposal Bags

Six-mil thick leak-tight pre-labeled (OSHA warning label) bags shall be provided for placement of asbestos generated.

1.20.5 Leak-tight Wrapping

Two layers of 0.152 mm (6 mil) (minimum) thick polyethylene sheet stock shall be used for the containment of removed asbestos-containing components or materials such as reactor vessels, large tanks, boilers, insulated pipe segments, and other materials too large to be placed in disposal bags as described in DETAIL SHEET 9B. Upon placement of the ACM component or material, each layer shall be individually leak-tight sealed with duct tape.

1.20.6 Fiberboard Drums

Fiberboard drums shall be provided by Contractor if needed. All drums shall be lined with 6-mil thick polyethylene, and properly labeled and sealed.

1.20.7 Sheet Plastic

Sheet plastic shall be provided as specified herein and in the largest sheet size necessary to minimize seams, as indicated on the project drawings.

1.20.7.1 Polyethylene Sheet - General

Six-mil (minimum) thick polyethylene film shall be clear, frosted, or black, and conform to ASTM D 4397.

1.20.7.2 Polyethylene Sheet - Flame Resistant

Where a potential for fire exists, 0.152 mm (6 mil) (minimum) thick flame-resistant polyethylene sheet shall be provided. Flame-resistant polyethylene film shall be frosted or black, and shall conform to the requirements of NFPA 701.

1.20.7.3 Polyethylene Sheet - Reinforced

Six-mil thick reinforced polyethylene sheet shall be provided where high skin strength is required such as where it constitutes the only barrier between the asbestos-regulated work area and the outdoor environment. The sheet stock shall consist of translucent, nylon-reinforced or woven-polyethylene thread laminated between two layers of polyethylene film. Film shall meet flame resistant standards of NFPA 701.

1.20.7.4 Viewing Inspection Window

Where feasible, a minimum of one clear 1/8-inch thick acrylic sheet, 18 inches by 24 inches, shall be installed as a viewing inspection window at eye level on a wall in each containment enclosure. All such windows shall be sealed leak-tight with industrial grade duct tape.

1.20.8 Wetting Agents

1.20.8.1 Amended Water

Amended water shall meet the requirements of ASTM D 1331.

1.20.8.2 Removal Encapsulant

Removal encapsulant (a penetrating encapsulant) shall be provided when requested by project monitor or required by regulations. The removal encapsulant shall be capable of wetting the ACM and retarding fiber release during disturbance of the ACM equal to or greater than provided by amended water. Performance requirements for penetrating encapsulants are specified in paragraph ENCAPSULANTS.

1.20.9 Strippable Coating

Strippable coating in aerosol cans shall be used (only as approved by project monitor) to adhere to surfaces and to be removed cleanly by stripping at the completion of work. Since these coatings have a hydrocarbon carrying agent, their use shall be confined to well ventilated areas.

1.21 MATERIAL SAFETY DATA SHEETS

Material Safety Data Sheets (MSDSs) shall be provided for all materials brought onto the worksite. Contractor shall not bring hazardous materials onto project site. One copy shall be provided to the Contracting Officer's on-site representative, and one copy shall be included in the Contractor's Hazard Communication Program.

1.22 OTHER ITEMS

A sufficient quantity of other items shall be provided that may include, but not be limited to: scrapers, brushes, brooms, staple guns, tarpaulins, shovels, rubber squeegees, dust pans, other tools, scaffolding, staging, enclosed chutes, wooden ladders, lumber necessary for the construction of asbestos regulated containment work areas, UL approved temporary electrical equipment, material, and cords, ground fault circuit interrupters, water hoses of sufficient length, fire extinguishers, first aid kits, portable toilets, logbooks, log forms, markers with indelible ink, spray paint in bright color to mark areas, project boundary fencing, etc.

1.23 PRECONSTRUCTION CONFERENCE

The Contractor and the Contractor's designated on-site "competent person" and supervisor shall meet with the Contracting Officer and project monitor prior to beginning work at a safety preconstruction conference to discuss the details of the Contractor's Asbestos Hazard Abatement Plan, SHP, and APP including work procedures and safety precautions. Once accepted by the Contracting Officer, the Asbestos Hazard Abatement Plan, the SHP, and APP will be enforced as an addition to the specifications. Any changes required in the specifications as a result of the Asbestos Hazard Abatement Plan shall be identified specifically in the plan to allow for free discussion and acceptance by the Contracting Officer prior to the start of work.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

3.1 GENERAL

Asbestos abatement work tasks as shown on the detailed plans and drawings, as summarized in paragraph DESCRIPTION OF WORK, shall be performed as specified herein to include the appended Asbestos Abatement DETAIL SHEETS. Personnel shall wear and utilize protective clothing and equipment as specified herein. Eating, smoking, drinking, or applying cosmetics shall not be permitted in the asbestos-regulated work area. All hot work (burning, cutting, welding, etc.) shall be conducted under strictly controlled conditions in conformance with 29 CFR 1926. Personnel of other trades not engaged in asbestos abatement activities shall not be exposed at any time to airborne concentrations of asbestos. The building heating, ventilating, and air conditioning system shall be shut down, openings to the system capped. Electrical service shall be disconnected where necessary for wet removal. Temporary electrical service shall be provided where needed. If an asbestos spill occurs outside the asbestos-regulated work area, work shall be stopped and the Contracting Officer shall be notified. The condition shall be corrected to the satisfaction of the Contracting Officer, including air sampling, prior to resumption of work. The Contractor shall stop abatement work in the asbestos-regulated work area immediately when the measured airborne total fiber concentrations, as sampled and analyzed as required herein, (1) equals or exceeds 0.01 f/cc or the preabatement concentration, whichever is greater outside the asbestos-regulated work area, or (2) equals or exceeds 0.1 f/cc inside the asbestos-regulated work area. The Contractor shall correct the condition to the satisfaction of the Contracting Officer, including visual inspection and air samplings. Work resumption will only be allowed upon notification by the Contracting Officer. Corrective actions shall be documented.

3.2 PROTECTION OF ADJACENT WORK OR AREAS TO REMAIN

Asbestos abatement work shall be performed without damage or contamination of adjacent work or areas to remain. Where such work or area is damaged or contaminated as verified by the Contracting Officer using visual inspection and/or sample analysis, it shall be restored to its original condition or decontaminated by the Contractor at no expense to the Government as deemed appropriate by the Contracting Officer. This includes inadvertent spill of dirt, dust, or debris in which it is reasonable to conclude that asbestos may exist. When these spills occur, work shall stop in all affected areas immediately and the spill shall be cleaned. When satisfactory visual inspection and/or sampling analysis results are obtained and have been evaluated by the Contractor and the Contracting Officer, work may proceed.

3.3 EXISTING EQUIPMENT AND MACHINERY IN BUILDING

3.3.1 Removal of Equipment and Machinery in Buildings

Machinery and equipment within a building will be removed from the area of work by the Contractor before asbestos abatement work begins. Equipment shall be precleaned using HEPA filtered vacuum followed by wet wiping. These items shall be removed to an approved storage area for later return to the building following clearance.

3.3.2 Furnishings, Equipment, and Machinery To Remain in Place

Heavy shelves, machinery, and equipment that can be decontaminated in-place and not interfere with the removal action in the building may remain in place as approved by the Contracting Officer and shall be precleaned using HEPA vacuum followed by adequate wet wiping. Cleared items shall be covered with 2 layers of 0.152 mm (6 mil) polyethylene and edges sealed with duct tape.

3.3.3 Replacement of Equipment and Machinery

At the conclusion of the asbestos-abatement work in each work area and after meeting the final clearance requirements for each work area, tagged equipment, tools, and machinery so removed shall be transferred back to the cleaned area from which they came in accordance with the storage code designation for that material and reinstalled.

3.4 BUILDING VENTILATION SYSTEM AND CRITICAL BARRIERS

Any building ventilating system supplying air into or returning air out of an asbestos regulated work area shall be shut down and isolated by lockable switch or other positive means in accordance with 29 CFR 1910.147 and 29 CFR 1926.1101 to prevent accidental start-up and isolated by airtight seals to prevent contaminant spread through the system. Air-tight critical barriers shall be installed on all building ventilating openings that supply or return air from the building ventilation system, or serve to exhaust air from the building, that are located inside the asbestos regulated work area. The critical barriers shall consist of 2 layers of 0.152 mm (6 mil) polyethylene. Edges to wall, ceiling, and floor surfaces shall be sealed with industrial grade duct tape. Critical barriers shall be installed as required by 29 CFR 1926.1101 and 12 NYCRR Part 56.

3.5 PRECLEANING

Surfaces shall be cleaned by HEPA vacuum and adequately wet wiped prior to establishment of containment.

3.6 ASBESTOS CONTROL AREA REQUIREMENTS

Regulated containment areas shall be established and maintained for each abatement work task per 29 CFR 1926.1101 and 12 NYCRR Part 56. Viewing inspection window shall be installed on the wall of the containment enclosure, as specified in paragraph VIEWING INSPECTION.

3.7 CLEANUP

The Contractor shall maintain a clean work area by performing housekeeping functions at the end of each shift:

1. Loose ACM shall be prepared for disposal by packaging the waste and removing it from the work area to the load-out area.

2. Work area shall be cleaned as required by Contracting Officer or project monitor.

3. Polyethylene in work and high traffic areas shall be inspected and repaired.

4. Containment area shall be wet wiped if air sample results exceed prescribed level.

3.8 FINAL CLEANING AND VISUAL INSPECTION

A final cleaning shall use HEPA vacuum and wet cleaning of all exposed surfaces and equipment in the asbestos-regulated work area per 29 CFR 1926.1101 and 12 NYCRR Part 56. Upon completion of the cleaning, the Contractor and project monitor shall conduct a visual pre-inspection of the cleaned area in preparation for a final inspection before final air clearance monitoring and reclean, as necessary. Upon completion of the final cleaning, the Contractor and the Contracting Officer shall conduct a final visual inspection of the cleaned work area and document the results on the Final Cleaning and Visual Inspection. If the Contracting Officer rejects the abatement area as not meeting final cleaning requirements, the Contractor shall reclean as necessary and have a follow-on inspection conducted with the Contracting Officer. Recleaning and follow-up reinspections shall be at the Contractor's expense.

3.9 LOCK DOWN

Prior to removal of plastic barriers and after cleanup of gross contamination and final visual inspection, a post-removal (lockdown) encapsulant shall then be spray applied to ceiling, walls, floors, steel structural beams, and trusses of all buildings and other surfaces in the removal area. The abatement area shall include, but not be limited to, constructed enclosures, barriers, polyethylene sheeting that covers any furnishings and equipment articles to be discarded, critical barriers, air locks, load-out units for bag removal, and on-site constructed decontamination unit.

3.10 AIR SAMPLING

Sampling and analysis of airborne concentration of asbestos fibers shall be performed in accordance with 29 CFR 1926.1101, 12 NYCRR Part 56, and the Contractor's air monitoring plan. Personal air monitoring samples shall be taken for a minimum of two workers in each shift. Results of the personal samples shall be posted at the job site and made available to the Contracting Officer as specified herein. The Contractor shall maintain a fiber concentration inside enclosed containment regulated work area equal to or less than 0.1 f/cc expressed as an 8-hour, time-weighted average (TWA) during the conduct of the asbestos abatement. If fiber concentration rises above 0.1 f/cc, work procedures shall be investigated with the Contracting Officer to determine the cause. The Contractor's workers shall not be exposed to an airborne fiber concentration in excess of the Excursion Limit of 1.0 f/cc, as average

over a sampling period of 30 minutes. Should either an environmental concentration of 1.0 f/cc expressed as an 8-hour TWA or a personal excursion concentration of 1.0 f/cc expressed as a 30-minute sample occur inside the contained (enclosure) regulated work area, the Contractor shall stop work immediately, notify the Contracting Officer, and implement additional engineering controls and work practice controls to reduce airborne fiber levels below prescribed limits in the work area. Work shall not restart until authorized by the Contracting Officer.

3.10.1 Sampling Prior to Asbestos Work (Background Sampling and Pre-Abatement Sampling)

The baseline (site background) air sampling shall be established for sitewide conditions prior to the start of any asbestos removal activities. This is critical for the characterization of outside background conditions. Samples shall be collected from a minimum of five locations across the site. In addition, each distinct area and building undergoing abatement will have area and building-specific baseline (pre-abatement) air monitoring established at least one day prior to masking and sealing operations for buildings to be abated under full containment (i.e., 6-02, 6-03, and 30A), or one day prior to the start of abatement activities for buildings undergoing open air abatement (i.e., 6-01), and all areas of soil excavation.

Pre-abatement air samples shall be collected at a minimum of five locations (three locations for small asbestos project areas - Buildings 6-02, 6-03, and 30A).

For soil excavation areas, pre-abatement air sampling will include perimeter samples at the mid-point of each of the four sides and one from the approximate center of the area.

For buildings undergoing abatement, five air samples will be collected from outside the building. Outside samples shall be collected a minimum of 50 ft from the structure and 6 ft above and/or away from any obstructions. Samples should also be collected no less than 3 ft off the ground. Within the buildings, one sample will be collected for every 5,000 square ft of floor space, or a minimum of five samples, whichever is greater. Only Building 6-01 is larger than 5,000 square ft.

The PCM samples shall be analyzed immediately; if any result in fiber concentration is greater than 0.01 f/cc, asbestos fiber concentration shall be confirmed using NIOSH Pub 84-100 Method 7402 (TEM) at Contractor expense.

3.10.2 Sampling During Asbestos Abatement Work

The Contractor shall provide personal and area sampling as indicated in 29 CFR 1926.1101, state and local requirements, and in accordance with the Contractor's air monitoring plan. Area sampling shall be conducted at least once every shift, close to the work in the work or containment area, outside the clean room entrance to the containment area (if applicable) (outside air lock for mini and modified containment areas), inside the clean room (if applicable) (inside the air lock for mini and modified containment areas), outside the load-out unit exit, if used, and at the exhaust discharge point of the local exhaust system (if applicable). If the sampling outside the containment area shows airborne fiber levels have exceeded background or 0.01 f/cc, whichever is greater, all work shall be stopped immediately, and the Contracting Officer notified. The condition causing the increase shall be corrected. Work shall not restart until authorized by the Contracting Officer. In areas where the construction of a containment area is not required, after initial time-weighted average (TWA) airborne fiber concentrations are established, and provided the same type of work is being performed, the PCM or TEM sampling shall be conducted at the boundary of the asbestos-regulated work area in such locations and at such frequency as recommended by the Contractor, but no less than one sample upwind and one sample

downwind per day. Where glove bag methods are used, personal and area air sampling shall be performed at locations and frequencies that will accurately characterize any evolving airborne fiber levels.

3.10.3 Sampling After Final Cleanup (Clearance Sampling)

Prior to conducting final air clearance monitoring, the Contractor and the Contracting Officer shall conduct a final visual inspection of the Contractor's final cleanup of the abated asbestos regulated work area. Final clearance air monitoring shall not begin until acceptance of this final cleaning by the Contracting Officer. The Contractor will provide area sampling of airborne fibers using aggressive air sampling techniques as defined in 12 NYCRR Part 56 as otherwise required by Federal or state requirements. The use of ongoing agitation during clearance sampling will not be required where the construction of a containment area is not required.

Post-abatement air sampling shall require the collection of a minimum of five area samples (three area samples for Buildings 6-02, 6-03, and 30A) inside and five area samples (three area samples for Buildings 6-02, 6-03, and 30A) outside. In addition to the minimum requirement, one representative area sample for every 5,000 square ft above 25,000 square ft of floor space shall be collected for Building 6-01.

Post-abatement sampling will not be conducted for the soil excavation areas. Abatement will be considered complete and sufficient when all visible surficial debris and potential ACMs have been removed, the upper 6 inches of soil has been stripped, and 6 inches of clean backfill, including 3 inches of new topsoil, has been added to the area of the excavation, graded, and seeded.

Contractor shall take one (1) sample for TEM analysis as a part of final clearance air sampling at each work site. Buildings adjacent to soil removal areas shall have a minimum of six swipe samples taken to verify absence of asbestos fibers.

3.10.4 Air Clearance Failure

Should clearance sampling results fail to meet the final cleanup requirements, the Contractor shall pay all costs associated with all required recleaning, resampling, and analysis until final cleanup requirements are met.

3.11 SITE INSPECTION

While performing asbestos removal work, the Contractor shall be subject to on-site inspection by the Contracting Officer who will be assisted by or represented by a third party project monitor. If the work is found to be in violation of this specification, the Contracting Officer or his representative will issue a stop work order to be in effect immediately and until the violation is resolved. Standby time required to resolve the violation shall be at the Contractor's expense.

3.12 CLEANUP AND DISPOSAL

3.12.1 Housekeeping

ACM dust and fibers shall not be allowed to move out of the work areas.

3.12.2 Title to Materials

Material resulting from abatement work, except as specified otherwise, shall become the property of the Contractor and shall be disposed of as specified in applicable local, state, and Federal regulations and herein.

3.12.3 Asbestos Waste Shipment Record

The Contractor shall complete and provide final completed copies of the Waste Shipment Record for all shipments of waste material as specified in 40 CFR 61, Subpart M and other required state waste manifest shipment records within 3 days of delivery to the landfill.

TABLE 1

SUMMARY OF WORK TASKS

TASK (1) _____

LOCATION (2)_____ _____ _____
_____ _____ _____
_____ _____ _____

DESCRIPTION (3)_____ _____ _____
_____ _____ _____
_____ _____ _____

TECHNIQUE (4)_____ _____ _____

FRIABLE (5) ___ _____
NF-1 ___ _____
NF-2 ___ _____

FORM (6) _____ _____ _____
CONDITION_____ _____ _____

QUANTITY (7)
LINEAR FT._____ _____ _____
SQUARE FT._____ _____ _____

RESP. SHEET (8)_____ _____ _____

SET-UP SHEET (9)__, __, __, __,__, __, __, __,__, __, __, __,
__, __, __, __,__, __, __, __,__, __, __, __,
__, __, __, __,__, __, __, __,__, __, __, __,
__, __, __, __,__, __, __, __,__, __, __, __,

NOTES:

(1) Alpha sequence of work tasks (A, B, C, etc.) for each asbestos regulated work area. Each category of friability has a separate task.

(2) Specific location of the work (building, floor, area, etc.).

(3) Description of material.

(4) Technique to be used: Removal = REM; Encapsulation = ENCAP; Encasement = ENCAS; Enclosure = ENCL; Repair = REP.

(5) Friability of materials: Friable = FR; Non-friable = NF-1 or NF-2 (number indicates friable category).

(6) Form: Interior or Exterior Architectural = IA or EA; Mechanical/Electrical = ME. Condition: Good = G; Fair = F; Poor = P.

(7) Quantity of ACM in linear meters (m); linear feet (ft); square meters (square feet (sf)).

(8) Response action sheet specifies the material to be abated and the method to be used.

(9) Set-up sheets indicate the containment and control methods to be used in support of the response action.

TABLE 2

NIOSH METHOD 7400 PCM ENVIRONMENTAL AIR SAMPLING PROTOCOL
(NON-PERSONAL)

Sample Location	Minimum No. of Samples	Filter Pore Size (Note 1)	Min. Sampling Vol. (Note 2) (liters)	Rate (liters/min)
Inside Abatement Area (Notes 3 and 4)	3-5/5,000 square feet	0.80 microns	1,500	2-10
Each Room in Abatement Area Less than 5,000 Square Feet	1	0.80 microns	1,500	2-10
Field Blank	2	0.80 microns	0	0
Laboratory Blank	1	0.80 microns	0	0

Notes:

1. Type of filter is mixed cellulose ester.
2. Ensure detection limit for PCM analysis is established at 0.01 fibers/cc.
3. One sample should be added for each additional 470 square meters (5,000 square feet).
4. No less than 3 samples are to be taken in Buildings 6-02, 6-03, and 30A, and no less than 5 samples are to be taken in Building 6-01, per abatement area plus two field blanks.

TABLE 3

NYS INDUSTRIAL CODE RULE 56 : TEM AIR SAMPLING PROTOCOL

Location Sampled	Minimum No. of Samples	Filter Pore Size	Min. Vol. (liters)	Sampling Rate (liters/min)
Inside Abatement Area	1	0.45 microns	1,199	2-10
Outside Abatement Area	0	0.45 microns	1,199	2-10
Field Blank	0	0.45 microns	0	0
Laboratory Blank	0	0.45 microns	0	0

Notes:

1. Type of filter is mixed cellulose ester.
2. The detection limit for TEM analysis is 70 structures/square mm.

CERTIFICATE OF WORKER'S ACKNOWLEDGMENT

PROJECT NAME _____ CONTRACT NO. _____
PROJECT ADDRESS _____ _____
CONTRACTOR'S NAME _____
EMPLOYEE'S NAME _____

WORKING WITH ASBESTOS CAN BE DANGEROUS. INHALING ASBESTOS FIBERS HAVE BEEN LINKED WITH TYPES OF LUNG DISEASE AND CANCER. IF YOU SMOKE AND INHALE ASBESTOS FIBERS, THE CHANCE THAT YOU WILL DEVELOP LUNG CANCER IS GREATER THAN THAT OF THE NONSMOKING PUBLIC.

Your employer's contract for the above project requires that: you be provided with and complete formal and project-specific training, you be supplied with proper personal protective equipment including respirators, that you be trained in its use and that you receive a medical examination to evaluate your physical capacity to perform your assigned work tasks, under the environmental conditions expected, while wearing the required personal protective equipment. These things are to be done at no cost to you. By signing this certification, you are acknowledging that your employer has met these obligations to you.

Date Completed: _____

FORMAL TRAINING: I have completed a formal training course for: asbestos abatement workers (for workers) (Contractor/ Supervisor) that meets EPA's and this state's requirements. . . . . _____

In addition, I have completed annual refresher as required by EPA and this state's requirements. . . . . _____

PROJECT-SPECIFIC TRAINING: I have been provided and have completed the project-specific training required by this Contract. My employer's industrial hygienist and competent person supervisor conducted the training. . . . . _____

RESPIRATORY PROTECTION: I have been trained in accordance with the criteria in the Contractor's Respiratory Protection Program. I have been trained in the dangers of handling and breathing asbestos dust and in the proper work procedures and use and limitations of the respirator(s) I will wear. I have been trained in and will abide by the facial hair policy of my employer. . . . . _____

RESPIRATOR FIT-TEST TRAINING: I have been trained in the proper selection, fit, use, care, cleaning, maintenance, and storage of the respirator(s) that I will wear. I have been fit-tested in accordance with the criteria in the Contractor's Respiratory Program and have received a satisfactory fit. I have been assigned my individual respirator. I have been taught how to properly perform positive and negative pressure fit-check upon donning negative pressure respirators each time. . . . . _____

MEDICAL EXAMINATION: I have had a medical examination within the last twelve months, which was paid for by my employer. The examination included: health history, pulmonary function tests, and may have included an evaluation of a chest x-ray. A physician made determination regarding my physical capacity to perform work tasks on the project while wearing personal protective equipment including a respirator. I was personally provided a copy and informed of the results of that examination. My employer's industrial hygienist evaluated the medical certification provided by the physician and checked the appropriate blank below.

The physician determined that there:
_____ were no limitations to performing the required work tasks;
_____ were identified physical limitations to performing the required work tasks.

Employee's Signature _____ Date _____
Printed Name _____
Social Security Number _____
Contractor's Industrial Hygienist Signature _____ Date _____
Printed Name _____
Social Security Number _____
Date Medical Exam Completed _____

-- End of Section --

TABLE 3-1
BUILDINGS T-3, 3-01, 5-01, AND WTP MIXING HOUSE
BULK ASBESTOS SAMPLING LOCATIONS AND RESULTS
SOMERSET GROUP PROPERTY
LOOW

SAMPLE ID	MATRIX	ACM	LOCATION	CONDITION	QUANTITY/COMMENTS
WTP - Mixing House					
WWTP - 1` A, B, C	Black Roof Flashing	No	From collapsed roof on the mixing house structure.	Poor (100%)	Wooden structure is collapsing into the influent mixing house. Black, asphaltic, fibrous roofing materials were sampled. Total square footage of this material estimated to be approximately 440 square ft.
Building 3-01					
1-053 A,B,C	Window Glazing	No	All windows still in place in the building.	Poor (100%)	Approximately 210 linear ft of light gray window glazing. Glazing is loose, dry, friable. Half of the glazing is on the floor.
Building 5-01					
1-054 A,B,C	Window Glazing	No	All windows still in place in the building.	Poor (100%)	Approximately 260 linear ft of light gray window glazing. Glazing is loose, dry, friable. Half of the glazing is on the floor.
Temporary Building No. 3					
1-052 A,B,C	Window Glazing	No	All windows still in place in the building.	Poor (100%)	Approximately 1,200 linear ft of light gray window glazing. Glazing is loose, dry, friable. Half of the glazing is on the floor.

TABLE 3-2
SOIL SAMPLING LOCATIONS AND RESULTS
SOMERSET GROUP PROPERTY
LOOW

SAMPLE ID	SAMPLING LOCATION	ASBESTOS CONTENT (%)
S-001*	West of Building 31, east of main access road	2% Chrysotile
S-002*	West of Building 31, east of main access road	4% Chrysotile
S-003*	West of Building 31, east of main access road	< 1% Chrysotile
S-008*	West of Building 3-01, east of main access road	< 1% Chrysotile
S-009*	East of Area 18N, west of main access road	3% Chrysotile
S-010*	East of Area 18N, west of main access road	2% Chrysotile
S-013*	East of Building 30, west of main access road	< 1% Chrysotile
S-014*	East of Building 30, west of main access road	< 1% Chrysotile
S-034*	North of Area 18N, west of main access road	< 1% Chrysotile
S-039*	West of T-1 and T-2, adjacent to main drainage ditch	< 1% Chrysotile
S-067*	West of Building 6-03, east of Building 3-01	< 1% Chrysotile
S-069*	West of Building 6-01, east of Building 5-01	< 1% Chrysotile
S-071*	West of Building 6-01,near concrete tank farm	< 1% Chrysotile
S-080*	North of Area 21	< 1% Chrysotile
S-085*	Southeast of Area 21, north of Building 6-01	< 1% Chrysotile
S-101*	Between Buildings 6-01 and 6-02	< 1% Chrysotile
S-104	Between the east and west wings of Building 6-01	< 1% Chrysotile
S-105	Between the east and west wings of Building 6-01	< 1% Chrysotile
S-114*	In the northeast corner of the property in forested area	< 1% Chrysotile
S-116*	In the northcenter of the property in open field	< 1% Chrysotile
S-117*	In the northcenter of the property east of main access road	< 1% Chrysotile
S-121*	In the northcenter of the property in open field	< 1% Chrysotile

* Indicates grid nodes sample location. Data represent only those samples which were determined to contain ACMs (see Figure 3-2 for soil sample locations).

TABLE 3-3
BUILDING 6-01
BULK ASBESTOS SAMPLING LOCATIONS AND RESULTS
SOMERSET GROUP PROPERTY
LOOW

SAMPLE ID	MATRIX	ACM	LOCATION	CONDITION	QUANTITY/COMMENTS
1-001 A,B,C	Bagged asbestos mortar	No	Found on the floor, southwest corner of east wing of building.	Poor (100%)	• 32 - 50-lb. bags of white, friable, loose, wind-blown powder. About half of the bags are torn and open. Trade name is John's Manville Hy-Flow Super Cel mortar
1-002 A,B,C	Piping - w/insulation - w/o insulation	Yes	Pipes found about 12 ft above the floor on both levels. Appears that at least 50% of the piping has been removed and is laying as scrap material on the floor.	Good (10%) Fair (20%) Poor (70%) Condition similar for material still on pipes.	• Since the walls are missing from this building, the pipe insulation has been subject to weathering and moisture over the years. • Majority of insulation laying on the ground often intermixed with scrap and vegetation, friable, soft, and weathered. • 5,500 ft of pipe is presumed to have been covered with ACMs and is now without insulation, 500 ft still covered with insulation with the majority (70%) in poor condition. • 80% of ACM insulation covers or had covered 1-2 inch water lines, 20% of insulation covers or had covered 6-10 inch pipes. Volume of pipe insulation remaining = 160 cu ft. Approximately 680 cu ft is missing.
1-004 A,B,C	Vitreous pipe	No	East wing, first floor stacked on pallet.	Good (100%)	• Hard, non-friable, appproxdmately 15 linear ft.
1-003 A,B,C 1-005 A,B,C	Loose debris	Yes Yes	Most in piles on the floor both inside and outside the building.	Poor (100%)	• Miscellaneous piles of loose, friable material. Approxdmately 10 ft^3 volume.
1-006 A,B,C	Pipe elbows	No	Found both attached to the remaining piping and scattered across the floor.	Good (25%) Fair (25%) Poor (50%)	• More than half missing insulation. Friable, loose, weathered. • 152 without insulation, 102 with insulation. Total volume estimated at approxdmately 45 cu ft of which approxdmately 10 cu ft remains on the pipes.
1-007 A,B,C	Electrical insulators	No	West wing, first floor in three 55-gallon drums and spilled on floor.	Good (90%) Fair (10%)	• White, hard, non-friable. Approxdmately 20 cu ft total volume.
1-008 A,B,C 2-009 A,B,C	Corrugated transite panels - interior - exterior	Yes Yes	Corrugated building panels found in piles on the first and second floors inside the building, and outside adjacent to the building in both piles and scattered loose pieces.	Good (70%) Fair (15%) Poor (15%)	• Interior - 30 (3'6' x 5'), 453 (3'6" x 6'), 212 (3'6" x 12') plus an additional 2000 sq ft loose debris. • Exterior - 98 (3'6" x 6'), 180 (3'6" x 12') mostly along east access road, beween building and west access road near the former concrete gas storage tanks, and along the south end of the building. • Total = 870 transite panels, many starting to deteriorate. • An additional 3,200 sq ft of flat, 1/4-inch thick, transite panels surrounds the 2nd floor steel structural members.

TABLE 3-3 (Cont'd)
BUILDING 6-01
BULK SAMPLING LOCATIONS AND RESULTS
SOMERSET GROUP PROPERTY
LOOW

SAMPLE ID	MATRIX	ACM	LOCATION	CONDITION	QUANTITY/COMMENTS
2-010 A,B,C	Roof flashing	Yes	Spalling off the roof of the second floor office north end of the buildings.	Poor (100%)	• Wet, deteriorated, loose, approximately 130 linear ft. Assume 12-18 inches in width and a total volume of approximately 20 cu ft.
2-011 A,B,C	Transite panel seam tape	No	Second floor at seams of 1/4 inch transite building panels.	Good (90%) Fair (10%)	• 2,400 linear ft most still on transite board which surrounds the lower 9 ft of the second floor steel structural support beams. • Non-friable, black bitumin tape.
2-012 A,B,C	Caulk	Yes	On the back side of some of the corrugated transite panels.	Poor (100%)	• Miscellaneous caulking materials used to seal between transite panels, insulate windows, etc.
2-013 A,B,C	Concrete floor	No	Second floor concrete beginning to weather and spall.	Good (80%) Fair/Poor (20%)	• Floor is cracked and spalling in many locations on the second floor.
2-014 A,B,C	Window glazing	No	Window frames removed, found on the floor on both the lower and upper levels, in three piles.	Fair (25%) Poor (75%)	• Approximately 1,200 linear feet on 85 windows. Total volume approximately 5 cu ft. • Loose, friable, weathered, and falling off. Half is missing.
1-015 A,B,C	Black bituminous expansion joint	Yes	Second floor north end.	Poor (100%)	• 60 linear ft by 10 inches wide, falling off from between building walls, found on the floor and ground.
Previously sampled	Hoppers	Yes	Located on the second floor, one in each the east and west building wings.	Poor (100%)	• Two hoppers found on the second floor of Building 6-01 each about 10 ft in diameter, and 10 ft tall. • Estimate approximately 250 cubic ft of potential ACM.

TABLE 3-4
BUILDINGS 6-02 and 6-03
BULK ASBESTOS SAMPLING LOCATIONS AND RESULTS
SOMERSET GROUP PROPERTY
LOOW

SAMPLE ID	MATRIX	ACM	LOCATION	CONDITION	QUANTITY/COMMENTS
Not sampled	Transite panels - exterior outside the building		On the ground between Buildings 6-02 and 6-03.	Good (70%) Fair (15%) Poor (15%)	• Exterior - 44 (3'6" x 6'), 94 (3'6" x 12'). • Total = 138 transite panels many starting to deteriorate, exposed to the elements, growing algae, soft and weathered on the edges.
1-016 A,B,C 1-018 A,B,C	Piping - w/o insulation	Yes Yes	Inside Buildings 6-02 and 6-03 on the concrete floor.	Poor (100%)	• All of the insulation on the floor, friable. • Pipes have all been removed. • Acres estimates approximately 100 linear ft per building. • Total = 200 linear ft. Original pipe diameter was 2 inches, total volume is approximately 20 cu ft in each building.
1-017 1-019	Wipe sample of north walls near doorway.	Not Detected	Inside Buildings 6-02 and 6-03 from the cinder block walls.	Not Applicable	• Collected one wipe sample from each building. • Samples designated 1-017 and 1-019. • Both wipe samples were collected from the building walls.

TABLE 3-5
BUILDINGS 21-01, 27 AND PIPE BRIDGE
BULK ASBESTOS SAMPLING LOCATIONS AND RESULTS
SOMERSET GROUP PROPERTY
LOOW

SAMPLE ID	MATRIX	ACM	LOCATION	CONDITION	QUANTITY/COMMENTS
Building 21-01					
1-064 A,B,C	Window glazing	No	All windows still in place in the building.	Poor (100%)	• Approximately 162 linear ft of window glazing. Half of the glazing is on the floor.
Building 27					
1-065 A,B,C	Building panels	No	Refrigeration unit just north of Building 27 - Guard House.	Good (100%)	• Gray, hard, non-friable building panels. Less than 100 square feet.
Not sampled	Corrugated transite panels - exterior		Outside the building on the grass.	Poor (100%)	• Exterior total = 1 transite panel in pieces, starting to deteriorate.
1-036 A,B,C	2 ft x 4 ft ceiling tile	No	Throughout the building.	Poor (100%)	• Wet, deteriorated, all on the floor • Total square footage of ceiling tile = 600 sq ft.
1-037 A,B,C	Window glazing	No	All windows still in place in the building.	Poor (100%)	• Approximately 250 linear ft of window glazing. Half of the glazing is on the floor.
Not sampled	12 inch x 12 inch floor tile	Labeled VAT	Behind the front counter on the floor.	Good (100%)	• Yellow and black alligator pattern. Two boxes of labeled vinyl asbestos tiles (VAT). Each box has 45 pieces per box. Same pattern as seen in the office in Building 30.
Pipe Bridge					
1-067 A,B,C	Steam line pipe insulation	Yes	West of Building 30A. Crosses over west drainage ditch to CWM property.	Poor (100%)	• Large diameter (±12 inch) steam line pipe insulation. • The aluminum exterior wrapping is damaged in many places, 100 linear ft with two pipe elbows. • Friable, loose, weathered.

TABLE 3-6
BUILDING 30
BULK ASBESTOS SAMPLING LOCATIONS AND RESULTS
SOMERSET GROUP PROPERTY
LOOW

SAMPLE ID	MATRIX	ACM	LOCATION	CONDITION	QUANTITY/COMMENTS
Not sampled	Corrugated transite panels - exterior		Outside the building on the east side on the lawn.	Good (70%) Fair (15%) Poor (15%)	• Exterior total = 5 transite panels, most starting to deteriorate.
1-020 A,B,C	2 ft x 4 ft ceiling tile	No	Offices, bathrooms, hallways, and paneled office spaces on east side of building.	Good (30%) Fair (50%) Poor (20%)	• Wet, deteriorated, loose, many on the floor in areas where the roof is missing. Total square footage of ceiling tile = 1,220 square ft. Approximately 20% shows water damage.
1-021 A,B,C	12 inch x 12 inch floor tile	No	Northeast corner office floor.	Fair (90%) Poor (10%)	• Yellow and black alligator pattern. Some tiles cracked and loose. Total square footage estimated at 150 square ft. Other areas of the building floor covered with ceiling materials, scrap and various equipment. Total footage may be slightly greater.
1-022 A,B,C	Pipe elbows	No	Throughout the building.	Good (80%) Poor (20%)	• Most damage along east and west building walls were the roof has collapsed into the structure. Assume a total of 65 pipe elbows, 20% which show damage. Friable and loose where damaged. Minor amounts of the materials on the floor (< 5 cubic ft).
1-023 A,B,C	Pipe insulation - w/insulation - w/o insulation	Yes	Throughout the building.	Good (80%) Poor (20%)	• Majority of pipe insulation is undamaged and appears to be fiberglass in composition. Small amount on ground and beneath hot water heaters which may be ACM. 25 linear ft with suspect insulation. Minor volumes of materials on the floor (< 10 cubic ft).
1-024 A,B,C	Ceiling plaster with steel mesh backing	No	Offices, bathrooms, hallways, and paneled office spaces on east side of building.	Poor (100%) for fallen material. Fair (100%) for intact material.	• Approximately 300 sq ft shows water damage and on the floor in poor condition. Approximately 200 sq ft intact. Most of this plaster is found along the east wall of the building. Approximately 25 cubic feet.
1-025 A,B,C	Roof flashing	No	Along east and west building walls where the roof has collapsed.	Good (60%) Fair (20%) Poor (20%)	• Black bituminous roofing material totals 8,400 sq ft. Approximately 1,700 sq ft collapsed and lying on the floor, all in poor condition. Intact material in good and fair condition and represents 80% of total building area. Minor amounts of the materials on the floor (< 5 cubic ft).
1-026 A,B,C	Concrete roof panels	No	Throughout the building, collapsed on east and west walls.	Good (60%) Fair (20%) Poor (20%)	• Tongue and groove concrete roof panel material. Totals 8,400 sq ft. Approximately 1,700 square ft collapsed and lying on the floor, all in poor condition. Intact material in good and fair condition and represents 80% of total building area. Approximately 150 - 250 cubic ft on the floor.

TABLE 3-7
BUILDING 30A
BULK ASBESTOS SAMPLING LOCATIONS AND RESULTS
SOMERSET GROUP PROPERTY
LOOW

SAMPLE ID	MATRIX	ACM	LOCATION	CONDITION	QUANTITY/COMMENTS
1-038 A,B,C	Pipe insulation	Yes	Throughout the building both on the floor and some on the pipes.	Poor (100%)	• Approximately 100 linear ft of pipe insulation estimated to have been in this building of various sizes (2, 4, and 8 inch diameters). 80% is now on the floor, the remaining 20 ft is in fair to poor condition and is exposed to the elements where the roof has holes and is starting to collapse.
1-039 A,B,C	2 ft x 4 ft ceiling tile	No	Piled on scrap steel in center of building.	Good (90%) Fair (10%)	• Approximately 160 sq ft is piled in the center of the building.
1-040 A,B,C	2 ft x 2 ft ceiling tile	No	Piled on scrap and on the golf game, some still in the box.	Good (90%) Fair (10%)	• Approximately 70 sq ft of aluminized 2 ft x 2 ft ceiling tiles.
1-041 A,B,C	Joint compound	No	Bagged material in center of room.	Poor (100%)	• One 25-lb. bag of Rubberoid joint compound still in the bag. Material is hard.
1-042 A,B,C	Asbestos mortor	Yes	Bagged material against south wall.	Poor (100%)	• Corey-Canadian Mines Ltd. 7M-90 asbestos mortar powder, loose, friable. Bags are ripped open and spilling their contents on the floor. Five 50-lb. bags.
1-043 A,B,C	Cement	No	Bagged material against south wall.	Poor (100%)	• Eagle Picher one coat cement, powder, bags open and spilling their contents onto the floor. • Bags are mixed in with the asbestos mortar bags. Four 100-lb. bags.
1-044 A,B,C	Roof panels	No	Falling onto the ground mainly along the south wall.	Poor (100%)	• Total of approximately 1,000 sq ft of roof panels, many damaged due to collapsed roof structure and exposure to moisture.
1-045 A,B,C	Pipe insulation elbow	No	Along floor beneath piping.	Poor (100%)	• White, friable mag pipe elbows subject to weathering and damage due to collapsed roof structure and exposure to moisture.
1-046 A,B,C	Brown panel mastic	Yes	From the back of paneling stacked against the wall.	Good (100%)	• 200 sq ft of paneling with mastic adhesive. Mastic is non-friable.
1-047 A,B,C	Steam line pipe insulation	Yes	From metal wrapped pipe insulation piled outside the building on the north side.	Poor (100%)	• Large diameter (±12 inch) steam line pipe insulation. Found in numerous debris piles across the site. Thin, aluminum exterior wrapping is damaged or missing along most sections. White, friable. Assume 100 - 200 linear feet. Several thousand feet found across the entire site.

TABLE 3.7 (Cont'd)
BUILDING 30A
BULK ASBESTOS SAMPLING LOCATIONS AND RESULTS
SOMERSET GROUP PROPERTY
LOOW

SAMPLE ID	MATRIX	ACM	LOCATION	CONDITION	QUANTITY/COMMENTS
1-048 A,B,C	Ductwork	Yes	From piled material outside the building on the east side.	Fair (90%) Poor (10%)	• Large diameter (±12 inch) transite ductwork, non-friable, found in a pile north of Building 30A. Estimate 100 linear ft of ductwork outside Building 30A.
1-049 A,B,C	Window glazing	No	From the exterior of the south side windows.	Poor (100%)	• Brittle, hard, friable window glazing. Majority is falling off the windows onto the floor. Estimate 400 linear ft in Building 30A.
1-050	Wipe sample	Yes	Off floor, 4 ft north of south wall.	Not Applicable	• Wipe sample collected in the vicinity of several small piles of debris and spilled bagged materials close to the south building wall.
1-051	Wipe sample	No	South wall, 4 ft off the floor.	Not Applicable	• Wipe sample collected off the wall near potential asbestos-containing materials.

TABLE 3-8
BUILDING 31
BULK ASBESTOS SAMPLING LOCATIONS AND RESULTS
SOMERSET GROUP PROPERTY
LOOW

SAMPLE ID	MATRIX	ACM	LOCATION	CONDITION	QUANTITY/COMMENTS
1-055 A,B,C	Brown panel mastic	Yes	From the back of paneling northwest end of building.	Good (100%)	• 4,300 square ft of paneling with mastic adhesive. Mastic is hard, brittle,non-friable.
1-056 A,B,C	12 inch x 12 inch floor tile	No	Northeast office.	Fair (80%) Poor (20%)	• Yellow with black alligator pattern. Also found in Buildings 27 and 30. Subjected to moisture and temperature extremes due to the collapsed roof in this section of the building.
1-057 A,B,C	2 ft x 2 ft ceiling tile	No	North center of the building.	Fair (90%) Poor (10%)	• Approximately 400 sq ft of aluminized 2 ft x 2 ft ceiling tiles.
1-058 A,B,C	Ceiling plaster	No	East end hallway ceiling.	Fair (75%) Poor (25%)	• Material is covered by ceiling tiles in the majority of the building. Assume 6,000 square ft. White, brittle, friable. Subject to deterioration and in poor condition where exposed to the weather. Assume 25% has been damaged, remainder in fair condition.
1-059 A,B,C	2 ft x 4 ft ceiling tile	No	Found in the southeast office areas.	Fair (80%) Poor (20%)	• Approximately 1,500 sq ft with water damage evident in approximately 20% of the tiles. Tiles are white, fibrous, and friable.
1-060 A,B,C	Cove base	No	Northeast office.	Good (100%)	• Approximately 80 linear ft of black cove base with what appears to be the same brown mastic as found behind the paneling.
1-061 A,B,C	Pipe insulation elbow	Yes	In hallway.	Fair (80%) Poor (20%)	• White, friable mag pipe elbows subject to weathering and damage due to collapsed roof structure and exposure to moisture. Unknown quantity above ceiling tiles.
1-062 A,B,C	Duct wrap	No	In hallway.	Good (50%) Fair (50%)	• Black, tar-like, duct sealant. Estimate 600 sq ft found above the ceiling tile.
1-063 A,B,C	1 ft x 1 ft ceiling tile	No	On floor in northest offices of building.	Fair (10%) Poor (90%)	• Approximately 400 sq ft of tile, most on the floor. The roof has collapsed in this portion of the building.
1-066 A,B,C	Ceiling plaster	No	Northeast corner office.	Poor (100%)	• Ceiling plaster from northeast corner office. Plaster has collapsed from the ceiling onto the floor. Sample collected off the floor.

TABLE 3-9
BUILDING 41
BULK ASBESTOS SAMPLING LOCATIONS AND RESULTS
SOMERSET GROUP PROPERTY
LOOW

SAMPLE ID	MATRIX	ACM	LOCATION	CONDITION	QUANTITY/COMMENTS
Not sampled	Transite panels - exterior	No	Outside the building in a pile along the west wall.	Good (80%) Fair (10%) Poor (10%)	• Exterior total = 55 transite panels most starting to deteriorate due to exposure to the weather.
1-027 A,B,C	Pipe insulation - w/insulation - w/o insulation	No	Throughout the building.	Good (80%)-800 ft Poor (20%)-200 ft	• Wet, deteriorated, loose, mostly on the floor on the east side of the building where the roof has collapsed (100%) in poor condition. Total piping insulation estimated at 900 ft, most on 2-inch water line. About 200 linear ft on floor along east side of building (volume = 15 cubic ft) which represents approximately 20% of the total linear footage.
1-028 A,B,C	Pipe elbows	No	Throughout the building.	Good (80%)-100 fittings Poor (20%)-20 fittings	• Wet, deteriorated, loose, mostly on the floor on the east side of the building where the roof has collapsed (100%) in poor condition. Total number of pipe elbows estimated to be about 120, most on 2-inch water line. About 20 lying on floor along east side of building (volume < 5 cubic ft) which represents approximately 20% of the total volume. Friable.
1-029 A,B,C	Ceiling plaster	No	In the east side of the building in the offices, boiler room, bathrooms, and storage areas.	Fair (80%)-Intact Poor (20%)-on floor	• Plaster ceiling with expanded metal backing. Wet, deteriorated, loose, on the floor along the east side of the building where the roof has collapsed (100%) in poor condition. 240 sq ft in mech. storage area intact, 300 sq ft in bathrooms in poor condition, 600 sq ft on floor in boiler room and 200 ft intact in poor condition, 1,000 sq ft on floor east side of building and 500 sq ft is intact in poor condition, 150 sq ft in the stock room intact, 10 sq ft in entrance to the boiler room in poor condition.
1-030 A,B,C	Tongue and groove concrete roof panels	No	Throughout the building, collapsed mainly along the east side of the building.	Fair (95%) Poor (5%)-1000 sq ft	• Approximately 20,000 sq ft roof area remains intact (95%). 1,000 sq ft has collapsed (5% of total area) and is lying on the floor on the east side of the building. Entire roof is in fair to poor condition and additional collapse should be expected.
1-031 A,B,C	Roof flashing	No	East side of building where the roof has collapsed.	Fair (90%) Poor (10%)-100 linear ft	• Approximately 650 linear ft of roof flashing with approximately 100 linear ft (5 cubic ft) collapsed along the east side of the building. Entire roof is in fair to poor condition and additional collapse should be expected.
1-032 A,B,C	Duct wrap	Yes	Mainly above the boiler room plaster ceiling.	Good (60%) Fair (20%) Poor (20%)	• Total quantity unknown, assumed to be approximately 400 sq ft. Wrap is generally intact but is starting to show signs of age. Can be expected to deteriorate as moisture affects the strength of the material.
1-033 A,B,C	9 inch x 9 inch floor tile	Yes	Storage area adjacent to bathroom.	Good (100%)	• Small area of the floor outside the bathroom. Generally in good condition.
1-034 A,B,C	Tank insulation	No	Small tank on floor in east side of building beneath area of roof collapse.	Poor (100%)	• White, fibrous thermal system insulation on small pressure vessel. Approximately 15 sq ft (<5 cubic ft) of material. All insulation in poor condition due to exposure.
1-035 A,B,C	Make-up water tank insulation	Yes	Ceiling of boiler room.	Fair (80%) Poor (20%)	• Tank is approximately 300 gallons in size (10' x 3'). Material is friable, loose, and wrap is starting to deteriorate.

LFI 12/19/97 P0981828
FILE: DRC100C CODE: 00000

CWM CHEMICAL SERVICES INC. PROPERTY

SOMERSET GROUP PROPERTY

BALMER RD.

310

LOOW LOCATION MAP

BUFFALO

LOOW SITE

LOOW SITE

BLDG 21-01

BLDG 6-01

BLDG 6-02

BLDG 6-03

BLDG 5-01

BLDG 3-01

BLDG 31

BLDG 30

BLDG 30A

BLDG T-3

BLDG 41

T-1

T-2

PROPERTY LINE

CWM CHEMICAL SERVICES INC. PROPERTY

SCALE 0 80 160 FEET

LEGEND:

1-017 BULK SAMPLE LOCATIONS

43 TRANSITE PANELS (QUANTITY)

MISCELLANEOUS PACM DEBRIS (ROOFING, PIPE INSULATION, TRANSITE PANELS AND DUCTWORK)

LOOW
AIR FORCE PLANT NO. 68
SOMERSET GROUP PROPERTY
BULK ASBESTOS SAMPLING LOCATION PLAN

FIGURE 3-1 ACRES

LFI 12/19/97
FILE: DRC1008

P0981828
CODE: 00000

CWM CHEMICAL SERVICES INC. PROPERTY

SOMERSET GROUP PROPERTY

BLDG 21-01

BLDG 6-01

BLDG 6-02

BLDG 6-03

BLDG 5-01

BLDG 3-01

BLDG 31

BLDG 30-1

BLDG 30A

BLDG T-3

BLDG #1

T-1

T-2

PROPERTY LINE

BALMER RD.

310

LOOW LOCATION MAP

LOOW SITE

LOOW SITE

CWM CHEMICAL SERVICES INC. PROPERTY

SCALE 0 80 160 FEET

LEGEND:

- SURFACE SOIL SAMPLE
- SURFACE/SUBSURFACE SOIL SAMPLE
- ASBESTOS DETECTED <1%
- ASBESTOS DETECTED >1%

NOTE:

1. S-029 NOT SAMPLED
2. ACM WERE NOT DETECTED IN ANY SUBSURFACE SOIL SAMPLE

LOOW
AIR FORCE PLANT NO. 68
SOMERSET GROUP PROPERTY
SOIL SAMPLING LOCATION PLAN

FIGURE 3-2

ACRES

ATTACHMENT 1

ASBESTOS SURVEY REPORT

THE ASBESTOS SURVEY REPORT, JUNE 1998, IS IDENTIFIED AS ATTACHMENT 1 OF SECTION 2080, AND IS PROVIDED AS A SEPARATELY BOUND DOCUMENT.

CEGS-02110 (July 1989)

Superseding
CEGS-02100 (August 1983)

SECTION 02110

CLEARING AND GRUBBING
07/89

PART 1 GENERAL

1.1 REFERENCES (NOT APPLICABLE)

1.2 DEFINITIONS

1.2.1 Clearing

Clearing shall consist of the felling, trimming, and cutting of trees into sections and the satisfactory disposal of the trees and other vegetation designated for removal, including down timber, snags, brush, and debris occurring in the areas to be cleared.

1.2.2 Grubbing

Grubbing shall consist of the removal and disposal of stumps, roots larger than 75 millimeters (3 inches) in diameter, and matted roots from the designated grubbing areas.

1.2.3 Asbestos-Containing Materials

The Somerset Group Property contains various asbestos-containing materials (ACMs) and certain soil areas that have varying levels of asbestos contamination. These areas, identified previously from a June 1998 Asbestos Survey prepared for Roy F. Weston, Inc. by ACRES International Corporation, are depicted on the Drawings. Material removed from these areas as part of the clearing and grubbing operations must be disposed of in accordance with the requirements of Section 02080, ASBESTOS ABATEMENT, unless specifically stated otherwise in this specification.

All loose, asbestos debris shall be placed into labeled bags as determined by size. All such debris shall be double bagged and placed into approved containers for disposal as ACM waste.

1.2.4 Non-Hazardous Materials

Materials in those areas that are outside the limits of asbestos-contaminated areas as delineated on the Drawings and described in these Specifications.

1.3 SUBMITTALS

Government approval is required for submittals with a "GA" designation; submittals having an "FIO" designation are for information only. The following shall be submitted in accordance with Section 01300, SUBMITTAL PROCEDURES.

1.3.1 SD-18 Records

Materials in Areas Outside Asbestos-Contaminated Areas; GA

Written permission to dispose of such products on private property shall be filed with the Contracting Officer.

Contractor shall submit landfill and transportation qualifications (GA) as specified in Section 02080, ASBESTOS ABATEMENT, for all asbestos-containing materials to be disposed of.

1.4 MEASUREMENT

1.4.1 Measured Clearing and Grubbing

Clearing and grubbing, outside asbestos soil abatement areas, will be measured in hectares (acres) of clearing and grubbing actually performed. Clearing of designated areas for asbestos-containing soil removed shall be included in the bid item for soil excavation under asbestos abatement.

1.5 PAYMENT

1.5.1 Paid Clearing and Grubbing

Payment will be made at the contract unit price for clearing and grubbing outside asbestos soil abatement areas, and this price shall constitute full compensation for all labor, equipment, tools, and incidentals necessary to complete the work specified herein.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION

3.1 CLEARING

Trees, stumps, roots, brush, and other vegetation in areas to be cleared shall be cut off flush with or below the original ground surface, except such trees and vegetation as may be indicated or directed to be left standing. Trees designated to be left standing by the Contracting Officer within the cleared areas shall be trimmed of dead branches 1-1/2 inches or more in diameter and shall be trimmed of all branches to the heights indicated or directed. Limbs and branches to be trimmed shall be neatly cut close to the bole of the tree or main branches. Cuts more than 1-1/2 inches in diameter shall be painted with an approved tree-wound paint. Trees and vegetation to be left standing shall be protected from damage incident to clearing, grubbing, and construction operations by the erection of barriers or by such other means as the circumstances require. Clearing shall also include the removal and disposal of metal debris, concrete rubble, rubbish in excavation areas, and structures that obtrude, encroach upon, or otherwise obstruct the work.

3.2 GRUBBING

Material to be grubbed, together with logs and other organic or metallic debris, shall be removed to a depth of not less than 18 inches below the original surface level of the ground in areas indicated to be grubbed. Grubbing shall not be performed in areas to be excavated except for access purposes. All cleared and grubbed material from non-contaminated areas shall become the property and responsibility of the Contractor for disposal off-site outside the limits of Government controlled land.

3.3 DISPOSAL OF MATERIALS

The Contractor shall dispose of all wastes from asbestos soil abatement areas generated as part of the Interim Response Action - Phase 1 in accordance with Section 02120, TRANSPORTATION AND DISPOSAL OF HAZARDOUS AND NON-HAZARDOUS MATERIALS.

-- End of Section --

SECTION 02120

TRANSPORTATION AND DISPOSAL OF HAZARDOUS AND NON-HAZARDOUS MATERIALS
10/96

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

CODE OF FEDERAL REGULATIONS (CFR)

40 CFR 61	National Emission Standards for Hazardous Air Pollutants
40 CFR 261	Identification and Listing of Hazardous Waste
40 CFR 262	Standards Applicable to Generators of Hazardous Waste
40 CFR 263	Standards Applicable to Transporters of Hazardous Waste
40 CFR 264	Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities
40 CFR 265	Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities
40 CFR 266	Standards for the Management of Specific Hazardous Wastes and Specific Types of Hazardous Waste Management Facilities
40 CFR 268	Land Disposal Restrictions
40 CFR 270	EPA Administered Permit Programs: The Hazardous Waste Permit Program
40 CFR 279	Standards for the Management of Used Oil, 40 CFR 300, National Oil and Hazardous Substances Pollution Contingency Plan
40 CFR 302	Designation, Reportable Quantities, and Notification
40 CFR 761	Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions
49 CFR 107	Hazardous Materials Program Procedures
49 CFR 172	Hazardous Materials Table, Special Provisions, Hazardous Materials Communications, Emergency Response Information, and Training Requirements
49 CFR 173	Shippers - General Requirements for Shipments and Packagings

49 CFR 178	Specifications for Packagings
6 NYCRR Part 360	Solid Waste Managements Facilities
17 NYCRR	Department of Transportation

1.2 SUBMITTALS

Government approval is required for submittals with a "GA" designation; submittals having an "FIO" designation are for information only. The following shall be submitted in accordance with Section 01300, SUBMITTAL PROCEDURES.

1.2.1 SD-1 Data

On-site Non-Hazardous Waste Management; GA.
Off-site Hazardous Waste Management; GA.
On-site Hazardous Waste Management; GA.
Off-site Non-Hazardous Waste Management; GA.

Prior to start of work, a plan detailing the manner in which hazardous and non-hazardous wastes shall be managed.

1.2.2 SD-09 Reports

Recordkeeping; GA

Information necessary to file state annual or EPA biennial reports for all hazardous waste transported, treated, stored, or disposed of under this contract. The Contractor shall not forward these data directly to the regulatory agency, but to the Contracting Officer at the specified time.

The submittal shall contain all the information necessary for filing of the formal reports in the form and format required by the governing Federal or state regulatory agency. A cover letter shall accompany the data to include the contract number, Contractor name, and project location.

Spill Response; FIO

In the event of a spill or release of a hazardous substance (as designated in 40 CFR 302), or pollutant or contaminant, or oil (as governed by the Oil Pollution Act (OPA), 33 U.S.C. 2701 et seq.), the Contractor shall notify the Contracting Officer immediately. If the spill exceeds a reporting threshold, the Contractor shall follow the pre-established procedures for immediate reporting to the Contracting Officer.

Exception Reports; GA

In the event that a manifest copy documenting receipt of hazardous waste at the treatment, storage, and disposal facility is not received within 35 days of shipment initiation, the Contractor shall prepare and submit an exception report to the Contracting Officer within 37 days of shipment initiation.

1.2.3 SD-13 Certificates

Qualifications; FIO

Copies of the current certificates of registration issued to the Contractor and/or subcontractors or written statements certifying exemption from these requirements.

Off-Site Policy Compliance Certification; FIO

A letter certifying that EPA considers the facilities to be used for all off-site disposal to be acceptable in accordance with the off-site policy in 40 CFR 300, Section .440. This certification shall be provided for wastes from Resource Conservation and Recovery Act (RCRA), 42 U.S.C. 6901 et seq. sites, as well as from Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C. 9601 et seq. responses.

See Attachment 1 sample certification at the end of this section.

Certificates of Disposal; FIO

Certificates documenting the ultimate disposal of hazardous wastes, polychlorinated biphenyls (PCBs), and/or asbestos within 180 days of initial shipment. Receipt of these certificates will be required for final payment.

Packagings Certification; GA

All transportation-related shipping documents to the Contracting Officer, including draft hazardous waste manifests; draft land disposal restriction notifications; draft asbestos waste shipment records; draft manifests for PCBs; draft bill of ladings for hazardous materials; lists of corresponding proposed labels, packages, marks, and placards to be used for shipment; waste profiles; supporting waste analysis documents, for review a minimum of 2 days prior to anticipated pickup.

Packaging assurances shall be furnished prior to transporting hazardous material; "generator copies" of hazardous waste manifests, land disposal restriction notifications, asbestos waste shipment records, used oil invoices/shipment records, bill of ladings, supporting waste analysis documents shall be furnished when shipments are originated; and "receipt copies" of asbestos waste shipment records at the designated disposal facility shall be furnished not later than 35 days after acceptance of the shipment.

1.2.4 SD-18 Records

Notices of Non-Compliance and Notices of Violation; FIO

Notices of non-compliance or notices of violation by a Federal, state, or local regulatory agency issued to the Contractor in relation to any work performed under this contract. The Contractor shall immediately provide copies of such notices to the Contracting Officer. The Contractor shall also furnish all relevant documents regarding the incident and any information requested by the Contracting Officer, and shall coordinate its response to the notice with the Contracting Officer or his designated representative prior to submission to the notifying authority. The Contractor shall also furnish a copy to the Contracting Officer of all documents submitted to the regulatory authority, including the final reply to the notice, and all other materials, until the matter is resolved.

1.3 QUALIFICATIONS

1.3.1 Transportation and Disposal Coordinator

The Contractor shall designate, by position and title, one person to act as the Transportation and Disposal Coordinator (TDC) for this contract. The TDC shall serve as the single point of contact for all environmental regulatory matters and shall have overall responsibility for total environmental compliance at the site, including, but not limited to, accurate identification and classification of hazardous waste, hazardous materials, and non-hazardous waste; determination of proper shipping names; identification of marking, labeling, packaging, and placarding requirements; completion of waste profiles, hazardous waste manifests, asbestos waste shipment records, bills of lading, exception and discrepancy reports; and all other environmental documentation. The TDC shall have, at a minimum,

one year of specialized experience in the management and transportation of hazardous waste.

1.3.2 Training

The Contractor's hazardous materials employees shall be trained, tested, and certified to safely and effectively carry out their assigned duties. The Contractor's employees transporting hazardous materials or preparing hazardous materials for transportation shall be trained, tested, and certified in accordance with 49 CFR 172.

1.3.3 Certification

The Contractor and/or subcontractors transporting hazardous materials shall possess a current certificate of registration issued by the Research and Special Programs Administration (RSPA), U.S. Department of Transportation, when required by 49 CFR 107, Subpart G.

1.4 LAWS AND REGULATIONS REQUIREMENTS

Work shall meet or exceed the minimum requirements established by Federal, state, and local laws and regulations that are applicable. These requirements are amended frequently, and the Contractor shall be responsible for complying with amendments as they become effective. In the event that compliance exceeds the scope of work or conflicts with specific requirements of the contract, the Contractor shall notify the Contracting Officer immediately.

1.5 DEFINITIONS

A. Hazardous Material. A substance or material that has been determined by the Secretary of Transportation to be capable of posing an unreasonable risk to health, safety, and property when transported in commerce, and which has been so designated pursuant to the Hazardous Materials Transportation Act, 49 U.S.C. Appendix Section 1801 et seq. The term includes materials designated as hazardous materials under the provisions of 49 CFR 172, Sections .101 and .102, and materials that meet the defining criteria for hazard classes and divisions in 49 CFR 173. EPA designated hazardous wastes are also hazardous materials.

B. Hazardous Waste. A waste that meets criteria established in RCRA or specified by EPA in 40 CFR 261, or which has been designated as hazardous by a RCRA authorized state program.

PART 2 PRODUCTS

2.1 MATERIALS

The Contractor shall provide all of the materials required for the packaging, labeling, marking, placarding, and transportation of hazardous wastes, hazardous materials, and non-hazardous wastes in conformance with Department of Transportation standards. Details in this specification shall not be construed as establishing the limits of the Contractor's responsibility.

2.1.1 Packagings

The Contractor shall provide bulk and non-bulk containers for packaging hazardous materials/wastes consistent with the authorizations referenced in the Hazardous Materials Table in 49 CFR 172, Section .101, Column 8. Bulk and non-bulk packaging shall meet the corresponding specifications in 49 CFR 173 referenced in the Hazardous Materials Table, 49 CFR 172, Section .101. Each packaging shall conform to the general packaging requirements of Subpart B of 49 CFR 173, to the requirements of 49 CFR 178 at the specified packing group performance level, to the requirements of special provisions of column 7 of the Hazardous Materials Table in 49 CFR 172, Section .101, and shall be compatible with the material to be packaged as required by 40 CFR 262. The Contractor shall also provide other

packaging related materials such as materials used to cushion or fill voids in overpacked containers, etc. Sorbent materials shall not be capable of reacting dangerously with, being decomposed by, or being ignited by the hazardous materials being packaged.

Additionally, sorbents used to treat free liquids to be disposed of in landfills shall be non-biodegradable as specified in 40 CFR 264, Section .314.

2.1.2 Markings

The Contractor shall provide markings for each hazardous material/waste package, freight container, and transport vehicle consistent with the requirements of 49 CFR 172, Subpart D and 40 CFR 262, Section .32 (for hazardous waste), and 40 CFR 61, Section .149(d) (for asbestos). Markings must be capable of withstanding, without deterioration or substantial color change, a 180-day exposure to conditions reasonably expected to be encountered during container storage and transportation.

2.1.3 Labeling

The Contractor shall provide primary and subsidiary labels for hazardous materials/wastes consistent with the requirements in the Hazardous Materials Table in 49 CFR 172, Section .101, column 6. Labels shall meet design specifications required by 49 CFR 172, Subpart E, including size, shape, color, printing, and symbol requirements. Labels shall be durable and weather resistant, and capable of withstanding, without deterioration or substantial color change, a 180-day exposure to conditions reasonably expected to be encountered during container storage and transportation.

2.1.4 Placards

For each off-site shipment of hazardous material/waste, the Contractor shall provide primary and subsidiary placards consistent with the requirements of 49 CFR 172, Subpart F. Placards shall be provided for each side and each end of bulk packaging, freight containers, transport vehicles, and rail cars requiring such placarding. Placards may be plastic, metal, or other material capable of withstanding, without deterioration, a 30-day exposure to open weather conditions and shall meet design requirements specified in 49 CFR 172, Subpart F.

2.1.5 Spill Response Materials

The Contractor shall provide spill response materials including, but not limited to, containers, adsorbent, shovels, and personal protective equipment. Spill response materials shall be available at all times in which hazardous materials/wastes are being handled or transported. Spill response materials shall be compatible with the type of material being handled.

2.2 EQUIPMENT AND TOOLS

The Contractor shall provide miscellaneous equipment and tools necessary to handle hazardous materials and hazardous wastes in a safe and environmentally sound manner.

PART 3 EXECUTION

3.1 ON-SITE HAZARDOUS WASTE MANAGEMENT

These paragraphs apply to Government-owned waste only. Contractors are prohibited by 10 U.S.C. 2692 from storing Contractor-owned waste on-site for any length of time. The Contractor shall be responsible for ensuring compliance with all Federal, state, and local hazardous waste laws and regulations, and shall verify those requirements when preparing reports, waste shipment records, hazardous waste manifests, or other documents. The Contractor shall identify hazardous wastes using criteria set forth in 40 CFR 261 or all applicable state and local laws, regulations, and ordinances. When

accumulating hazardous waste on-site, the Contractor shall comply with generator requirements in 40 CFR 262 and any applicable state or local law or regulation. On-site accumulation times shall be restricted to applicable time frames referenced in 40 CFR 262, Section .34 and any applicable state or local law or regulation. Accumulation start dates shall commence when waste is first generated (i.e., containerized or otherwise collected for discard). The Contractor shall only use containers in good condition and compatible with the waste to be stored. The Contractor shall be responsible for ensuring containers are closed except when adding or removing waste. The Contractor shall be responsible for immediately marking all hazardous waste containers with the words "hazardous waste" and other information required by 40 CFR 262, Section .32, and any applicable state or local law or regulation as soon as the waste is containerized. An additional marking shall be placed on containers of "unknowns" designating the date sampled and the suspected hazard. The Contractor shall be responsible for inspecting containers for signs of deterioration and shall be responsible for responding to any spills or leaks. The Contractor shall inspect all hazardous waste areas weekly and shall provide written documentation of the inspection. Inspection logs will contain date and time of inspection, name of individual conducting the inspection, problems noted, and corrective actions taken.

3.1.1 Hazardous Waste Classification

The Contractor, in consultation with the Contracting Officer and Property Owner, shall identify all waste codes applicable to each hazardous waste stream based on requirements in 40 CFR 261 or any applicable state or local law or regulation. The Contractor shall also identify all applicable treatment standards in 40 CFR 268 and state land disposal restrictions, and shall make a determination as to whether or not the waste meets or exceeds the standards. Waste profiles, analyses, classification, and treatment standards information shall be submitted to Contracting Officer for review and approval.

3.1.2 Management Plan

The Contractor shall prepare a plan detailing the manner in which hazardous wastes shall be managed and describing the types and volumes of hazardous wastes anticipated to be managed as well as the management practices to be utilized. The plan shall identify the method to be used to ensure accurate piece counts and/or weights of shipments; shall identify waste minimization methods; shall propose facilities to be utilized for treatment, storage, and/or disposal; shall identify areas on-site where hazardous wastes are to be handled; shall identify whether transfer facilities are to be utilized; and if so, how the wastes will be tracked to ultimate disposal.

3.2 OFF-SITE HAZARDOUS WASTE MANAGEMENT

The Contractor shall use RCRA Subtitle C permitted facilities that meet the requirements of 40 CFR 264 or facilities operating under interim status that meet the requirements of 40 CFR 265. Off-site treatment, storage, and/or disposal facilities with significant RCRA violations or compliance problems (such as facilities known to be releasing hazardous constituents into groundwater, surface water, soil, or air) shall not be used.

3.2.1 Description of TSD Facility and Transporter

The Contractor shall provide the Contracting Officer with EPA ID numbers, names, locations, and telephone numbers of TSD facilities and transporters. This information shall be contained in the Hazardous Waste Management Plan for approval prior to waste disposal.

3.2.2 Status of the Facility

Facilities receiving hazardous waste must be permitted in accordance with 40 CFR 270 or operating under interim status in accordance with 40 CFR 265 requirements or must be permitted by an authorized state program. Additionally, prior to using a TSD facility, the Contractor shall contact the EPA Regional Off-Site Coordinator specified in 40 CFR 300, Section .440, to determine the facility's

status and document all information necessary to satisfy the requirements of the EPA off-site policy and furnish this information to the Contracting Officer.

3.2.3 Packagings Certification

Prior to shipment of any hazardous material off-site, the Contractor's TDC shall provide written certification to the Contracting Officer that hazardous materials have been properly packaged, labeled, and marked in accordance with Department of Transportation and EPA requirements.

3.2.4 Transportation

The Contractor shall use manifests for transporting hazardous wastes as required by 40 CFR 263 or any applicable state or local law or regulation. Transportation shall comply with all requirements in the Department of Transportation referenced regulations in the 49 CFR series.

The Contractor shall acquire manifests in accordance with the hierarchy established in 40 CFR 262, Section .21. The Contractor shall prepare hazardous waste manifests for each shipment of hazardous waste shipped off-site. Manifests shall be completed using instructions in 40 CFR 262, Subpart B, and any applicable state or local law or regulation.

Manifests and waste profiles shall be submitted to the Contracting Officer for review and approval. The Contractor shall prepare land disposal restriction notifications as required by 40 CFR 268 or any applicable state or local law or regulation for each shipment of hazardous waste.

Notifications shall be submitted with the manifest to the Contracting Officer for review and approval.

3.2.5 Treatment and Disposal of Hazardous Wastes

The hazardous waste shall be transported to an approved hazardous waste treatment, storage, or disposal facility within 90 days of the accumulation start date on each container. The Contractor shall ship hazardous wastes only to facilities that are properly permitted to accept the hazardous waste or operating under interim status. The Contractor shall ensure wastes are treated to meet land disposal treatment standards in 40 CFR 268 prior to land disposal. The Contractor shall propose TSD facilities via submission of the Hazardous Waste Management Plan, subject to the approval of the Contracting Officer.

3.3 HAZARDOUS MATERIALS MANAGEMENT

The Contractor, in consultation with the Contracting Officer and property owner, shall evaluate prior to shipment of any material off-site whether the material is regulated as a hazardous waste in addition to being regulated as a hazardous material; this shall be done for the purpose of determining proper shipping descriptions, marking requirements, etcetera, as described below.

3.3.1 Identification of Proper Shipping Names

The Contractor shall use 49 CFR 172, Section .101, to identify proper shipping names for each hazardous material (including hazardous wastes) to be shipped off-site. Proper shipping names shall be submitted to the Contracting Officer in the form of draft shipping documents for review and approval.

3.3.2 Packaging, Labeling, and Marking

The Contractor shall package, label, and mark hazardous materials/wastes using the specified materials and in accordance with the referenced authorizations. The Contractor shall mark each container of hazardous waste of 440 L (110 gallons) or less with the following:

HAZARDOUS WASTE - Federal Law Prohibits Improper Disposal. If found, contact the nearest police or public safety authority or the U.S. Environmental Protection Agency.

Generator's Name _____

Manifest Document Number _____

3.3.3 Shipping Documents

The Contractor shall ensure that each shipment of hazardous material sent off-site is accompanied by properly completed shipping documents.

3.3.3.1 PCB Waste Shipment Documents

The Contractor shall prepare hazardous waste manifests for each shipment of PCB waste shipped off-site. Manifests will be completed using instructions in 40 CFR 761, Sections .207 and .208, and all other applicable requirements. Documents shall be submitted to the Contracting Officer for review and approval.

3.3.3.2 Asbestos Waste Shipment Documents

The Contractor shall prepare waste shipment records as required by 40 CFR 61 and applicable New York State regulations for shipments of asbestos. Waste shipment records shall be submitted to the Contracting Officer for review and approval. Waste shipment records shall be signed by the Contractor.

3.3.3.3 Other Hazardous Material Shipment Documents

The Contractor shall prepare a bill of lading for each shipment of hazardous material that is not accompanied by a hazardous waste manifest or asbestos waste shipment record that fulfills the shipping paper requirements. The bill of lading shall satisfy the requirements of 49 CFR 172, Subpart C, and any applicable state or local law or regulation, and shall be submitted to the Contracting Officer for review and approval. For laboratory samples, the Contractor shall prepare bills of lading and other documentation as necessary to satisfy conditions of the sample exclusions in 40 CFR 261, Section .4(d) and (e) and any applicable state or local law or regulation. Bills of lading requiring shipper's certifications shall be signed by the Contractor.

3.4 NON-HAZARDOUS WASTE MANAGEMENT

The Contractor shall be responsible for ensuring compliance with all Federal, state, and local solid waste laws and regulations, and shall verify those requirements when preparing reports or other 6 NYCRR documents. Materials not meeting the definition of Hazardous Waste shall be disposed at a NYSDEC Part 360 approved facility in accordance with 6 NYCRR360.2, Landfills; 6 NYCRR360.7, Construction and Demolition Debris Landfills; and other applicable laws and regulations.

The Contractor shall prepare shipping papers in accordance with Department of Transportation and other applicable regulations. The shipping papers shall be submitted to the Contracting Officer for review and approval.

3.5 OBTAINING EPA ID NUMBERS

The Contractor shall complete EPA Form 8700-12, Notification of Hazardous Waste Activity, and submit it to the Contracting Officer for review and approval. The Contractor shall allow a minimum of 30 days for processing the application and assigning the EPA ID number. Shipment shall be made not earlier than one week after receipt of the EPA ID number.

3.6 SPECIAL REQUIREMENTS FOR ASBESTOS WASTES

If work involves asbestos containing wastes, the Contractor shall manage these wastes in accordance with specification Section 02080, ASBESTOS ABATEMENT.

3.7 WASTE MINIMIZATION

The Contractor shall minimize the generation of hazardous waste to the maximum extent practicable. The Contractor shall take all necessary precautions to avoid mixing clean and contaminated wastes. The Contractor shall identify and evaluate recycling and reclamation options as alternatives to land disposal. Requirements of 40 CFR 266 shall apply to: hazardous wastes recycled in a manner constituting disposal; hazardous waste burned for energy recovery; lead-acid battery recycling; and hazardous wastes with economically recoverable precious metals.

3.8 RECORDKEEPING

The Contractor shall be responsible for maintaining adequate records to support information provided to the Contracting Officer regarding exception reports, annual reports, and biennial reports. The Contractor shall be responsible for maintaining asbestos waste shipment records for a minimum of 3 years from the date of shipment or any longer period required by any applicable law or regulation or any other provision of this contract.

3.9 SPILL RESPONSE

The Contractor shall respond to any spill of hazardous materials or hazardous waste that are in the custody or care of the Contractor pursuant to this contract. Any direction from the Contracting Officer concerning a spill or release shall not be considered a change under the contract. The Contractor shall comply with all applicable requirements of Federal, state, or local laws or regulations regarding any spill incident.

3.10 EMERGENCY CONTACTS

The Contractor shall be responsible for complying with the emergency contact provisions in 49 CFR 172, Section .604. Whenever the Contractor ships hazardous materials, the Contractor shall provide a 24-hr emergency response contact and phone number of a person knowledgeable about the hazardous materials being shipped and who has comprehensive emergency response and incident mitigation information for that material, or has immediate access to a person who possesses such knowledge and information.

The phone must be monitored on a 24-hour basis at all times when the hazardous materials are in transportation, including during storage incidental to transportation. The Contractor shall ensure that information regarding this emergency contact and phone number are placed on all hazardous materials shipping documents. The Contractor shall designate an emergency coordinator and post the following information at areas in which hazardous wastes are managed:

a. The name of the emergency coordinator.

b. Phone number through which the emergency coordinator can be contacted on a 24-hour basis.

c. The telephone number of the local fire department.

d. The location of fire extinguishers and spill control materials.

-- End of Section --

ATTACHMENT 1

SAMPLE OFF-SITE POLICY CERTIFICATION MEMO

ATTACHMENT 1

SAMPLE OFF-SITE POLICY CERTIFICATION MEMO

Project/Contract #: _____
Waste Stream: _____
Primary TSD Facility, EPA ID # and Location: _____
Alter. TSD Facility, EPA ID # and Location: _____

EPA Region	Primary Contact	Secondary Contact
I	(617) 573-5755	(617) 573-1754
II	(212) 264-9504	(212) 264-2638
III	(215) 597-1857	(215) 597-8338
IV	(404) 347-7603	(404) 347-7603
V	(312) 353-7921	(312) 886-4445
VI	(214) 655-2282	(214) 655-2281
VII	(913) 551-7816	(913) 551-7667
VIII	(303) 293-1823	(303) 293-1506
IX	(415) 744-2129	(415) 744-2114
X	(206) 553-6646	(206) 553-1061

EPA representative contacted: _____
EPA representative phone number: _____
Date contacted: _____

Comment: _____
The above EPA representative was contacted on _____. As of that date the above sites were considered acceptable in accordance with the Off-Site Policy in 40 CFR 300.440.

Signature: _____ Date: _____
Phone number: _____

LAKE ONTARIO ORDNANCE WORKS
LEWISTON AND PORTER, NY

SECTION 02143

DECONTAMINATION OF CONSTRUCTION EQUIPMENT

PART 1 GENERAL

1.1 DECONTAMINATION REQUIREMENTS

The Contractor shall decontaminate all construction equipment (i.e., vehicles, excavators, hand tools, etc.) used during remediation activities and which have been used in the exclusion zones prior to demobilization from the site.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

3.1 CONSTRUCTION EQUIPMENT DECONTAMINATION

3.1.1 General

The Contractor shall decontaminate all construction equipment surfaces that have come into contact with contaminated soils, sediments, and liquids. Construction equipment items shall be decontaminated immediately upon completion of work in a particular area and prior to being moved to a new work area; however, if only the bucket of the excavation equipment comes in contact with contaminated material or enters the designated contamination areas, the bucket may be cleaned of gross contamination, wrapped in plastic, and the excavation equipment moved to another work area. Construction equipment may enter the contaminated areas and work "clean" by placing a heavy (min. 40 mil) HDPE under the construction equipment tires and/or tracks such that they remain on the liner and do not come in contact with the contaminated materials. The Contractor must inspect the "barrier" liner to ensure contaminated materials do not cover the liner and come in contact with the equipment. If contaminated materials get on the liner, then the equipment tires and/or tracks will be decontaminated when the equipment leaves the contaminated areas. All equipment used in the decontaminated areas shall be decontaminated prior to leaving the site. Approval by the Contracting Officer (CO) or his/her designee (Site Safety Officer) and documentation of this approval shall be provided by the Contractor prior to any vehicle leaving the site that has entered the decontamination areas.

3.1.2 Equipment and Personnel

The Contractor shall supply all equipment and materials necessary to properly decontaminate construction equipment used in remediation areas and which has entered the exclusion zone.

3.1.3 Decontamination Structures

The Contractor shall construct or provide heavy duty decontamination structures on-site that can accommodate all types of equipment used during site remediation. The Contractor shall maintain decontamination areas daily throughout the duration of the project. Decontamination areas shall be covered at the end of each shift to prevent the infiltration of precipitation. The Contractor shall remove

excess material and other debris from the decontamination pads or structures on a daily basis, and these materials shall be handled and disposed with the other contaminated materials. The Contractor shall construct the decontamination area to prevent the infiltration of decontamination and rinsate fluids into underlying soils. At a minimum, the constructed equipment decontamination areas shall be composed of a minimum 40-mil HDPE (or approved equivalent) geomembrane over- and underlain by a nonwoven protective geotextile. The geomembrane may be overlain by a free draining material or flexible pavement section that is sloped to a collection sump. All liquids used for decontamination shall be collected and disposed of in a proper manner according to applicable regulations. The minimum requirements for the decontamination structure are shown on the Drawings. The Contractor shall submit with his Operations Plan details of his decontamination facilities. An approved location for the equipment decontamination area is shown on the Drawings. The Contractor is responsible for the cleanup of any spills and infiltration into underlying soils at no expense to the Government.

The Contractor shall design and construct the decontamination structure to allow for the proper containment, collection, and temporary storage of all decontamination and rinsate fluids generated during equipment decontamination. The Contractor shall utilize clean water for the decontamination of construction equipment. The decontamination fluids shall be HEPA filtered prior to discharge.

3.1.4 Removal of Decontamination Structures

Upon completion of site activities, the Contractor shall remove the decontamination structure(s). If the decontamination structure is constructed on the ground, the materials used to construct the areas will be disposed of as materials containing hazardous constituents or as non-hazardous based on a sample analysis required by the accepting permitted facility. Two verification samples will be collected by the Contractor from the soils under the decontamination area before the pad's construction and following its removal. Analysis shall be limited to asbestos in accordance with EPA-66/M4-82-020 - December 1982, "Interim Method for Determination of Asbestos in Bulk Insulation," using polarized light microscopy (PLM). If asbestos is detected at levels that exceed the concentrations detected prior to the pad's construction, the Contractor shall remove and properly dispose of the soils at a permitted facility at no expense to the Government.

-- End of Section --

LAKE ONTARIO ORDNANCE WORKS
LEWISTON AND PORTER, NY

SECTION 02144

MISCELLANEOUS LIQUIDS AND OILS

PART 1 GENERAL

1.1 MISCELLANEOUS LIQUIDS AND OILS HANDLING REQUIREMENTS

The Contractor shall provide all labor, materials, equipment, and services for the removal and proper disposal of the miscellaneous liquids and oils identified for removal in the EE/CA (March 1995), which include the following:

- One (1) 55-gallon open top drum of oil located in Area 6, pH = 6, oil predominantly comprised of acenaphthene, anthracene, dibenzofuran, fluorene, 2-methylnaphthalene, and phenanthrene. Concentrations range from 17,000 µg/kg to 1,300,000 µg/kg.

- Two (2) 5-gallon metal containers and sixteen (16) 1-gallon glass containers of a red liquid located at Temporary Building No. 2. The containers have pH values of 0.3 and 1.0 and specific conductivities of > 10,000 µS/cm. The containers may contain chromic acid because analytical results indicated chromium concentrations of 224,000 and 227,000 mg/L.

- Approximately sixteen 1-gallon glass containers of miscellaneous laboratory chemicals in the non-combustibles warehouse located in Area 30A. The following are characteristics for 11 of the 16 identified containers:

  (1) Clear glass, clear liquid, no label, pH = 11.
  (2) Clear glass, clear liquid, no label, pH = 11.
  (3) Clear glass, clear liquid, no label, pH = 12.
  (4) Clear glass, clear liquid, label indicates H_3PO_4, pH = 6.
  (5) Clear glass, clear liquid, label indicates NH_4OH, pH = 12.
  (6) Clear glass, clear liquid, illegible green label, pH = 7, smells like glue.
  (7) Amber glass, no label, pH = 6, smells like toluene.
  (8) Amber glass, label indicates pentane, pH = 7.
  (9) Clear glass, clear liquid, label indicates HCl, pH = 1.
  (10) Amber glass, no label, pH = 7.
  (11) Clear glass, clear liquid, pH = 6, smells like pentane.

If additional containers are located during remediation activities, the Contractor will notify the Contracting Officer of the additional containers. The Contractor shall remove and dispose of these additional containers at the direction of the Contracting Officer at the unit charge rate provided in the Additional Item Cost Sheet.

The Contractor shall provide for sampling, analysis, and proper disposal of the above designated containerized liquids and oils at a permitted treatment facility in accordance with applicable Federal, state, and local regulations.

PART 2 PRODUCTS

The Contractor shall provide all of the materials required for collection, transfer, overpack, storage, characterization sampling and analysis, and ultimate disposal of the designated miscellaneous liquids and oils. Details in this specification shall not be construed as establishing the limits of the Contractor's responsibility.

PART 3 EXECUTION

3.1 STORAGE AND SAMPLING REQUIREMENTS

The Contractor shall provide overpacks, overpacking materials, and/or drums for the proper packaging of the containers. All contents in glass containers or containers not of acceptable condition will be transferred to other containers for transport to a permitted treatment facility. The liquids/containers will be stored on-site pending sampling, analysis, and disposal. Containers encountered will include, at a minimum, the containers and materials presented in Part 1. The Contractor shall avoid mixing incompatible materials.

The Contractor shall containerize and handle these liquids for transportation and disposal in accordance with the requirements of Section 02120, TRANSPORTATION AND DISPOSAL OF HAZARDOUS AND NON-HAZARDOUS MATERIALS.

The Contractor shall receive approval from the Contracting Officer and property owner for the placement of all drums for temporary storage while awaiting analysis results.

The Contractor shall supply, with the overpacks and drums, all pumps and piping required to convey the liquids. The Contractor shall take precautions necessary to prevent any possible leaks or spills of collected liquids.

The Contractor shall provide sampling and analysis for chemical characterization as required by the disposal facility of all miscellaneous liquids and oils encountered, and will provide the Contracting Officer with the analytical data.

The Contractor is responsible for collecting and containing any spills of such liquid that may occur. Care shall be taken when handling the existing containers as the seals may not be secure or have been compromised. In the event of a spill, the Contractor is responsible for the excavation, the cost of transportation, and disposal of any soils impacted by the spill. The Contractor shall develop a Contingency Plan for spills, and submit this plan with the Site Operations Plan and other specified plans 30 days after the Notice to Proceed and following the Preconstruction Conference.

Since the contents of the containers to be removed and properly disposed may be hazardous, the Contractor shall provide personnel that have completed the 40-hour Hazardous Materials OSHA 29 CFR 1910 training, who are responsible for the handling, sampling, and overpacking of the miscellaneous chemicals specified in this section.

3.2 OFF-SITE TREATMENT/DISPOSAL

The liquids shall be transported and disposed/treated at a competitively bid permitted facility capable of processing the liquids. The Contractor is responsible to supply all data, including chemical analysis results, as required by the accepting facility for processing the liquids. The Contractor shall containerize and arrange for transport of the liquids to the accepting facility according to Section 02120, TRANSPORTATION AND DISPOSAL OF HAZARDOUS AND NON-HAZARDOUS MATERIALS.

-- End of Section --

SECTION 02210

**BACKFILL AND GRADING FOR REMEDIATION AREAS
12/88**

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM D 1556 (1990) Density and Unit Weight of Soil in Place by the Sand-Cone Method

ASTM D 1557 (1991) Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/cu ft (2,700 kN-m/cu m))

ASTM D 2167 (1994) Density and Unit Weight of Soil in Place by the Rubber Balloon Method

ASTM D 2487 (1993) Classification of Soils for Engineering Purposes (Unified Soil Classification System)

ASTM D 2922 (1991) Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth)

ASTM D 3017 (1988; R 1993) Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth)

ASTM D 422 (1963: R 1990) Particle-Size Analysis of Soils

ASTM D 2216 (1990) Laboratory Determination of Water (Moisture) Content of Soil Rock, and Soil-Aggregate Mixtures

1.2 UNIT PRICE

1.2.1 Measurement

1.2.1.1 Excavation

The unit of measurement for excavation will be the cubic yard. The amount (yardage) paid for will be the number of cubic yards of material removed from its original position and placed into roll-off boxes or dump trucks for transport off-site and disposed, including the excavation for ditches, soil remediation areas where material is acceptably utilized or disposed of as herein specified. The measurement will not include the yardage excavated without authorization or the yardage of any material used for other

than directed purposes. Amount (yardage) of overburden stripped from borrow pits, unless used as borrow material, will not be paid for.

1.2.1.2 Topsoil

The upper 6 inches of surface soil (including existing topsoil) shall be considered as asbestos-contaminated when excavated from the designated asbestos abatement areas, and shall be excavated and removed from the site for proper disposal.

1.2.2 Payment

1.2.2.1 Excavation

Excavation will be paid for at the contract unit price per cubic yard for "Excavation."

1.3 DEFINITIONS

1.3.1 Satisfactory Materials

Materials classified in ASTM D 2487 as SC, SM, CL, and ML and free from roots and other organic matter, trash, debris, and frozen materials and stones larger than 150 mm (6 inches) in any dimension are satisfactory. Backfill materials shall possess similar gradation to the existing site fine-grained soils.

Satisfactory materials must also meet the NYSDEC, Division of Hazardous Waste Remediation, TAGM HWR-92-4046, Soil Clean-up Criteria, for use as backfill material. Off-site borrow sources for backfill material shall be approved by the Contracting Officer, based on physical and chemical testing results. The chemical analysis shall include total petroleum hydrocarbons, PCBs (Method SW 846/8080/8181), TCLP metals (Method SW 846/6010), and volatile and semivolatile organic compounds (Method SW 846/8260) at a frequency of one of each test per 1,000 yd^3. A written and signed certification that the borrow source is environmentally clean and does not exceed any of the NYSDEC criteria for clean backfill may be provided by the supplier in lieu of the chemical analysis as approved by the Contracting Officer.

1.3.2 Unsatisfactory Materials

Materials that do not comply with the requirements for satisfactory materials are unsatisfactory. Materials classified in ASTM D 2487 as CH, MH, Pt, OH, and OL are unsatisfactory.

1.3.3 Cohesionless and Cohesive Materials

Cohesive materials include materials classified as GC, SC, ML, CL, MH, and CH. Cohesionless materials include materials classified in ASTM D 2487 as GW, GP, SW, and SP. Materials classified as GM and SM will be identified as cohesionless only when the fines have a plasticity index of zero.

1.3.4 Degree of Compaction

Degree of compaction is a percentage of the maximum density obtained by the test procedure presented in ASTM D 1557 as a percent of laboratory maximum density.

1.3.5 Topsoil

Material obtained from off-site areas suitable for topsoils, is defined in Part 2, MATERIALS, Paragraph 2.3.

1.4 SUBMITTALS

Government approval is required for submittals with a "GA" designation; submittals having an "FIO" designation are for information only. The following shall be submitted in accordance with Section 01300, SUBMITTAL PROCEDURES.

1.4.1 Backfilling and Grading Plan; GA

Thirty calendar days after notice to proceed, the Contractor shall submit as part of the Site Operations Plan (see Section 01500, TEMPORARY CONSTRUCTION FACILITIES) a soil backfill staging and grading plan detailing the proposed backfilling and grading operations. The plan shall include a list of equipment, location(s) of backfill material borrow sources, sequence and timing of backfilling operations, qualifications of personnel in charge of operations and quality control, and location of backfill staging areas. Quality control includes ensuring the backfill material is suitable based on physical and chemical testing. The Plan shall specify the testing program to maintain suitable backfill materials. If the Contractor finds it necessary to modify the plan, he shall do so in writing and shall not change procedures until approval has been granted by the Contracting Officer.

1.4.2 SD-08 Statements

Field Testing Control; GA

Qualifications of the commercial testing laboratory that will be performing all testing in accordance with paragraph FIELD TESTING CONTROL.

1.4.3 SD-09 Reports

Field Testing Control; GA. Satisfactory Materials; GA.

Certified test reports and chemical analysis certifying that the satisfactory materials proposed for use at the project site conform to the specified requirements, and for all tests conducted in accordance with paragraph FIELD TESTING CONTROL.

1.5 SUBSURFACE DATA

Surficial soil data are presented in the Asbestos Survey Report provided as an attachment to Section 02080, ASBESTOS ABATEMENT.

PART 2 PRODUCTS

2.1 (ROCK FOR SLOPE PROTECTION) OMITTED

2.2 BORROW MATERIAL

Borrow material shall be selected to meet requirements and conditions of the particular fill for which it is to be used. Necessary clearing, grubbing, disposal of debris, and satisfactory drainage of borrow pits shall be performed by the Contractor as incidental operations to the borrow excavation.

2.2.1 Selection

Borrow materials shall be obtained from approved sources. Borrow material shall be selected to meet the requirements and conditions of the particular fill or embankment for which it is to be used and meet the definition for Satisfactory Materials. Borrow materials shall be subject to approval. Unless otherwise provided in the contract, the Contractor shall obtain from the owners the right to procure material, shall pay all royalties and other charges involved, and shall bear all the expense of developing the sources, including rights-of-way for hauling. The Contractor will comply with all Federal, state, and local requirements for the excavation and reclamation of the borrow source(s). It shall be the responsibility of the Contractor to obtain and submit to the Contracting Officer all appropriate Federal, state, and local permits that may be required for the excavation and reclamation of the borrow sources.

2.3 TOPSOIL

2.3.1 General

Topsoil shall be fertile and friable surface soil, of good and uniform quality. Topsoil shall not contain subsoil materials. Topsoil shall be free of refuse, hard clods, woody vegetation, stiff clay, construction debris, boulders, stones larger than two (2) inches, hydrocarbons, petroleum materials, or chemicals toxic to plants, and other deleterious material.

2.3.2 Organic Content

Topsoil shall have a minimum organic content of five (5) percent by weight. The organic content shall be increased by adding humus in the form of partially or completely decomposed leaf mold or approved organic matter at a rate necessary to attain the minimum organic content specified. The organic content of soils shall be determined by the Contracting Officer-approved laboratory utilizing the method described in ASTM 2974.

2.3.3 Particle Size

The particle size of topsoil shall be determined by the laboratory using ASTM D 422. The gradation of the topsoil shall be within the following ranges:

Size	Percent Passing
2-inch	100%
1-inch	85 to 100%
¼-inch	65 to 100%
#200 sieve	20 to 80%

2.3.4 pH

Topsoil shall have a pH value within a range of 5.5 to 7.6.

2.3.5 Topsoil Sources

The Contractor shall identify the off-site topsoil sources for approval by the Contracting Officer. The Contractor shall allow for the Contracting Officer to inspect the source of topsoil and collect any necessary samples for analytical analysis. The Contractor is responsible for any physical testing of materials as required to meet the material specification. The Contractor shall also perform chemical analysis on a topsoil sample for volatile and semivolatile organic compounds (Method SW 846/8260),

PCBs/pesticides (Method SW 846/8080-8081), and TCLP metals (Method SW 846/6810), at a frequency of one of each test per 2,000 yd^3.

PART 3 EXECUTION

3.1 CONSERVATION OF TOPSOIL

Where indicated, in non-contaminated areas to be cleared for soil stockpiles or decontamination pads, topsoil shall be removed to a depth of 4 inches without contamination with subsoil and stockpiled convenient to areas for later application or at locations specified. Topsoil shall be removed to full depth and shall be stored separate from other excavated materials and piled free of roots, stones, and other undesirable materials. Any surplus of topsoil from excavations and grading shall be stockpiled in locations approved by the property owner and the Contracting Officer.

3.2 (EXCAVATION) OMITTED

3.3 (DITCHES, GUTTERS, AND CHANNELS) OMITTED

3.4 BACKFILL ADJACENT TO STRUCTURES

Backfill adjacent to structures shall be placed and compacted uniformly in such manner as to prevent wedging action or eccentric loading upon or against the structures. During backfilling operations and in the formation of embankments, equipment that will overload the structure in passing over and compacting these fills shall not be used. Backfill for storm drains and subdrains, including the bedding and backfill for structures other than culverts and drains, shall conform to the additional requirements in other applicable sections.

3.5 PREPARATION OF GROUND EXCAVATION SURFACE FOR BACKFILL

The entire exposed surface shall be visually inspected by the Contracting Officer. Should any soft, loose, or otherwise unstable areas be detected by the visual inspection, these areas shall be recompacted to densify these materials to the satisfaction of the Contracting Officer. If these materials cannot be densified sufficiently by the additional compaction efforts, they shall be stabilized with the placement of NYS DOT No. 1A stone and/or geotextile that is placed on or worked into these soft areas.

3.6 BACKFILLS

Backfill shall be placed at the locations and to lines and grades indicated. The completed fill shall conform to existing grades prior to excavation or as indicated on the Drawings or shall meet the requirements of the particular case. Satisfactory material obtained during excavation may be used in forming required backfill. Backfill shall be satisfactory material and shall be reasonably free from roots, other organic material, and trash and from stones having a maximum diameter greater than 3 inches. No frozen material will be permitted in the fill. Stones having a dimension greater than 1 inch shall not be permitted in the upper 3 inches of fill. The approved backfill material shall be placed in successive horizontal layers of 4 to 6 inches in loose depth for the full width of the cross section and shall be compacted as specified. Each layer shall be compacted before the overlaying lift is placed. Moisture content of the backfill material shall be adjusted by wetting or aerating, as required, to achieve the required degree of compaction.

3.7 COMPACTION

Except for paved areas and areas adjacent to structures, each layer of the fill shall be compacted to at least 88 percent of laboratory maximum density as determined by ASTM D 1557, Modified Proctor. Areas within 10 feet of a roadway or structure shall be compacted to 92 percent of laboratory maximum density.

3.8 FINISHED EXCAVATION AND FILLS

All areas covered by the project, including excavated and filled sections and adjacent transition areas, shall be uniformly smooth-graded. The finished surface shall be reasonably smooth, compacted, and free from irregular surface changes. The degree of finish shall be that ordinarily obtainable from blade-grader operations, except as otherwise specified. Ditches and drainageways shall be finished to permit adequate drainage. The surface of areas to be turfed shall be finished to a smoothness suitable for the application of turfing materials. Surfaces shall be finished not more than 0.15 foot above or below the established grade or approved cross section.

3.9 PLACING TOPSOIL

On areas to receive topsoil, the compacted subgrade soil shall be scarified to a 2-inch depth for bonding of topsoil with subsoil. Topsoil then shall be spread evenly to a thickness of 3 inches and graded to the elevations and slopes shown. Topsoil shall not be spread when frozen or excessively wet or dry. Material required for topsoil in excess of that produced by excavation within the grading limits shall be obtained from off-site areas.

3.10 FIELD TESTING CONTROL

Testing shall be the responsibility of the Contractor and shall be performed by an approved commercial testing laboratory or by the Contractor subject to approval. Field density and moisture content tests of backfill areas shall be performed on every 10,000 square feet of each 6-inch lift placed with a minimum of 2 tests per 6-inch lift per material type. Field in-place density shall be determined in accordance with ASTM D 2922. When ASTM D 2922 is used, the calibration curves shall be checked, and adjusted if necessary, using the sand cone method as described in paragraph CALIBRATION of the ASTM publication. ASTM D 2922 results in a wet unit weight of soil; when using this method, ASTM D 3017 shall be used to determine the moisture content of the soil. The calibration curves furnished with the moisture gauges shall be checked along with density calibration checks as described in ASTM D 3017. The calibration checks of both the density and moisture gauges shall be made at the beginning of a job on each different type of material encountered and at intervals as directed.

3.11 FINAL GRADING

3.11.1 General

Perform grading operations so that all excavations will be well-drained at all times. Maintain diversions and keep them free from soil, debris, and leaves until final acceptance of the work. Finish grading all remediation areas to preconstruction or natural contours, or as directed by the Contracting Officer to promote surface water drainage and to prevent ponding or collection of surface water. Perform the grading work in proper sequence with all other associated operations.

3.11.2 Disturbed Areas

Grade all areas disturbed during the work of the Contract. At trench locations, excavated and fill areas, and adjacent transition areas, grade so the finished surfaces are at the proposed grade or are approximately at grades existing prior to being disturbed. Adjust as required to provide positive drainage.

3.11.3 Final Grading, Seeding, and Stabilization

All final grading, seeding, and stabilization shall be in accordance with the final approved Contractor's Erosion and Sedimentation Control (E&SC) Plan.

3.11.4 Site Management Controls

Implement, place, and install all site management controls in accordance with these Specifications.

3.12 PROTECTION

Newly graded areas shall be protected from traffic and from erosion, and any settlement or washing away that may occur from any cause, prior to acceptance, shall be repaired and grades reestablished to the required elevations and slopes. All work shall be conducted in accordance with the environmental protection requirements of the contract.

-- End of Section --

CEGS-02241 (April 1992)

Superseding
CEGS-02241 (February 1989)

SECTION 02241

AGGREGATE BASE COURSE FOR STAGING AREAS
04/92

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM C 29	(1991a) Unit Weight and Voids in Aggregate
ASTM C 127	(1988; R 1993) Specific Gravity and Absorption of Coarse Aggregate
ASTM C 128	(1993) Specific Gravity and Absorption of Fine Aggregate
ASTM C 131	(1989) Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine
ASTM C 136	(1995a) Sieve Analysis of Fine and Coarse Aggregates
ASTM D 75	(1987; R 1992) Sampling Aggregates
ASTM D 422	(1963; R 1990) Particle-Size Analysis of Soils
ASTM D 1556	(1990) Density and Unit Weight of Soil in Place by the Sand-Cone Method
ASTM D 1557	(1991) Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/cu ft (2,700 kN-m/cu m))
ASTM D 2167	(1994) Density and Unit Weight of Soil in Place by the Rubber Balloon Method

ASTM D 2922	(1991) Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth)
ASTM D 3017	(1988; R 1993) Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth)
ASTM D 4318	(1993) Liquid Limit, Plastic Limit, and Plasticity Index of Soils
ASTM E 11	(1995) Wire-Cloth Sieves for Testing Purposes

1.2 UNIT PRICE

1.2.1 Measurement for Payment

The quantity of aggregate base course completed and accepted as determined by the Contracting Officer will be measured in cubic yards of aggregate used in the accepted work.

1.2.2 Basis for Payment

Payment for aggregate base course on the tonnage basis will be allowed if more economical than the cubic yard basis. Payment for aggregate base course, constructed and accepted, will be made at the respective contract unit price in the unit price schedule. No payment will be made for any material wasted, used for the convenience of the Contractor, unused or rejected, or for water used.

1.3 DEFINITIONS

1.3.1 Aggregate Base

Aggregate base as used herein is well graded, durable aggregate uniformly moistened and mechanically stabilized by compaction.

1.3.2 Degree of Compaction

Degree of compaction required is expressed as a percentage of the maximum density obtained by the test procedure presented in ASTM D 1557 abbreviated hereinafter as percent laboratory maximum density.

1.4 GENERAL

The work specified herein consists of the construction of an aggregate base course. The work shall be performed in accordance with this specification and shall conform to the lines, grades, notes, and typical sections shown in the plans. Sources of all materials shall be selected well in advance of the time that materials will be required in the work.

1.5 SUBMITTALS

Government approval is required for submittals with a "GA" designation; submittals having an "FIO" designation are for information only. The following shall be submitted in accordance with Section 01300, SUBMITTAL PROCEDURES.

1.5.1 SD-01 Data

Plant, Equipment, Machines, and Tools; FIO

List of proposed equipment to be used in performance of construction work including descriptive data.

1.5.2 SD-09 Reports

Sampling and Testing; GA. Field Density; GA.

Calibration curves and related test results prior to using the device or equipment being calibrated. Copies of field test results within 24 hours after the tests are performed. Certified copies of test results for approval not less than 30 days before material is required for the work.

1.5.3 SD-18 Records

Waybills and Delivery Tickets; FIO. Coarse Aggregate; FIO.

Copies of waybills and delivery tickets during the progress of the work. Certified waybills and delivery tickets for all materials actually used. A notification stating which type of coarse aggregate is to be used.

1.6 WAYBILLS AND DELIVERY TICKETS

Copies of waybills or delivery tickets shall be submitted during the progress of the work. Before the final payment is allowed, waybills and certified delivery tickets shall be furnished for all aggregates actually used in the construction.

1.7 WEATHER LIMITATIONS

Base shall not be constructed when the atmospheric temperature is less than 2°C (35°F). Base shall not be constructed on subgrades that are frozen or contain frost. If the temperature falls below 2°C, (35°F), completed areas shall be protected against any detrimental effects of freezing.

1.8 PLANT, EQUIPMENT, MACHINES, AND TOOLS

1.8.1 General Requirements

Plant, equipment, machines, and tools used in the work shall be subject to approval and shall be maintained in satisfactory working condition at all times. Other compacting equipment may be used in lieu of that specified, where it can be demonstrated that the results are equivalent. The equipment shall be adequate and have the capability of producing the results specified.

1.8.2 Steel-Wheeled Rollers

Steel-wheeled rollers shall be the self-propelled type weighing not less than 10 tons, with a minimum weight of 300 pounds per inch width of rear wheel. Wheels of the rollers shall be equipped with adjustable scrapers. The use of vibratory rollers is optional.

1.8.3 Pneumatic-Tired Rollers

Pneumatic-tired rollers shall have four or more tires, each loaded to a minimum of 30,000 pounds and inflated to a minimum pressure of 150 psi. The loading shall be equally distributed to all wheels, and the tires shall be uniformly inflated. Towing equipment shall also be pneumatic-tired.

1.8.4 Mechanical Spreader

Mechanical spreader shall be self-propelled or attached to a propelling unit capable of moving the spreader and material truck. The device shall be steerable and shall have variable speeds forward and reverse. The spreader and propelling unit shall be carried on tracks, rubber tires, or drum-type steel rollers that will not disturb the underlying material. The spreader shall contain a hopper, an adjustable screen, and outboard bumper rolls, and be designed to have a uniform, steady flow of material from the hopper. The spreader shall be capable of laying material without segregation across the full width of the lane to a uniform thickness and to a uniform loose density so that, when compacted, the layer or layers shall conform to the thickness and grade requirements indicated. The Contracting Officer may require a demonstration of the spreader prior to approving its use in performance of the work.

1.8.5 Sprinkling Equipment

Sprinkling equipment shall consist of tank trucks, pressure distributors, or other approved equipment designed to apply controlled quantities of water uniformly over variable widths of surface.

1.8.6 Tampers

Tampers shall be of an approved mechanical type, operated by either pneumatic pressure or internal combustion, and shall have sufficient weight and striking power to produce the compaction required.

1.8.7 Straightedge

The Contractor shall furnish and maintain at the site, in good condition, one 10-foot straightedge for use in the testing of the finished surface. Straightedge shall be made available for Government use. Straightedges shall be constructed of aluminum or other lightweight metal and shall have blades of box or box-girder cross section with flat bottom reinforced to ensure rigidity and accuracy. Straightedges shall have handles to facilitate movement on pavement.

1.9 STOCKPILING MATERIALS

Materials, including approved material available from excavation and grading, shall be stockpiled in the manner and at locations designated and approved by the property owner and the Contracting Officer. Before stockpiling of material, storage sites shall be cleared, and sloped to drain. Materials obtained from different sources shall be stockpiled separately. Materials shall be stockpiled in accordance with

Section 02226, EXCAVATION, STAGING, AND CONTAINERIZATION OF CONTAMINATED SOILS AND DRUMS - AREAS A AND B.

1.10 SAMPLING AND TESTING

1.10.1 General Requirements

Sampling and testing shall be performed by an approved commercial testing laboratory or by facilities furnished by the Contractor. No work requiring testing shall be permitted until the facilities have been inspected and approved. The first inspection shall be at the expense of the Government. Cost incurred for any subsequent inspection required because of failure of the facilities to pass the first inspection will be charged to the Contractor. Tests shall be performed in sufficient numbers and at the locations and times directed to ensure that materials and compaction meet specified requirements. Copies of test results shall be furnished to the Contracting Officer within 24 hours of completion of tests.

1.10.2 Test Results

Results shall verify that materials comply with this specification. When a material source is changed, the new material will be tested for compliance. When deficiencies are found, the initial analysis shall be repeated and the material already placed shall be retested to determine the extent of unacceptable material. All in-place unacceptable material shall be replaced or modified as directed by the Contracting Officer.

1.10.3 Sampling

Aggregate samples for laboratory tests shall be taken in accordance with ASTM D 75.

1.10.4 Sieve Analysis

Before starting work, at least one sample of material shall be tested in accordance with ASTM C 136 and ASTM D 422 on sieves conforming to ASTM E 11. After the initial test, a minimum of one analysis shall be performed for each 100 cubic yards of material placed, with a minimum of one analysis for each day's run until the course is completed.

1.10.5 Liquid Limit and Plasticity Index

One liquid limit and plasticity index shall be performed for each sieve analysis. Liquid limit and plasticity index shall be in accordance with ASTM D 4318.

1.10.6 Laboratory Density

Tests shall provide a moisture-density relationship for the aggregate. Tests shall be conducted in accordance with ASTM D 1557.

1.10.7 Weight Per Cubic Foot of Slag

Weight per cubic foot of slag shall be determined in accordance with ASTM C 29.

1.10.8 Wear Tests

Wear tests shall be performed in accordance with ASTM C 131. A minimum of one test per aggregate source shall be run.

PART 2 PRODUCTS

2.1 MATERIALS

2.1.1 Aggregates

Aggregates shall consist of crushed stone or slag, crushed gravel, angular sand, or other approved material. Aggregates shall be durable and sound, free from lumps of clay, organic matter, objectionable coatings, and other foreign material. Material retained on a No. 4 sieve shall be known as coarse aggregate and that passing the No. 4 sieve shall be known as binder material.

2.1.1.1 Coarse Aggregate

The types of coarse aggregate used on the project shall meet the requirements specified in Paragraph 2.1.3.

2.1.1.2 Slag

Slag shall be an air-cooled blast-furnace product having a dry unit weight of not less than 65 pcf.

2.1.2 Binder Material

Binder material shall consist of screenings, angular sand, or other finely divided mineral matter processed or naturally combined with the coarse aggregate. Liquid-limit and plasticity-index requirements shall apply to any component that is blended to meet the required gradation and shall also apply to the completed course. The portion of any component or of the completed course passing the No. 40 sieve shall be either nonplastic or have a liquid limit not greater than 25 and a plasticity index not greater than 5.

2.1.3 Gradation

Requirements for gradation specified shall apply to the completed base course. The aggregate shall meet the requirements of NYSDOT Type 1A Subbase Course, and NYSDOT Type 3 for stabilized construction entrance.

PART 3 EXECUTION

3.1 GENERAL REQUIREMENTS

When the base is constructed in more than one layer, the previously constructed layer shall be cleaned of loose and foreign matter. Adequate drainage shall be provided during the entire period of construction to prevent water from collecting or standing on the working area. Line and grade stakes shall be provided as necessary for control. Grade stakes shall be in lines parallel to the centerline of the area under construction and suitably spaced for string lining.

3.2 OPERATION OF AGGREGATE SOURCES

Aggregates shall be obtained from off-site sources.

3.3 PREPARATION OF UNDERLYING COURSE

3.3.1 General Requirements

Before constructing the aggregate base course, the previously constructed underlying course shall be cleaned of foreign substances. Surface of underlying course shall meet the specified compaction and surface tolerances. Subgrade shall conform to Section 02210, BACKFILLING AND GRADING FOR REMEDIATION AREAS. Ruts or soft, yielding spots that may appear in the underlying course, areas having inadequate compaction, and deviations of the surface from requirements specified shall be corrected. Where wet or unstable areas of subgrade are encountered and with the approval of the Contracting Officer, the surface shall be undercut as required, backfilled, and mechanically stabilized with NYSDOT Type 1A aggregate prior to placement of the aggregate course. Stabilization may be accomplished by mixing aggregate material into the underlying course and compacting by approved methods. Alternatively, upon receipt of approval from the Contracting Officer, the Contractor may utilize geotextile filter fabric in conjunction with or in lieu of the aggregate for stabilization purposes. Properly compacted material will be considered as part of the underlying course and shall meet all requirements for the underlying course. Finished underlying course shall not be disturbed by traffic or other operations, and shall be maintained in a satisfactory condition until subsequent courses are placed.

3.3.2 Grade Control

Underlying material shall be excavated to sufficient depth for the required base course thickness so that the finished base course with the subsequent surface course will meet the fixed grade. Finished and completed area shall conform to the lines, grades, cross section, and dimensions indicated.

3.4 INSTALLATION

3.4.1 Mixing and Placing

Materials shall be mixed by the stationary plant, traveling plant, or road mix method and placed in such a manner as to obtain uniformity of the aggregate base course material and at a uniform optimum water content for compaction. The Contractor shall make such adjustments in mixing or placing procedures or in equipment to obtain the true grades, to minimize segregation and degradation, to reduce or accelerate loss or increase of water, and to ensure a satisfactory base course.

3.4.2 Edges of Base Course

Approved material shall be placed along edges of aggregate base course in such quantities as will compact to thickness of the course being constructed, or to the thickness of each layer in a multiple layer course.

3.4.3 Compaction

Each layer of aggregate base course including shoulders shall be compacted. Water content shall be maintained at optimum or at a water content for which the required degree of compaction is achievable. Density of compacted mixture shall be at least 95 percent of laboratory maximum density. Rolling shall begin at the outside edge of the surface and proceed to the center, overlapping on successive trips at least one-half the width of the roller. Alternate trips of the roller shall be slightly different lengths. Speed of the roller shall be such that displacement of the aggregate does not occur. Areas inaccessible to the rollers shall be compacted with mechanical tampers, and shall be shaped and finished by hand methods.

3.4.4 Layer Thickness

Compacted thickness of the aggregate course shall be as indicated. No layer shall be in excess of 8 inches nor less than 3 inches in compacted thickness.

3.4.5 (Proof Rolling) Omitted

3.4.6 Finishing

The surface of the top layer shall be finished to grade and cross section shown. Finished surface shall be of uniform texture. Light blading during compaction may be necessary for the finished surface to conform to the lines, grades, and cross sections. Should the surface for any reason become rough, corrugated, uneven in texture, or traffic marked prior to completion, such unsatisfactory portion shall be scarified, reworked, recompacted, or replaced as directed.

3.4.6.1 Smoothness

Surface of each layer shall show no deviations in excess of 3/8 inch when tested with the 10-foot straightedge. Deviations exceeding this amount shall be corrected by removing material and replacing with new material, or by reworking existing material and compacting, as directed.

3.4.6.2 Thickness Control

Compacted thickness of the base course shall be within 1/2 inch of the thickness indicated. Where the measured thickness is more than 1/2 inch deficient, such areas shall be corrected by scarifying, adding new material of proper gradation, reblading, and recompacting as directed. Where the measured thickness is more than 1/2 inch thicker than indicated, the course shall be considered as conforming to the specified thickness requirements. Average job thickness shall be the average of all thickness measurements taken for the job, but shall be within 1/4 inch of the thickness indicated.

3.5 FIELD QUALITY CONTROL

3.5.1 Field Density

Field in-place density shall be determined in accordance with ASTM D 2922. When ASTM D 2922 is used, the calibration curves shall be checked, and adjusted if necessary, using the sand cone method as described in paragraph CALIBRATION of the ASTM publication. ASTM D 2922 results in a wet unit weight of soil, and when using this method, ASTM D 3017 shall be used to determine the moisture

content of the soil. The calibration curves furnished with the moisture gauges shall be checked along with density calibration checks as described in ASTM D 3017. If ASTM D 2922 is used, in-place densities shall be checked by ASTM D 1556 at least once per lift for each 5,000 square yard of base material. Calibration curves and calibration test results shall be furnished within 24 hours of the conclusion of the tests. At least one field density test shall be performed for each 250 square yards of each layer of base material.

3.5.2 Smoothness

Measurements for deviation from grade and cross section shown shall be taken in successive positions parallel to the road centerline with a 10-foot straightedge. Measurements shall also be taken perpendicular to the road centerline at 100-foot intervals.

3.5.3 Thickness

Thickness of the base course shall be measured at intervals in such a manner as to ensure one measurement for each 200 square yards of base course. Measurements shall be made in 3-inch diameter test holes penetrating the base course.

3.6 TRAFFIC

Completed portions of the area may be opened to traffic, provided there is no marring or distorting of the surface by the traffic. Heavy equipment shall not be permitted except when necessary for construction, and then the area shall be protected against marring or damage to the completed work.

3.7 MAINTENANCE

The aggregate base course shall be maintained in a satisfactory condition until accepted. Maintenance shall include immediate repairs to any defects and shall be repeated as often as necessary to keep the area intact.

3.8 DISPOSAL OF UNSATISFACTORY MATERIALS

Removed in-place materials that are unsuitable for the base course material that is removed for the required correction of defective areas, and waste material and debris shall be disposed of as directed.

-- End of Section --

SECTION 02271

GEOMEMBRANE FOR STAGING AREAS

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of the specification to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM D 638	(1989) Test Method for Tensile Properties of Plastics
ASTM D 746	(1987) Test Method for Brittleness Temperature of Plastics and Elastomers by Impact
ASTM D 1004	(1988) Test Method for Initial Tear Resistance of Plastic Film and Sheeting
ASTM D 1238	(1982) Test Method for Flow Rates of Thermoplastics by Extrusion Plastometer
ASTM D 1505	(1968) Test Method for Density of Plastics by the Density-Gradient Technique
ASTM D 1603	(1976) Test Method for Carbon Black in Olefin Plastics
ASTM D 4354	Sampling of Geosynthetics for Testing
ASTM D 4437	(1988) Practice for Determining the Integrity of Field Seams Used in Joining Flexible Polymeric Sheet Geomembranes
ASTM D 5199	Measuring Normal Thickness of Geotextiles and Geomembranes
ASTM D 3015	(1972) Recommended Practice for Microscopical Examination of Pigment Dispersion in Plastic Compounds
ASTM D 5321	(1993) Standard Test Method for Determining the Coefficient of Soil and Geosynthetic or Geosynthetic and Geosynthetic Friction by the Direct Shear Method

NATIONAL SANITATION FOUNDATION (NSF)

NSF Standard 54	(1991) Standard for Flexible Membrane Liners

GEOSYNTHETIC RESEARCH INSTITUTE (GRI)

GRI GM4 (1991) Three Dimensional Geomembrane Tension Test

FEDERAL TEST METHOD STANDARDS (FTMS)

FTMS 101 C 2065.1 Puncture Resistance and Elongation Test

1.2 OMITTED

1.3 PAYMENT

Incidental item.

1.4 QUALIFICATIONS

1.4.1 Manufacturer

The Manufacturer is the corporation hired by the Contractor who is responsible for producing the geomembrane sheets. Manufacturer shall have produced the proposed geomembrane sheets for at least five completed projects having a total minimum area of 5 million square feet.

1.4.2 Installer

The Installer is the person or corporation hired by the Contractor who is responsible for field handling, deploying, seaming, and anchoring of the geomembrane. Due to the nature of this project, the Contractor shall be permitted to deploy the geomembrane. If seaming is required, the Contractor shall employ a seamer acceptable to the Contracting Officer.

1.5 SUBMITTALS

1.5.1 Materials; FIO

Manufacturer's certified raw material and sheet material data sheets along with a copy of quality control certificates.

1.5.2 Tests, Inspections, and Verifications; FIO

Manufacturer's quality control (QC) manual. Fabricator's quality control manual.

1.5.3 Field Seaming; FIO

Installer's quality control (QC) manual.

1.5.4 Warranty; FIO

Warranty for geomembrane material and installation workmanship.

1.5.5 Surface Preparation Acceptance; FIO

Installer's form for completing and signing to accept prepared subgrade for geosynthetics installation.

1.6 DELIVERY, STORAGE, AND HANDLING

The geomembrane shall be protected from puncture, abrasion, excessive heat or cold, material degradation, adhesion of individual layers, or other damaging circumstances. Damaged geomembrane shall be removed from the site.

1.7 WEATHER LIMITATIONS

Geomembrane shall be deployed and field-seamed only when the geomembrane is dry and winds are low. In marginal conditions, seaming shall cease unless tests confirm that satisfactory seam strengths are being obtained. Cold weather seaming techniques shall conform to Installer's quality control manual.

1.8 (WARRANTY) OMITTED

1.9 EQUIPMENT

All equipment used in performance of the work shall be in accordance with the geomembrane Manufacturer's recommendations and shall be maintained in satisfactory working condition.

PART 2 PRODUCTS

2.1 MATERIALS

2.1.1 High-Density Polyethylene Geomembrane

The Contractor shall supply a 40-mil high-density polyethylene geomembrane.

2.1.2 Geomembrane Stockpile Covers

Geomembrane material used as a stockpile cover shall either be unreinforced polyethylene (min. 10-mil thickness) or reinforced polyethylene (min. 6-mil thickness).

PART 3 EXECUTION

3.1 PREPARATION

3.1.1 Surface Preparation

Surface preparation shall include clearing, grubbing, and proof rolling the exposed surface prior to installation of the bedding geotextile that shall underlie the geomembrane. Material larger than 1/2 inch in diameter and any other debris that could damage the geomembrane shall be removed from the surfaces to be covered first with the bedding geotextile and then with the geomembrane. The subgrade surface shall be observed daily by the Inspector and Installer to evaluate the surface condition. Any damage to the subgrade caused by the Contractor's operations shall be repaired at no additional cost

to the Government. Immediately prior to geomembrane placement, the Contracting Officer shall inspect the surface on which the geomembrane is to be placed.

3.1.2 Anchor

The geomembrane shall be anchored as shown on the Drawings. Loose soil, rock larger than 2 inches in diameter, and any other debris that could damage the geomembrane shall be removed from the surfaces of the trench.

3.2 PANEL/SHEET DEPLOYMENT

The geomembrane shall be placed with minimum handling. The procedures and equipment used shall not damage the geomembrane. Geomembrane damaged during installation shall be removed or repaired, at the Contracting Officer's discretion and as specified in paragraph DEFECTS AND REPAIRS, at no additional cost to the Government. Only those panels/sheets that can be anchored and seamed together the same day shall be deployed. Adequate ballast (e.g., sand bags) shall be placed on the geomembrane to prevent uplift by wind without damaging the geomembrane. No vehicular traffic will be allowed directly on the geomembrane. The method used to unroll the panels/sheets shall not scratch, crimp, or excessively elongate the geomembrane and shall not detrimentally rut the subgrade soil as determined by the Inspector. Seams shall be oriented parallel to the line of maximum slope. Where seams can only be oriented across the slope, the upper panel shall be lapped over the lower panel.

3.2.1 Wrinkles

The method used to place the panels/sheets shall minimize wrinkles; however, the geomembrane Manufacturer and Installer shall coordinate efforts to provide the proper amount of slack in the deployed geomembrane so as to compensate for contraction due to local temperature extremes.

3.2.2 (Thickness Measurement) Omitted

3.3 FIELD SEAMING

3.3.1 Test Seams

Test seams shall be made on test strips of geomembrane to verify that seaming conditions are adequate. They shall be made in the area to be seamed and in contact with the subgrade. Test seams shall be made each day prior to production seaming. One sample shall be obtained from each test seam. Four random specimens 1 inch wide shall be cut from the sample. The Installer shall field test 2 seam specimens for shear strength and 2 seam specimens for peel adhesion using an approved quantitative tensiometer. Jaw separation speed shall be 20 inches per minute. To be acceptable, 2 out of 2 replicate test specimens must meet specified seam strength requirements of 10 lb/in. If the field tests fail to meet these requirements of 10 lb/in., the entire operation shall be repeated. If the additional test seam fails, the seaming apparatus or seamer shall not be accepted or used for seaming until the deficiencies are corrected.

3.3.2 Field Seams

3.3.2.1 General Requirements

All panels/sheets shall be overlapped a minimum of 3 inches. In corners and odd-shaped geometric locations, the number of field seams shall be minimized. Where possible, the Contractor shall utilize one geomembrane panel for the stockpile areas to avoid field seaming. Seaming shall extend to the outside edge of panels/sheets to be placed in anchor trenches or berms. Seaming shall not be conducted in the presence of standing water and/or soft subgrades as determined by the Contracting Officer. Wet surfaces shall be thoroughly dried and soft subgrades compacted and approved by the Contracting Officer prior to seaming. The seam area shall be cleaned of all dust, dirt, and foreign material prior to and during seaming.

3.3.2.2 Polyethylene Seams

Polyethylene geomembranes shall be seamed by hot wedge methods. Extrusion welding shall only be allowed for patching and seaming around appurtenances. If seam overlap grinding is required, the procedure used shall not damage the geomembrane. Grinding marks shall be oriented perpendicular to the seam direction and no marks shall extend more than 1/8 inch beyond the extrudate after placement. The depth of the grinding marks shall be no greater than 10% of the sheet thickness. Where extrusion fillet welds are temporarily terminated long enough to cool, they shall be ground prior to applying new extrudate over the existing seam.

3.3.3 (Field Sampling and Testing) Omitted

3.3.4 Defects and Repairs

3.3.4.1 Identification

Immediately prior to covering the geomembrane, seams and non-seam areas shall be visually inspected by the Contracting Officer for defects, holes, or damage due to weather conditions or construction activities. At the Contracting Officer's discretion, the surface of the geomembrane shall be brushed, blown, or washed by the Contractor if the amount of dust, mud, or foreign material inhibits inspection or functioning of the overlying material.

3.3.4.2 Evaluation

Each suspect location shall be repaired.

3.3.4.3 Repair Procedures

Defective seam areas may be overlaid with a strip of new material and seamed (cap stripped). Alternatively, the seaming path shall be retraced to an intermediate location a minimum of 10 feet on each side of the defective location.

3.3.4.4. Patches

Tears, holes, blisters, and areas with undispersed raw materials or foreign material contamination shall be repaired with patches. Patches shall have rounded corners, be made of the same geomembrane, and extend a minimum of 6 inches beyond the edge of defects. Minor localized flaws shall be repaired by spot welding or seaming as determined by the Contracting Officer.

3.4 (PENETRATIONS) OMITTED

-- End of Section --

SECTION 02272

SEPARATION/BEDDING GEOTEXTILE FOR STAGING AREAS
11/96

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of the specification to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM D 3786 (1987) Hydraulic Bursting Strength of Knitted Goods and Nonwoven Fabrics-Diaphragm Bursting Strength Tester Method

ASTM D 4354 (1989; R 1994) Sampling of Geosynthetics for Testing

ASTM D 4355 (1992) Deterioration of Geotextiles from Exposure to Ultraviolet Light and Water (Xenon-Arc Type Apparatus)

ASTM D 4491 (1992) Water Permeability of Geotextiles by Permittivity

ASTM D 4533 (1991) Trapezoid Tearing Strength of Geotextiles

ASTM D 4632 (1991) Grab Breaking Load and Elongation of Geotextiles

ASTM D 4751 (1993) Determining Apparent Opening Size of a Geotextile

ASTM D 4759 (1988; R 1992) Determining the Specification Conformance of Geosynthetics

ASTM D 4833 (1988) Index Puncture Resistance of Geotextiles, Geomembranes, and Related Products

ASTM D 4873 (1995) Identification, Storage, and Handling of Geotextiles

1.2 MEASUREMENT

Measurement will be made of the as-built surface area in square meters (yards) covered by geotextile. Allowance will be made for geotextile in anchor and/or drainage trenches, but no allowance will be made for waste, overlaps, damaged materials, repairs, or materials used for the convenience of the Contractor.

1.3 PAYMENT

Geotextile installed and accepted will be paid for at the respective contract unit price in the bidding schedule. This unit price shall include the cost of materials, equipment, installation, testing, and other costs associated with placement of the geotextile.

1.4 (QUALIFICATION) OMITTED

1.5 SUBMITTALS

Government approval is required for submittals with a "GA" designation. Submittals having an "FIO" designation are for information only. The following shall be submitted in accordance with Section 01300, SUBMITTAL PROCEDURES.

1.5.1 SD-06 Instructions

Manufacturing, Sampling, and Testing; FIO

A minimum of 7 days prior to scheduled use, Manufacturer's quality control manual including instructions for storage, handling, installation, seaming, and repair.

1.5.2 SD-13 Certificates

Geotextile; FIO

A minimum of 7 days prior to scheduled use, Manufacturer's certificate of compliance stating that the geotextile meets the requirements of this section. This submittal shall include copies of manufacturer's quality control test results. For needle punched geotextiles, the manufacturer shall also certify that the geotextile has been continuously inspected using permanent on-line full-width metal detectors and does not contain any needles that could damage other geosynthetic layers. The certificate of compliance shall be attested to by a person having legal authority to bind the geotextile manufacturing company.

1.6 DELIVERY, STORAGE, AND HANDLING

1.6.1 General

Geotextiles shall be labeled, handled, and stored in accordance with ASTM D 4873 and as specified herein. Each roll shall be wrapped in an opaque and waterproof layer of plastic during shipment and storage. The plastic wrapping shall not be removed until deployment. Each roll shall be labeled with the manufacturer's name, geotextile type, lot number, roll number, and roll dimensions (length, width, gross weight). Geotextile or plastic wrapping damaged as a result of storage or handling shall be repaired or replaced, as directed. Geotextile shall not be exposed to temperatures in excess of 60°C degrees C (140°F) or less if recommended by the Manufacturer.

1.6.2 Handling

No hooks, tongs, or other sharp instruments shall be used for handling geotextile. Geotextile shall not be dragged along the ground.

PART 2 PRODUCTS

2.1 RAW MATERIALS

2.1.1 Geotextile

The geotextile shall be a nonwoven pervious sheet of polymeric material and shall consist of long-chain synthetic polymers composed of at least 85 percent by weight polyolefins, polyesters, or polyamides. Stabilizers and/or inhibitors shall be added to the base polymer if necessary to make the filaments resistant to deterioration by ultraviolet light, oxidation, and heat exposure. Regrind material, which consists of edge trimming and other scraps that have never reached the consumer, may be used to produce the geotextile. Post-consumer recycled material may also be used. Geotextile shall be formed into a network such that the filaments or yarns retain dimensional stability relative to each other, including the selvages. The geotextile physical properties shall equal or exceed the minimum average roll values listed in Table 1. Acceptance of geotextile shall be in accordance with ASTM D 4759. Strength values shown are for the weaker principal direction.

Table 1 Geotextile Physical Properties

PROPERTY	TEST METHOD	TEST VALUE	
		Separation Geotextile	Bedding Geotextile
Unit Weight, oz/yd^2	ASTM D 3776	10	16
Puncture, lb	ASTM D 4833	75	200
Grab Tensile, lb	ASTM D 4632	180	350
Trapezoidal Tear, lb	ASTM D 4533	75	130
Ultraviolet Degradation (percent strength retained at 500 hours)	ASTM D 4355	70	70

2.2 TESTS, INSPECTIONS, AND VERIFICATIONS

2.2.1 Manufacturing, Sampling, and Testing

Geotextiles shall meet the requirements specified in Table 1. Manufacturing quality control testing shall be performed in accordance with the manufacturer's approved quality control manual. At a minimum, geotextiles shall be randomly sampled for testing in accordance with ASTM D 4354 (Procedure A).

PART 3 EXECUTION

3.1 SURFACE PREPARATION

The surface underlying the geotextile shall be smooth and free of ruts or protrusions that could damage the geotextile. Subgrade materials requirements shall be in accordance with Section 02110, CLEARING AND GRUBBING.

3.2 INSTALLATION

Geotextile rolls that are damaged or contain imperfections shall be repaired or replaced as directed. The geotextile shall be laid smooth so as to be free of tensile stresses, folds, and wrinkles. On slopes greater than 5 horizontal on 1 vertical, the geotextile shall be laid with the machine direction of the fabric parallel to the slope direction.

3.3 PROTECTION

The geotextile shall be protected during installation from clogging, tears, and other damage. Damaged geotextile shall be repaired or replaced as directed. Adequate ballast (e.g., sand bags) shall be used to prevent uplift by wind. Staples or pins shall not be used to hold the geotextile in place. The geotextile shall not be left uncovered for more than 14 days during installation. The initial loose soil lift height over the geotextile shall be between 8 inches and 12 inches. Equipment with ground pressures less than 5.0 psi shall be used to place the first lift over the geotextile. Overlying materials shall be deployed such that the geotextile is not shifted, damaged, or placed in tension. Cover soil shall be placed from the bottom of the slope upward. Cover soil placed from a bucket shall be dropped from a height no greater than 3 feet.

3.4 SEAMING

3.4.1 Overlap Seams

Geotextile panels shall be continuously overlapped a minimum of 12 inches. Where it is required that seams be oriented across the slope of a berm or barrier, the upper sheet shall be lapped over the lower sheet. The Contractor has the option of field sewing instead of overlapping.

3.4.2 Sewn Seams

Seams shall be sewn at the locations shown on the drawings. Seams shall be continuously sewn using a flat seam with one row of a two-thread chain stitch unless otherwise recommended by the Manufacturer. The minimum distance from the geotextile edge to the stitch line nearest to that edge shall be 75 mm (3 inches) unless otherwise recommended by the Manufacturer. The thread at the end of each seam run shall be tied off to prevent unraveling. Seams shall be on the top side of the geotextile to allow inspection. Skipped stitches or discontinuities shall be sewn with an extra line of stitching with 450 mm (18 inches) of overlap.

3.5 REPAIRS

Geotextile damaged during installation shall be repaired by placing a patch of the same type of geotextile that extends a minimum of 300 mm (12 inches) beyond the edge of the damage or defect. Patches shall be continuously fastened using a sewn seam or other approved method. The machine direction of the patch shall be aligned with the machine direction of the geotextile being repaired. Geotextile that cannot be repaired shall be replaced.

3.6 (ENGINEERED PENETRATIONS) OMITTED

-- End of Section --

LAKE ONTARIO ORDNANCE WORKS
LEWISTON AND PORTER, NY

SECTION 02935

TURF
06/90

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AGRICULTURAL MARKETING SERVICE (AMS)

AMS-01 (Amended thru: Aug 1988) Federal Seed Act Regulations (Part 201-202)

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM D 977 (1991) Emulsified Asphalt

ASTM D 2028 (1976; R 1992) Cutback Asphalt (Rapid-Curing Type)

ASTM D 2607 (1969) Peats, Mosses, Humus, and Related Products

COMMERCIAL ITEM DESCRIPTIONS (CID)

CID A-A-1909 (Basic; Notice 1) Fertilizer

1.2 SUBMITTALS

Government approval is required for submittals with a "GA" designation; submittals having an "FIO" designation are for information only. The following shall be submitted in accordance with Section 01300, SUBMITTAL PROCEDURES.

1.2.1 SD-01 Data

Manufacturer's Literature; FIO

Manufacturer's literature discussing physical characteristics, application and installation instructions for erosion control material, and for chemical treatment material.

1.2.2 SD-07 Schedules

Equipment List; FIO

A list of proposed pesticide application, seeding, and mulching equipment to be used in performance of turfing operation, including descriptive data and calibration tests.

1.2.3 SD-08 Statements

Delivery; FIO

Delivery schedule, at least 10 days prior to the intended date of the first delivery.

1.2.4 SD-13 Certificates

Certificates of compliance and certified laboratory test reports certifying that materials meet the requirements specified, prior to the delivery of materials. Certified copies of the reports for the following materials shall be included.

Seed; FIO

For mixture, percent pure live seed, minimum percent germination and hard seed, maximum percent weed seed content, date tested, and state certification.

Fertilizer; FIO

For chemical analysis, composition percent.

Agricultural Limestone; FIO

For calcium carbonate equivalent and sieve analysis.

Topsoil; FIO

For pH, particle size, chemical analysis, and mechanical analysis.

1.3 OMITTED

1.4 DELIVERY, INSPECTION, STORAGE, AND HANDLING

1.4.1 Delivery

1.4.1.1 Topsoil

A soil test shall be provided for topsoil delivered to the site.

1.4.1.2 Soil Amendments

Soil amendments shall be delivered to the site in the original, unopened containers bearing the manufacturer's chemical analysis. In lieu of containers, soil amendments may be furnished in bulk. A chemical analysis shall be provided for bulk deliveries.

1.4.2 Inspection

Seed and topsoil shall be inspected upon arrival at the job site by the Contracting Officer for conformity to type and quality in accordance with paragraph MATERIALS. Other materials shall be inspected for meeting specified requirements, and unacceptable materials shall be removed from the job site.

1.4.3 Storage

Materials shall be stored in areas designated by the Contracting Officer. Seed, lime, and fertilizer shall be stored in cool, dry locations away from contaminants. Chemical treatment materials shall not be stored with other landscape materials.

1.4.4 Handling

1.4.4.1 Materials

Except for bulk deliveries (or actual application spreading), materials shall not be dropped or dumped from vehicles. Bulk deliveries will be stored in a building, container, or on plastic.

PART 2 PRODUCTS

2.1 MATERIALS

2.1.1 Seed

2.1.1.1 Seed Classification

State-approved seed of the latest season's crop shall be provided in original sealed packages bearing the producer's guaranteed analysis for percentages of mixture, purity, germination, hard seed, weed seed content, and inert material. Labels shall be in conformance with AMS-01 and applicable state seed laws.

2.1.1.2 Seed Mixtures

Permanent seed mixtures and application rates shall conform to the following table:

Name	Variety	Min. Purity (%)	Min. Germination (%)	Application Rate	Allowable Seeding Dates
Tall Fescue, Plus	Kentucky 31	95	80	35#/Acre	April to May 31; August 15 to October 15
Redtop, Plus	Common	92	80	5#/Acre	
Bird's-foot Trefoil	Use half Empire, Dawn, or Leo Variety and half Viking or European source	98	80	10#/Acre	

2.1.1.3 Quality

Weed seed shall not exceed 0.5 percent by weight of the total mixture.

Seed shall be clean, fresh, free of deleterious material, and delivered to the site in the original, unopened bags showing net weight, composition of mix, date of germination tests, supplier's name, and guarantee of analysis. Seed shall conform to applicable state and Federal regulations in effect on the

date of invitation to bid. Live seed crop plants other than those specified shall not be utilized. Prohibited noxious weeds include Johnsongrass or Johnsongrass crosses, Canada thistle, and quackgrass; restricted noxious weeds include wild garlic and wild onion, bermuda grass, annual bluegrass, corn cockle, dodder, and bindweed.

The Contractor shall furnish a certified report from an approved seed testing laboratory not engaged in selling seed showing a test for purity, viability, and weed seed content of representative samples of the grass seed before it is mixed; witness the mixing operations; and shall immediately seal all bags of mixed seed. The price bid shall include the cost of laboratory charges. No grass seed shall be delivered until the approval of samples by the Contracting Officer, but such approval shall not constitute final acceptance. The Contracting Officer reserves the right to reject on or after delivery any material which, in his opinion, does not meet these specifications.

Wet, moldy, or otherwise damaged seed shall be rejected.

2.1.1.4 Temporary Seed

The temporary seed mixture and application rates for erosion control shall conform to the following table:

Name	Variety	Min. Purity (%)	Min. Germination (%)	Application Rate	Allowable Seeding Dates
Annual Rye Grass, or Winter Rye	Common	95	85	40#/Acre	March 15 to October 15
	Aroostook	95	85	100#/Acre	

2.1.2 Soil Amendments

Soil amendments shall consist of lime and fertilizer, meeting the following requirements.

2.1.2.1 Lime

Lime shall be agricultural limestone and shall have a minimum calcium carbonate equivalent of 88 percent and shall be ground to such a fineness that at least 90 percent will pass a 10-mesh sieve and at least 50 percent will pass a 60-mesh sieve.

2.1.2.2 Fertilizer

Fertilizer shall be commercial grade, free flowing, uniform in composition, and conforming to CID A-A-1909. Granular Fertilizer: As recommended by soil test. In lieu of soil testing, consists of nitrogen-phosphorus-potassium ratio: 5 percent nitrogen, 10 percent phosphorus, and 10 percent potassium.

2.1.3 Mulch

Mulch shall be free from weeds, mold, and other deleterious materials.

2.1.3.1 Straw

Straw shall be stalks from oats, wheat, rye, barley, or rice furnished in air-dry condition and with a consistency for placing with commercial mulch-blowing equipment.

2.1.3.2 Hay

Hay shall be native hay, sudan-grass hay, broomsedge hay, or other herbaceous mowings furnished in an air-dry condition suitable for placing with commercial mulch-blowing equipment.

2.1.3.3 Wood Cellulose Fiber

Wood cellulose fiber shall not contain any growth or germination-inhibiting factors, and shall be dyed an appropriate color to facilitate visual metering during application. Composition on air-dry weight basis: 9 to 15 percent moisture, pH range from 4.5 to 6.0.

2.1.3.4 Wood Chips

Wood chips shall be chips or shredded bark with maximum particle size of 3/16 inch.

2.1.3.5 Paper Fiber Mulch

Paper fiber mulch shall be recycled newsprint that is shredded for the purpose of mulching seed.

2.1.4 Asphalt Adhesive

Asphalt adhesive shall conform to the following.

2.1.4.1 Emulsified Asphalt

Conforming to ASTM D 977, Grade SS-1.

2.1.4.2 Cutback Asphalt

Conforming to ASTM D 2028, designation RC-70.

2.1.5 Water

Water shall not contain elements toxic to plant life.

PART 3 EXECUTION

3.1 SEEDING, TIMES, AND CONDITIONS

3.1.1 Seeding Time

Seed shall be sown in accordance with the periods as specified in tables in Paragraphs 2.1.1.2 and 2.1.1.4.

3.1.2 Turfing Conditions

Turf operations shall be performed only during periods when beneficial results can be obtained. When drought, excessive moisture, or other unsatisfactory conditions prevail, the work shall be stopped when

directed. When special conditions warrant a variance to the turf operations, proposed times shall be submitted to and approved by the Contracting Officer.

3.2 SITE PREPARATION

3.2.1 Grading

The Contracting Officer shall verify that finished grades are as indicated on Drawings, and the placing of topsoil and the smooth grading has been completed in accordance with Section 02210, BACKFILL AND GRADING FOR REMEDIATION AREAS.

3.2.2 Application of Soil Amendments

3.2.2.1 Soil Test

A soil test shall be performed for pH, chemical analysis, and mechanical analysis to establish the quantities and type of soil amendments required to meet local growing conditions for the type and variety of turf specified.

3.2.2.2 Lime

Lime shall be applied at the rate recommended by the soil test. In lieu of a soil test, lime shall be applied at the rate of 92 pounds per 1,000 ft^2, 2 tons per acre, on all areas that will receive permanent seeding. Lime shall be incorporated into the soil to a minimum depth of 100 mm (4 inches) or may be incorporated as part of the tillage operation.

3.2.2.3 Fertilizer

Fertilizer shall be applied at the rate recommended by the soil test. In lieu of a soil test, fertilizer shall be applied at the rate of 14 pounds per 1,000 square feet, or 600 pounds per acre, on all areas that will receive permanent seeding. Fertilizer shall be incorporated into the soil to a minimum depth of 100 mm (4 inches) and may be incorporated as part of the tillage or hydroseeding operation.

3.2.3 Finished Grading

3.2.3.1 Preparation

Turf areas shall be filled as needed or have surplus soil removed to attain the finished grade. Drainage patterns shall be maintained as indicated on drawings. Turf areas compacted by construction operations shall be completely pulverized by tillage. Soil used for repair of erosion or grade deficiencies shall conform to topsoil requirements specified in Section 02210, BACKFILL AND GRADING FOR REMEDIATION AREAS. Finished grade shall be 25 mm (1 inch) below the adjoining grade of any surfaced area. New surfaces shall be blended to existing areas.

3.2.3.2 Lawn Area Debris

Lawn areas shall have debris and stones larger than 25 mm (1 inch) in any dimension removed from the surface.

3.2.3.3 Field Area Debris

Field areas shall have debris and stones larger than 75 mm (3 inches) in any dimension removed from the surface.

3.2.3.4 Protection

Finished graded areas shall be protected from damage by vehicular or pedestrian traffic and erosion.

3.3 SEEDING

3.3.1 General

Prior to seeding, any previously prepared seedbed areas compacted or damaged by interim rain, traffic, or other cause shall be reworked to restore the ground condition previously specified. Seeding operations shall not take place when the wind velocity will prevent uniform seed distribution.

3.3.2 Equipment Calibration

The equipment to be used and the methods of turfing shall be subject to the inspection and approval of the Contracting Officer prior to commencement of turfing operations. Immediately prior to the commencement of turfing operations, the Contractor shall conduct turfing equipment calibration tests in the presence of the Contracting Officer.

3.3.3 Applying Seed

3.3.3.1 Broadcast Seeding

Seed shall be uniformly broadcast at the specified rate using broadcast seeders. Half of seed shall be broadcast in one direction, and the remainder at right angles to the first direction. Seed shall be covered to an average depth of 5 mm (1/4 inch) by disk harrow, steel mat drag, cultipacker, or other approved device.

3.3.3.2 Drill Seeding

Seed shall be uniformly drilled to an average depth of 15 mm (1/2 inch) and at the specified rate using equipment having drills not more than 160 mm (6-1/2 inches) apart. Row markers shall be used with the drill seeder.

3.3.3.3 Rolling

Immediately after seeding, except for slopes 3 horizontal to 1 vertical and greater, the entire area shall be firmed with a roller not exceeding 130 kg (90 pounds) for each meter (foot) of roller width. Areas seeded with seed drills equipped with rollers shall not be rolled.

3.3.4 Hydroseeding

Seed and fertilizer shall be added to water and thoroughly mixed at the rates specified. Wood cellulose fiber mulch shall be added at the rates recommended by the manufacturer after the seed, fertilizer, and water have been thoroughly mixed to produce a homogeneous slurry. Slurry shall be uniformly applied under pressure over the entire area. The hydroseeded area shall not be rolled.

3.3.5 Mulch

3.3.5.1 Straw or Hay Mulch

Straw or hay mulch shall be spread uniformly at the rate of 4.5 metric tons per hectare (2 tons per acre). Mulch shall be spread by hand, blower-type mulch spreader, or other approved method. Mulching shall be started on the windward side of relatively flat areas or on the upper part of a steep slope and continued uniformly until the area is covered. The mulch shall not be bunched. All seeded areas shall be mulched on the same day as the seeding.

3.3.5.2 Mechanically Anchoring

Immediately following spreading, the mulch shall be anchored to the soil by a V-type-wheel land packer, a scalloped-disk land packer designed to force mulch into the soil surface, or other suitable equipment.

3.3.5.3 Asphalt Adhesive Tackifier

When asphalt adhesive is applied to the in-place mulch, spraying shall be at the rate of between 400 to 500 liters per hectare (10 to 13 gallons per 1,000 square feet).

3.3.5.4 Spreading Asphalt-Adhesive-Coated Mulch

Straw or hay mulch shall be spread simultaneously with asphalt adhesive at the rate of 2 tons per acre by using power mulch equipment that shall be equipped with suitable asphalt pump and nozzle. The adhesive-coated mulch shall be applied evenly over the surface. Sunlight shall not be completely excluded from penetration to the ground surface.

3.3.5.5 Wood Cellulose Fiber

Wood cellulose fiber mulch for use with the hydraulic application of seed and fertilizer shall be applied as part of the hydroseeding operation.

3.3.6 Water

Watering shall be started within 7 days after completing the seeded area. Water shall be applied at a rate sufficient to ensure moist soil conditions to a minimum depth of 25 mm (1 inch). Run-off and puddling shall be prevented.

3.4 EROSION CONTROL

3.4.1 Temporary Turf Cover

3.4.1.1 General

When there are contract delays in the turfing operation or a quick cover is required to prevent erosion, the areas designated for turf shall be seeded with a temporary seed or provided with a mulch only cover as directed by the Contracting Officer.

3.4.1.2 Application

When no other turfing materials have been applied, the quantity of one half of the required soil amendments shall be applied and the area tilled in accordance with paragraph SITE PREPARATION.

Seed shall be uniformly broadcast and applied at the specified rate. The area shall be watered as required.

3.5 RESTORATION AND CLEANUP

3.5.1 Restoration

Existing turf areas, pavements, and facilities that have been damaged from the turfing operation shall be restored to original condition at Contractor's expense.

3.5.2 Cleanup

Excess and waste material shall be removed from the planting operation and shall be disposed of off-site. Adjacent paved areas shall be cleaned.

3.6 PROTECTION OF TURFED AREAS

Immediately after turfing, the area shall be protected against traffic or other use by erecting barricades and providing signage as required, or as directed by the Contracting Officer.

3.7 TURF ESTABLISHMENT PERIOD

3.7.1 Commencement

The Turf Establishment Period for establishing a healthy stand of turf shall begin on the first day of work under this contract and shall end three (3) months after the last day of turfing operations required by this contract. The written calendar time period shall be furnished to the Contracting Officer for the Turf Establishment Period. When there is more than one turf establishment period, describe the boundaries of the turfed area covered for each period.

3.7.2 Satisfactory Stand of Turf

3.7.2.1 Seeded Area

A. Lawn Area: A satisfactory stand of turf from the seeding operation for a lawn area is defined as a minimum of 160 (15) grass plants per square meter (foot). Bare spots shall be no larger than 150 mm (6 inches) square. The total bare spots shall not exceed 2 percent of the total seeded area.

B. Field Area: A satisfactory stand of turf from the seeding operation for a field area is defined as a minimum of 100 (10) grass plants per square meter (foot). The total bare spots shall not exceed 2 percent of the total seeded area.

3.7.3 Maintenance During Establishment Period

3.7.3.1 General

Maintenance of the turfed areas shall include eradicating weeds, eradicating insects and diseases, protecting embankments and ditches from erosion, maintaining erosion control materials and mulch, protecting turfed areas from traffic, mowing, watering, and post-fertilization.

3.7.3.2 Watering

Watering shall be at intervals to obtain a moist soil condition to a minimum depth of 25 mm (1 inch). Frequency of watering and quantity of water shall be adjusted in accordance with the growth of the turf. Run-off, puddling, and wilting shall be prevented.

3.7.3.3 Post-Fertilization

Nitrogen carrier fertilizer shall be applied at the rate of 0.5 pound per 1,000 square feet after the first month and again in 3 months prior to the final acceptance. The application shall be timed prior to the advent of winter dormancy and shall avoid excessively high nitrogen levels.

3.7.3.4 Repair

The Contractor shall re-establish as specified herein, eroded, damaged, or barren areas. Mulch shall also be repaired or replaced as required.

3.7.3.5 Maintenance Report

A written record shall be furnished to the Contracting Officer of the maintenance work performed.

3.8 FINAL ACCEPTANCE

3.8.1 Preliminary Inspection

Prior to the completion of the Turf Establishment Period, a preliminary inspection shall be held by the Contracting Officer. Time for the inspection shall be established in writing. The acceptability of the turf in accordance with the Turf Establishment Period shall be determined. An unacceptable stand of turf shall be repaired as soon as turfing conditions permit.

3.8.2 Final Inspection

A final inspection shall be held by the Contracting Officer to determine that deficiencies noted in the preliminary inspection have been corrected. Time for the inspection shall be established in writing.

-- End of Section --