

**STATE OF NEW JERSEY  
DEPARTMENT OF TRANSPORTATION  
FACILITIES PLANNING, ENGINEERING, AND CONSTRUCTION  
1035 PARKWAY AVENUE  
EWING, MERCER COUNTY, NEW JERSEY**

**PLANS & TECHNICAL SPECIFICATIONS FOR:**

**ASBESTOS ABATEMENT & DISPOSAL  
GEODETIC SURVEY BUILDING  
940 LOWER FERRY ROAD  
EWING, MERCER COUNTY, NEW JERSEY**

**STATE OF NEW JERSEY  
HONORABLE PHIL MURPHY, GOVERNOR  
HONORABLE SHEILA OLIVER, LT. GOVERNOR**



**COMMISSIONER  
DEPARTMENT OF TRANSPORTATION  
DIANE GUTIERREZ-SCACCETTI**

**PREPARED BY:**

**USA ENVIRONMENTAL MANAGEMENT, INC.  
344 WEST STATE STREET  
TRENTON, MERCER COUNTY, NEW JERSEY  
PROJECT NO. 23-020024-03**

**DATE:**

**JUNE 9, 2023**

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## SECTION 01 10 00 - SUMMARY

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including State of New Jersey Instructions to Bidders and General Conditions, and other Division 1 Specification Sections apply to this Section.

#### 1.2 WORK COVERED BY CONTRACT DOCUMENTS

- A. Project Identification: The project consists of asbestos abatement-related work at Geodetic Survey Building.
  - 1. Project Location:  
  
NJDOT Headquarters Complex  
940 Lower Ferry Road  
Ewing, Mercer County, New Jersey
  - 2. Owner:  
  
State of New Jersey  
Department of Transportation  
1035 Parkway Avenue  
Ewing, Mercer County, New Jersey
- B. Consultant Identification: The drawings and specifications were prepared for the Project by USA Environmental Management, Inc., 344 West State Street, Trenton, Mercer County, New Jersey, 08618.
- C. Contracting Authority: State of New Jersey, Department of Transportation, 1035 Parkway Avenue, Ewing, Mercer County, New Jersey.
- D. Contracting Authority Contact: Sheryl Quatermas, Occupational Health Consultant 1, Telephone: (609) 530-4156.

#### 1.3 PROJECT SCHEDULE

- A. The Client intends to complete the asbestos abatement work within six (6), eight (8) hour work shifts, Monday – Friday, 7:30 AM – 4:00 PM, excluding weekends and State holidays.
- B. The work schedule shall be maintained by the Contractor at all times. There shall be no provisions allowed for the Contractor to extend or alter the schedule.
  - 1. The schedule shall include satisfactory clearance air sampling, final inspection of the work area, and demobilization of all Contractor equipment.

- C. Failure to complete the asbestos abatement work within the six (6); eight (8) hour work shifts, as specified, will result in a \$1,100.00/per shift deduct change order to the Contractor to cover the additional expenses incurred by the State to cover the Owner's Representative's fees, on a per work shift basis.

#### 1.4 CONTRACT

- A. Project will be constructed under a Lump Sum construction contract. Bidders must be classified with the Division of Property Management & Construction (DPMC) as C092 ASBESTOS REMOVAL/TREATMENT.

#### 1.5 WORK SEQUENCE (Not Used)

#### 1.6 USE OF PREMISES

- A. General: The Contractor's use of premises is limited to the work area and by the Owner's right to perform work or to retain other contractors on portions of the Project.
  - 1. Contractor shall have access to the Building, to conduct the work. The building may be partially occupied during the work. The Contractor shall cooperate with the Owner in the completion of the work. A site area designated by Owner will be available for lay-down purposes.

#### PART 2 - PRODUCTS (Not Used)

#### PART 3 – EXECUTION (Not Used)

END OF SECTION 01 10 00

## SECTION 02 82 13 – REMOVAL AND DISPOSAL OF ASBESTOS-CONTAINING MATERIALS

### PART 1 – GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including State of New Jersey Instructions to Bidders and General Conditions, and other Division 1 Specification Sections apply to this Section.

#### 1.2 CONTRACTOR REQUIREMENTS AND QUALIFICATIONS

- A. All work involving the removal and disposal of asbestos-containing materials shall be accomplished by a State of New Jersey, Department of Labor and Workforce Development (NJLW), licensed Asbestos Abatement Contractor.
- B. All employees shall possess and maintain on their person a valid asbestos worker or supervisor certification issued by the State of New Jersey, Department of Labor and Workforce Development while working on this project.
- C. The Contractor shall furnish evidence that each worker and supervisor has been given medical examinations and respiratory fit tests within the previous twelve (12) months per United States Department of Labor, Occupational Safety and Health Administration (OSHA) 29 CFR 1910 and 29 CFR 1926 requirements.
- D. The Contractor shall be responsible for securing the work area(s) at the end of the shift, and all on-site waste containers/dumpsters. In addition, failure to comply with all site health and safety requirements, these Technical Specifications, and all applicable local, State, and Federal regulations will require the issuance of a Stop Work order by the Owner's Representative.
- E. Before commencement of work, the Contractor shall inspect areas in which work is to be performed. Prepare a listing of damage to the structure, surfaces, equipment, or of surrounding properties that could be misconstrued as damage resulting from the work. Photograph or videotape existing conditions as necessary to document conditions. Submit a copy of these photos or tapes to the Owner's Representative before starting work.
- F. Water supply is available at the site(s). Extension to the point of the source shall be the responsibility of the Contractor. The Contractor shall ensure leak-tight connections. The Contractor shall comply with code specification requirements regarding connections. The Contractor shall depressurize all temporary connections at the end of the work shift.
- G. Temporary electric service for use during construction is available at the site(s). Extension to the source and point of use shall be the responsibility of the Contractor. The Contractor shall install ground fault current interrupter (GFCI) protection at a point of a source outside of containment. All electrical connections, except to outlets and extension cords, will require the Contractor to utilize a licensed New Jersey Electrician.

- H. All requests for work and project scheduling shall be coordinated in writing with the Owner's Representative. The Contractor shall not proceed until authorization and approval on the scheduled start date is obtained. A 72-Hour advance notice to the Owner's Representative shall be issued in writing requesting any change to the schedule.
- I. In buildings required by the New Jersey Uniform Construction Code (UCC) to be of noncombustible construction, all materials used to construct separation barriers must meet the UCC, building subcode requirements for that building. Polyethylene sheeting shall be a nominal six (6) mil and must be flame resistant.

### 1.3 NOTIFICATIONS

- A. Send written notification as required by the United States, Environmental Protection Agency (USEPA), National Emission Standards for Hazardous Air Pollutants (NESHAP), Asbestos Regulations (40 CFR, Part 61, Sub-part M), to the regional asbestos NESHAP Contact at least ten (10) business days before beginning any work on asbestos-containing materials. Send notification to the following address for REGION 2, as applicable:

- 1. United States Environmental Protection Agency- Region 2  
Division of Enforcement and Compliance Assistance  
Air Compliance Branch (DECA-ACB)  
290 Broadway - 21st Floor  
New York, NY 10007-1866

Send written notifications to the State Agencies listed, as applicable:

- 2. New Jersey Department of Environmental Protection  
Division of Solid and Hazardous Waste  
P.O. Box 414  
Trenton, NJ 08625-0414
- 3. New Jersey Department of Community Affairs  
Division of Codes and Standards  
Asbestos Safety Unit  
101 South Broad Street  
P.O. Box 816  
Trenton, NJ 08625-0816
- 4. New Jersey Department of Health  
Indoor Environments Program  
Consumer and Environmental Health Services  
P.O. Box 360  
Trenton, NJ 08625-0360
- 5. New Jersey Department of Labor & Workforce Development  
Division of Public Safety & Occupational Safety & Health  
Asbestos Control & Licensing Section  
1 John Fitch Plaza  
P.O. Box 949  
Trenton, NJ 08625-0949

- B. Floor tile and mastic removal: The Contractor shall submit the State of New Jersey, Department of Health “CONTRACTOR INFORMATION FOR NON-FRIABLE ASBESTOS WORK ACTIVITIES—Exemption Request”.

Send written exemption request to:

1. New Jersey Department of Health  
Consumer, Environmental & Occupational Health Service  
PO Box 369  
Trenton, NJ 08625-0369

- C. Floor tile and mastic removal: Send written “NOTIFICATION OF NON-FRIABLE ASBESTOS WORK ACTIVITIES” as required by State of New Jersey, Department of Health at least 10 business days before beginning any work for non-friable asbestos-containing materials removal. Send notification to the following address:

1. New Jersey Department of Health  
Consumer, Environmental & Occupational Health Service  
PO Box 369  
Trenton, NJ 08625-0369

- D. Construction Permit

1. The Contractor shall be responsible for obtaining a construction permit per N.J.A.C. 5:23-2.

- E. Regulatory Compliance

1. The Contractor shall furnish documentation to the building Owner or his designated representative that the firm and its employees are familiar with the following regulations of the United States Department of Labor, Occupational Safety and Health Administration (OSHA), and the USEPA relating to the application, removal, disposal, and treatment of asbestos:
  - i. OSHA regulations, namely: 29 CFR 1910.1001, 29 CFR 1926.58 and 29 CFR 191.134, Respiratory Protection, and 29 CFR 1910.20, Access to Employee Exposure and Medical Records.
  - ii. USEPA regulations, namely: Subparts A and M of 40 CFR Part 61, National Emissions Standards for Hazardous Air Pollutants.
2. One copy of each of the regulations cited in Article 1.3.E.1 shall be available in the Contractor’s business office and one copy of each shall be maintained in view at the job site, available to both the public and the Contractor’s employees.
3. The Contractor shall display at the job site, copies of documents required in Articles 1.3.A-D.
4. The Contractor shall be responsible for controlling access at the work site and shall maintain a daily log of personnel conducting asbestos removal activities. A list of worker names shall be posted with their start and stop times for each day.

Copies of the daily log shall be given to the Project Monitor at the end of the project.

5. The Contractor shall strictly adhere to all precautions necessary for the safety and health of workers per provisions of OSHA Standards 29 CFR Part 1926, Construction Standards, and 29 CFR 1910, General Industry Standards. The applicable parts of NIOSH Health Hazard Evaluation Report Number HETA 84-321-1590 shall be adhered to.

#### 1.4 CONTRACTOR SUBMITTALS

- A. The Asbestos Abatement Contractor shall submit the following information to the Owner's representative before mobilization at the worksite:
  1. State of New Jersey, Department of Labor & Workforce Development, Asbestos Contractor's License;
  2. Notification forms submitted to State and Federal agencies;
  3. Inspection report of existing site conditions (if applicable);
  4. Supervisor's license;
  5. Written Respiratory Protection Program and proof of OSHA compliance with 29 CFR 134; and
  6. Safety Data Sheets (SDS) for all chemical agents brought onto the site.
- B. After completion of work on this project, the Asbestos Abatement Contractor shall submit the following information to the Owner:
  1. Daily activity reports and personnel sign-in sheets;
  2. Minutes of meetings;
  3. Visitations; authorized and unauthorized;
  4. Special or unusual events; and
  5. Waste material disposal manifests.

#### 1.5 DEFINITIONS

- A. The following words, terms, and abbreviations, when used in this section, shall have the following meanings unless the context indicates otherwise.
  1. Abatement - Procedures to control fiber release from asbestos-containing materials, which include removal, encapsulation, enclosure, repair, demolition, and renovation activities.



2. Airlock - A serial arrangement of rooms whose doors are spaced a minimum of four (4) feet apart to permit ingress or egress through one (1) room without interfering with the next and constructed in such a manner as to prevent or restrict the free flow of air in either direction.
3. Air Monitoring - The process of measuring the fiber content of a known volume of air collected during a specific period of time. The procedure utilized for asbestos follows the NIOSH Method 7400. For clearance air monitoring, electron microscopy methods may be utilized for lower limits of detection and specific fiber identification.
4. Amended Water - Water to which a surfactant has been added.
6. Asbestos - The asbestiform varieties of serpentinite (chrysotile), riebeckite (crocidolite), cummingtonite-grunerite, anthophyllite, and actinolite-tremolite. For purposes of determining respiratory and worker protection both the asbestiform and non-asbestiform varieties of the above minerals and any of these materials that have been chemically treated and/or altered shall be considered as asbestos.
7. Asbestos-Containing Material (ACM) - Material composed of asbestos of any type and in an amount greater than 1% by weight, either alone or mixed with other fibrous or non-fibrous materials.
8. Asbestos-Containing Waste Materials - Any material that is, or suspected of being, or any material, contaminated with an asbestos-containing material, which is to be removed from a work area for disposal.
9. Authorized Personnel - The Owner, the Owner's representative, Asbestos Abatement Contractor personnel, Asbestos Safety Control Monitor personnel, emergency personnel, or a representative of any Federal, State, or local regulatory agency or other personnel under contract for or having jurisdiction over the project.
10. Barrier - Any surface that seals off the work area to inhibit the movement of fibers.
11. Breathing Zone - A hemisphere forward of the shoulders with a radius of approximately six to nine inches (6" - 9").
12. Building Owner - The Owner or his authorized representative.
13. Category I Non-friable ACM - Asbestos-containing packing, gaskets, resilient floor covering, and asphalt roofing products containing more than one (1) percent asbestos as determined using the method specified in appendix A, subpart F, 40 CFR part 763, section 1, Polarized Light Microscopy.
14. Category II Non-friable ACM - Any material, excluding Category I non-friable ACM, containing more than 1 percent asbestos as determined using the methods specified in appendix A, subpart F, 40 CFR part 763, section 1, Polarized Light

Microscopy that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure.

15. Ceiling Concentration - The concentration of an airborne substance that shall not be exceeded.
16. Clean Room - An uncontaminated area or room which is a part of the worker decontamination enclosure system with provisions for the storage of worker's street clothes and clean protective equipment.
17. Contractor - The Asbestos Abatement Contractor licensed by the State of New Jersey, Department of Labor and Workforce Development.
18. Critical Barrier - Two layers of nominal six (6) mil polyethylene sheeting that completely seals off the work area to prevent the distribution of fibers to the surrounding area, such as the opening between the top of a wall and the underside of ceiling construction, electrical outlets, non-removable lights, HVAC systems, windows, doorways, entranceways, ducts, grilles, grates, diffusers, wall clocks, speaker grilles, floor drains, sink drains, etc.
19. Curtained Doorway - A device to allow ingress or egress from one room to another while permitting minimal air movement between the rooms, typically constructed by placing three (3) weighted overlapping sheets of plastic over an existing or temporarily framed doorway, securing each along the top of the doorway, securing the vertical edge of the two outer sheets along one vertical side of the doorway and securing the vertical edge of the middle sheet along the opposite vertical side of the doorway. Other effective designs are permissible.
20. Decontamination Enclosure System - A series of connected rooms, separated from the work area and each other by airlocks, for the decontamination of workers and equipment.
21. Disposal Bag – six (6) mil thick leak-tight plastic bags used for transporting asbestos waste from work and to disposal sites. Each is labeled as follows:

**DANGER**  
**CONTAINS ASBESTOS FIBERS**  
**MAY CAUSE CANCER**  
**CAUSES DAMAGE TO LUNGS**  
**DO NOT BREATHE DUST**  
**AVOID CREATING DUST**  
**ASBESTOS, CLASS 9, RQ, NA 2212**

The Contractor shall also label all disposal bags and/or containers with the name of the waste generator (Owner) and the location from which the waste was generated; all per the USEPA NESHAPS regulation - 40 CFR Part 651, Subpart M.

22. Encapsulant - A liquid material that can be applied to asbestos-containing material which controls the possible release of asbestos fibers from the material

- either by creating a membrane over the surface (bridging encapsulant) or by penetrating the material and binding its components together (penetrating encapsulant).
23. Encapsulation - The application of an encapsulant to asbestos-containing materials to control the release of asbestos fibers into the air.
  24. Filter - A media component used in respirators to remove solid or liquid particles from the inspired air.
  25. Flame-Resistant Polyethylene Sheeting - A single polyethylene film in the largest sheet size possible to minimize seams, nominal six (6) mil thick, conforming to requirements set forth by the National Fire Protection Association Standard 701, Small Scale Fire Test for Flame-Resistant Textiles and Films.
  26. Friable Asbestos Material - Material that contains more than 1% asbestos by weight and that can be crumbled, pulverized, or reduced to powder by hand pressure when dry.
  27. HVAC - Heating, Ventilation, and Air Conditioning system.
  28. HEPA Filter - A High-Efficiency Particulate Air (HEPA) filter capable of trapping and retaining 99.97% of asbestos fibers greater than 0.3 microns in length.
  29. HEPA Filter Vacuum Collection Equipment (or vacuum cleaner) - High-efficiency particulate air-filtered vacuum collection equipment with a filter system capable of collecting and retaining asbestos fibers. Filters should be of 99.97% efficiency for retaining fibers of 0.3 microns or larger.
  30. Negative Pressure - Air pressure lower than surrounding areas, generally caused by exhausting air from a sealed space (work area).
  31. Negative Pressure Respirator - A respirator in which the air pressure inside the respirator inlet covering is positive during exhalation in relation to the air pressure of the outside atmosphere and negative during inhalation in relation to the air pressure of the outside atmosphere.
  32. Negative Pressure Air Filtration Device (AFD) - A local exhaust system device, utilizing HEPA filtration capable of maintaining a negative pressure inside the work area and a constant airflow from adjacent areas into the work area and exhausting that air outside the work area.
  33. Owner's Representative(s) – USA Environmental Management, Inc., represented on-site by an Industrial Hygiene Technician (IHT) for all non-permitted work and an Asbestos Safety Technician (AST), certified by the New Jersey Department of Community Affairs, for all permitted work. The IHT/AST shall ensure compliance with these Technical Specifications; all applicable local, State, and Federal Regulations.

34. Personal Monitoring - Sampling of the asbestos fiber concentrations within the breathing zone of an employee.
35. Prior Experience - Experience required of the contractor on asbestos projects of similar nature and scope to ensure the capability of performing the asbestos abatement satisfactorily. Similarities shall be in areas related to material composition, project size, abatement methods required, number of employees, and the engineering, work practice, and personal protection controls required.
36. Regulated Asbestos-Containing Material (RACM) - (a) Friable asbestos material, (b) Category I Non-friable ACM that has become friable, (c) Category I Non-friable ACM that will be or has been subjected to sanding, grinding, cutting, or abrading, or (d) Category II Non-friable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of demolition or renovation operations.
37. Removal - The stripping of any asbestos-containing materials from surfaces or components of a facility.
36. Renovation - Altering in any way one or more facility components. Operations in which load-supporting structural members are wrecked or taken out are excluded.
37. Respirator - A device designed to protect the wearer from the inhalation of harmful atmospheres.
38. Shower Room - A room between the clean room and the equipment room in the worker decontamination enclosure with hot and cold or warm running water controllable at the tap and suitably arranged for complete showering during decontamination.
39. Surfactant - A chemical wetting agent added to water to improve penetration, thus reducing the quantity of water required for a given operation or area.
40. Time Weighted Average (TWA) - The average concentration of a contaminant in the air during a specific time period.
41. Visible Emissions - Any emissions containing particulate asbestos material that is visually detectable without the aid of instruments. This does not include condensed uncombined water vapor.
42. Water Column (w.c.) - A unit of measurement for pressure differential.
43. Wet Cleaning - The process of eliminating asbestos contamination from building surfaces and objects by using cloths, mops, or other cleaning utensils that have been dampened with amended water or diluted removal encapsulant and afterward thoroughly decontaminated or disposed of as asbestos-contaminated waste.
44. Work Area - Designated rooms, spaces, or areas of the project in which asbestos

abatement actions are to be undertaken or which may become contaminated as a result of such abatement actions. A contained work area is a work area that has been sealed, plasticized, and equipped with a negative-pressure air-filtration system.

45. Worker decontamination enclosure - A decontamination system consisting of a clean room, a shower room, and an equipment room separated from each other and from the work area by airlocks and curtained doorways. This system is used for all worker entrances and exits to and from the work area and for equipment pass out for small jobs.

## 1.6 CODES & STANDARDS RELATIVE TO ASBESTOS ABATEMENT

- A. Except to the extent that more explicit or more stringent requirements are written directly into the Contract Documents, all applicable codes, regulations, and standards have the same force and effect (and are made a part of the Contract Documents by reference) as if copied directly into the Contract Documents, or as if published copies are bound herewith.
- B. The Contractor shall assume full responsibility and liability for the compliance with all applicable Federal, State, and local regulations about work practices, hauling, disposal, and protection of workers, visitors to the site, and persons occupying areas adjacent to the site. The Contractor is responsible for providing medical examinations and maintaining medical records of personnel as required by the applicable federal, state, and local regulations. The Contractor shall hold the Owner and the Owner's representative harmless for failure to comply with any applicable work, hauling, disposal, safety, health, or other regulation on the part of himself, his employees, or subcontractors.
- C. State of New Jersey requirements that govern asbestos abatement work or hauling, and disposal of asbestos waste materials include but are not limited to the following:
  1. Asbestos Licenses and Permits  
  
New Jersey Department of Labor & Workforce Development  
Division of Public Safety & Occupational Safety & Health  
Asbestos Control & Licensing Section  
1 John Fitch Plaza  
P.O. Box 949  
Trenton, NJ 08625-0949
  2. Asbestos Hazard Abatement Sub-code - N.J.A.C. 5:23-8  
  
New Jersey Department of Community Affairs  
Division of Codes and Standards  
Asbestos Safety Unit  
101 South Broad Street  
P.O. Box 816  
Trenton, NJ 08625-0816
  3. Asbestos Training Courses - N.J.A.C. 8:60 and 12:120  
  
New Jersey Department of Health

Indoor Environments Program  
Consumer and Environmental Health Services  
P.O. Box 360  
Trenton, NJ 08625-0360

4. Disposal Regulations - N.J.A.C. 7:26

New Jersey Department of Environmental Protection  
Division of Solid and Hazardous Waste  
P.O. Box 414  
Trenton, NJ 08625-0414

D. Standards that apply to asbestos abatement work of hauling and disposal of asbestos waste materials include but are not limited to the following:

1. American National Standards Institute (ANSI)  
25 West 43rd Street, 4th floor  
New York, NY 10036
  - i. *Fundamentals Governing the Design and Operation of Local Exhaust Systems Publication Z9.2-79.*
  - ii. *Practices for Respiratory Protection Publication Z88.2-80.*
2. American Society for Testing and Materials (ASTM)  
100 Barr Harbor Drive, P.O. Box C700  
West Conshohocken, PA 19428-2959
  - i. *Safety and Health Requirements Relating to Occupational Exposure to Asbestos E 849-82.*
  - ii. *Specification for Encapsulants for Friable Asbestos Containing Building Materials Proposal P-189.*

## 1.7 COORDINATION

- A. The Contractor shall coordinate all activities with the Owner, the Owner's Representative, and the Prime Contractor, where applicable. Coordination shall also be with the Facility where such coordination is necessary relative to site logistics, electrical power, and water sources, and/or ensuring the safety of Facility personnel. Where the Contractor performing the work specified herein is a subcontractor, the subcontractor shall coordinate all work with the Prime Contractor, and/or General Contractor, for coordination with the Owner's Representative.
- B. Coordination of work shall be notified to the Owner's Representative, at a minimum within seventy-two (72) hours of an event. The exception shall be that of emergencies.

## PART 2 – SCOPE OF WORK

### 2.1 SUMMARY OF WORK

This section covers the furnishing of all labor, materials, facilities, equipment, services, permits, and agreements necessary to perform the work required for asbestos abatement per these

Technical Specifications, USEPA and OSHA regulations, NIOSH recommendations, State of New Jersey regulations, and other applicable federal, state, and local government regulations. Wherever there is a conflict or overlap of the above references the most stringent provisions shall apply. It shall be the Contractor's responsibility to verify the exact quantities and locations of all asbestos-containing materials. The quantities shown are for informational purposes only. It is USA Environmental Management, Inc., understanding that the Contractor has verified the materials and quantities to be removed under this scope of work and has priced the work accordingly.

## 2.2 DESCRIPTION OF THE WORK

- A. Site:  
NJDOT Headquarters Complex  
940 Lower Ferry Road (Block 320, Lot 31)  
Ewing, Mercer County, New Jersey
- B. Building:  
Geodetic Survey Building
- C. Base Bid:
  - 1. The Contractor shall remove and dispose of approximately 3,923 square feet of asbestos-containing floor tile with overlying carpet squares, sheet flooring (non-asbestos), and ¼" plywood (luan) throughout all rooms of the Geodetic Survey Building, via non-friable methods, as specified in the Contract Documents; and
  - 2. The Contractor shall encapsulate the underlying wood substrate.
    - i. Products:
      - a. ChemSafe® Brands, Chemsafe 500W Lockdown, White,
      - b. Fiberlock Technologies, Fiberset PM, Post-Removal Surface Sealant, White, or
      - c. H.B. Fuller Company, Foster™ Asbestos Removal Encapsulant and Post-Removal Residual Encapsulant, Blue.
- D. Owner to vacate the work area before mobilization. The Contractor shall coordinate all work with the Owner and the Owner's Representative (USA Environmental Management, Inc.) a minimum of ten (10) business days before mobilization.
- E. All work shall be completed within a negative pressure enclosure.
- F. The exterior decontamination unit shall be sheathed with one-half inch (1/2") plywood and protected from the elements with a single layer of nominal six (6) mil polyethylene sheet affixed to all exposed portions of the decontamination unit. The decontamination unit shall have a closeable door with a louver. The door shall have a hasp and lock. The contractor shall provide a minimum of three (3) keys for the lock to the Owner and the Owner's Representative.
- G. Asbestos-containing floor tile shall be removed, via non-friable methods, per N.J.A.C. 5:23-8.20 Removal of Non-Friable Asbestos-Containing Material and per the

"Recommended Work Practices For The Removal Of Resilient Floor Coverings" (latest edition) by the Resilient Floor Covering Institute.

- H. Remove and dispose of all wall base and carpet as construction debris.
- I. Remove and dispose of the overlying non-asbestos sheet flooring and ¼” plywood (luan). If no underlying asbestos floor tile adheres to the luan, the luan can be disposed of as construction debris. Any luan with adhered asbestos flooring shall be cut out and disposed of as asbestos waste.
- J. Remove flooring flush with any base cabinets, toilets, or fixtures, scheduled to remain.
- K. Refer to all Contract Drawings for locations of all asbestos-containing materials to be removed.
- L. Quantities:
  - 1. NJDOT Headquarters Complex, Geodetic Survey Building

<b>Table 1 – Base Bid Quantities</b>			
<b>Room</b>	<b>Material</b>	<b>Quantity</b>	<b>Unit(s)</b>
H101	Floor Tile Under ¼” Plywood (Luan)	130	Square Feet
H102	Floor Tile Under ¼” Plywood (Luan)	91	Square Feet
101	Floor Tile Under ¼” Plywood (Luan)	98	Square Feet
102	Floor Tile Under ¼” Plywood (Luan)	130	Square Feet
103	Floor Tile Under ¼” Plywood (Luan)	97	Square Feet
104	Floor Tile Under ¼” Plywood (Luan)	48	Square Feet
105	Floor Tile Under ¼” Plywood (Luan)	51	Square Feet
106	Floor Tile Under ¼” Plywood (Luan)	39	Square Feet
107	Floor Tile Under ¼” Plywood (Luan)	581	Square Feet
108	Floor Tile Under ¼” Plywood (Luan)	2,565	Square Feet
109	Floor Tile Under ¼” Plywood (Luan)	67	Square Feet
110	Floor Tile Under ¼” Plywood (Luan)	26	Square Feet
<b>Total Quantity</b>		<b>3,923</b>	<b>Square Feet</b>

### 2.3 ADDITIONAL INFORMATION

- A. The Contract Drawings are designed to complement the Technical Specifications. Wherever conflicts arise between the Contract Drawings and the Technical Specifications, the more stringent shall apply.
- B. Prepare all asbestos-containing materials for transportation and disposal per NESHAPS, OSHA, and the United States Department of Transportation (USDOT) asbestos waste handling requirements.
- C. The Contractor shall be aware that electrical, communication, and other utility lines may exist in proximity to some locations where asbestos-containing material is to be removed. The Contractor shall exercise caution with his/her activities during preparation, removal, clean-up, and final cleaning operations associated with asbestos abatement in these work



areas, to prevent damaging said electrical, communication, and other utility lines. Where possible, the Contractor shall cautiously move and secure the aforementioned items.

1. Should the Contractor damage any electrical, communication, and/or other utility lines, the Contractor shall be responsible for either the cost to the Owner to repair/replace damaged components or shall arrange for the components to be repaired/replaced to the Owner's specifications with no additional cost to the Owner.
  2. The Owner shall be the **SOLE** deciding factor as to which option referenced above the Contractor shall implement to repair/replace electrical, communication, and/or other utility lines that are damaged as a result of the asbestos abatement activities in these work area locations.
  3. Damage caused by the Contractor to surfaces, finishes, and building components shall be restored to their existing conditions. The Contractor shall be responsible for either the cost to the Owner to restore damaged surfaces, finishes, and building components or shall arrange for the restoration to the Owner's specifications with no additional cost to the Owner.
- D. The Contractor shall utilize proper protective equipment (PPE) such as safety glasses, disposable gloves, protective suits, safety shoes, HEPA cartridge-equipped full-face respirators, and other appropriate personal protective equipment when handling asbestos-contaminated materials during pre-cleaning activities.
- E. Security shall be required as follows:
1. The Owner shall be responsible for providing access to and closing the building each shift. The Contractor shall be responsible to ensure protection against damage or vandalism to separation barriers, engineering systems, monitoring devices, work-related equipment, or any other equipment.
- F. The Owner shall provide continuous unlimited access for the IHT/AST in all occupied spaces for installation, maintenance, and data collection from monitoring systems.
- G. The Contractor shall coordinate the location of all waste vehicles with the Owner. The Owner shall approve all locations of waste vehicles before the waste vehicles' arrival.

#### 2.4 STANDARD OPERATING PROCEDURES

- A. The Contractor shall develop and implement a written standard operating procedure for abatement work to ensure maximum protection and safeguard from asbestos exposure of the workers, visitors, the general public, and the environment.
- B. The standard operating procedure shall ensure:
  1. Proper protective clothing and respiratory protection before entering the work area.
  2. Safe work practices in the workplace, including provisions for inter-room

communications, exclusion of eating, drinking, smoking, or breaking of respiratory protection in any way.

3. Packing, labeling, loading, transporting, and disposal of asbestos-containing materials in a way that minimizes exposure and contamination.
  4. Proper exit practices from the workspace to the outside through the decontamination facility.
  5. Emergency evacuation for medical or safety to minimize exposure.
  6. Safety from accidents in the work area, especially from electrical shocks, slippery surfaces, and entanglements in loose hoses, temporary wiring, and other equipment.
  7. Provisions for effective supervision and personnel air monitoring during work.
  8. Engineering systems that minimize exposure to fibers in the workplace.
- C. Perform OSHA 8-hour Time Weighted Average personal exposure air monitoring per 29 CFR 1926.1101. OSHA monitoring is solely the responsibility of the Contractor, and the Contractor shall ensure that the Contractor's Supervisor performs OSHA monitoring per 29 CFR 1926.1101. The Owner's Representative is not responsible for the Contractor's compliance with OSHA monitoring.
- D. Provide Personal Protective Equipment (PPE) to the Owner's Representative and inspectors representing Federal, State, and local agencies, as required to perform progress inspections of the work.

## 2.5 NOTIFICATIONS, WARNING SIGNS, LABELS, AND POSTERS

- A. At the entrance, the work area and/or decontamination unit, the Contractor's ingress/egress point to the building and the exterior door that leads from the exterior of the building for the waste removal route, and all sides of the waste dumpster, post an approximate twenty by fourteen inch (20" x 14") manufactured caution sign displaying the following legend with letter-sized and styles of visibility required by 29 CFR 1926:

**DANGER  
ASBESTOS  
MAY CAUSE CANCER  
CAUSES DAMAGE TO LUNGS**

**AUTHORIZED  
PERSONNEL ONLY**

**WEAR  
RESPIRATORY PROTECTION  
AND PROTECTIVE CLOTHING  
IN THIS AREA**

- B. Disposal/Waste Bags/Containers shall be labeled as follows:

**DANGER  
CONTAINS ASBESTOS FIBERS  
MAY CAUSE CANCER  
CAUSES DAMAGE TO LUNGS  
DO NOT BREATHE DUST  
AVOID CREATING DUST  
ASBESTOS, CLASS 9, RQ, NA 2212**

In addition, the Contractor shall also label all disposal bags and/or containers with the name of the waste generator (Owner) and the location from which the waste was generated; all per the USEPA NESHAPS regulation - 40 CFR Part 651, Subpart M.

- C. Provide other signs, labels, warnings, and posted instructions that are necessary to protect, inform and warn people of the hazard of asbestos exposure. Post in a prominent and convenient place for the workers a copy of the latest applicable regulations from OSHA, USEPA, and NIOSH.
- D. Post ten (10) day Notifications to the USEPA, New Jersey Department of Community Affairs (when applicable), New Jersey Department of Labor and Workforce Development, New Jersey Department of Environmental Protection, and New Jersey Department of Health, at the entrance to the work area(s).
- E. Post Construction Permits, if applicable, at the entrance to the work area(s).

## 2.6 DECONTAMINATION UNITS

- A. Description of Work:

1. Provide personnel decontamination for each work area as indicated in the Contract Documents. One (1) stage or three (3) stage as indicated.

- B. Personnel Decontamination Unit:

1. Provide a personnel decontamination unit consisting of a serial arrangement of connected rooms or spaces, a clean room, a shower room, and an equipment room. Do not allow parallel routes for entry or exit. Provide temporary lighting within decontamination units as necessary to reach a lighting level of 100-foot candles.
2. Clean room: Provide a room that is physically and visually separated from the rest of the building to change into protective clothing.
  - i. Construct using two (2) individual layers of polyethylene sheeting, at least six (6) mil in thickness on all sides.
  - ii. Locate so that access to the work area from the changing room is through the shower room.
  - iii. Separate changing room from the building by a three (3) sheet plastic, weighted, flapped doorway.

- iv. Require workers to remove all street clothes in this room, dress in clean disposable coveralls, and respiratory protective equipment. Do not allow asbestos-contaminated items to enter this room. Require workers to enter this room either from outside the structure dressed in street clothes, or naked from the showers.
    - v. Maintain the floor of the clean room dry and clean at all times. Do not allow overflow water from the shower to the wet floor in the clean room.
    - vi. Damp wipe all surfaces twice after each shift change with a disinfectant solution.
    - vii. Provide posted information for all emergency phone numbers and procedures.
  3. Shower Room: Provide a completely watertight operational shower to be used for transit by cleanly dressed workers heading for the equipment room/work area from the clean room, or for showering by workers headed out of the work area after undressing in the equipment room.
    - i. Construct the room by providing a shower pan and shower walls in a configuration that will cause water running down walls to drip into the pan.
    - ii. Provide a three (3) tier plastic flapped doorway at the entrance to the shower chamber.
    - iii. Provide shower head and controls.
    - iv. Provide temporary extensions of existing hot and cold water and drainage, as necessary for a complete and operational shower.
    - v. Provide a soap dish and a continuously adequate supply of soap and maintain it in a sanitary condition.
    - vi. Arrange so that water from showering does not splash into the clean or equipment rooms.
    - vii. Separate from the equipment room by a three (3) sheet plastic, weighted, flapped doorway.
  4. Equipment Room (contaminated area): Require work equipment, footwear, and additional contaminated work clothing to be left here. This is a change and transit area for workers.
    - i. Separate this room from the work area by a three (3) sheet plastic, weighted, flapped doorway.
  5. Decontamination Sequence: The Contractor shall require that all workers adhere to the following sequence when entering or leaving the work areas.
    - i. Entering Work Area: The worker enters the clean room and removes street clothing, puts on clean disposable coveralls and respirator, and passes through the shower room into the equipment room. Any additional clothing and equipment left in the equipment room needed by the worker are put on in the equipment room. The worker proceeds to the work area.
    - ii. Exiting Work Area: Before leaving the work area, require the worker to remove all gross contamination and debris from coveralls and feet.
    - iii. The worker then proceeds to the equipment room and removes all clothing except respiratory protection equipment.

- iv. Extra work clothing such as boots, hard hats, goggles, gloves, etc., are to be stored in the equipment room.
- v. Disposable coveralls are placed in a bag for disposal with other materials.
- vi. Require that decontamination procedures be followed by all individuals leaving the work area.
- vii. After showering, the worker moves to the clean room and dresses in either new coveralls for another entry or street clothes if leaving.

C. Construction of the Decontamination Units:

1. Walls and Ceiling: Construct airtight walls and ceiling using two (2) layers of polyethylene sheeting, at least six (6) mil in thickness. Attach to existing building elements or a temporary framework.
2. Floors: Use two (2) layers of six (6) mil polyethylene sheeting to cover floors in all areas of the decontamination units.
3. Flap Doors: Fabricate from three (3) overlapping sheets with openings a minimum of four (4) feet wide. Configure so that sheeting overlaps adjacent surfaces. Weigh sheets at the bottoms as required so that they quickly close after being released. Put arrows on sheets to indicate the direction of overlap and/or travel. Provide a minimum of four (4) feet between the entrance and exit of any room.

D. Cleaning of Decontamination Units:

1. Clean debris and residue from inside of decontamination units daily or as otherwise indicated. Damp wipe twice or hose down all surfaces after each shift change. Clean debris from shower pans daily.

E. Signs:

1. Post an approximately 20" x 14" manufactured caution sign at each entrance to the work areas displaying the following legend with letter sizes and styles of visibility required by 29 CFR, Part 1926:

Provide signs in both English and Spanish.

LEGEND:

**DANGER  
ASBESTOS  
MAY CAUSE CANCER  
CAUSES DAMAGE TO LUNGS**

**AUTHORIZED  
PERSONNEL ONLY**

**WEAR  
RESPIRATORY PROTECTION  
AND PROTECTIVE CLOTHING**

## IN THIS AREA

Provide spacing between respective lines at least equal to the height of the respective upper line.

### 2.7 NON-FRIABLE FLOOR TILE REMOVAL

#### A. Floor Tile Removal:

1. The Contractor shall install a two (2) flapped fire retardant, six (6) mil polyethylene sheeted airlock at the entrance to the work areas. Entrance flaps are to be installed so that the flaps will close if airflow into each work area is stopped for any reason.
2. The Contractor shall be responsible for the erection of critical barriers consisting of two (2) layers of fire retardant, six (6) mil polyethylene sheeting over all openings and access points from the exterior of the work area(s), and over all electrical panels within the work areas. The Contractor shall provide all ladders, scaffolding, and/or other necessary equipment for the installation of all engineering controls.
3. The Contractor shall provide and install HEPA-equipped air filtration device(s) (AFDs) within the work areas to create a continuous negative pressure within the work areas throughout abatement operations, in addition to the prevention of smoke/fumes from exiting the work areas. This may require more than one (1) AFD depending on conditions. Exhaust for the AFDs shall be ducted to the outside of the building.
  - i. If necessary, the Contractor shall construct all exterior exhaust manifolds using a minimum of ½" inch fire-rated plywood sheeting with sheet metal flanges. The Contractor shall affix a duct outlet with mechanical fasteners. The Contractor shall also be responsible for establishing streamers at the outlets of the duct work to provide a quick assessment of the AFDs operation.
4. Removal activity shall not commence until a written Notice to Proceed has been issued by the on-site IHT/AST. Approval of each work area for removal activity shall not, in any way, relieve the Contractor of his responsibility to ensure that non-work areas and items/equipment within each work area are protected from smoke/fumes, physical damage, or asbestos contamination from this project.
5. The Contractor shall remove floor tile by heating it with an approved radiant heat machine until the heat penetrates through the tile and softens the adhesive. When the tile/adhesive is sufficiently heated, carefully lift the tile with a long-handled tile scraper from the sub-flooring. Ensure that all broken tile show evidence of heat application and apply amended water to the broken tile and any debris before removing it from the sub-flooring and disposal.
6. ACM waste shall be stored in a covered, locked dumpster or approved waste transfer vehicle. Prepare waste for transport per specific requirements of the

waste facility and all applicable local, state, and Federal regulations.

7. Transport the waste to the waste dumpster or waste vehicle in covered carts, with consideration given at all times to building occupants and/or facility personnel.

## 2.8 WORK AREA CLEAN UP

- A. All surfaces and Contractor equipment in the work area(s) shall be cleaned after completion of the removal activities.
- B. Walls and adjoining adjacent surfaces shall be wet cleaned.
- C. The polyethylene sheeting installed shall be rolled up keeping the top surface to the inside and placed into six (6) mil asbestos disposal bags for disposal as asbestos-contaminated waste.
- D. Upon issuance of a satisfactory visual inspection, the Owner's representative shall proceed with the collection of final clearance air samples, if applicable.

## 2.9 ASBESTOS WASTE HANDLING AND DISPOSAL

- A. Disposal bags shall be six (6) mil, leak-tight, and labeled per OSHA, NESHAPS, and the USDOT regulations.
- B. Load all asbestos-containing waste material in disposal bags or leak-tight drums. All materials are to be contained in one (1) of the following:
  1. Two (2), six (6) mil disposal bags, or,
  2. Two (2), six (6) mil disposal bags and a fiberboard drum, or
  3. Two (2), six (6) mil disposal bags, and a sealed steel drum.
- C. Two (2) layers of six (6) mil flame-resistant polyethylene sheeting shall be utilized for wrapping large components not suited for disposal bags or drums.
- D. Duct tape shall be used to seal disposal bags and wrapped components.
- E. The Contractor's vehicle and/or dumpster shall be lined with a critical barrier of two (2) layers of six (6) mil flame-resistant polyethylene sheeting. The Contractor's vehicle and/or dumpster utilized to transport the asbestos waste off-site, and the Waste Hauler shall be licensed by the New Jersey Department of Environmental Protection.
- F. The Contractor shall remove waste from the work area to the waste dumpster only during times of minimum occupancy (i.e., at the end of the work shift when building occupancy is anticipated to be at its minimum).
- G. Maintain records of waste shipments per NESHAPS 40 CFR Part 61, section 61.150, (d) 1-5, and (e).

- H. Notify the USEPA ID #27 approved landfill within ten (10) days before transportation of the asbestos-containing waste to the landfill. Provide the name and address of the landfill. Retain manifest from the landfill for all materials disposed of. After asbestos abatement forward all manifests to the Owner.
- I. On-site activities shall not be considered complete until all waste is off-site, upon demobilization of the work area(s), and after receipt of satisfactory final clearance air sample results.

### PART 3 – AIR MONITORING

#### 3.1 DESCRIPTION OF THE WORK

- A. This Section describes air monitoring to verify that the building beyond the work area and the outside environment remains uncontaminated. This Section also sets forth airborne fiber levels both inside and outside the work area as activity levels and describes the action required by the Contractor if an action level is met or exceeded.
- B. AIR MONITORING REQUIRED BY OSHA IS THE RESPONSIBILITY OF THE CONTRACTOR AND IS NOT COVERED IN THIS SECTION.

#### 3.2 BACKGROUND AIR MONITORING

- A. The Owner's Representative will conduct background environmental/daily air monitoring to detect faults in the abatement removal methods.
- B. Daily Air Monitoring (including the building interior adjacent to the work) shall be performed from the start of work to project decontamination, per shift. The Owner's Representative will collect air samples from locations adjacent to the work area, including critical barriers, the clean room of the decontamination unit, and the waste removal route (as applicable).
- C. Phase Contrast Microscopy (PCM) sampling and analysis will be performed using the latest revision of NIOSH Method 7400.
- D. If any air sample exceeds the action level of 0.010 fibers per cubic centimeter, immediately and automatically stop all work except corrective action.

#### 3.3 FINAL CLEARANCE AIR MONITORING

- A. The Owner's Representative shall collect final clearance air samples after interior abatement activities and after a satisfactory clean-up inspection.
- B. Engineering controls, critical barriers, and the decontamination unit shall remain during final clearance air sampling.
- C. All final clearance air samples will be taken using aggressive sampling techniques as follows:



1. Before sampling pumps are started, the exhaust from forced-air equipment (leaf blower with 1 HP electric motor) will be swept against all walls, ceilings, floors, ledges, and other surfaces in the room. This procedure will be continued for five (5) minutes per 10,000 cubic feet of air volume.
  2. One 20" diameter fan per 10,000 cubic feet of room volume will be mounted in a central location at approximately 2 meters above the floor, directed towards the ceiling, and operated at low speed for the entire period of sample collection.
  3. Air samples will be collected in areas subject to normal air circulation away from room corners, obstructed locations, and sites near windows, doors, or vents.
- D. A minimum of five (5) samples will be collected from the work area and analyzed per the method outlined in the AHERA Regulation 40 CFR Part 763 Appendix A.
1. For work area(s) where more than 160 SF or 260 LF of asbestos-containing materials have been removed, final clearance samples shall be collected/analyzed utilizing Transmission Electron Microscopy (TEM).
  2. For work area(s) where less than 160 SF or 260 LF of asbestos-containing materials have been removed and/or for floor tile/mastic work areas (in any quantity of material) where a "Notification of Non-Friable Asbestos Work Activities" was submitted to the New Jersey Department of Health, final clearance samples shall be collected/analyzed utilizing Phase Contrast Microscopy (PCM).
  3. TEM samples shall be analyzed at a laboratory accredited by the American Industrial Hygiene Association, participating in the National Voluntary Laboratory Accreditation Program (NVLAP). PCM samples shall be analyzed per the most recent revision to NIOSH method 7400.
  4. Acceptable Clearance Criteria for work area demobilization and re-occupancy shall be as follows:
    - i. TEM: Average of less than 70 Structures per millimeter squared for all five (5) samples analyzed.
    - ii. PCM: Less than 0.01 fibers per cubic centimeter.

## PART 4 – PROJECT COMPLETION

### 4.1 FINAL INSPECTION

- A. The Owner's Representative will perform a final visual inspection of the abatement work area(s) to document the project has been completed per these Technical Specifications and all applicable Local, State, and Federal regulations.

END OF SECTION 02 82 13

**SITE PLAN:**





