

FORM OF PROPOSAL

Nassau County Department of Public Works
Demolition of Deteriorated Structures
Welwyn Preserve
100 Crescent Beach Road, Glen Cove, NY

GENERAL CONSTRUCTION

CONTRACT NO.: B90405-01G

FOR INFORMATIONAL PURPOSES ONLY-DO NOT USE TO PLACE A BID

Item No.	Type	Description		
1	LUMP SUM	LUMP SUM for furnishing all labor, materials and equipment required for all General Construction work associated with the demolition of three (3) deteriorated and unsafe structures including hazardous material removals, removal and disposal of all debris and debris generated by the demolition activities, and associated site restoration, as shown on the drawings.		
2	ALLOWANCE	Include in bid an allowance of One Hundred Twenty-Five Thousand Dollars (\$125,000.00) for testing, removal, and disposal of any underground bulk petroleum storage tank, associated piping, contaminated soils, construction spoils, or the like, encountered during the course of construction as directed by the County.	\$125,000	00
3	ALLOWANCE	Include in bid an allowance of One Hundred Twenty-Five Thousand Dollars (125,000.00) for items unforeseen or not specifically characterized in the contract documents, encountered during the course of construction as directed by the County.	\$125,000	00

- BASIS OF AWARD:** Bids on Lump Sum Contracts will be compared on the basis of the total bid price, arrived at by taking the Sum of each Bid Item,
- including Allowance Item(s), if any, and plus or minus the cost difference of the Alternate(s), if any, as may be selected by the Architect and/or Owner. The sum of all “Amounts Bid” will determine the low bid and the subsequent award of this Contract.
- BID SECURITY:** Prospective bidders are cautioned to carefully review the requirements of Paragraph H, Bid Security, of The Instructions to Bidders.
- NOTE TO BIDDERS:** Prospective bidders must possess a license to handle hazardous materials in the State of New York and shall present evidence of sufficient experience to be qualified as a “Responsible Bidder” (in addition to other requirements as stated in the bid documents).

CONSTRUCTION TECHNICAL SPECIFICATIONS

SECTION 010100 - SUMMARY OF WORK

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Work covered by the Contract Documents.
 2. Type of the Contract.
 3. Work Sequencing.
 4. Owner-furnished products.
 5. Use of premises.
 6. Owner's occupancy requirements.
 7. Work restrictions.
- ##### B. Related Sections:

1. Division 1 Section "Temporary Construction Facilities" for limitations and procedures governing temporary use of Owner's facilities.

1.2 WORK COVERED BY CONTRACT DOCUMENTS

A. Project Identification: Welwyn Preserve – Demolition of 3 Structures.

1. Project Location: 100 Crescent Beach Rd., Glen Cove, NY.

B. Owner: Nassau County Department of Public Works, 1194 Prospect Avenue, Westbury, NY 11590.

C. Owner's Representative: Nassau County Department of Public Works, 1194 Prospect Avenue, Westbury, NY 11590.

D. Engineer: LiRo Engineers, Inc. 235 East Jericho Turnpike, Mineola, NY 11801.

E. Construction Manager: To be determined by Owner

1.3 TYPE OF CONTRACT

A. Project will be constructed under a single prime contract.

1.4 WORK SEQUENCING

A. The project will be phased for abatement of asbestos containing materials, controlled demolition of the Laundry Building with asbestos in place, and demolition of the Garage and Greenhouse Buildings. Sequencing as follows:

1. Sequencing:

CONSTRUCTION TECHNICAL SPECIFICATIONS

- a. Provide construction fence to secure site and separate existing precinct building from construction activities.
- b. Protect existing museum, roadways, nature paths, stream, and other elements per the Owner
- c. Abate accessible ACM in the Garage and Greenhouse buildings.
- d. Perform controlled demolition with asbestos in place of the Laundry building.
- e. Demolish the existing Garage and Greenhouse buildings.
- f. Site work to eliminate fall hazards at excavations.
- g. Remove construction fence and any temporary construction.

1.5 OWNER-FURNISHED PRODUCTS (not used)

1.6 USE OF PREMISES

- A. General: Contractor shall have limited use of premises for construction operations as indicated on Drawings by the Contract limits.
- B. Use of Site: Limit use of premises to work in areas indicated. Do not disturb portions of Project site beyond areas in which the Work is indicated.
 - 1.Owner Occupancy: Allow for Owner occupancy in areas immediately adjacent to the work area, and for access to the existing museum building for Owner and public.
 - 2.Driveways and Entrances: Keep indicated driveways and entrances serving existing museum building clear and available to Owner, Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials.
 - a. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.

1.7 OWNER'S OCCUPANCY REQUIREMENTS

- A. Partial Owner Occupancy: Owner will occupy the existing museum building during the demolition and site work. Cooperate with Owner during construction operations to minimize conflicts and facilitate Owner usage of the existing building. Perform the Work so as not to interfere with Owner's operations. Maintain existing exits.
 - 1.Maintain access to existing walkways and other adjacent occupied or used facilities. Do not close or obstruct walkways or other occupied or used facilities without written permission from Owner and authorities having jurisdiction.
 - 2.Provide not less than 72 hours notice to Owner of activities that will affect Owner's ongoing operations.

1.8 WORK RESTRICTIONS

- A. Refer to Supplemental Conditions by the County for work hour restrictions.

CONSTRUCTION TECHNICAL SPECIFICATIONS

B. Existing Utility Interruptions: No interruption of utilities serving facilities occupied by Owner or others during normal business hours will be permitted. All utility interruptions must be performed after normal hours, and only after coordination with the County.

1. Notify County not less than two days in advance of proposed utility interruptions.

2. Do not proceed with utility interruptions without County's written permission.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 010100

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SECTION 022000 - EARTHWORK

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. The contract documents apply to the work of this section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Backfilling in areas of removed building foundations and concrete ramps.
- B. Related Sections:
 - 1. Section 024100 – Building Demolition

1.3 DEFINITIONS

- A. Backfill: Soil material or controlled low-strength material used to fill an excavation.
- B. Borrow Soil: Satisfactory soil imported from off-site for use as fill or backfill.
- C. Well-graded material – Material with a gradation having all particle sizes represented, with a smooth shaped grain-size distribution curve and coefficient of uniformity greater than four and a coefficient of curvature between one and three inclusive. Refer to ASTM D 2487.
 - 1. Coefficient of uniformity $C_u = D_{60}/D_{10}$
 - 2. Coefficient of curvature $C_c = (D_{30})^2/(D_{10}D_{60})$
- D. Structures: Buildings, footings, foundations, retaining walls, slabs, tanks, curbs, mechanical and electrical appurtenances, or other man-made stationary features constructed above or below the ground surface.
- E. Utilities: On-site underground pipes, conduits, ducts, and cables, as well as underground services within buildings.

1.4 SUBMITTALS

- A. Material Test Reports: For each on-site and borrow soil material proposed for fill and backfill as follows:
 - 1. Classification according to ASTM D 2487.
 - 2. Laboratory compaction curve according to ASTM D 698.

CONSTRUCTION TECHNICAL SPECIFICATIONS

- B. Pre-excavation Photographs or Videotape: Show existing conditions of adjoining construction and site improvements, including finish surfaces that might be misconstrued as damage caused by earth moving operations. Submit before earth moving begins.

1.5 PROJECT CONDITIONS

- A. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during earth moving operations.
1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction.
 2. Provide alternate routes around closed or obstructed traffic ways if required by Owner or authorities having jurisdiction.

PART 2 - PRODUCTS

2.1 SOIL MATERIALS

- A. Satisfactory Fill Material: Provide borrowed soil materials when sufficient satisfactory soil materials are not available from excavations. Fill or backfill material obtained from sources located away from site (borrowed) shall be clean gravel, earth, or a mixture of these containing no particles with a maximum dimension of four inches or greater, organic matter, clay, wood, concrete, brick or other deleterious material. ASTM D 2487 soil classification groups GW, GP, GM, or a combination of these group symbols; free of rock or gravel larger than 3 inches (75 mm) in any dimension, debris, waste, petroleum contamination, frozen materials, vegetation, and other deleterious matter.

1. Do not include asphalt pavement materials.

- B. Recycled Concrete Aggregate Option: as an option, recycled concrete aggregate may be used in lieu of the fill material specified above. The material must be clean, with no deleterious material visible (wood, metal, or other friable material) and meet the following criteria:

- a. Material shall consist of at least 97% by weight of Portland cement concrete or ledge rock.
- b. Material making up the remaining 3% shall be as follows:
 - 1) Brick, mica schist, metal, or other friable stone material - 2% maximum
 - 2) Asphaltic Concrete – trace

- C. Fill materials shall conform to the following grading limits:

<u>Sieve Size</u>	<u>% Passing</u>
1-1/2"	100
1"	80-100
3/4"	70-90
No. 100	10-30

CONSTRUCTION TECHNICAL SPECIFICATIONS

No. 200

0-12

Unsatisfactory Soils: ASTM D 2487 soil classification groups GC, SC, ML, MH, CL, CH, OL, OH, and PT, or a combination of these group symbols.

Unsatisfactory soils also include satisfactory soils not maintained within 2 percent of optimum moisture content at time of compaction.

- D. Impervious Fill: Clayey gravel and sand mixture capable of compacting to a dense state.
- E. Gravel: Gravel shall conform to the following gradation requirements:

<u>Sieve Size</u>	<u>% Passing by Weight</u>
3/4"	100
1/2"	85-90
No. 4	50-78
No. 8	37-67
No. 40	13-35
No. 200	4-15
Plasticity Index	4-12

PART 3 - EXECUTION

3.1 PREPARATION

- A. Protect structures, utilities, sidewalks, pavements (other than those targeted for removal as part of this Project), and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earth moving operations.
- B. Protect and maintain erosion and sedimentation controls during earth moving operations.

3.2 PLACING BACKFILL AND GRAVEL FINISH SURFACE

- A. Surface Preparation of Fill Areas: Remove building floor finishes and concrete slabs. Demolish building foundations elements to minimum 2 feet below final site grade. Backfill excavations with suitable backfill to a level 6" below final site grade. Prepare resulting surface for placement of 6" gravel surfacing.

3.3 DEWATERING

- A. Prevent surface water and ground water from entering excavations, from ponding on prepared subgrades, and from flooding Project site and surrounding area.

3.4 SUBGRADE INSPECTION

- A. Notify Project Engineer when excavations have reached required subgrade.

CONSTRUCTION TECHNICAL SPECIFICATIONS

- B. If Project Engineer determines that unsatisfactory soil is present, continue excavation and replace with compacted backfill or fill material as directed.
- C. Proof-roll subgrade with a pneumatic-tired, tandem-axle dump truck weighing not less than 15 tons to identify soft pockets and areas of excess yielding. Do not proof-roll wet or saturated subgrades.
 - 1. Completely proof-roll subgrade in one direction, repeating proof-rolling in direction perpendicular to first direction. Limit vehicle speed to 3 mph (5 km/h).
 - 2. Excavate soft spots, unsatisfactory soils, and areas of excessive pumping or rutting, as determined by the Engineer, and replace with compacted backfill or fill as directed.

3.5 STORAGE OF SOIL MATERIALS

- A. Stockpile borrow soil materials and excavated satisfactory soil materials without intermixing. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.
 - 1. Stockpile soil materials away from edge of excavations.

3.6 BACKFILL

- A. Place and compact backfill in excavations promptly, but not before completing the following:
 - 1. Removing trash and debris.
- B. Place backfill on subgrades free of mud, frost, snow, or ice.

3.7 GRAVEL FILL

- A. Plow, scarify, bench, or break up sloped surfaces steeper than 1 vertical to 4 horizontal so fill material will bond with existing material.
- B. Place and compact fill material in layers to required elevations as follows:
 - 1. Under grass and planted areas, use “satisfactory fill” material.
- C. Place fill on subgrades free of mud, frost, snow, or ice.

3.8 MOISTURE CONTROL

- A. Uniformly moisten or aerate subgrade and each subsequent fill or backfill soil layer before compaction to within 2 percent of optimum moisture content.
 - 1. Do not place backfill or fill material on surfaces that are muddy, frozen, or contain frost or ice.
 - 2. Remove and replace, or scarify and air dry, otherwise satisfactory soil material that exceeds optimum moisture content by 2 percent and is too wet to compact to specified dry unit weight.

CONSTRUCTION TECHNICAL SPECIFICATIONS

3.9 COMPACTION OF BACKFILLS AND FILLS

- A. Place backfill and fill materials in layers not more than 8 inches (200 mm) in loose depth for material compacted by heavy compaction equipment, and not more than 4 inches (100 mm) in loose depth for material compacted by hand-operated tampers.
- B. Place backfill and fill materials evenly on all sides of structures to required elevations, and uniformly along the full length of each structure.

3.10 GRADING

- A. General: Uniformly grade areas to a smooth surface, free of irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated.
 - 1. Provide a smooth transition between adjacent existing grades and new grades.
 - 2. Cut out soft spots, fill low spots, and trim high spots to comply with required surface tolerances.
- B. Site Rough Grading: Slope grades to direct water away from buildings and to prevent ponding. Finish subgrades to required elevations within the following tolerances:
 - 1. Turf or Unpaved Areas: Plus or minus 1 inch (25 mm).

3.11 FIELD QUALITY CONTROL

- A. Special Inspections: Owner will engage a qualified special inspector to perform the following special inspections:
 - 1. Determine prior to placement of fill that site has been prepared in compliance with requirements.
 - 2. Determine that fill material and maximum lift thickness comply with requirements.
 - 3. Determine, at the required frequency, that in-place density of compacted fill complies with requirements.
- B. Testing Agency: Owner will engage a qualified geotechnical engineering testing agency to perform tests and inspections.
- C. Allow testing agency to inspect and test subgrades and each fill or backfill layer. Proceed with subsequent earth moving only after test results for previously completed work comply with requirements.
- D. When testing agency reports that subgrades, fills, or backfills have not achieved degree of compaction specified, scarify and moisten or aerate, or remove and replace soil materials to depth required; recompact and retest until specified compaction is obtained.

3.12 PROTECTION

- A. Protecting Graded Areas: Protect newly graded areas from traffic, freezing, and erosion. Keep free of trash and debris.

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- B. Repair and reestablish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or where they lose compaction due to subsequent construction operations or weather conditions.
 - 1. Scarify or remove and replace soil material to depth as directed by Architect; reshape and recompact.

3.13 DISPOSAL OF SURPLUS AND WASTE MATERIALS

- A. Remove surplus satisfactory soil and waste materials, including unsatisfactory soil, trash, and debris, and legally dispose of them off Owner's property.

END OF SECTION 02200

CONSTRUCTION TECHNICAL SPECIFICATIONS

SECTION 024100 - BUILDING DEMOLITION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. The contract documents apply to the work of this section.

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Demolition and removal of buildings and site improvements.
 - 2. Removing below-grade construction.
 - 3. Disconnecting and capping site utilities.
 - 4. Salvaging nonhazardous demolition construction waste

1.3 RELATED SECTIONS

- A. Section 028200 – Asbestos Abatement
- B. Section 028700 – Removal of fluorescent Light Ballasts/ Capacitors and Fluorescent Light Tubes
- C. Section 022000 – Earthwork
- D. Section 028310 – Chain link Fence and Gates.

1.4 DEFINITIONS

- A. Demolish: Completely remove and legally dispose of off-site.
- B. Demolition Waste: Building and site improvement materials resulting from demolition or selective demolition operations.
- C. Disposal: Removal off-site of demolition and construction waste and subsequent sale, recycling, reuse, or deposit in landfill or incinerator acceptable to authorities having jurisdiction.
- D. Recycle: Recovery of demolition or construction waste for subsequent processing in preparation for reuse.

CONSTRUCTION TECHNICAL SPECIFICATIONS

1.5 PERFORMANCE GOALS

- A. Recycle Goals: Owner's goal is to salvage and recycle as much nonhazardous demolition waste as possible, including the following materials:
 - 1. Demolition Waste:
 - a. Concrete and Asphalt Pavement
 - b. Concrete.
 - c. Brick.
 - d. Timber
 - e. Structural and Miscellaneous Steel.

1.6 MATERIALS OWNERSHIP

- A. Unless otherwise indicated, demolition waste becomes property of Contractor.

1.7 PERMIT AND LICENSE REQUIREMENTS:

- A. Prior to the commencement of work under this Contract, any permits or licenses required to perform the demolition work, disconnection and plugging of utilities will be obtained by the Contractor at the Contractor's own cost and expense. Determining license and permit requirements will be the responsibility of the Contractor. The Contractor must act sufficiently ahead of time in order to receive the permit in time. No delay claim or extension of times will be entertained due to time lapse in this regard.

1.8 APPLICABLE REFERENCES

- A. The regulations of the Agencies listed below (but not limited to) are a part of this specification. The requirements are referenced in the text by basic designation only and will be the latest version published. In the case of conflict between the referenced documents and the following text, the stricter requirements will apply.
 - 1. OSHA Requirements
 - 2. Any other applicable Federal, State, City or Utility company regulations

1.9 SUBMITTALS

- A. Proposed Protection Measures: Submit informational report, including drawings, that indicates the measures proposed for protecting individuals and property, for environmental protection, for dust control and for noise control. Indicate proposed locations and construction of barriers.
- B. Schedule of Building Demolition Activities: Indicate the following:
 - 1. Detailed sequence of demolition work, with starting and ending dates for each activity.
 - 2. Temporary interruption of utility services.
 - 3. Shutoff and capping of utility services.
 - 4. Submit a list of items to be removed prior to start of demolition.

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- C. Detailed Demolition and Site Safety Plan outlining proposed means, methods, and sequence. This plan will include all appropriate information, data, and calculations (i.e. shielding requirements, loading capacities for floors, etc.) to support the proposed demolition method. The plan must be signed and sealed by a New York State licensed Professional Engineer employed and paid by the Contractor. The plan must include, at a minimum, the following items:
1. Detailed outline of intended demolition and disposal procedures.
 2. Detailed sequence of demolition and removal work, with starting and ending dates for each activity.
 3. Schedule for termination of utility services.
 4. Location of temporary protection and means of egress both inside and surrounding the building.
 5. Location of storage areas, loading areas, vehicle ingress, egress, circulation, and other work areas.
 6. Coordination of site area with any other contractors working on the site
- The demolition plan will not relieve the contractor of complete responsibility for the successful performance of the Work in accordance with applicable Federal, State and local codes and restrictions.
- D. Pre-demolition Photographs or Video: Show existing conditions of adjoining construction and site improvements, including finish surfaces that might be misconstrued as damage caused by building demolition operations.
- E. Permits: Prepare and Submit copies of required permits.
- F. Certifications: Submit certification, signed by Subcontractor performing rodent extermination, verifying completion of their work and compliance with specified requirements.
- G. Landfill Records: Indicate receipt and acceptance of hazardous wastes by a landfill facility licensed to accept hazardous wastes.
- H. Recycling and Processing Facility Records: Indicate receipt and acceptance of recyclable waste by recycling and processing facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.
- I. The Contractor shall make submittals to agencies having jurisdiction over the Work. The Contractor shall obtain approval from these agencies and pay all related costs and fees.
- J. The Contractor shall obtain the following approvals and certifications as required by federal, state, and local jurisdictions prior to commencement of demolition work. A copy shall be forwarded to the owner prior to the start of demolition operations. These include, but are not limited to, the following:
1. Demolition application in indicating that the fee was paid in full.
 2. Pre-demolition inspector's report
 3. Workmen's compensation certificates.
 4. Disability insurance required on form DB 120.1.
 5. Street Obstruction bond for fence permit.
 6. Letter from the health department certifying that a licensed exterminator and treated building for rodent control.
 7. Posting of required site signage
 8. Letter from relevant utilities indicating that gas and electric service have been shut off.

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9. Copy of sewer plug permit indicating hat a licensed plumber has plugged the sewer line to the premises.
10. Copy of water use permit indicating that water has been cut and sealed by a licensed plumber.
11. Four (4) Docket information sheets.
12. Asbestos report

1.10 QUALITY ASSURANCE

- A. Codes and Requirements:
 1. The Work specified in this Section shall conform to the requirements of regulations of other municipal, State and Federal authorities having jurisdiction, including safety, health and anti-pollution requirements in effect at the time of the execution of the Contract.
 2. Comply with governing EPA notification regulations before beginning demolition.
 3. Comply with hauling and disposal regulations of authorities having jurisdiction.
- B. Standards: Comply with ANSI A10.6 and NFPA 241.
- C. Skilled Workmen: Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the Work of this Section.
- D. Pre-demolition Conference: Conduct conference at Project site to comply with the General Requirements of this contract Review methods and procedures related to building demolition including, but not limited to, the following:
 1. Inspect and discuss condition of construction to be demolished.
 2. Review structural load limitations of existing structures.
 3. Review and finalize building demolition schedule and verify availability of demolition personnel, equipment, and facilities needed to make progress and avoid delays.
 4. Review and finalize protection requirements.
 5. Review procedures for noise control and dust control.
 6. Review procedures for protection of adjacent buildings and infrastructure.

1.11 PROJECT CONDITIONS

- A. Buildings to be demolished will be vacated and their use discontinued before start of the Work.
- B. Buildings on adjacent properties to demolition area will be occupied. Conduct building demolition so operations of occupied buildings on adjacent properties will not be disrupted.
 1. Provide not less than 5 days notice of activities that will affect operations of adjacent occupied buildings.
 2. Maintain access to existing walkways, exits, and other facilities used by occupants of adjacent buildings.
 - a. Do not close or obstruct walkways, exits, or other facilities used by occupants of adjacent buildings without written permission from authorities having jurisdiction.

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- C. Owner assumes no responsibility for buildings and structures to be demolished.
 - 1. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.
 - 2. The Contractor shall fully acquaint himself with the existing conditions, shall have visited and inspected the job site, and be fully informed as to the extent of the work and the nature of equipment and facilities needed for the proper prosecution of the work. Starting of work will be construed as evidence that the Contractor has complied with these requirements and later claims for difficulties encountered which could have been foreseen, will not be recognized. The Contractor shall submit certification that the above visits and inspections have been made.
 - 3. The Owner assumes no responsibility for the present or future condition of said buildings. All damage or loss, whether by reason of fire, theft or other casualty or happening, to said building or to any materials, fixtures and equipment salvaged from the demolition thereof, shall be at the sole risk of the Contractor.
- D. Hazardous Materials: Hazardous materials are present in buildings and structures to be demolished. A report on the presence of hazardous materials is on file for review and use.
 - 1. Hazardous and Universal Waste material shall be collected and disposed of prior to demolition activities in accordance with applicable regulations and specifications provided elsewhere in these Contract Documents.
- E. On-site storage or sale of removed items or materials is not permitted.

1.12 COORDINATION

- A. Arrange demolition schedule so as not to interfere with operations on adjacent properties.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. General: Provide shoring and bracing materials, if necessary, which will support loads imposed in accordance with approved shop drawings. All materials provided and installed as part of the Work of this Section shall be in compliance with requirements of the Nassau County Department of Public Works. Materials need not be new but should be in serviceable condition.
- B. Structural Steel: ASTM A36.
- C. Timber Bracing: Any species, rough-cut, mixed hardwood, size as indicated on approved shop drawings.
- D. Satisfactory Soils: Obtain approved clean materials from off-site sources when sufficient satisfactory soil materials are not available on-site. Comply with requirements in Section "Earthwork."

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PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that utilities have been disconnected and capped before starting demolition operations.
- B. Review Project Record Documents of existing construction provided by Owner. Owner does not guarantee that existing conditions are same as those indicated in Project Record Documents.
- C. Provide photographs or video of conditions that might be misconstrued as damage caused by salvage operations.
- D. Engage a professional engineer to perform an engineering survey or condition of specific building elements to determine whether removing any element might result in unplanned/uncontrolled collapse of any portion of structure or adjacent structures during building demolition operations.
- E. Verify that hazardous and universal waste materials have been remediated before proceeding with building demolition operations.

3.2 PREPARATION

- A. Existing Utilities: Locate, identify, disconnect, and seal or cap off indicated utilities serving buildings and structures to be demolished.
 - 1. Arrange to shut off indicated utilities with utility companies.
 - 2. If removal, relocation, or abandonment of utility services will affect adjacent occupied buildings, then provide temporary utilities that bypass buildings and structures to be demolished and that maintain continuity of service to other buildings and structures.
 - 3. Cut off pipe or conduit a minimum of 24 inches (610 mm) below grade. Cap, valve, or plug and seal remaining portion of pipe or conduit after bypassing according to requirements of authorities having jurisdiction.
- B. Existing Utilities: Refer to other Sections for shutting off, disconnecting, removing, and sealing or capping utilities. Do not start demolition work until utility disconnecting and sealing have been completed and verified in writing.
- C. Rodent Extermination: Before commencing demolition work, the Contractor shall carry out, through an experienced licensed Subcontractor, effective measures for rodent extermination in the buildings. The method of extermination employed shall be one in successful use, and shall meet the approval of the authorities having jurisdiction,
- D. Pollution Controls: Use water sprinkling, temporary enclosures, and other suitable methods to control the spread of dust and dirt. Comply with governing regulations pertaining to environmental protection. Do not use water when it may create hazardous or objectionable conditions such as ice, flooding, and pollution.
- E. Temporary Shoring: Provide and maintain interior and exterior shoring, bracing, or structural support as necessary to preserve stability and prevent unexpected movement or collapse of construction being demolished.

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1. Strengthen or add new supports when required during progress of demolition.

3.3 PROTECTION

- A. Existing Facilities: Protect adjacent walkways, building entries, and other building facilities during demolition operations. Maintain exits from existing buildings.
- B. Temporary Protection: Erect temporary protection, such as walks, fences, railings, canopies, and covered passageways, where required by authorities having jurisdiction and as indicated. Comply with the General Requirements of this contract.
 1. Protect adjacent buildings and facilities from damage due to demolition activities.
 2. Protect existing site improvements, appurtenances, and landscaping to remain.
 3. Erect a plainly visible fence around drip line of individual trees or around perimeter drip line of groups of trees to remain.
 4. Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain. The Contractor shall be responsible for protecting all persons from injury and all public and private property from damage due to the operations under this section. Adequate protection of persons and property shall be provided at all times, including Saturdays, Sundays and holidays, and during time work is being performed and after working hours.
 5. Provide protection to ensure safe passage of people around building demolition area and to and from occupied portions of adjacent buildings and structures.
 6. If at any time the safety of any adjacent structures appears to be endangered, cease operations. The Contractor shall notify the Engineer and the owner, and take precautions to protect adjacent structures and shall not resume operations until permission has been granted.
 7. Erect and maintain dustproof partitions and temporary enclosures to limit dust, noise, and dirt migration to occupied portions of adjacent buildings.
 8. The Contractor shall be liable for any movement or settlement, and damage or injury caused thereby or resulting therefrom.
- C. Installation of Barricades, Warning Signs, and Lights: Comply with standards and code requirements for erecting structurally adequate barricades. Paint with appropriate colors, graphics, and warning signs to inform personnel and public of possible hazard. Where appropriate and needed, provide lighting, including flashing red or amber lights. For safety barriers, provide minimum 5/8" thick exterior plywood.
- D. Remove temporary barriers and protections where hazards no longer exist. Where open excavations or other hazardous conditions remain, leave temporary barriers and protections in place.
- E. Traffic And Roadway Maintenance:
 1. Adjacent streets and walks shall be kept free from debris. All hauling upon local roads shall be subject to all local ordinances, rules, and regulations. The Contractor shall conduct his operations in such manner as to keep all roadways open to traffic at all times and to cause the traveling public minimum inconvenience.
 2. Any movement or operation of equipment on paved streets will be performed in such manner as to avoid any damage thereto. Any damage shall be repaired by the Contractor

CONSTRUCTION TECHNICAL SPECIFICATIONS

as directed by the Engineer. There shall be no additional payment for the repair of damage to streets and roadways.

3. All adjoining sidewalks, curbs, traffic signal street light facilities, and subsurface structures (i.e., drainage pipe, manholes, grates, castings, etc.) outside of the demolition area shall be protected from damage. Any such damage shall be repaired at the Contractor's expense to the satisfaction of the Engineer.
4. The Contractor shall conduct his activities in such a manner that no falling or flying debris shall enter the streets or adjacent properties. In order to protect the public, proper shielding or other protective means shall be employed as required or as ordered by the Engineer.
5. While the demolition of the building superstructure is in progress, the Contractor shall employ such measures as noted above to protect the public from falling or flying debris.

3.4 DEMOLITION, GENERAL

- A. General: Demolish indicated existing buildings and pavement completely. Use methods required to complete the Work within limitations of governing regulations and as follows:
 1. Do not use cutting torches until work area is cleared of flammable materials. Maintain portable fire-suppression devices during flame-cutting operations.
 2. Maintain fire watch during and for at least 24 hours after flame cutting operations.
 3. Maintain adequate ventilation when using cutting torches.
 4. Locate building demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
- B. Engineering Surveys: During demolition, perform surveys to detect hazards that may result from building demolition activities.
- C. Site Access and Temporary Controls: Conduct building demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
 1. Do not close or obstruct streets, walks, walkways, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction. Provide alternate routes around closed or obstructed traffic ways if required by authorities having jurisdiction.
- D. Explosives: Use of explosives is not permitted.

3.5 DEMOLITION BY MECHANICAL MEANS

- A. Proceed with demolition of structural framing members systematically, from higher to lower level. Complete building demolition operations above each floor or tier before disturbing supporting members on the next lower level.
- B. Remove debris from elevated portions of the building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.

CONSTRUCTION TECHNICAL SPECIFICATIONS

1. Remove structural framing members and lower to ground by method suitable to minimize ground impact and dust generation.
- C. Below-Grade Construction: Existing foundation walls/footings shall be removed 2 feet below adjacent grade and abandoned in place.
- D. Existing Utilities: Demolish and remove existing utilities and below-grade utility structures.
 1. Piping: Disconnect piping at unions, flanges, valves, or fittings.
 2. Wiring Ducts: Disassemble into unit lengths and remove plug-in and disconnecting devices.

3.6 RECYCLING DEMOLITION WASTE, GENERAL

- A. Recycling Incentives: Revenues, savings, rebates, tax credits, and other incentives received for recycling waste materials shall be shared equally by Owner and Contractor.
- B. Procedures: Separate recyclable waste by type at Project site to the maximum extent practical.
 1. Provide appropriately marked containers or bins for controlling recyclable waste until they are removed from Project site. Include list of acceptable and unacceptable materials at each container and bin.
 - a. Inspect containers and bins for contamination and remove contaminated materials if found.
 2. Remove recyclable waste off Owner's property and transport to recycling receiver or processor.

3.7 RECYCLING SPECIFIC DEMOLITION WASTE

- A. Asphaltic Concrete Paving: To the extent permitted break up and transport paving to asphalt-recycling facility.
- B. Concrete: To the extent permitted remove reinforcement and other metals from concrete and sort with other metals.
- C. Masonry: Remove metal reinforcement, anchors, and ties from masonry and sort with other metals.
 1. Clean and stack undamaged, whole masonry units on wood pallets.
- D. Wood (Timber) Materials: Sort and stack timber members according to size, type, and length.
- E. Metals: Separate metals by type.
 1. Structural Steel: Stack members according to size, type of member, and length.
 2. Remove and dispose of bolts, nuts, washers, and other rough hardware.

CONSTRUCTION TECHNICAL SPECIFICATIONS

3.8 SITE RESTORATION

- A. Below-Grade Areas: Completely fill below-grade areas and voids resulting from building demolition operations with clean, non-combustible fill material to avoid any accumulation of water and cover with 6" gravel according to the requirements in section "EARTHWORK."
- B. Site Grading: Uniformly rough grade area of demolished construction to a smooth surface, free from irregular surface changes. Provide a smooth transition between adjacent existing grades and new grades. Provide top soil and seed. See Sections 022000.

3.9 REPAIRS

- A. Promptly repair damage to adjacent buildings caused by demolition operations.

3.10 DISPOSAL OF DEMOLISHED MATERIALS

- A. Remove demolition waste materials from Project site and legally dispose of them in an EPA-approved landfill acceptable to authorities having jurisdiction.
 - 1. Do not allow demolished materials to accumulate on-site.
 - 2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
- B. Burning will not be permitted on site.

3.11 CLEANING

- A. Clean adjacent structures and improvements of dust, dirt, and debris caused by building demolition operations. Return adjacent areas to condition existing before building demolition operations began.

END OF SECTION 024100

CONSTRUCTION TECHNICAL SPECIFICATIONS

SECTION 024110 - UTILITY COORDINATION AND ABANDONMENT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. The contract documents apply to the work of this section.

1.2 SUMMARY

This section specifies the requirements for work associated with the abandonment of utilities and the coordination of work activities with the applicable utility owner. Locate, identify, disconnect, and seal or cap off indicated utility services serving structures to be demolished.

A. General:

1. The Contractor shall prepare his bid and enter into the contract with the full understanding of the conditions that could be encountered on the project. The Contractor shall satisfy himself as to the exact location of overhead and underground power lines within the limits of his construction operations (i.e. excavation and trenching operations, etc.) and shall determine the location of the facilities accurately as to line and grade, before demolition has started, so that there will be no interference with the progression of the work.
2. The Contractor shall coordinate their schedule of operations with the various utility owners involved with the project and shall field verify the information found in the contract documents. Existing utilities, above or below ground, reflect information based on a field inspection. Utility mark outs and test pits have not been completed at the time of contract bid. The locations of the utility facilities have been shown in the contract documents to the greatest degree of accuracy available.
3. The Contractor may be required to alter their work plan due to the actual field conditions encountered and more precise location data. The ability to perform work on utilities may also be altered due to the emergency related delays such as hurricanes or heat storms. The Contractor will not be able to claim additional compensation for any sort of schedule delay regarding utilities.
4. The Contractor should be fully aware of NY State Law Code 16 NYCRR Part 753 "Protection of Underground Facilities". Also the Contractor, responsible for actual excavation, shall provide the engineer with confirmation of all case numbers requesting mark-out and that he has received a response from those utility operators where such utilities have been identified within the work area, and that these facilities have been "marked-out". The Contractor shall not commence any excavation until all utilities have been marked out within the excavation work limits. Any damage by the Contractor must be brought to utility owner's attention immediately and all corrective work shall be at the Contractor's expense.
5. If removal, relocation, or abandonment of utility services will affect adjacent occupied buildings, then provide temporary utilities that bypass buildings and structures to be demolished and that maintain continuity of service to other buildings and structures.

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6. Cut off pipe or conduit a minimum of 24 inches below grade. Cap, valve, or plug and seal remaining portion of pipe or conduit after bypassing according to requirements of authorities having jurisdiction.
7. All PSE&G electric facilities including overhead power lines, cables, and equipment must be treated as if they are energized at all times. These facilities shall be considered de-energized only when the contractor receives confirmation by an authorized PSE&G representative. The Contractor shall maintain a minimum 10-foot clearance between 13Kv and 23Kv overhead conductors and any part of the Contractor's equipment or material load. A minimum 15-foot clearance is to be maintained when working in proximity to the 69Kv overhead conductors. In addition, all cranes, pile drivers, and other hoisting equipment shall be adequately and securely grounded while the equipment is in operation. The Contractor shall submit a written request to PSE&G regarding the de-energizing of the electrical service to the property. PSE&G, the Contractor, and the engineer will negotiate a mutually acceptable date to when the cable/conductors and facilities can be de-energized.
8. Any damage to any utility facilities shall be immediately brought to the respective utility representative's attention. Any corrective work to repair damage done by the Contractor will be performed in accordance with the utility owner's request and may require time beyond the standard work day at the Contractor's own expense.

1.3. SUBMITTALS:

1. The Contractor will be required to be able to provide the engineer, upon request, that mark-outs have been requested and have been implemented in accordance with NY State Law Code 16 NYCRR Part 753 "Protection of Underground Facilities".
2. The Contractor will provide "As-Built" utility plan which shows the pertinent information regarding the abandonment of all existing utilities. The Contractor will be required to show:
 - a. The exact location of utility abandonment
 - b. Invert elevation of conduit or pipe
 - c. Size of conduit or pipe
 - d. Method of capping utilized, if applicable
3. Arrange for shut off of indicated utility services via written notification to utility companies. Furnish the signed copies of each of the notifications and documentation that the service has been disconnected in accordance with utility owner requirements.

1.4. DELIVERABLES:

1. "As-Built" plans will need to be provided prior to the completion of the contract.

PART 2- PRODUCTS

2.1 DEVICES AND EQUIPMENT:

A. General:

1. All sewer house connection pipes will need to be capped with a rubber sewer pipe cap submitted to the engineer for approval prior to installation. Product will be manufactured by Fernco, or approved equal.

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2. In locations where utilities are shut off or de-energized the contractor will be allowed to use mechanical equipment to remove the existing utility with the applicable utility company's permission. Hand digging will be required wherever existing utilities are to remain.

PART 3- EXECUTION

3.1 COORDINATION WITH UTILITIES:

- A. The Contractor shall be responsible for coordination with all utility companies required during the project.
- B. Proper maintenance and protection of pedestrians and traffic must be adhered to while working on utilities.

3.2 PREPARATION:

- A. Existing utilities: Locate, identify, disconnect and seal or cap off utility services to the buildings to be demolished.
 1. Arrange shut off of utility services with utility companies.

3.3 UTILITY SERVICE DISCONNECT/REMOVAL:

- A. Where disconnect of utility service is by the utility company, pay any fees required and obtain documentation from utility owner that service has been disconnected.
- B. Where disconnect/removal of utility service is by the Contractor, coordinate with and submit documentation required by the utility owner. Obtain documentation that states that the disconnection has been performed to the utility company's satisfaction and is acceptable.

END OF SECTION

CONSTRUCTION TECHNICAL SPECIFICATIONS

SECTION 02 82 00

ASBESTOS REMOVAL

PART 1 GENERAL

1.01 SCOPE OF WORK

- A. This asbestos abatement Project will consist of the removal and disposal of asbestos-containing materials (ACMs) and presumed asbestos-containing materials (PACMs) at the Welwyn Preserve, located at 100 Crescent Beach Road, Glen Cove, NY 11542.
- B. The work shall include but not be limited to the removal of the following materials:

Location	Material	Results	Estimated ACM Quantity
Garage Building – Basement	Residues of Elbow Insulation and Floor Debris	36.4 % Chrysotile	1,357.0 SF of Floor Debris 30.0 LF of Intact Insulation
Garage Building – Roof	Roof Membrane	5.8 % Chrysotile	1,525.0 SF
Laundry Building - Roof	Roof Membrane	2.1 % Chrysotile	696.0 SF
Greenhouse Building – Basement Boiler Room	Building Boiler Insulation/Floor Debris	57.1 % Chrysotile	72. SF Boiler Insulation 418.0 SF of Floor Debris
	Small Boiler Insulation/Floor Debris	44.4 % Chrysotile	72.0 SF of Boiler Insulation See Above for Floor Debris Qty.
Greenhouse – Basement Open Area	Aircell Pipe Insulation/Floor Debris	50.0 % Chrysotile	1,514.0 SF of Floor Debris 30.0 LF of Pipe Insulation
Garage	Sub-Grade Foundation Waterproofing	Assumed ACM	1,376.0 SF
Sub-Grade Pipe Tunnel between Garage and Laundry Building	Sub-Grade Waterproofing	Assumed ACM	672.0 SF
	Pipe and Elbow Insulation	Assumed ACM	126.0 LF of Assumed Pipe Insulation (3 runs of 42.0 LF each)
Laundry Building	Boiler and Pipe Insulation	Assumed ACM	72.0 SF of Boiler Insulation 30.0 LF of Pipe Insulation
	Sub-Grade Waterproofing	Assumed ACM	848.0 SF
Greenhouse	Sub-Grade Waterproofing	Assumed ACM	2,680.0 SF
Total Estimated Quantity of ACM			11,302.0 SF 216.0 LF

- C. The Contractor shall be aware of all conditions of the Project and is responsible for verifying quantities and locations of all Work to be performed. Failure to do so shall not relieve the Contractor of its obligation to furnish all labor and materials necessary to perform the Work.
- D. All Work shall be performed in strict accordance with the Project Documents and all governing codes, rules, and regulations. Where conflicts occur between the Project Documents and applicable codes, rules, and regulations, the more stringent shall apply.
- E. Working hours shall be as required and approved by the Owner. Asbestos abatement activities including, but not limited to, work area preparation, gross removal activities, cleaning activities, waste removal, etc. may need to be performed during ‘off-hours’ (including nights and weekends). In addition, multiple

CONSTRUCTION TECHNICAL SPECIFICATIONS

mobilizations may be required to perform the work identified in this project. The Contractor shall coordinate and schedule all Work with the facility and Owner's representative.

1.02 SPECIAL JOB CONDITIONS

- A. Any special job conditions, including Variances obtained by the Owner, are described below:
 - 1. Abatement Contractor shall be responsible for establishing vertical barrier on eastern edge of roof to provide barrier between abatement Work Area and neighboring structure.
 - 2. All ACM is to be removed down to the substrate and be free and clear of any residues.
 - 3. Abatement contractor shall be required to establish access to the roof level work areas through lift or scaffolding in the parking lot on the south side of the property.
 - 4. Abatement Contractor may be required to supply generator and 55-gallon drums of water for the abatement Work Area if building temporary hookups are not available.
 - 5. Materials listed as "flashing" shall be considered both the vertical and the horizontal projections thereof. Detail on drawing H-102.00 is provided for the Abatement Contractor's reference.

1.03 PERMITS AND COMPLIANCE

- A. The Contractor shall assume full responsibility and liability for compliance with all applicable Federal, State, and local laws, rules, and regulations pertaining to Work practices, protection of Workers, authorized visitors to the site, persons, and property adjacent to the Work.
- B. Perform asbestos related Work in accordance with New York State Industrial Code Rule 56 (herein referred to as Code Rule 56), 40 CFR 61, and 29 CFR 1926. Where more stringent requirements are specified, adhere to the more stringent requirements.
- C. The Contractor must maintain current licenses, permits and certifications pursuant to New York State Department of Labor and Department of Environmental Conservation for all Work related to this Project, including the removal, handling, transport, and disposal of asbestos-containing materials.
- D. The Contractor must maintain current licenses pursuant to New York State Department of Labor, and New York State Department of Environmental Conservation for all Work related to this Project, including the removal, handling, transport, and disposal of asbestos-containing materials.
- E. The Contractor must have and submit proof upon request that any persons employed by the Contractor to engage in or supervise Work on any asbestos Project have valid NYS asbestos handling and supervisor certificates pursuant to Code Rule 56 regulations.
- F. The Contractor shall be responsible for obtaining all other Variances as may be required for the Project or as requested by the Owner. Approval of the Owner is required prior to submission of a Variance application to any regulatory agency. Failure to obtain Owner approval may result in Owner not permitting variance to be used on the Project.
- G. The Contractor shall be responsible for compliance with The New York State Uniform Fire Prevention and Building Code, or its successor during all Work at the site.
- H. Failure to adhere to the Project Documents shall constitute a breach of the Contract and the Owner shall have the right to and may terminate the Contract provided, however, the failure of the Owner to so terminate shall not relieve the Contractor from future compliance.

1.04 SUBMITTALS

- A. Pre-Work Submittals: Within 7 days prior to the pre-construction conference, the Contractor shall submit an electronic copy of the documents listed below to the Owner's Project Manager and the Environmental Consultant for review and approval prior to the commencement of asbestos abatement activities::
1. Contractor license issued by New York State Department of Labor.
 2. A list of Projects performed within the past two (2) years and include the dollar value of all Projects. Provide Project references to include Owner, Environmental Consultant, and air monitoring firm's name, contact persons, address, and phone number.
 3. Progress Schedule:
 - a. Show the complete sequence of abatement activities for each work area and the sequencing of Work within each building or building section listed in the contract.
 - b. Show the dates and hours of work for the beginning and completion of each major element of Work for wall work areas including substantial completion dates for each Work Area, building, or phase.
 4. Project Notifications (original and all amendments in chronological order): As required by Federal and State regulatory agencies together with proof of transmittal (i.e. certified mail return receipts). NYS DOL Site Specific Variance or Applicable Variance, if applicable.
 5. Building Occupant Notification: Provide the following information, as required by regulatory agencies:
 - a. Owner, Site Name and Address, Building, Asbestos Project Location at Building, Start and End Dates.
 - b. Quantity and type of material to be removed.
 - c. Asbestos Contractor Name, Address, Contact Name and Phone Number, NYSDOL License Number.
 - d. Third Party Air Monitor Name, Address, Contact Name and Phone Number, NYSDOL License Number.
 - e. Air Monitoring Laboratory Name, Address, Contact Name and Phone Number, New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP) Number.
 - f. NYSDOL Regional Office Phone Number.
 - g. OWNER Project Manager Name and Phone Number.
 - h. General Contractor Project Manager Name and Phone Number, if applicable
 6. Abatement Work Plan and Drawing(s): Provide a written work plan description of work and drawing(s) that clearly indicates the following:
 - a. All work areas/containments numbered sequentially.
 - b. Locations and types of all decontamination enclosures for each work area.
 - c. Entrances and exits to each work areas/containments.
 - d. Type of abatement activity/technique for each work area/containment.
 - e. Number and location of negative air units and exhaust for each work area, when applicable. Also provide calculations for determining number of negative air pressure units.
 - f. Proposed location and construction of storage facilities and field office.
 - g. Location of water and electrical connections to building services for each work area/containment.
 - h. Waste transport routes through the building, or exterior to the waste storage container for each work area/containment.
 7. Disposal Site/Landfill Permit from applicable regulatory agency.
 8. Transfer Facility Permit (if used) from applicable regulatory agency.
 9. Valid Waste Transporter NYS Part 364 permit for all transporters.
 10. Valid State Waste Transport vehicle permit for all transporters for each State the waste is being transported through to reach the Disposal Facility/Landfill.
 11. Valid US DOT vehicle permits for all Transporters.

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12. Special Waste Characterization Profile, if required by the disposal site/landfill.
 13. Current ELAP Certificate for laboratory performing analysis of OSHA personal air monitoring samples. Refer to Section 1.09.
- B. On-Site Submittals: Refer to Part 3.01.B, C, D and E for all submittals, documentation, and postings required to be maintained on-site during abatement activities.
- C. Project Close-out Submittals: Within 30 days of the completion of each abatement phase, the **Abatement Contractor** shall submit an electronic copy of the documents listed below to OWNER and the Environmental Consultant for review and Code Compliance approval prior to Contractor's final payment. Once OWNER approves the close-out submittal, the Contractor shall provide 3 hard copy sets of the approved close-out documents (double-sided and bound) to OWNER Project Management for appropriate distribution, including 1 set to be distributed to the facility and 1 set (with original waste records) to Code Compliance.
1. All Waste Shipment Records and Waste Shipment Record Logs (**Original** Waste Shipment Record(s) shall be sent to OWNER).
 2. OSHA compliance air monitoring records (laboratory reports and chain of custodies) conducted during the Work (compiled in chronological order).
 3. Daily progress log, and the Work Area entry/exit log (s).
 4. Supervisor and Handlers/Workers NYS DOL Asbestos (current at time of asbestos abatement) Certifications.
 5. Contractor license issued by New York State Department of Labor.
 6. Disposal Site/Landfill Permit from applicable regulatory agency.
 7. Transfer Facility Permit (if used) from applicable regulatory agency.
 8. Valid Waste Transporter NYS Part 364 permit for all transporters.
 9. Valid State Waste Transport vehicle permit for all transporters for each State the waste is being transported through to reach the Disposal Facility/Landfill.
 10. Valid US DOT vehicle permits for all Transporters.
 11. Special Waste Characterization Profile, if required by the disposal site/landfill.
 12. Current ELAP Certificate for laboratory performing analysis of OSHA personal air monitoring samples. Refer to Section 1.09.
 13. EPA and NYS DOL Regulatory Project notifications and amended notifications, along with proof of transmittals, and NYS DOL Site-Specific Variances/Applicable Variances.
- D. Project Close-out Submittals: Within 30 days of the completion of the abatement phase, the **Environmental Consultant** shall submit 1 electronic copy of the closure report, including the documents listed below to OWNER for review and approval. Once OWNER approves the final closeout submittals, the Environmental Consultant shall provide 3 hard copy sets of the approved submittals (double-sided and bound) to OWNER Project Management for appropriate distribution, including 1 set to be distributed to the facility and 1 set to Owner.
1. Upon completion of the Project, the Environmental Consultant shall certify to the Owner, in writing, that the work is complete, acceptable and was performed in compliance with the Project Documents and all Local, State and Federal Regulation in an Executive Summary of the work.
 2. The Environmental Consultant shall review and approve or disapprove all necessary guarantees, certificates of compliance, and all other close-out documentation, which the Asbestos Contractor is required to submit.
 3. The Environmental Consultant shall provide to the Owner the final/closeout project report which must include
 - a. Consultant license issued by New York State Department of Labor.
 - b. Project Monitor(s) Certificate issued by New York State Department of Labor.
 - c. All daily logs and daily worker/handler rosters.

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- d. Summary of all visual inspections with the date of inspection and the date of signoff on the supervisor's log.
- e. Air sampling logs, final lab reports (no drafts-must be signed by analyst and reviewer), chain of custody forms, and sample location plans.
- f. Copies of Waste Shipment Records and Waste Shipment Record Logs.
- g. EPA and NYS DOL Regulatory Project notifications, amended notifications, along with proof of transmittals and NYS DOL Site-Specific Variances/Applicable Variances, if applicable.
- h. All pertinent correspondence related to the Project, including re-occupancy letters and elevated air results submission to NYS DOL documentation per 56-4.10 (a).

1.05 PRE-CONSTRUCTION CONFERENCE

- A. Prior to start of preparatory Work under this Contract, the Contractor shall attend a pre-construction conference attended by Owner, Facility Personnel, and Environmental Consultant.
- B. Agenda for this conference shall include but not necessarily be limited to:
 - 1. Contractor's scope of Work, Work plan, and schedule to include number of workers and shifts.
 - 2. Contractor's safety and health precautions including protective clothing and equipment and decontamination procedures.
 - 3. Environmental Consultant's duties, functions, and authority.
 - 4. Contractor's Work procedures including:
 - a. Methods of job site preparation and removal methods.
 - b. Respiratory protection.
 - c. Disposal procedures.
 - d. Cleanup procedures.
 - e. Fire exits and emergency procedures.
 - 5. Contractor's required pre-work and on-site submittals, documentation, and postings.
 - 6. Contractor's plan for twenty-four (24) hour Project security both for prevention of theft and for barring entry of unauthorized personnel into Work Areas.
 - 7. Temporary utilities.
 - 8. Handling of furniture and other movable objects.
 - 9. Storage of removed asbestos-containing materials.
 - 10. Waste disposal requirements and procedures.
- C. In conjunction with the conference the Contractor shall accompany the Owner and Environmental Consultant on a pre-construction walk-through documenting existing condition of finishes and furnishings, reviewing overall Work plan, location of fire exits, fire protection equipment, water supply and temporary electric tie-in.

1.06 APPLICABLE STANDARDS AND REGULATIONS

- A. The Contractor shall comply with the following codes and standards, except where more stringent requirements are shown or specified:
- B. Federal Regulations:
 - 1. 29 CFR 1910.1001, "Asbestos" (OSHA)
 - 2. 29 CFR 1910.1200, "Hazard Communication" (OSHA)
 - 3. 29 CFR 1910.134, "Respiratory Protection" (OSHA)
 - 4. 29 CFR 1910.145, "Specification for Accident Prevention Signs and Tags" (OSHA)
 - 5. 29 CFR 1926, "Construction Industry" (OSHA)
 - 6. 29 CFR 1926.1101, "Asbestos, Tremolite, Anthophyllite, and Actinolite" (OSHA)

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7. 29 CFR 1926.500 "Guardrails, Handrails and Covers" (OSHA)
 8. 40 CFR 61, Subpart A, "General Provisions" (EPA)
 9. 40 CFR 61, Subpart M, "National Emission Standard for Asbestos" (EPA)
 10. 49 CFR 171-172, Transportation Standards (DOT)
- C. New York State Regulations:
1. 12 NYCRR, Part 56, "Asbestos", Industrial Code Rule 56 (DOL) (amended March 21, 2007).
 2. 6 NYCRR, Parts 360, 364, Disposal and Transportation (DEC)
 3. 10 NYCRR, Part 73, "Asbestos Safety Program Requirements" (DOH)
- D. Standards and Guidance Documents:
1. American National Standards Institute (ANSI) Z88.2, Practices for Respiratory Protection
 2. ANSI Z9.2-79, Fundamentals Governing the Design and Operation of Local Exhaust Systems
 3. EPA 560/585-024, Guidance for Controlling Asbestos-containing Materials in Buildings (Purple Book)
 4. EPA 530-SW-85-007, Asbestos Waste Management Guidance
 5. ASTM Standard E1368 "Standard Practice for Visual Inspection of Asbestos Abatement Projects."

1.07 NOTICES

- A. The Contractor shall provide notification of intent to commence asbestos abatement activities as indicated below.
1. At least ten (10) Working days prior to beginning abatement activities, send written notification to:

U.S. Environmental Protection Agency Region 2
National Emissions Standards for Hazardous Air Pollutants (NESHAPS) Coordinator
Air Branch
290 Broadway, 21st Floor
New York, NY 10007-1866
 2. At least ten (10) calendar days prior to beginning abatement activities send written notification to:

New York State Department of Labor
Division of Safety and Health, Asbestos Control Program
State Office Campus
Building 12 - Room 161B
Albany, NY 12240
- B. The Contractor is required to send notifications to U.S. Environmental Protection Agency and New York State Department of Labor via mail or package delivery service that will provide proof of delivery and receipt.
- C. The Contractor shall be responsible for maintaining current project filings with regulatory agencies for the duration of the project.
- D. The Contractor shall post and/or provide Building Occupant Notification at least 10 calendar days prior to beginning abatement activities as required by Code Rule 56.

1.08 PROJECT MONITORING AND AIR SAMPLING

- A. The Owner shall engage the services of an Environmental Consultant who shall serve as the Owner's Representative in regard to the performance of the asbestos abatement Project and provide direction as required throughout the entire abatement Project period. The Environmental Consultant and all subconsultants shall not have any contractual relationship with the Contractor for the duration of the asbestos project.
- B. The Contractor is required to ensure cooperation of its personnel with the Environmental Consultant for the air sampling and Project monitoring functions described in this section. The Contractor shall comply with all direction given by the Environmental Consultant during the course of the Project.
- C. The Environmental Consultant shall provide the following administrative services:
 - 1. Review and approve or disapprove all submittals, shop drawings, schedules, and samples.
 - 2. Assure that all notifications to governmental agencies by the Contractor are submitted in a timely manner and are correct in content.
- D. The Environmental Consultant shall staff the Project with a trained and certified person(s) to act on the Owner's behalf at the job site. This individual shall be designated as the Abatement Project Monitor (APM).
 - 1. The APM shall be on-site at all times the Contractor is on-site. The Contractor shall not be permitted to conduct any Work unless the APM is on-site (except for inspection of barriers and negative air system during non-working days).
 - 2. The APM shall have the authority to direct the actions of the Contractor verbally and in writing to ensure compliance with the Project documents and all regulations. The APM shall have the authority to Stop Work when gross Work practice deficiencies or unsafe practices are observed, or when ambient fiber concentrations outside the removal area are equal to or greater than 0.01 f/cc or background level, whichever is greater.
 - a. Such Stop Work order shall be effective immediately and remain in effect until corrective measures have been taken and the situation has been corrected.
 - b. Standby time, re-cleaning time, and air sample collection time and analysis cost required to resolve the situation shall be at the Contractor's expense.
 - c. The Environmental Consultant shall track and provide a summary of standby, re-cleaning, and/or air sampling time to achieve satisfactory clearance, as well as a summary of any equipment used. These summaries shall be provided to the OWNER Project Manager.
 - 3. The APM shall provide the following services:
 - a. Inspection of the Contractor's Work, practices, and procedures, including temporary protection requirements, for compliance with all regulations and Project specifications including provisions required by Variances, the Work Place Safety Plan and Asbestos Work Permit.
 - b. Provide abatement Project air sampling as required by applicable regulations and the Owner. Sampling will include background, work area preparation, asbestos handling, final cleaning and aggressive clearance air sampling.
 - c. Verify daily that all Workers used in the performance of the Project are certified by the appropriate regulatory agency and include a worker roster in the daily log.
 - d. Monitor the progress of the Contractor's work and report any deviations from the schedule to the Owner.
 - e. Monitor, verify, and document all waste load-out operations.
 - f. Verify that the Contractor is performing personal air monitoring daily, and that results are being returned and posted at the site as required.
 - g. The APM shall maintain a daily log on site that documents all project related and Environmental Consultant and Contractor actions, activities, and occurrences.

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- h. Verify landfill to be used for waste disposal with waste transporter (driver) and Contractor prior to waste trailer/hardtop dumpster leaving site. Confirm the waste transporter firm and landfill are listed on the regulatory notifications for the project and the waste transport vehicle license number is listed on the current NYS DEC Waste Transporter permit.
4. The following minimum inspections shall be conducted by the APM, accompanied by the Contractor's supervisor. Additional inspections shall be conducted as required by Project conditions and/or at the owner's direction. Progression from one (1) phase of Work to the next by the Contractor is only permitted with the written approval of the APM.
- a. Pre-Construction Inspection: The purpose of this inspection is to verify the existing conditions of the Work Areas and to document these conditions.
 - b. Pre-Commencement Inspection: The purpose of this inspection is to verify the integrity of each containment system prior to disturbance of any asbestos-containing material. This inspection shall take place only after the Work Area is fully prepped for removal.
 - c. Work Inspections: The purpose of this inspection is to monitor the Work practices and procedures employed on the Project and to monitor the continued integrity of the containment system. Inspections within the removal areas shall be conducted by the APM during all preparation, removal, and cleaning activities at least twice every Work shift. Additional inspections shall be conducted as warranted.
 - d. Pre-Encapsulation Inspection: The purpose of this inspection is to ensure the complete removal of Asbestos-Containing Material (ACM), from all surfaces in the Work Area prior to encapsulation.
 - e. Visual Clearance Inspection: The purpose of this inspection is to verify that: all materials in the scope of work have been properly removed; no visible asbestos debris/residue remains; no pools of liquid or condensation remains; and all required cleanings are complete. This inspection shall be conducted before final air clearance testing.
 - f. Post-Clearance Inspection: The purpose of this inspection is to ensure the complete removal of ACM, including debris, from the Work Area after satisfactory final clearance sampling and removal of all isolation and critical barriers and equipment from the Work Area.
 - g. Punch List Inspection: The purpose of this inspection is to verify the Contractor's certification that all Work has been completed as contracted and the existing condition of the area prior to its release to the Owner.
- E. The Environmental Consultant shall provide abatement Project air sampling and analysis as required by applicable regulations. Sampling will include, but is not limited to, background, work area preparation, asbestos handling, and final cleaning and clearance air sampling.
- 1. Unless otherwise required by applicable regulations, the Environmental Consultant shall have samples analyzed by Phase Contrast Microscopy (PCM). Results shall be available at the Project site within 24 hours of completion of sampling.
 - 2. Samples shall be collected as required by applicable regulations and these specifications. If Transmission Electron Microscopy (TEM) clearance air sampling is utilized by the owner, the clearance criteria and sampling protocols must be in compliance with AHERA. If PCM air sample analysis results exceed the satisfactory clearance criteria, then TEM analysis of the entire set of clearance air samples may be used, provided that a standard NIOSH/ELAP accepted laboratory analysis method is utilized that shall report each air sample result in fibers per cubic centimeter.
 - 3. If the air sampling during any phase of the abatement project reveals airborne fiber levels at or above 0.01 fibers/cc or the established background level, whichever is greater, outside the regulated Work Area, Work shall stop immediately and corrective measures required by applicable regulations shall be initiated. Notify OWNER project personnel, as well as all employers and occupants in adjacent areas. The Contractor shall bear the burden of any and all costs incurred by this delay.

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4. The Environmental Consultant shall submit copies of all elevated air sampling results collected during abatement and all elevated final air clearance results to the Commissioner of Labor, as required by regulation.
5. A minimum of 1,200 Liters for PCM air samples or 1,300 Liters for TEM air samples (whichever is applicable) shall be collected at a flow rate between 2 and 10 liters per minute (L/min) as necessary to achieve proper sample collection and work practice duration.

1.09 CONTRACTOR AIR SAMPLING

- A. In addition to the requirements of OSHA 1926.1101, the Contractor shall be required to perform personal air monitoring **every Work shift in each Work Area** during which abatement activities occur in order to determine that appropriate respiratory protection is adequate and is being worn and utilized. Negative Exposure Assessments are not allowed to be used in lieu of personal air monitoring.
- B. The Contractor shall conduct air sampling that is representative of both the 8-hour time weighted average and 30-minute short-term excursion level exposures to indicate compliance with the OSHA Permissible Exposure Limits (PELs).
- C. The Contractor's laboratory analysis of air samples shall be conducted by an NYS DOH ELAP approved laboratory. The Environmental Consultant shall not collect or analyze the Contractor's air samples.
- D. Results of personal air sample analyses shall be available, verbally, within twenty-four 24 hours of sampling and results with associated chains of custody shall be posted upon receipt and documented in the supervisor's daily log book. Written laboratory reports shall be delivered and posted at the Work site within five (5) days. Failure to comply with these requirements may result in all work being stopped until compliance is achieved.

1.10 PROJECT SUPERVISOR

- A. The Contractor shall designate a full-time Project Supervisor who shall meet the following qualifications:
 1. The Project Supervisor shall hold New York State DOL certification as an Asbestos Supervisor.
 2. The Project Supervisor shall meet the requirements of a "Competent Person" as defined by OSHA 1926.1101 and shall have a minimum of one (1) year experience as a supervisor.
 3. The Project Supervisor must be able to speak, read, and write English fluently, as well as communicate in the primary language of the Workers.
- B. If the Project Supervisor is not on-site at any time whatsoever, all Work shall be stopped. The Project Supervisor shall remain on-site until the Project is complete. The Project Supervisor cannot be removed from the Project without the written consent of the Owner and the Environmental Consultant. The Project Supervisor shall be removed from the Project if so requested by the Owner.
- C. The Project Supervisor shall maintain the bound Daily Project Log and separate work area entry/exit logs for each work area, as required by applicable regulations and section 2.03 of the specifications and the Waste Shipment Record Log required by section 4.03 of the specifications.
- D. The Project Supervisor shall be responsible for the performance of the Work and shall represent the Contractor in all respects at the Project site. The Supervisor shall be the primary point of contact for the Abatement Project Monitor.

1.11 MEDICAL REQUIREMENTS

- A. Before exposure to airborne asbestos fibers, provide Workers with a comprehensive medical examination as required by 29 CFR 1910.1001, and 29 CFR 1926.1101.
 - 1. This examination is not required if adequate records show the employee has been examined as required by 29 CFR 1910.1001, and 29 CFR 1926.1101 within the past year.
 - 2. The same medical examination shall be given on an annual basis to employees engaged in an occupation involving asbestos fibers and within thirty 30 calendar days before or after the termination of employment in such occupations.

1.12 TRAINING

- A. As required by applicable regulations, prior to assignment to asbestos Work instruct each employee with regard to the hazards of asbestos, safety and health precautions, and the use and requirements of protective clothing and equipment.
- B. Establish a respirator program as required by ANSI Z88.2 and 29 CFR 1910.134, and 29 CFR 1926.1101. Provide respirator training and fit testing.

1.13 RESPIRATORY PROTECTION

- A. Select respirators from those approved by the National Institute for Occupational Safety and Health (NIOSH).
- B. Respirators shall be individually fit-tested to personnel under the direction of an Industrial Hygienist on a yearly basis. Fit-tested respirators shall be permanently marked to identify the individual fitted, and use shall be limited to that individual. Fit-test records shall be maintained on site for each employee.
- C. Where fiber levels permit, and in compliance with regulatory requirements, Powered Air Purifying Respirators (PAPRs) are the minimum allowable respiratory protection permitted to be utilized during gross removal operations of OSHA Class I or OSHA Class II friable ACM.
- D. No respirators shall be issued to personnel without such personnel participating in a respirator training program.
- E. High Efficiency Particulate Air (HEPA) respirator filters shall be approved by NIOSH and shall conform to the OSHA requirements in 29 CFR 1910.134 and 29 CFR 1926.1101.
- F. A storage area for respirators shall be provided by the Contractor in the clean room side of the personal decontamination enclosure where they will be kept in a clean environment.
- G. The Contractor shall provide and make available a sufficient quantity of respirator filters so that filter changes can be made as necessary during the work day. Filters will be removed and discarded during the decontamination process. Filters cannot be reused. Filters must be changed if breathing becomes difficult.
- H. Filters used with negative pressure air purifying respirators shall not be used any longer than one eight (8) hour work day. Any loose respirator filters found within the regulated area, must be disposed of as RACM asbestos waste.
- I. Any authorized visitor, worker, or supervisor found in the Work Area not wearing the required respiratory protection shall be removed from the Project site and shall not be permitted to return.

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- J. The Contractor shall have at least two (2) Powered Air Purifying Respirators stored on site designated for authorized visitors use. Appropriate respirator filters for authorized visitors shall be made available by the Contractor.

1.14 DELIVERY AND STORAGE

- A. Deliver all materials to the job site in original packages with containers bearing manufacturer's name and label.
- B. Store all materials at the job site in a suitable and designated area.
1. Store materials subject to deterioration or damage away from wet or damp surfaces and under cover.
 2. Protect materials from unintended contamination and theft.
 3. Storage areas shall be kept clean and organized.
- C. Remove damaged or deteriorated materials from the job site. Materials contaminated with asbestos shall be disposed of as asbestos debris as herein specified.

1.15 TEMPORARY UTILITIES

- A. Shut down and lock out all electrical power to the asbestos Work Areas, including lighting circuits. Any electrical power passing through the Work Areas that can't be shut down due to health and safety reasons, shall be protected as per the requirements of applicable regulations and shall not be utilized within the work area.
- B. Provide temporary 120-240 volt, single phase, three (3) wire, 100 amp electric service with Ground Fault Circuit Interrupters (GFCIs) for all electric requirements within the asbestos Work Area.
1. Where available, obtain from Owner's existing system. Otherwise provide power from other sources (i.e. generator).
 2. Provide temporary wiring and "weatherproof" receptacles in sufficient quantity and location to serve all HEPA equipment and tools.
 3. Provide wiring and receptacles as required by the APM for air sampling equipment.
 4. All power to the Work Area shall be brought in from outside the area through GFCI's at the source.
- C. Provide temporary lighting with "weatherproof" fixtures for all Work Areas including decontamination chambers.
1. The entire Work Area shall be kept illuminated at all times.
 2. Provide lighting as required by the Environmental Consultant for the purposes of performing required inspections.
- D. All temporary devices and wiring used in the Work Area shall be capable of decontamination procedures including HEPA vacuuming and wet-wiping.
- E. Utilize domestic water service, if available, from Owner's existing system. Provide hot water heaters with sufficient capacity to meet Project demands.

PART 2 PRODUCTS

2.01 PROTECTIVE CLOTHING

- A. Provide personnel utilized during the Project with disposable protective whole body clothing, head coverings, gloves and foot coverings. Provide disposable plastic or rubber gloves to protect hands. Cloth gloves may be worn inside the plastic or rubber for comfort, but shall not be used alone. Make sleeves secure at the wrists and make foot coverings secure at the ankles by the use of tape, or provide disposable coverings with elastic wrists or tops.
- B. Provide sufficient quantities of protective clothing to assure a minimum of four (4) complete disposable outfits per day for each individual performing abatement Work.
- C. Eye protection and hard hats shall be provided and made available for all personnel entering any Work Area.
- D. Authorized visitors shall be provided with suitable protective clothing, headgear, eye protection, and footwear whenever they enter the Work Area.

2.02 SIGNS AND LABELS

- A. Provide warning signs and barrier tapes at all approaches to asbestos Work Areas. Locate signs at such distance that personnel may read the sign and take the necessary protective steps required before entering the area.
 - 1. Provide danger signs in vertical format conforming to 29 CFR 1926.1101, minimum 20" x 14" displaying the following legend:

DANGER
ASBESTOS
MAY CAUSE CANCER
CAUSES DAMAGE TO LUNGS
AUTHORIZED PERSONNEL ONLY
WEAR RESPIRATORY PROTECTION AND
PROTECTIVE CLOTHING IN THIS AREA
 - 2. Provide 3" wide red barrier tape printed with black lettered, "DANGER ASBESTOS REMOVAL". Locate barrier tape across all corridors, entrances and access routes to asbestos Work Area. Install tape 3' to 4' above finished floor (AFF).
- B. Provide asbestos danger labels affixed to all asbestos materials, scrap, waste, debris and other products contaminated with asbestos.
 - 1. Provide asbestos danger labels of sufficient size to be clearly legible, displaying the following legend:

DANGER
CONTAINS ASBESTOS FIBERS
MAY CAUSE CANCER
CAUSES DAMAGE TO LUNGS
DO NOT BREATHE DUST
AVOID CREATING DUST

CONSTRUCTION TECHNICAL SPECIFICATIONS

2. Provide the following asbestos labels, of sufficient size to be clearly legible, for display on waste containers (bags or drums) which will be used to transport asbestos contaminated material in accordance with United States Department of Transportation 49 CFR Parts 171 and 172:
RQ, NA2212, RACM ASBESTOS, 9, PGIII
3. Generator identification information shall be affixed to each waste container or any packaging used to containerize RACM asbestos waste indicating the following printed in indelible ink:
Generator Name
Facility Name
Facility Address
Date

2.03 DAILY PROJECT LOG & WORK AREA (Worker Decontamination Unit) ENTRY/EXIT LOG

- A. Provide a bound Daily Project Log. The log shall contain on title page the Project name, name, address and phone number of Owner; name, address and phone number of Environmental Consultant; name, address and phone number of Abatement Contractor; emergency numbers including, but not limited to local Fire/Rescue department and all other regulatory requirements.
- B. All entries into the log shall be made in non-washable, permanent ink and such pen shall be strung to or otherwise attached to the log to prevent removal from the log-in area. Under no circumstances shall pencil entries be permitted.
- C. All persons entering and exiting the Work Area shall sign the Work Area (entry/exit log located in the decontamination unit clean room or airlock to the work area) and include name, certification number, and time.
- D. The Project Supervisor shall document all work performed daily and note all regulatory required inspections, maintain entry log records and ensure that they are recorded in accordance with the provisions of all applicable regulations.

2.04 SCAFFOLDING AND LADDERS

- A. Provide all scaffolding and/or staging as necessary to accomplish the Work of this Contract. Scaffolding may be of suspension type or standing type such as metal tube and coupler, tubular welded frame, pole or outrigger type or cantilever type. All scaffolding shall be designed and constructed in accordance with OSHA, and any other applicable federal, state and local government regulations. Whenever there is a conflict or overlap of the above references the most stringent provisions are applicable.
- B. Provide scaffolding and ladders as required by the Environmental Consultant for the purposes of performing required inspections.

2.05 SURFACTANT (AMENDED WATER)

- A. Wet all asbestos-containing materials prior to removal with surfactant mixed and applied in accordance with manufacturer's printed instructions.

2.06 ENCAPSULANT

- A. Encapsulant shall be tinted or pigmented so that application when dry is readily discernible.
- B. The encapsulant solvent or vehicle shall not contain a volatile hydrocarbon.

2.08 WASTE DISPOSAL BAGS, DRUMS, AND CONTAINERS

- A. Provide 6 mil polyethylene disposal bags printed with asbestos caution labels. Bags shall also be imprinted with U.S. Department of Transportation required markings.
- B. Provide 30 or 55 gallon capacity fiber, plastic, or metal drums capable of being sealed air and water tight if asbestos waste has the potential to damage or puncture disposal bags. Affix asbestos caution labels on lids and at one-third points around drum circumference to assure ready identification.
- C. Containers and bags must be labeled in accordance with 40 CFR Part 61 NESHAPS and applicable regulations. When the bags/containers are moved to the lockable hardtop dumpster from the waste decontamination system washroom, the bags must also be appropriately labeled with the date they are moved on the bag/container in waterproof markings.
- D. Labeled ACM waste containers or bags shall not be used for non-ACM waste or trash. Any material placed in labeled containers or any material placed in bags, whether the bag is turned inside out or not, shall be handled and disposed of as RACM waste.

2.09 HEPA VACUUM EQUIPMENT

- A. All vacuuming performed under this contract shall be performed with High Efficiency Particulate Air (HEPA) filter equipped industrial vacuums conforming to ANSI Z9.2.
- B. Provide tools and specialized equipment including scraping nozzles with integral vacuum hoods connected to a HEPA vacuum with flexible hose.

2.10 POWER TOOLS

- A. Any power tools used to drill, cut into, or otherwise disturb asbestos material shall be manufacturer equipped with HEPA filtered local exhaust ventilation

2.11 FIRE RETARDANT POLYETHYLENE SHEETING

- A. All polyethylene (plastic) sheeting used on the Project (including but not limited to sheeting used for critical and isolation barriers, fixed objects, walls, floors, ceilings, waste container) shall be at least 6 mil fire retardant sheeting.
- B. Decontamination enclosure systems shall utilize at least 6 mil opaque fire retardant plastic sheeting. At least two (2) layers of 6 mil reinforced fire retardant plastic sheeting shall be used for the flooring.

PART 3 EXECUTION

3.01 GENERAL REQUIREMENTS

- A. Should visible emissions or water leaks be observed outside the Work Area, immediately stop Work and institute emergency procedures per applicable regulations. Should there be elevated fiber levels outside the Work Area, immediately stop Work and institute emergency procedures per applicable regulations.

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All costs incurred in decontaminating such non-Work Areas and the contents thereof shall be borne by the Contractor, at no additional cost to the Owner.

- B. Current medical surveillance approval, fit test reports, Contractor's Worker Acknowledgments, and valid NYS DOL Asbestos Handler certification cards shall be on site prior to admittance of any Contractor's employees to the asbestos Work Area.
- C. Hard Copies of the following submittals, documentation, and postings shall be maintained on-site by the Contractor during abatement activities at a location approved by the Abatement Project Monitor:
 - 1. Valid Contractor license issued by New York State Department of Labor.
 - 2. Certification, Worker Training, Medical Surveillance, Acknowledgment(s):
 - a. NYS DOL Asbestos Handler certification cards for each person employed in the removal, handling, or disturbance of asbestos.
 - b. Evidence that Workers have received proper training required by the regulations and the medical examinations required by OSHA 29 CFR 1926.1101.
 - c. Documentation that Workers have been fit tested specifically for respirators used on the Project.
 - 3. Daily OSHA personal air monitoring results.
 - 4. NYS Department of Health ELAP certification for the laboratory that will be analyzing the OSHA personal air samples.
 - 5. Disposal Site/Landfill Permit from applicable regulatory agency.
 - 6. Transfer Facility Permit (if used) from applicable regulatory agency.
 - 7. Valid Waste Transporter NYS Part 364 permit for all transporters.
 - 8. Valid State Waste Transport vehicle permit for all transporters for each State the waste is being transported through to reach the Disposal Facility/Landfill.
 - 9. Valid US DOT vehicle permits for all Transporters.
 - 10. Current ELAP Certificate for laboratory performing analysis of OSHA personal air monitoring samples
 - 11. Special Waste Characterization Profile, if required by the disposal site/landfill.
 - 12. Regulatory Project notifications and amended notifications.
 - 13. Applicable regulations.
 - 14. Safety Data Sheets of supplies/chemicals used on the Project.
 - 15. Approved Abatement Work Plan.
 - 16. List of emergency telephone numbers.
 - 17. Magnahelic manometer semi-annual calibration certification.
 - 18. Waste Shipment Record Log.
 - 19. Daily Project Log.
 - 20. Work Area Entry/Exit Logs, for each personal decontamination unit.
 - 21. Contract documents (environmental survey report, specifications and drawings).
- D. A floor plan showing the areas of the building under abatement and the location of all fire exits in said areas shall be prominently posted in the building lobby or comparable location, along with a notice stating the location within the building of the negative air cutoff switch required under applicable regulations.
- E. Hard Copies of the following documentation shall be maintained on-site by the Abatement Project Monitor during abatement activities:
 - 1. Valid Contractor license issued by New York State Department of Labor.
 - 2. Air Sample Log.
 - 3. Air sample laboratory results with chain of custody and sample location plans.
 - 4. Project monitor daily log and a daily list of workers/supervisors onsite.

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5. A copy of ASTM Standard E1368 "Standard Practice for Visual Inspection of Asbestos Abatement Projects."
 6. Calibration Chart for rotometer(s) used on-site.
 7. Project documents (environmental survey report, specifications and drawings).
- F. The Work Area must be vacated by building occupants prior to decontamination enclosure construction and Work Area preparation.
- G. All demolition necessary to access asbestos-containing materials for removal must be conducted within negative pressure enclosures by licensed asbestos handlers. Demolition debris may be disposed of as construction and demolition debris provided the Abatement Project Monitor determines that it is not contaminated with asbestos and there has been no disturbance of ACM within the enclosure. If the demolition debris is determined to be contaminated or ACM has been disturbed, it must be disposed of as RACM asbestos waste.

3.02 PERSONAL DECONTAMINATION ENCLOSURE

- A. Provide personal decontamination enclosure contiguous to the Work Area or as per Variance. The decontamination enclosure shall be attached to the Work Area and not located within it unless isolation barriers are installed. If the decontamination chamber is accessible to the public it shall be fully framed and sheathed to prevent unauthorized entry.
- B. Access to the Work Area will be from the clean room through an airlock to the shower and through an airlock to the equipment room. Each airlock shall be a minimum of three (3) feet from door to door. Additional airlocks shall be provided as required by applicable regulations for remote decontamination enclosures.
- C. The decontamination enclosure ceiling and walls shall be covered with one (1) layer of opaque 6 mil fire retardant polyethylene sheeting. Two (2) layers of reinforced 6 mil fire retardant polyethylene sheeting shall be used to cover the floor.
- D. The entrance to the clean room shall have a lockable door along with adequate small openings for Work Area make-up air. Provide suitable lockers for storage of Worker's street clothes. Storage for respirators along with replacement filters and disposable towels shall also be provided.
- E. Provide a temporary shower with individual hot and cold water supplies and faucets. Provide a sufficient supply of soap and shampoo. There shall be one (1) shower for every six Workers. The shower room shall be constructed in such a way so that travel through the shower chamber shall be through the shower. The shower shall not be able to be bypassed.
- F. Shower water shall be drained, collected and filtered through a system with at least a 5.0 micron particle size collection capability containing a series of several filters with progressively smaller pore sizes to avoid rapid clogging of the system. The filtered waste water shall then be discharged in accordance with applicable codes and the contaminated filters disposed of as RACM asbestos waste.
- G. The equipment room shall be used for the storage of tools and equipment. A walk-off pan filled with water shall be located in the Work Area outside the equipment room for Workers to clean foot coverings when leaving the Work Area. A labeled 6 mil plastic ACM waste bag for collection of contaminated clothing shall be located in this room.
- H. The personal decontamination enclosure shall be cleaned and disinfected minimally at the end of each Work shift and as otherwise directed by the Abatement Project Monitor.

3.03 WASTE DECONTAMINATION ENCLOSURE

- A. Provide a waste decontamination enclosure contiguous to the Work area or as per Variance. The decontamination enclosure shall be attached to the Work Area and not located within it unless isolation barriers are installed. If the decontamination chamber is accessible to the public it shall be fully framed and sheathed to prevent unauthorized entry.
- B. The waste decontamination enclosure system shall consist of a holding area, airlock and washroom. The airlock shall be a minimum of three (3) feet from door to door. The entrance to the holding area shall have a lockable door.
- C. The decontamination enclosure ceiling and walls shall be covered with one (1) layer of opaque 6 mil fire retardant polyethylene sheeting on walls and ceiling. Two (2) layers of reinforced 6 mil fire retardant polyethylene sheeting shall be used to cover the floor.
- D. Where there is only one egress from the Work Area, the holding area of the waste decontamination enclosure system may branch off from the personal decontamination enclosure equipment room, which then serves as the waste wash room.
- E. The waste wash room water shall be drained, collected, and filtered through a system with at least a 5.0 micron particle size collection capability containing a series of several filters with progressively smaller pore sizes to avoid rapid clogging of the system. The filtered waste water shall then be discharged in accordance with applicable codes and the contaminated filters disposed of as RACM asbestos waste.
- F. In small asbestos Projects where only one (1) egress from the Work Area exists, the shower room may be used as a waste washroom. In this instance, the clean room shall not be used for waste storage, but shall be used for waste transfer to carts, which shall immediately be removed from this enclosure.

3.04 WORK AREA ENTRY AND EXIT PROCEDURES

- A. Access to and from the asbestos Work Area is permitted only through the personal decontamination enclosure unless otherwise stipulated in a Variance.
- B. Workers shall sign the Work Area entry/exit log (located in the decontamination clean room) upon every entry and exit.
- C. The following procedures shall be followed when entering the Work Area:
 - 1. Before entering the Work Area, Workers shall proceed to the clean room, remove all street clothes, and don protective clothing, equipment, and respirators.
 - 2. Workers shall proceed from the clean room through the shower room and the equipment room and into the Work Area.
- D. The following procedures shall be followed when exiting the Work Area:
 - 1. Before leaving the Work Area, gross asbestos contamination will be removed by brushing, wet cleaning and/or HEPA vacuuming.
 - 2. In the equipment room, Workers shall remove disposable clothing, but not respirators, and shall place clothing in plastic disposal bags for disposal as contaminated debris prior to entering the shower room.
 - 3. Workers shall shower thoroughly while wearing respirators then wash respirator with soap and water prior to removal.

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4. Upon exiting the shower, Workers shall don new disposable clothing if the Work shift is to continue or street clothes to exit area. Under no circumstances shall Workers enter public non-Work Areas in disposable protective clothing.
- E. If remote decontamination enclosures are permitted by applicable regulations or a Variance, workers shall wear two disposable suits for all phases of Work. Workers exiting the work area shall HEPA vacuum the outer suit, enter the airlock, remove the outer suit and then place it back into the Work Area. A clean second suit shall be donned before exiting the airlock and proceeding to the decontamination enclosure or another work area via the designated pathway.

3.05 WORK AREA PREPARATION

- A. Asbestos danger signs shall be posted at all approaches to the asbestos Work Area. Post all emergency exits as emergency exits only on the Work Area side; post with asbestos caution signs on the non-Work Area side. Provide all non-Work Area stairs and corridors accessible to the asbestos Work Area with warning tapes at the base of stairs and beginning of corridors. Warning tapes shall be in addition to caution signs.
- B. Shut down and lock out the building heating, ventilating, and air conditioning (HVAC) systems. Electrical systems and circuits shall also be shut down unless permitted to remain active per applicable regulations and appropriately protected and labeled. Existing lighting sources shall not be utilized. Provide temporary electric power and lighting as specified herein.
- C. All non-ACM surfaces and objects within the Work Area shall be pre-cleaned using HEPA vacuuming and/or wet-wiping methods. Dry sweeping and any other methods that raise dust shall be prohibited. ACM shall not be disturbed during pre-cleaning.
- D. Movable objects within the Work Area shall be HEPA vacuumed and/or wet-wiped and removed from the Work Area.
- E. All non-movable equipment in the Work Area shall be completely covered with two (2) layers of fire retardant polyethylene sheeting, at least 6 mil in thickness, and secured in place with duct tape and/or spray adhesive. Active Fire Protection System components in the Work Area shall not be covered with fire retardant plastic sheeting or any other obstruction.
- F. Provide enclosure of the asbestos Work Area necessary to isolate it from unsealed areas of the building in accordance with the approved asbestos Work plan and as specified herein.
- G. Provide critical barriers by sealing off all openings including but not limited to windows, diffusers, grills, electrical outlets and boxes, doors, floor drains, and any other penetrations of the Work Area enclosure, using two (2) layers of at least 6 mil fire retardant polyethylene sheeting.
- H. Provide isolation barriers by installing temporary framing and sheathing at openings larger than 32 square feet forming the limits of the asbestos Work Area. Sheathing thickness must be a minimum of 3/8 inch and all sheathing shall be caulked and the Work Area side sealed with two (2) layers of 6 mil fire retardant polyethylene sheeting.
- I. Isolation barriers shall be installed at all elevator openings in the Work Area. Elevators running through the regulated abatement work area shall be shut down or isolated as per applicable regulations. Elevator controls shall be modified so that elevators bypass the Work Area.

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- J. Provide two (2) independent layers of 6 mil fire retardant polyethylene sheeting over all floor, wall, and ceiling surfaces. Each sheet/layer shall be individually applied and secured with tape, not folded over. Isolation barriers shall also be covered with two (2) independent layers (for a total of four (4) layers). Sheets shall be secured with duct tape. All joints in fire retardant polyethylene sheeting shall overlap 12" minimum. Carpeting left in place shall be covered with 3/8-inch plywood sheathing prior to plasticizing.
- K. Unless otherwise specified for removal, the Contractor shall either protect all fiberglass insulation on piping, ductwork, tanks, etc. in the Work Area using two (2) layers of 6 mil fire retardant polyethylene or remove the insulation as asbestos-containing waste. If the Contractor elects to remove the fiberglass insulation, he/she shall be responsible for reinsulation, if piping is required to be insulated.
- L. Frame out emergency exits. Provide double layer 6 mil fire retardant polyethylene sheeting and tape seal opening. Post as emergency exits only and mark with photoluminescent paint or signage. Provide a cutting tool on the Work Area side of exit.
- M. Remove all items attached to or in contact with ACM only after the Work Area enclosure is in place. HEPA vacuum and wet wipe with amended water all removed items prior to their removal from the Work Area and before the start of asbestos removal operations.
- N. Suspended ceiling tiles shall only be removed after Work Area preparation is complete. If possible, non-contaminated ceiling tiles shall be HEPA vacuumed and removed from the Work Area before asbestos removals begin. Contaminated ceiling tiles and porous ceiling tiles in work areas with ACM debris located above the ceiling shall be disposed of as RACM asbestos waste.

3.06 NEGATIVE AIR PRESSURE FILTRATION SYSTEM

- A. Provide a portable asbestos filtration system that develops a minimum pressure differential of negative 0.02 inches of water column within all full enclosure areas relative to adjacent unsealed areas and that provides a minimum of four (4) air changes per hour in the Work Area during abatement and six (6) air changes for non-friable flooring and/or mastic removal.
- B. Such filtration systems must be made operational after critical and isolation barriers are installed but before wall, floor, and ceilings are plasticized and shall be operated 24 hours per day during the entire Project until the final cleanup is completed and satisfactory results of the final air samples are received from the laboratory.
- C. The system shall include a series of pre-filters and filters to provide High Efficiency Particulate Air (HEPA) filtration of particles down to 0.3 microns at 100% efficiency and below 0.3 microns at 99.9% efficiency. Provide sufficient replacement filters to replace pre-filters every 2 hours, secondary pre-filters every 24 hours, and primary HEPA filters every 600 hours of operation. HEPA filter sides shall be marked with the date of installation during all new HEPA filter installations on the Project.
- D. A minimum of one (1) additional filtration unit of at least the same capacity as the primary unit(s) shall be installed and fully functional to be used during primary unit (s) filter changing and in case of primary failure.
- E. If the containment area includes either the entire floor of the building or an area greater than 15,000 square feet on any floor, install a negative air cut off switch, similar to NYC DEP regulatory requirements.

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- F. Upon electric power failure or shut-down of any filtration unit, all abatement activities shall stop immediately and only resume after power is restored and all filtration units are fully operating. For shut-downs longer than one-half hour, all openings into the Work Area, including the decontamination enclosures, shall be sealed.
- G. The Contractor shall provide a manometer to verify negative air pressure. Manometers shall be read twice daily and recorded within the Supervisor's Daily Project Log.
- H. There shall be at least a four (4) hour settling period after the Work Area is fully prepared, small and large projects only, as defined by 12 NYCRR Part 56, and the negative filtration units have been started to ensure integrity of the barriers.
- I. Once installed and operational, the Contractor's Supervisor shall conduct daily inspections of the Work Area to ensure the airtight integrity of the enclosure and operation of the negative air system. Findings shall be recorded within the Daily Project Log. Inspections shall also be conducted on days when no abatement activities are in progress.

3.07 REMOVAL OF ASBESTOS-CONTAINING MATERIALS

- A. If new (previously unidentified) suspect ACM is discovered during the course of a Project, the Owner or Owner's Representative shall be notified. The Contractor is prohibited from collecting bulk samples. The Designer of Record shall have bulk samples collected by a dually certified NYS DOL asbestos inspector to determine asbestos content.
- B. Definition of Substrate – The underlying support, foundation or base (e.g. wood lathe, wire screen, concrete, etc.) to which a single layer or multilayered system (e.g. plaster, roofing, etc.) is applied.
- C. Asbestos-containing materials shall be removed in accordance with the Contract Documents and the approved Asbestos Work Plan. Only one (1) type of ACM shall be abated at a time within a Work Area. Where there are multiple types of ACM requiring abatement, applicable regulations procedures for sequential abatement shall be followed.
- D. Sufficiently wet asbestos materials with a low pressure, airless fine spray of surfactant to ensure full penetration to substrate prior to material removal. Re-wet material that does not display evidence of saturation.
- E. One (1) Worker shall continuously apply amended water while ACM is being removed. All layers of ACM shall be removed to the underlying substrate (e.g. concrete, roof deck, piping, etc.), unless stated otherwise in the contract documents.
- F. Perform cutting, drilling, abrading, or any penetration or disturbance of asbestos-containing material in a manner to minimize the dispersal of asbestos fibers into the air and may require a NYS DOL site specific variance. Use equipment and methods specifically designed to limit generation of airborne asbestos particles. All power operated tools used shall be provided with manufacturer equipped HEPA filtered local exhaust ventilation.
- G. Upon removal of ACM from the substrate, the newly exposed surfaces shall be HEPA vacuumed and/or wet cleaned. Surfaces must be thoroughly cleaned using necessary methods and any required solvents to completely remove any adhesive, mastic, etc.
- H. All removed material shall be placed into 6 mil plastic disposal bags or other suitable container upon detachment from the substrate. ACM is not permitted to lie on the floor for any period of time. Cleanup

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of accumulations of loose debris or waste shall be performed whenever there is enough accumulation to fill a single bag or container and minimally at the end of each work shift.

- I. Large components shall be wrapped in two (2) layers of 6 mil polyethylene sheeting. Sharp components likely to tear disposal bags shall be placed in fiber drums or boxes and then wrapped with sheeting.
- J. Power or pressure washers are not permitted for asbestos removal. Power or pressure washers are allowed during clean-up procedures only if stated in an approved Site-Specific Variance and allowed by the Owner.
- K. All open ends of pipe and duct insulation not scheduled for removal shall be encapsulated using lag cloth.
- L. All construction and demolition debris determined by the Environmental Consultant to be contaminated with asbestos shall be handled and disposed of as RACM asbestos waste.
- M. The use of metal shovels, metal dust pans, etc. are not permitted inside the work area.

3.08 EQUIPMENT AND WASTE CONTAINER DECONTAMINATION AND REMOVAL PROCEDURES

- A. External surfaces of contaminated containers and equipment shall be cleaned by wet cleaning and/or HEPA vacuuming in the Work Area before moving such items into the waste decontamination enclosure system airlock by persons assigned to this duty. The persons in the Work Area shall not enter the airlock. No gross removal operations are permitted when waste transfer is in progress.
- B. The containers and equipment shall be removed from the airlock by persons stationed in the washroom during waste removal operations. The external surfaces of containers and equipment shall be cleaned a second time by wet cleaning.
- C. The cleaned containers of asbestos material and equipment are to be dried of any excessive pooled or beaded liquid, placed in uncontaminated 6 mil plastic bags or sheeting, as the item's physical characteristics demand, and sealed airtight.
- D. The clean recontainerized items shall be moved into the airlock that leads to the holding area. Workers in the washroom shall not enter this airlock.
- E. Containers and equipment shall be moved from the airlock and into the holding area by persons dressed in clean personal protective equipment, who have entered from the holding area.
- F. The cleaned containers of asbestos material and equipment shall be placed in water tight carts with doors or tops that shall be closed and secured. These carts shall be held in the holding area until transfer to the waste trailer/container. The carts shall be wet cleaned and/or HEPA vacuumed at least once each day.
- G. The exit from the decontamination enclosure system shall be secured to prevent unauthorized entry.
- H. Where the waste removal enclosure is part of the personal decontamination enclosure, waste removal shall not occur during shift changes or when otherwise occupied. Precautions shall be taken to prevent short circuiting and cycling of air outward through the shower and clean room.

3.09 WORK AREA DECONTAMINATION, CLEANING, AND CLEARANCE PROCEDURES

- A. Following completion of gross abatement and after all accumulations of asbestos waste materials have been containerized, the following decontamination procedures shall be followed unless modified by a Variance.
- B. First Cleaning:
 - 1. All bagged asbestos waste and unnecessary equipment shall be decontaminated and removed from the Work Area.
 - 2. All surfaces in the Work Area shall be wet cleaned, except active fire protection system components that may be damaged by water. A wet-purpose shop vacuum may be used to pick up excess liquid, and may either be decontaminated prior to removal from the Work Area or disposed of as RACM asbestos waste.
 - 3. The Abatement Project Monitor shall conduct a visual inspection of the Work Area for cleanliness and completion of abatement and document the results in the project log accordingly.
 - 4. The Contractor shall then apply a thin coat of encapsulant to all surfaces in the Work Area that were not the subject of removal. In no event shall encapsulant be applied to any surface that was the subject of removal prior to obtaining satisfactory air monitoring results. Encapsulants shall be pigmented or tinted to provide an indication for completeness of coverage. The Abatement Project Monitor shall determine adequacy of coverage.
 - 5. After the encapsulant has been applied and the required waiting/settling and drying time has elapsed, the first layer of fire retardant polyethylene sheeting shall then be removed and bagged as RACM asbestos waste.
- C. Second Cleaning
 - 1. All surfaces in the Work Area shall be HEPA vacuumed and then wet cleaned. Wet cleaning of active fire protection system components is not necessary if damage may occur.
 - 2. The Abatement Project Monitor shall conduct a second visual inspection of the Work Area for cleanliness and document the results in the project log accordingly.
 - 3. After the required waiting/settling and drying time has elapsed, the second layer of fire retardant polyethylene sheeting shall be removed and bagged as RACM asbestos waste.
- D. Third Cleaning
 - 1. All surfaces in the Work Area shall be HEPA vacuumed and then wet cleaned. Wet cleaning of active fire protection system components is not necessary if damage may occur.
 - 2. After the required waiting/settling and drying time has elapsed, the Abatement Project Monitor shall conduct a third visual inspection of the Work Area for cleanliness and document the results in the project log accordingly.
 - 3. After satisfactory APM visual inspection, aggressive final clearance air sampling shall then be conducted by the APM provided no visible asbestos debris/residue; pools of liquid, or condensation remains. NOTE: TEM samples should be used vs. PCM if demolition or other dust-generating evolutions are taking place in adjacent areas, as evident from excessive loading.
 - 4. Upon receipt of satisfactory final clearance air sampling results, the negative air pressure equipment can be shut down and the isolation and critical barriers removed and bagged as RACM asbestos waste.
- E. After isolation and critical barriers are removed, the Abatement Project Monitor and Contractor's Supervisor shall inspect the Work Area for cleanliness. If necessary, additional cleaning shall be performed by the Contractor as directed by the Abatement Project Monitor. Following the satisfactory inspections, the decontamination enclosures shall be removed.

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- F. As a result of any visual inspection by the Abatement Project Monitor or should air sampling results indicate high fiber levels, the Contractor will clean or reclean the affected areas at no additional expense to the Owner. Clearance air samples shall be collected again if previous results failed, at no additional expense to the Owner. The Contractor shall be back-charged for the additional clearance air sample collection and analysis.

3.10 TENT ENCLOSURES

- A. Tent enclosures may only be used where specifically permitted by applicable regulations or a Variance.
- B. The Contractor shall restrict access to the immediate area where tent removal procedures are taking place using barrier tape and/or construction barriers. Caution signs shall be posted.
- C. Personal and waste decontamination enclosures shall be constructed. Configuration shall be as required by Project size. Remote personal decontamination enclosure may be allowed by variance.
- D. The Work Area shall be precleaned. All objects and equipment that will remain in the restricted area during abatement shall be sealed with two (2) layers of six mil fire retardant polyethylene and tape.
- E. The tent shall be a single use barrier constructed with a rigid frame and at least two (2) layers of 6 mil fire retardant polyethylene unless one (1) layer of 6 mil fire retardant polyethylene is otherwise permitted by applicable regulations. All seams shall be sealed airtight using duct tape and/or spray adhesive.
- F. The tent shall be constructed with at least one (1) airlock for worker/waste egress.
- G. A monometer shall be used for all enclosures.
- H. Negative air shall be maintained at four (4) air changes per hour for non-friable and glovebag abatement tent enclosure work areas. Eight (8) air changes shall be maintained for friable gross removal tent enclosure work areas.
- I. OSHA compliance air monitoring is required per section 1.09.
- J. ACM removal shall follow procedures defined in section 3.07.
- K. Waste material shall be placed in properly labeled 6 mil plastic bags or other appropriate containers. The outside of the bags or containers shall be wet wiped and/or HEPA vacuumed in the wash room and shall then be placed in a second bag/container before being transferred to the waste storage container. All transportation of waste bags and containers outside the Work Area shall be in watertight carts. These carts shall be held in the holding area until transfer to the waste storage container. The carts shall be wet cleaned and/or HEPA vacuumed at least once each day.
- L. Following completion of gross abatement and after all accumulations of asbestos waste materials have been containerized, the following decontamination procedures shall be followed.
 - 1. All bagged asbestos waste and unnecessary equipment shall be decontaminated and removed from the Work Area.
 - 2. All surfaces in the Work Area shall be wet cleaned. A wet-purpose shop vacuum may be used to pick up excess liquid, and shall be decontaminated prior to removal from the Work Area.
 - 3. The asbestos supervisor shall perform a visual inspection of the work area(s) followed by the APM prior to applying the encapsulation.
 - 4. The Contractor shall then apply a thin coat of encapsulant to all non-removal surfaces covered with plastic in the Work Area. In no event shall encapsulant be applied to any surface that was

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the subject of removal prior to obtaining satisfactory air monitoring results. Encapsulants shall be pigmented or tinted to provide an indication for completeness of coverage. The APM shall determine adequacy of coverage.

5. After the waiting/settling/drying time requirements have elapsed, the Abatement Project Monitor shall conduct a visual inspection of the Work Area for cleanliness and completion of abatement. The APM shall document the results of the visual inspection in the Project Monitor Log and Contractor's Daily Project Log.
6. After satisfactory APM visual inspection, aggressive final clearance air sampling shall then be conducted by the APM.
7. Upon receipt of satisfactory final clearance air sampling results, the tent shall be collapsed into itself, placed in suitable disposal bags, and transported to the waste decontamination enclosure. Isolation and critical barriers shall then be removed and bagged as RACM asbestos waste followed by satisfactory visual inspections by the project supervisor and the APM for cleanliness.

3.11 GLOVEBAG REMOVAL

- A. Glovebag removals may only be used as specifically permitted by applicable regulations or a Variance. Glovebags may only be used on piping.
- B. In addition to conformance with applicable regulations and Variances, glovebag removals are only permitted to be conducted within full containments or tent enclosures complying with these specifications.
- C. The Contractor shall restrict access to the immediate area where tent/glovebag removal procedures are taking place using barrier tape and/or construction barriers. Caution signs shall be posted.
- D. Personal and waste decontamination enclosures shall be constructed. Configuration shall be as required by Project size. Remote personal decontamination enclosure may be allowed by variance.
- E. Glovebag removals shall utilize commercially available glovebags of at least 6 mil thickness. Use shall be in accordance with the manufacturer's instructions and the following minimum requirements:
 1. The sides of the glovebag shall be cut to fit the size pipe being removed. Tools shall be inserted into the attached tool pocket.
 2. The glovebag shall be placed around the pipe and the open edges shall be folded and sealed with staples and duct tape. The glovebag shall also be sealed at the pipe to form a tight seal.
 3. Openings shall be made in the glovebag for the wetting tube and HEPA vacuum hose. The opening shall be sealed to form a tight seal.
 4. All glovebags shall be smoke tested by the Abatement Project Monitor under negative pressure using the HEPA vacuum before removal operations commence. Glovebags that do not pass the smoke test shall be resealed and then retested.
 5. After first wetting the materials to be removed, removal may commence. ACM shall be continuously wetted. After removal of the ACM, the piping shall be scrubbed or brushed so that no visible ACM remains. Open ends of pipe insulation shall be encapsulated.
 6. After the piping is cleaned, the inside of the glovebag shall be washed down and the wetting tube removed. Using the HEPA vacuum, the glovebag shall be collapsed and then twisted and sealed with tape with the ACM at the bottom of the bag.
 7. A disposal bag shall be placed around the glovebag that is then detached from the pipe. The disposal bag is then sealed and transferred through the wash room to the waste storage container.
- F. After glovebag removals are complete, containment/tent decontamination procedures shall be followed.

3.12 REMOVALS OF EXTERIOR NON-FRIABLE ACM

- A. Except as modified by this section, removal of exterior non-friable ACM shall conform to all provisions of this specification.
- B. Unless Variances have been otherwise obtained, removals shall be conducted in accordance with the provisions of applicable regulations.
- C. The Work Area shall be the area from which ACM materials are being removed and shall extend 25 feet from the perimeter of the removal area.
- D. Non-certified Workers are not allowed in the Work Area until the Work Area is cleared by the Abatement Project Monitor.
- E. Personal and waste decontamination enclosures shall be constructed at a location in accordance with the approved Work Plan and applicable regulations. Unless located outside the Work Area, decontamination enclosures are not permitted to be constructed on the roof. Remote personal decontamination enclosure may be allowed by variance.
- F. All openings (including but not limited to operable windows, doors, hatches, vents, ducts, and grilles) one (1) story above, one (1) story below, and within 25 feet of the work area shall be sealed with two (2) layers of 6 mil fire retardant polyethylene.
- G. The removal of the ACM may require the use of scrapers, solvents, mastic removal chemicals, or other methods/procedures to ensure complete removal. Use of mechanical equipment without a tent containment, including, but not limited to chipping gun/hammer is prohibited without an approved NYS DOL site specific variance. Refer to Section 2.10 for other Power tool requirements.
- H. The Contractor is required to provide temporary protection of the building (i.e. roof, window openings, construction joints, etc.) at the end of each Work shift so as to maintain the building in a watertight condition.
- I. All asbestos waste generated shall be containerized in the work area, prior to transfer to waste storage trailer/container/dumpster. No waste shall remain in the work area at the end of each work shift. All waste shall be disposed of as RACM asbestos waste including projects where waste transfer procedures are modified by Site Specific Variance.
- J. Waste Containers used for waste storage shall be lined with two (2) layers of six mil polyethylene and shall have a hard top (fully enclosed). Canvas cover or open topped dumpsters shall not be used to store asbestos waste unless permitted by a Site-Specific Variance.
- K. Personal protective equipment, including respirators, shall be utilized and worn during all removal operations until the Work Area is cleared by the Abatement Project Monitor.
- L. If air samples collected during abatement indicate any airborne asbestos fiber concentration(s) at or above 0.01 f/cc or the background level, whichever is greater, Work shall be stopped immediately and Work methods shall be altered to reduce the airborne asbestos fiber concentration(s).
- M. Following completion of gross abatement and after all accumulations of asbestos waste materials have been containerized, the following decontamination procedures shall be followed:
 - 1. All surfaces in the Work Area shall be HEPA vacuumed and then wet cleaned.

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2. The Abatement Project Monitor shall conduct a visual inspection of the Work Area for cleanliness and completeness of abatement, prior to conducting final air clearance.
3. Upon obtaining satisfactory clearance air sample results, the isolation and critical barriers shall be removed and bagged as RACM asbestos waste. Following this, the decontamination enclosures shall be removed.

3.13 NON-FRIABLE FLOORING AND/OR MASTIC REMOVALS

- A. The following procedures may only be used for the removal of non-friable flooring and/or mastic materials using manual and chemical methods. These procedures shall not apply to beadblaster use or other abrasive abatement methods.
- B. The Contractor shall restrict access to the immediate area where removals are taking place using barrier tape and/or construction barriers. Caution signs shall be posted.
- C. Personal and waste decontamination enclosures shall be utilized and shall be constructed at a location in accordance with the approved Work Plan. Remote personal decontamination enclosure may be allowed by variance.
- D. The Work Area shall be prepared per applicable regulations.
- E. Negative air shall be maintained at six (6) air changes per hour.
- F. OSHA compliance air monitoring is required per section 1.09.
- G. ACM removal shall follow procedures defined in section 3.07.
- H. Waste material shall be placed in properly labeled 6 mil plastic bags or other appropriate containers. The outside of the bags or containers shall be wet wiped and/or HEPA vacuumed before being passed into the wash room for double- bagging. The bags or containers shall then be transferred to the waste storage container. All transfer of waste bags and containers outside the Work Area shall be in watertight carts.
- I. Following completion of gross abatement and after all accumulations of asbestos waste materials have been containerized, the following decontamination procedures shall be followed.
 1. All bagged asbestos waste and unnecessary equipment shall be decontaminated and removed from the Work Area.
 2. All surfaces in the Work Area shall be wet cleaned. A wet-purpose shop vacuum may be used to pick up excess liquid, and shall be decontaminated prior to removal from the Work Area.
 3. The Abatement Project Monitor shall conduct a visual inspection of the Work Area for cleanliness and completion of abatement.
 4. The Contractor shall then apply a thin coat of encapsulant to all non-removal surfaces covered with plastic in the Work Area. In no event shall encapsulant be applied to any surface that was the subject of removal prior to obtaining satisfactory air monitoring results. Encapsulants shall be pigmented or tinted to provide an indication for completeness of coverage. The Abatement Project Monitor shall determine adequacy of coverage.
 5. After the encapsulant has been applied and the required waiting/settling and drying time has elapsed, aggressive final clearance air sampling shall then be conducted by the Environmental Consultant.
 6. Upon receipt of satisfactory final clearance air sampling results, the isolation and critical barriers shall be removed. Following this, the decontamination enclosures shall be removed.

3.14 RESTORATION OF UTILITIES, FIRESTOPPING, AND FINISHES

- A. After final clearance, remove locks and restore electrical and HVAC systems. All temporary power shall be disconnected, power lockouts removed and power restored. All temporary plumbing shall be removed.
- B. Finishes damaged by asbestos abatement activities including, but not limited to, plaster/paint damage due to duct tape and spray adhesives, and floor tile lifted due to wet or humid conditions, shall be restored prior to final payment.
 - 1. Finishes unable to be restored shall be replaced under this Contract.
 - 2. All foam and expandable foam products and materials used to seal Work Area openings shall be completely removed upon completion of abatement activities.
- C. All penetrations (including, but not limited to, pipes, ducts, etc.) through fire rated construction shall be firestopped using materials and systems tested in accordance with ASTM E814 on Projects where reinsulation is part of the required work.

PART 4 DISPOSAL OF ASBESTOS WASTE

4.01 TRANSPORTATION AND DISPOSAL SITE

- A. The Contractor's Hauler and Disposal Site shall be approved by the Owner. All waste generated during the asbestos project shall be disposed of as RACM asbestos waste.
- B. The Contractor shall give 24 hour notification prior to removing any waste from the site. Waste shall be removed from the site only during normal working hours unless otherwise specified. No waste may be taken from the site unless the Contractor and APM are present and the APM authorizes the release of the waste as described herein.
- C. All waste generated as part of the asbestos project shall be removed from the site within ten (10) calendar days after successful completion of all asbestos abatement work.
- D. Upon arrival at the Project Site, the Hauler must possess and present to the APM a valid US DOT Hazardous Waste Transporter Permit, New York State Department of Environmental Conservation Part 364 Asbestos Hauler's Permit required permit/license. The APM may verify the authenticity of the hauler's permit with the proper authority.
- E. The Hauler, with the Contractor and the APM, shall inspect all material in the transport container prior to taking possession and signing the Asbestos Waste Shipment Records.
- F. Unless specifically approved by the Owner, the Contractor shall not permit any off-site transfers of the waste or allow the waste to be transported or combined with any other off-site asbestos material. The Hauler must travel directly to the disposal site as identified on the notifications with no unauthorized stops.
- G. The APM shall verify the landfill to be used for waste disposal with the waste transporter (driver) and Contractor prior to the waste trailer/dumpster leaving the site. The APM shall confirm the waste transporter firm and landfill are listed on the regulatory notifications for the project and the waste transport vehicle license number is listed on the current NYS DEC Waste Transporter permit.

4.02 WASTE STORAGE CONTAINERS

- A. All waste containers shall be fully enclosed with a hard top and be lockable (i.e. enclosed dumpster, trailer, etc.). No open containers will be permitted on-site (i.e. open dumpster with canvas cover, etc.) unless specifically permitted by a Variance. When asbestos contaminated waste must be kept on the work site overnight or longer, it shall be double bagged and stored in accordance with Federal, State, and local laws.
- B. The APM shall verify that the waste storage container and/or truck tags (license plates) match the information listed on the New York State Department of Environmental Conservation Part 364 permit. Any container not listed on the permit shall be removed from the site immediately.
- C. The container shall be plasticized and sealed with two (2) layers of 6 mil polyethylene. Once on site, it shall be kept locked at all times, except during load out. The waste container shall not be used for storage of equipment or contractor supplies.
- D. While on-site, the container shall be labeled with EPA Danger signage:

DANGER
CONTAINS ASBESTOS FIBERS
AVOID CREATING DUST
CANCER AND LUNG DISEASE HAZARD
- E. The New York State Department of Environmental Conservation Asbestos Hauler's Permit number shall be stenciled on both sides and back of the container.
- F. The container is not permitted to be loaded unless it is properly plasticized, has the appropriate danger signage affixed, and has the permit number appropriately stenciled on the container.
- G. Waste generated off-site is not permitted to be brought onto the Project site and loaded into the waste container.
- H. All asbestos waste removed from the Project site shall be transported directly to the disposal site without any additional waste being added to the container during transport.
- I. The Owner may initiate random checks at the Disposal Site to ensure that the procedures outlined herein are complied with.

4.03 HAULER'S ASBESTOS WASTE SHIPMENT RECORDS

- A. The Hauler's Waste Shipment Record shall be completed by the Contractor and verified by the APM that all the information and amounts are accurate and the proper signatures are in place.
- B. The Waste Shipment Records shall have the appropriate signatures of the APM, the Contractor, and the Hauler representatives prior to any waste being removed from the site.
- C. Copies of the completed Hauler's Waste Shipment Record shall be retained by the APM and the Contractor and shall remain on site for inspection.
- D. Upon arrival at the Disposal Site, the Hauler's Waste Shipment Record shall be signed by the Disposal Facility operator to certify receipt of ACM covered by the Waste Shipment Record.

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- E. The Disposal Facility operator shall return the original Hauler's Waste Shipment Record to the Contractor.
- F. The Contractor shall forward copies of the Hauler's Waste Shipment Record to the APM within 14 days of the waste container being removed from the site. Failure to do so may result in payment being withheld from the Contractor.
- G. Originals of all Waste Shipment Records and Waste Shipment Record Logs shall be submitted by the Contractor to the Owner with the final close-out documentation.

END OF SECTION 02 82 0

CONSTRUCTION TECHNICAL SPECIFICATIONS

SECTION 02831 - CHAIN LINK FENCES AND GATES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. The contract documents apply to the work of this section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Chain-link fences.
 - 2. Gates: swing.

1.3 PERFORMANCE REQUIREMENTS

- A. Delegated Design: Design chain-link fences and gates, including comprehensive engineering analysis by a qualified professional engineer, using performance requirements and design criteria indicated.
- B. Structural Performance: Chain-link fence and gate framework shall withstand the effects of gravity loads and the following loads and stresses within limits and under conditions indicated according to ASCE/SEI 7:
 - 1. Minimum Post Size: Determine according to ASTM F 1043 for framework up to 12 feet (3.66 m) high, and post spacing not to exceed 10 feet (3 m) for IA.
 - a. Wind Loads: 16.8 psf
 - b. Exposure Category: C.
 - c. Fence Height: 12 feet
 - d. Material Group: IA, ASTM F 1043, Schedule 40 steel pipe
- C. Lightning Protection System: Maximum grounding-resistance value of 25 ohms under normal dry conditions.

1.4 SUBMITTALS

- A. Product Data: For each type of product indicated, submit manufacturer's product data for all components mentioned below. Data shall include, where relevant, ASTM data indicating compliance with these specifications.
 - 1. Fence and gateposts, rails, and fittings.
 - 2. Chain-link fabric, reinforcements, and attachments.
 - 3. Gates and hardware.

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- B. Product Certificates: For each type of chain-link fence, and gate, from manufacturer.
- C. Product Test Reports: For framing strength according to ASTM F 1043.

1.5 PROJECT CONDITIONS

- A. Field Measurements: Verify layout information for chain-link fences and gates shown on Drawings in relation to property survey and existing structures. Verify dimensions by field measurements.

1.6 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which Installer agrees to repair or replace components of chain-link fences and gates that fail in materials or workmanship within specified warranty period.
 - 1. Failures include, but are not limited to, the following:
 - a. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
 - 2. Warranty Period: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 CHAIN-LINK FENCE FABRIC

- A. General: Provide fabric in one-piece heights measured between top and bottom of outer edge of selvage knuckle or twist. Comply with CLFMI Product Manual and with requirements indicated below:
 - 1. Fabric Height: 10 feet
 - 2. Steel Wire Fabric: Wire with a diameter of 0.192 inch (4.88 mm)
 - a. Mesh Size: 2 inches (50 mm)
 - 3. Selvage: Twisted top and knuckled bottom.

2.2 FENCE FRAMING

- A. Posts and Rails: Comply with ASTM F 1043 for framing, including rails, braces, and line; terminal; and corner posts. Provide members with minimum dimensions and wall thickness according to ASTM F 1043 based on the following:
 - 1. Fence Height: 144 inches.

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2. Heavy Industrial Strength: Material Group IA, round steel pipe, Schedule 40.
 - a. Line Post: 2.5 inches (168 mm) in diameter.
 - b. End, Corner and Pull Post: 3 inches (168 mm) in diameter.
3. Horizontal Framework Members: top and bottom rails complying with ASTM F 1043.
 - a. Top and Brace Rails: 1.66 inches (42 mm) in diameter.
4. Metallic Coating for Steel Framing:
 - a. Type A, consisting of not less than minimum 2.0-oz./sq. ft. (0.61-kg/sq. m) average zinc coating per ASTM A 123/A 123M or 4.0-oz./sq. ft. (1.22-kg/sq. m) zinc coating per ASTM A 653/A 653M.

2.3 SWING GATES

- A. General: Comply with ASTM F 900 for gateposts and double swing gate types.
 1. Gate Leaf Width: 72 inches.
 2. Gate Fabric Height: More than 72 inches (1830 mm).
- B. Pipe and Tubing:
 1. Zinc-Coated Steel: Comply with ASTM F 1043 and ASTM F 1083; protective coating and finish to match fence framing.
 2. Gate Posts: 3-inch diameter, round tubular steel.
 3. Gate Frames: 2" diameter, round tubular steel.
- C. Frame Corner Construction: Assembled with corner fitting].
- D. Hardware:
 1. Hinges: 360-degree inward and outward swing.
 2. Latches permitting operation from both sides of gate with provision for padlocking accessible from both sides of gate.
 3. Lock: Manufacturer's standard
 4. Closer:

2.4 FITTINGS

- A. General: Comply with ASTM F 626.
- B. Post Caps: Provide for each post.
 1. Provide line post caps with loop to receive top rail.
- C. Rail and Brace Ends: For each gate, corner, pull, and end post.

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- D. Rail Fittings: Provide the following:
 - 1. Top Rail Sleeves: Pressed-steel or round-steel tubing.
 - 2. Rail Clamps: Line and corner boulevard clamps for connecting bottom rails in the fence line-to-line posts.
- E. Tension and Brace Bands: Pressed steel.
- F. Tension Bars: Steel, length not less than 2 inches (50 mm) shorter than full height of chain-link fabric. Provide one bar for each gate and end post, and two for each corner and pull post, unless fabric is integrally woven into post.
- G. Truss Rod Assemblies: Steel, hot-dip galvanized after threading rod and turnbuckle or other means of adjustment.
 - 1.
- H. Tie Wires, Clips, and Fasteners: According to ASTM F 626.
 - 1. Standard Round Wire Ties: For attaching chain-link fabric to posts, rails, and frames, complying with the following:
 - a. Hot-Dip Galvanized Steel: 0.106-inch- (2.69-mm-) diameter wire; galvanized coating thickness matching coating thickness of chain-link fence fabric.
- I. Finish:
 - 1. Metallic Coating for Pressed Steel or Cast Iron: Not less than 1.2 oz. /sq. ft. (366 g /sq. m) zinc.

2.5 GROUT AND ANCHORING CEMENT

- A. Non-shrink, Nonmetallic Grout: Premixed, factory-packaged, non-staining, non-corrosive, non-gaseous grout complying with ASTM C 1107. Provide grout, recommended in writing by manufacturer, for exterior applications.

2.6 PRIVACY SLATS

- A. Material: PVC, UV-light stabilized, not less than 0.023 inch (0.58 mm) thick; attached to not less than 0.0475-inch- (1.21-mm-) diameter, twisted galvanized wire; sized to fit mesh specified for direction indicated.
- B. Color: As selected by Owner from manufacturer's full range

CONSTRUCTION TECHNICAL SPECIFICATIONS

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine areas and conditions, with Installer present, for compliance with requirements for site clearing, earthwork, pavement work, and other conditions affecting performance of the Work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Stake locations of fence lines, gates, and terminal posts. Indicate locations of utilities and underground structures.

3.3 INSTALLATION, GENERAL

- A. Install chain-link fencing to comply with ASTM F 567 and more stringent requirements indicated.

3.4 CHAIN-LINK FENCE INSTALLATION

- A. Post Excavation: Drill or hand-excavate holes for posts to diameters and spacing's indicated, in firm, undisturbed soil.
- B. Post Setting: Set posts in concrete at maximum spacing of 10', into firm, undisturbed soil.
 - 1. Verify that posts are set plumb, aligned, and at correct height and spacing, and hold in position during setting with concrete or mechanical devices.
 - 2. Concrete Fill: Place concrete around posts to dimensions indicated and vibrate or tamp for consolidation. Protect aboveground portion of posts from concrete splatter.
 - a. Exposed Concrete: Extend 2 inches (50 mm) above grade; shape and smooth to shed water.
 - b. Posts Set into Concrete in Sleeves: Use steel pipe sleeves preset and anchored into concrete for installing posts. After posts have been inserted into sleeves, fill annular space between post and sleeve with non-shrink, non-metallic grout, mixed and placed to comply with anchoring material manufacturer's written instructions, and finished sloped to drain water away from post.
 - c. Posts Set into Voids in Concrete: Form or core drill holes not less than 5 inches (125 mm) deeper and 3/4 inch (20 mm) larger than OD of post. Clean holes of loose material, insert posts, and fill annular space between post and concrete with non-shrink, non-metallic grout, mixed and placed to comply with anchoring material manufacturer's written instructions, and finished sloped to drain water away from post.
- C. Terminal Posts: Locate terminal end, corner, and gateposts per ASTM F 567 and terminal pull posts at changes in horizontal or vertical alignment.

CONSTRUCTION TECHNICAL SPECIFICATIONS

- D. Line Posts: Space line posts uniformly at 10 feet (3 m) o.c.
- E. Post Bracing: Install according to ASTM F 567, maintaining plumb position and alignment of fencing. Diagonally brace terminal posts to adjacent line posts with truss rods and turnbuckles. Install braces at end and gateposts and at both sides of corner and pull posts.
 - 1. Locate horizontal braces at mid-height of fabric 72 inches (1830 mm) or higher, on fences with top rail and at two-third fabric height on fences without top rail. Install so posts are plumb when diagonal rod is under proper tension.
- F. Top Rail: Install according to ASTM F 567, maintaining plumb position and alignment of fencing. Run rail continuously through line post caps, bending to radius for curved runs and terminating into rail end attached to posts or post caps fabricated to receive rail at terminal posts. Provide expansion couplings as recommended in writing by fencing manufacturer.
- G. Bottom Rails: Install and secure to posts with fittings.
- H. Chain-Link Fabric: Apply fabric to outside of enclosing framework. Leave 2 inches (50 mm) between finish grade or surface and bottom selvage unless otherwise indicated. Pull fabric taut and tie to posts, rails, and tension wires. Anchor to framework so fabric remains under tension after pulling force is released.
- I. Tension or Stretcher Bars: Thread through fabric and secure to end, corner, pull, and gate posts with tension bands spaced not more than 15 inches (380 mm) o.c.
- J. Tie Wires: Use wire of proper length to firmly secure fabric to line posts and rails. Attach wire at one end to chain-link fabric, wrap wire around post a minimum of 180 degrees, and attach other end to chain-link fabric per ASTM F 626. Bend ends of wire to minimize hazard to individuals and clothing.
 - 1. Maximum Spacing: Tie fabric to line posts at 12 inches (300 mm) o.c. and to braces at 24 inches (610 mm) o.c.
- K. Fasteners: Install nuts for tension bands and carriage bolts on the side of the fence opposite the fabric side. Peen ends of bolts or score threads to prevent removal of nuts.

3.5 GATE INSTALLATION

- A. Install gates according to manufacturer's written instructions, level, plumb, and secure for full opening without interference. Attach fabric as for fencing. Attach hardware using tamper-resistant or concealed means. Install ground-set items in concrete for anchorage. Adjust hardware for smooth operation and lubricate where necessary.

3.6 ADJUSTING

- A. Gates: Adjust gates to operate smoothly, easily, and quietly, free of binding, warp, excessive deflection, distortion, nonalignment, misplacement, disruption, or malfunction, throughout entire operational range. Confirm that latches and locks engage accurately and securely without forcing or binding.

CONSTRUCTION TECHNICAL SPECIFICATIONS

- B. Lubricate hardware and other moving parts.

END OF SECTION 02831

INSPECTION REPORT FOR ASBESTOS-CONTAINING MATERIALS

Performed at:

Welwyn Preserve
100 Crescent Beach Road, Glen Cove, NY

Performed for:

County of Nassau – Department of Public Works

1194 Prospect Avenue
Westbury, NY 11590

Prepared by:



LiRo Engineers, Inc.

235 East Jericho Turnpike
Mineola, NY 11501

LiRo Job No. 22-180-0248

November 15, 2022

To assure that the removal of the aforementioned ACM is properly and effectively carried out, the following recommendations are proposed by LiRo Engineers, Inc.

- A. Develop and implement a schedule that outlines the time frame for removal of asbestos-containing materials.
- B. Develop complete and concise specifications to effectively deal with removal of the asbestos-containing material. These specifications should be developed to comply with all applicable Federal, State, and Local regulations.
- C. Retain the service of an independent testing laboratory to monitor the quality of the air before, during, and after the removal work. Retain all documentation and correspondence from the removal contractor, the testing laboratory, and related items in a permanent record.

5.0 AREAS NOT ACCESSIBLE

LiRo Engineers, Inc. inspected and sampled materials, which were observable and accessible to the survey team, at the time of inspection. It is possible however, that additional suspect asbestos-containing material (ACM) may exist inside other concealed spaces, which were not accessible without using destructive means. Any materials that have not been tested and/or found asbestos positive must be presumed asbestos-containing material (PACM).

6.0 REPORT CERTIFICATIONS

LiRo Engineers, Inc. certifies that the information contained herein is based on the physical and visual inspections conducted by LiRo Engineers, Inc. and data collected during the inspection survey.



David Peters
Project Engineer



Christopher Zaroni
Vice President



8.0 APPENDIX A

ANALYTICAL RESULTS & CHAIN-OF-CUSTODY



8.1 APPENDIX A.1

ASBESTOS-CONTAINING MATERIALS



LiRo Engineers, Inc.

A LiRo Group Company
3 Aerial Way Syosset, New York 11791

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Facsimile 516.937.5421

222102535

1/4

BULK SAMPLING CHAIN-OF-CUSTODY

Site Name/Location: Welwyn Preserve – 100 Crescent Beach Road, Glen Cove, NY	LiRo Job #:
Investigator: Maher Abraham	Date: 10/18/22

HA #	Sample #	SAMPLE LOCATION	MATERIAL DESCRIPTION	F/NF	Condition	Notes
1	1	Garage Bldg - Basement	Residuals Elbow Insulation / Floor Debris	F	Damage	
↓	2	↓	↓	↓	↓	
	3					
2	4	Roof	Membrane Gravel Tar	NF		
↓	5	↓	↓	↓	↓	
	6					
3	7		Roof Membrane			
↓	8	↓	↓	↓	↓	
	9					
4	10	MFL	ceiling plaster white coat	F		
↓	11	↓	↓	↓	↓	
	12					
↓	13					
↓	14					
5	15		Brown coat			
↓	16		↓	↓	↓	
	17					
↓	18					
6	19					
↓	20		Exterior window caulking	NF		
	21		↓	↓	↓	

COMMENTS: Stop at first positive per homogenous area. Analysis all samples by layer.

All results to be reported within 24 Hours (TEM and PLM) *** E-mail results to *** AbrahamM@liro.com & PetersD@liro.com ***

Relinquished By (Print/Date/Time) Maher Abraham 10/19/22	Relinquished By (Print/Date/Time)	Received By (Print/Date/Time) Alexander Voinov 10-19-22 1340	PLM Analysis (signature/time) <i>[Signature]</i> 10/20/22 10:13
Relinquished By (Signature) <i>[Signature]</i> 1324	Relinquished By (Signature)	Received By (Signature) <i>[Signature]</i>	TEM Analysis (signature/time) <i>[Signature]</i> 10/20/22 1237



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2/4

BULK SAMPLING CHAIN-OF-CUSTODY

Site Name/Location: Welwyn Preserve – 100 Crescent Beach Road, Glen Cove, NY	LiRo Job #:
Investigator: Maher Abraham	Date: 10/18/22

HA #	Sample #	SAMPLE LOCATION	MATERIAL DESCRIPTION	F/NF	Condition	Notes
6	22	Garage Bldg 1st Floor	Exterior window crack	NF	Damage	
7	23		Exterior window Glazing			
↓	24		↓	↓		
↓	25					
8	26		Glazed Brick mortar	F		
↓	27		↓	↓		
↓	28					
9	29	Exterior Facade	Facade Brick mortar			
↓	30		↓	↓		
↓	31					
10	32	Laundry Bldg Throughout	wall plaster white coat			
↓	33					
↓	34					
↓	35					
↓	36					
11	37		Brown coat			
↓	38					
↓	39					
↓	40					
↓	41					
12	42		ceiling plaster white coat			

COMMENTS: Stop at first positive per homogenous area. Analysis all samples by layer.

All results to be reported within 24 Hours (TEM and PLM) * E-mail results to *** AbrahamM@liro.com & PetersD@liro.com *****

Relinquished By (Print/Date/Time) Maher Abraham 10/19/22	Relinquished By (Print/Date/Time)	Received By (Print/Date/Time) Alexander Vach 10-19-22 1340	PLM Analysis (signature/time) [Signature] 10/20/22 10:13
Relinquished By (Signature) [Signature] 1321	Relinquished By (Signature)	Received By (Signature) [Signature]	TEM Analysis (signature/time) [Signature] 10/20/22 12:37



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BULK SAMPLING CHAIN-OF-CUSTODY

222102535

3/4

Site Name/Location: Welwyn Preserve – 100 Crescent Beach Road, Glen Cove, NY	LiRo Job #:
Investigator: Maher Abraham	Date: 10/18/22

HA #	Sample #	SAMPLE LOCATION	MATERIAL DESCRIPTION	F/NF	Condition	Notes
12	43	Laundry Bldg - Throatant	Ceiling plaster white coat	F	Damage	
↓	44			↓		
↓	45			↓		
↓	46			↓		
13	47		Brown coat			
↓	48			↓		
↓	49			↓		
↓	50			↓		
↓	51			↓		
14	52	Exterior facade	Facade brick mortar	F		
↓	53			↓		
↓	54			↓		
15	55	Roof	Gravel Tar layer	NF		
↓	56			↓		
↓	57			↓		
16	58		Roof Membrane			
↓	59			↓		
↓	60			↓		
17	61	Greenhouse Bldg Basement Boiler Rm	Big Boiler Insulation/Floor Debris	F		
↓	62			↓		
↓	63			↓		

COMMENTS: Stop at first positive per homogenous area. Analysis all samples by layer.

All results to be reported within 24 Hours (TEM and PLM) *** E-mail results to *** AbrahamM@liro.com & PetersD@liro.com ***

Relinquished By (Print/Date/Time) Maher Abraham 10/19/22	Relinquished By (Print/Date/Time)	Received By (Print/Date/Time) Alexander Vucic 10-19-22 1340	PLM Analysis (signature/time) Adrian 10/20/22 10:13
Relinquished By (Signature) 1321	Relinquished By (Signature)	Received By (Signature) 	TEM Analysis (signature/time) 10/20/22 10:37



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222102535

4/4

BULK SAMPLING CHAIN-OF-CUSTODY

Site Name/Location: Welwyn Preserve – 100 Crescent Beach Road, Glen Cove, NY	LiRo Job #:
Investigator: Maher Abraham	Date: 10/18/22

HA #	Sample #	SAMPLE LOCATION	MATERIAL DESCRIPTION	F/NF	Condition	Notes
18	64	Greenhouse - Basement Boiler Room	Small Boiler Insulation/Floor Debris	F	Damage	
↓	65	↓	↓	↓	↓	
	66					
19	67	Basement open area	Aircell pipe Insulation/Floor Debris			
↓	68	↓	↓			
	69					
20	70	Basement Boiler Room	Chimney Brick mortar			
↓	71	↓	↓	↓		
	72					
21	73	Roof	Roof Membrane/Floor Debris	NF		
↓	74	↓	↓	↓		
	75					
22	76	Throughout	Terra cotta mortar			
↓	77	↓	↓	↓		
	78					

COMMENTS: Stop at first positive per homogenous area. Analysis all samples by layer.

All results to be reported within 24 Hours (TEM and PLM) * E-mail results to *** AbrahamM@liro.com & PetersD@liro.com *****

Relinquished By (Print/Date/Time) Maher Abraham 10/19/22	Relinquished By (Print/Date/Time)	Received By (Print/Date/Time) Alexander Vucic 10-19-22 1340	PLM Analysis (signature/time) 10/20/22 10:13
Relinquished By (Signature) 1321	Relinquished By (Signature)	Received By (Signature) 	TEM Analysis (signature/time) 10/20/22 12:37

Client Name: The Liro Group

Table I
Summary of Bulk Asbestos Analysis Results
 Welwyn Preserve; 100 Crescent Beach Road, Glen Cove, NY

AmeriSci Sample #	Client Sample#	HG Area	Sample Weight (gram)	Heat Sensitive Organic %	Acid Soluble Inorganic %	Insoluble Non-Asbestos Inorganic %	** Asbestos % by PLM/DS	** Asbestos % by TEM
01	1	1	----	----	----	----	Chrysotile 36.4	NA
Location: Garage Bldg - Basement - Residue Elbow Insulation / Floor Debris								
02	2	1	----	----	----	----	NA/PS	NA
Location: Garage Bldg - Basement - Residue Elbow Insulation / Floor Debris								
03	3	1	----	----	----	----	NA/PS	NA
Location: Garage Bldg - Basement - Residue Elbow Insulation / Floor Debris								
04	4	2	0.189	81.7	11.9	6.5	NAD	NAD
Location: Garage Bldg - Roof - Membrane Gravel Tar								
05	5	2	0.337	74.6	5.1	20.2	NAD	NAD
Location: Garage Bldg - Roof - Membrane Gravel Tar								
06	6	2	0.384	29.2	9.6	61.2	NAD	NAD
Location: Garage Bldg - Roof - Membrane Gravel Tar								
07	7	3	0.218	87.1	2.2	10.6	NAD	NA
Location: Garage Bldg - Roof - Roof Membrane								
08	8	3	0.247	58.5	5.0	30.7	Chrysotile 5.8	NA
Location: Garage Bldg - Roof - Roof Membrane								
09	9	3	0.209	95.3	1.5	3.2	NA/PS	NA
Location: Garage Bldg - Roof - Roof Membrane								
10	10	4	----	----	----	----	NAD	NA
Location: Garage Bldg - 1st Fl. - Ceiling Plaster White Coat								
11	11	4	----	----	----	----	NAD	NA
Location: Garage Bldg - 1st Fl. - Ceiling Plaster White Coat								
12	12	4	----	----	----	----	NAD	NA
Location: Garage Bldg - 1st Fl. - Ceiling Plaster White Coat								
13	13	4	----	----	----	----	NAD	NA
Location: Garage Bldg - 1st Fl. - Ceiling Plaster White Coat								
14	14	4	----	----	----	----	NAD	NA
Location: Garage Bldg - 1st Fl. - Ceiling Plaster White Coat								
15	15	5	----	----	----	----	Chrysotile 0.3	NA
Location: Garage Bldg - 1st Fl. - Ceiling Plaster Brown Coat								
16	16	5	----	----	----	----	Chrysotile 0.3	NA
Location: Garage Bldg - 1st Fl. - Ceiling Plaster Brown Coat								

See Reporting notes on last page

Client Name: The Liro Group

Table I
Summary of Bulk Asbestos Analysis Results
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AmeriSci Sample #	Client Sample#	HG Area	Sample Weight (gram)	Heat Sensitive Organic %	Acid Soluble Inorganic %	Insoluble Non-Asbestos Inorganic %	** Asbestos % by PLM/DS	** Asbestos % by TEM
17	17	5	----	----	----	----	Chrysotile <0.25	NA
Location: Garage Bldg - 1st Fl. - Ceiling Plaster Brown Coat								
18	18	5	----	----	----	----	Chrysotile 0.3	NA
Location: Garage Bldg - 1st Fl. - Ceiling Plaster Brown Coat								
19	19	6	----	----	----	----	Chrysotile 0.3	NA
Location: Garage Bldg - 1st Fl. - Ceiling Plaster Brown Coat								
20	20	6	0.300	9.1	73.3	17.6	NAD	NAD
Location: Garage Bldg - 1st Fl. - Exterior Window Caulk								
21	21	6	0.319	10.5	61.2	28.3	NAD	NAD
Location: Garage Bldg - 1st Fl. - Exterior Window Caulk								
22	22	6	0.273	12.9	84.1	3.0	NAD	NAD
Location: Garage Bldg - 1st Fl. - Exterior Window Caulk								
23	23	7	0.369	16.1	66.7	17.2	NAD	NAD
Location: Garage Bldg - 1st Fl. - Exterior Window Glazing								
24	24	7	0.266	12.0	76.9	11.1	NAD	NAD
Location: Garage Bldg - 1st Fl. - Exterior Window Glazing								
25	25	7	0.235	98.3	0.9	0.8	NAD	NAD
Location: Garage Bldg - 1st Fl. - Exterior Window Glazing								
26	26	8	----	----	----	----	NAD	NA
Location: Garage Bldg - 1st Fl. - Glazed Brick Mortar								
27	27	8	----	----	----	----	NAD	NA
Location: Garage Bldg - 1st Fl. - Glazed Brick Mortar								
28	28	8	----	----	----	----	NAD	NA
Location: Garage Bldg - 1st Fl. - Glazed Brick Mortar								
29	29	9	----	----	----	----	NAD	NA
Location: Garage Bldg - Exterior Facade - Facade Brick Mortar								
30	30	9	----	----	----	----	NAD	NA
Location: Garage Bldg - Exterior Facade - Facade Brick Mortar								
31	31	9	----	----	----	----	NAD	NA
Location: Garage Bldg - Exterior Facade - Facade Brick Mortar								
32	32	10	----	----	----	----	NAD	NA
Location: Laundry Building Throughout - Wall Plaster White Coat								

See Reporting notes on last page

Client Name: The Liro Group

Table I
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AmeriSci Sample #	Client Sample#	HG Area	Sample Weight (gram)	Heat Sensitive Organic %	Acid Soluble Inorganic %	Insoluble Non-Asbestos Inorganic %	** Asbestos % by PLM/DS	** Asbestos % by TEM
33	33	10	----	----	----	----	NAD	NA
Location: Laundry Building Throughout - Wall Plaster White Coat								
34	34	10	----	----	----	----	NAD	NA
Location: Laundry Building Throughout - Wall Plaster White Coat								
35	35	10	----	----	----	----	NAD	NA
Location: Laundry Building Throughout - Wall Plaster White Coat								
36	36	10	----	----	----	----	NAD	NA
Location: Laundry Building Throughout - Wall Plaster White Coat								
37	37	11	----	----	----	----	Chrysotile <0.25	NA
Location: Laundry Building Throughout - Wall Plaster Brown Coat								
38	38	11	----	----	----	----	Chrysotile <0.25	NA
Location: Laundry Building Throughout - Wall Plaster Brown Coat								
39	39	11	----	----	----	----	Chrysotile 0.3	NA
Location: Laundry Building Throughout - Wall Plaster Brown Coat								
40	40	11	----	----	----	----	Chrysotile 0.3	NA
Location: Laundry Building Throughout - Wall Plaster Brown Coat								
41	41	11	----	----	----	----	Chrysotile <0.25	NA
Location: Laundry Building Throughout - Wall Plaster Brown Coat								
42	42	12	----	----	----	----	NAD	NA
Location: Laundry Building Throughout - Ceiling Plaster White Coat								
43	43	12	----	----	----	----	NAD	NA
Location: Laundry Building Throughout - Ceiling Plaster White Coat								
44	44	12	----	----	----	----	NAD	NA
Location: Laundry Building Throughout - Ceiling Plaster White Coat								
45	45	12	----	----	----	----	NAD	NA
Location: Laundry Building Throughout - Ceiling Plaster White Coat								
46	46	12	----	----	----	----	NAD	NA
Location: Laundry Building Throughout - Ceiling Plaster White Coat								
47	47	13	----	----	----	----	Chrysotile <0.25	NA
Location: Laundry Building Throughout - Ceiling Plaster Brown Coat								
48	48	13	----	----	----	----	Chrysotile <0.25	NA
Location: Laundry Building Throughout - Ceiling Plaster Brown Coat								

See Reporting notes on last page

Client Name: The Liro Group

Table I
Summary of Bulk Asbestos Analysis Results
 Welwyn Preserve; 100 Crescent Beach Road, Glen Cove, NY

AmeriSci Sample #	Client Sample#	HG Area	Sample Weight (gram)	Heat Sensitive Organic %	Acid Soluble Inorganic %	Insoluble Non-Asbestos Inorganic %	** Asbestos % by PLM/DS	** Asbestos % by TEM
49	49	13	----	----	----	----	Chrysotile <0.25	NA
Location: Laundry Building Throughout - Ceiling Plaster Brown Coat								
50	50	13	----	----	----	----	Chrysotile <0.25	NA
Location: Laundry Building Throughout - Ceiling Plaster Brown Coat								
51	51	13	----	----	----	----	Chrysotile <0.25	NA
Location: Laundry Building Throughout - Ceiling Plaster Brown Coat								
52	52	14	----	----	----	----	NAD	NA
Location: Laundry Building Exterior Facade - Facade Brick Mortar								
53	53	14	----	----	----	----	NAD	NA
Location: Laundry Building Exterior Facade - Facade Brick Mortar								
54	54	14	----	----	----	----	NAD	NA
Location: Laundry Building Exterior Facade - Facade Brick Mortar								
55	55	15	0.152	94.7	1.7	3.6	NAD	NAD
Location: Laundry Building Roof - Gravel Tar Layer								
56	56	15	0.324	68.6	4.0	27.4	NAD	NAD
Location: Laundry Building Roof - Gravel Tar Layer								
57	57	15	0.173	93.5	1.2	5.3	NAD	NAD
Location: Laundry Building Roof - Gravel Tar Layer								
58	58	16	0.220	70.8	6.7	20.4	Chrysotile 2.1	NA
Location: Laundry Building Roof - Roof Membrane								
59	59	16	0.257	68.7	5.2	26.2	NA/PS	NA
Location: Laundry Building Roof - Roof Membrane								
60	60	16	0.295	97.6	0.9	1.5	NA/PS	NA
Location: Laundry Building Roof - Roof Membrane								
61	61	17	----	----	----	----	Chrysotile 57.1	NA
Location: Greenhouse Bldg Basement Boiler Rm. - Big Boiler Insulation / Floor Debris								
62	62	17	----	----	----	----	NA/PS	NA
Location: Greenhouse Bldg Basement Boiler Rm. - Big Boiler Insulation / Floor Debris								
63	63	17	----	----	----	----	NA/PS	NA
Location: Greenhouse Bldg Basement Boiler Rm. - Big Boiler Insulation / Floor Debris								
64	64	18	----	----	----	----	Chrysotile 44.4	NA
Location: Greenhouse - Basement Boiler Rm. - Small Boiler Insulation / Floor Debris								

See Reporting notes on last page

Client Name: The Liro Group

Table I
Summary of Bulk Asbestos Analysis Results
 Welwyn Preserve; 100 Crescent Beach Road, Glen Cove, NY

AmeriSci Sample #	Client Sample#	HG Area	Sample Weight (gram)	Heat Sensitive Organic %	Acid Soluble Inorganic %	Insoluble Non-Asbestos Inorganic %	** Asbestos % by PLM/DS	** Asbestos % by TEM
65	65	18	----	----	----	----	NA/PS	NA
Location: Greenhouse - Basement Boiler Rm. - Small Boiler Insulation / Floor Debris								
66	66	18	----	----	----	----	NA/PS	NA
Location: Greenhouse - Basement Boiler Rm. - Small Boiler Insulation / Floor Debris								
67	67	19	----	----	----	----	Chrysotile 50.0	NA
Location: Greenhouse - Basement Open Area - Aircell Pipe Insulation / Floor Debris								
68	68	19	----	----	----	----	NA/PS	NA
Location: Greenhouse - Basement Open Area - Aircell Pipe Insulation / Floor Debris								
69	69	19	----	----	----	----	NA/PS	NA
Location: Greenhouse - Basement Open Area - Aircell Pipe Insulation / Floor Debris								
70	70	20	----	----	----	----	NAD	NA
Location: Greenhouse - Basement Boiler Rm. - Chimney Brick Mortar								
71	71	20	----	----	----	----	NAD	NA
Location: Greenhouse - Basement Boiler Rm. - Chimney Brick Mortar								
72	72	20	----	----	----	----	NAD	NA
Location: Greenhouse - Basement Boiler Rm. - Chimney Brick Mortar								
73	73	21	0.202	97.4	1.0	1.5	NAD	NAD
Location: Greenhouse - Roof - Roof Membrane / Floor Debris								
74	74	21	0.176	97.0	1.5	1.5	NAD	NAD
Location: Greenhouse - Roof - Roof Membrane / Floor Debris								
75	75	21	0.199	97.4	1.1	1.5	NAD	NAD
Location: Greenhouse - Roof - Roof Membrane / Floor Debris								
76	76	22	----	----	----	----	NAD	NA
Location: Greenhouse - Throughout - Terracotta Mortar								
77	77	22	----	----	----	----	NAD	NA
Location: Greenhouse - Throughout - Terracotta Mortar								
78	78	22	----	----	----	----	NAD	NA
Location: Greenhouse - Throughout - Terracotta Mortar								

See Reporting notes on last page

Client Name: The Liro Group

Table I
Summary of Bulk Asbestos Analysis Results
 Welwyn Preserve; 100 Crescent Beach Road, Glen Cove, NY

AmeriSci Sample #	Client Sample#	HG Area	Sample Weight (gram)	Heat Sensitive Organic %	Acid Soluble Inorganic %	Insoluble Non-Asbestos Inorganic %	** Asbestos % by PLM/DS	** Asbestos % by TEM
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Analyzed by: Karol H. Lu
 Date: 10/20/2022



Reviewed by: Karol H. Lu



**Quantitative Analysis (Semi/Full); Bulk Asbestos Analysis - PLM by Appd E to Subpt E, 40 CFR 763 or NYSDOH ELAP 198.1 for New York friable samples or NYSDOH ELAP 198.6 for New York NOB samples; TEM (Semi/Full) by EPA 600/R-93/116 (or NYSDOH ELAP 198.4; for New York samples). Analysis using Hitachi, Model H7000-Noran 7 System, Microscope, Serial #: 747-05-06. NAD = no asbestos detected during a quantitative analysis; NA = not analyzed; Trace = <1%; (SOF-V) = Sprayed On Fireproofing containing Vermiculite; (SM-V) = Surfacing Material containing Vermiculite; Quantitation for beginning weights of <0.1 grams should be considered as qualitative only; Qualitative Analysis: Asbestos analysis results of "Present" or "NVA = No Visible Asbestos" represents results for Qualitative PLM or TEM Analysis only (no accreditation coverage available from any regulatory agency for qualitative analyses): NVLAP (PLM) 200546-0, NYSDOH ELAP Lab 11480, NJ Lab ID #NY031.

Warning Note: PLM limitation, only TEM will resolve fibers <0.25 micrometers in diameter. TEM bulk analysis is representative of the fine grained matrix material and may not be representative of non-uniformly dispersed debris for which PLM evaluation is recommended (i.e. soils and other heterogenous materials).

**AmeriSci New York**

117 EAST 30TH ST.
NEW YORK, NY 10016
TEL: (212) 679-8600 • FAX: (212) 679-3114

PLM Bulk Asbestos Report

The Liro Group
Attn: Robert Kreuzer
690 Delaware Ave.

Buffalo, NY 14209

Date Received 10/19/22 **AmeriSci Job #** 222102535
Date Examined 10/19/22 **P.O. #**
ELAP # 11480 **Page** 1 **of** 14
RE: Welwyn Preserve; 100 Crescent Beach Road, Glen Cove, NY

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
1	222102535-01	Yes	36.4%
1	Location: Garage Bldg - Basement - Residue Elbow Insulation / Floor Debris		(by NYS ELAP 198.1) by Valeriu Voicu on 10/19/22
Analyst Description: Gray/Beige, Homogeneous, Fibrous, Bulk Material			
Asbestos Types: Chrysotile 36.4 %			
Other Material: Non-fibrous 63.6%			
2	222102535-02		NA/PS
1	Location: Garage Bldg - Basement - Residue Elbow Insulation / Floor Debris		
Analyst Description: Bulk Material			
Asbestos Types:			
Other Material:			
3	222102535-03		NA/PS
1	Location: Garage Bldg - Basement - Residue Elbow Insulation / Floor Debris		
Analyst Description: Bulk Material			
Asbestos Types:			
Other Material:			
4	222102535-04	No	NAD
2	Location: Garage Bldg - Roof - Membrane Gravel Tar		(by NYS ELAP 198.6) by Valeriu Voicu on 10/20/22
Analyst Description: Black, Homogeneous, Non-Fibrous, Bulk Material			
Asbestos Types:			
Other Material: Non-fibrous 6.5%			
5	222102535-05	No	NAD
2	Location: Garage Bldg - Roof - Membrane Gravel Tar		(by NYS ELAP 198.6) by Valeriu Voicu on 10/20/22
Analyst Description: Black, Homogeneous, Non-Fibrous, Bulk Material			
Asbestos Types:			
Other Material: Non-fibrous 20.2%			

PLM Bulk Asbestos Report

Welwyn Preserve; 100 Crescent Beach Road, Glen Cove, NY

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
6 2	222102535-06 Location: Garage Bldg - Roof - Membrane Gravel Tar	No	NAD (by NYS ELAP 198.6) by Valeriu Voicu on 10/20/22
Analyst Description: Black, Homogeneous, Non-Fibrous, Bulk Material Asbestos Types: Other Material: Non-fibrous 61.2%			
7 3	222102535-07 Location: Garage Bldg - Roof - Roof Membrane	No	NAD (by NYS ELAP 198.6) by Valeriu Voicu on 10/20/22
Analyst Description: Black, Homogeneous, Non-Fibrous, Bulk Material Asbestos Types: Other Material: Non-fibrous 10.6%			
8 3	222102535-08 Location: Garage Bldg - Roof - Roof Membrane	Yes	5.8% (by NYS ELAP 198.6) by Valeriu Voicu on 10/20/22
Analyst Description: Black, Homogeneous, Fibrous, Bulk Material Asbestos Types: Chrysotile 5.8 % Other Material: Non-fibrous 30.7%			
9 3	222102535-09 Location: Garage Bldg - Roof - Roof Membrane		NA/PS
Analyst Description: Bulk Material Asbestos Types: Other Material:			
10 4	222102535-10 Location: Garage Bldg - 1st Fl. - Ceiling Plaster White Coat	No	NAD (by NYS ELAP 198.1) by Valeriu Voicu on 10/19/22
Analyst Description: White, Homogeneous, Non-Fibrous, Bulk Material Asbestos Types: Other Material: Non-fibrous 100%			
11 4	222102535-11 Location: Garage Bldg - 1st Fl. - Ceiling Plaster White Coat	No	NAD (by NYS ELAP 198.1) by Valeriu Voicu on 10/19/22
Analyst Description: White, Homogeneous, Non-Fibrous, Bulk Material Asbestos Types: Other Material: Non-fibrous 100%			

Client Name: The Liro Group

PLM Bulk Asbestos Report

Welwyn Preserve; 100 Crescent Beach Road, Glen Cove, NY

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
12 4	222102535-12 Location: Garage Bldg - 1st Fl. - Ceiling Plaster White Coat	No	NAD (by NYS ELAP 198.1) by Valeriu Voicu on 10/19/22
Analyst Description: White, Homogeneous, Non-Fibrous, Bulk Material Asbestos Types: Other Material: Non-fibrous 100%			
13 4	222102535-13 Location: Garage Bldg - 1st Fl. - Ceiling Plaster White Coat	No	NAD (by NYS ELAP 198.1) by Valeriu Voicu on 10/19/22
Analyst Description: White, Homogeneous, Non-Fibrous, Bulk Material Asbestos Types: Other Material: Non-fibrous 100%			
14 4	222102535-14 Location: Garage Bldg - 1st Fl. - Ceiling Plaster White Coat	No	NAD (by NYS ELAP 198.1) by Valeriu Voicu on 10/19/22
Analyst Description: White, Homogeneous, Non-Fibrous, Bulk Material Asbestos Types: Other Material: Non-fibrous 100%			
15 5	222102535-15 Location: Garage Bldg - 1st Fl. - Ceiling Plaster Brown Coat	Yes	0.3% (ELAP 400 PC) by Valeriu Voicu on 10/19/22
Analyst Description: Brown, Homogeneous, Non-Fibrous, Cementitious, Bulk Material Asbestos Types: Chrysotile 0.3 % Other Material: Animal hair Trace, Cellulose Trace, Non-fibrous 99.7%			
16 5	222102535-16 Location: Garage Bldg - 1st Fl. - Ceiling Plaster Brown Coat	Yes	0.3% (ELAP 400 PC) by Valeriu Voicu on 10/19/22
Analyst Description: Brown, Homogeneous, Non-Fibrous, Cementitious, Bulk Material Asbestos Types: Chrysotile 0.3 % Other Material: Animal hair Trace, Cellulose Trace, Non-fibrous 99.7%			
17 5	222102535-17 Location: Garage Bldg - 1st Fl. - Ceiling Plaster Brown Coat	Yes	Trace (<0.25 % pc) (ELAP 400 PC) by Valeriu Voicu on 10/19/22
Analyst Description: Brown, Homogeneous, Non-Fibrous, Cementitious, Bulk Material Asbestos Types: Chrysotile <0.25 % pc Other Material: Animal hair Trace, Cellulose Trace, Non-fibrous 100%			

Client Name: The Liro Group

PLM Bulk Asbestos Report

Welwyn Preserve; 100 Crescent Beach Road, Glen Cove, NY

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
18 5	222102535-18 Location: Garage Bldg - 1st Fl. - Ceiling Plaster Brown Coat	Yes	0.3% (ELAP 400 PC) by Valeriu Voicu on 10/19/22
Analyst Description: Brown, Homogeneous, Non-Fibrous, Cementitious, Bulk Material Asbestos Types: Chrysotile 0.3 % Other Material: Animal hair Trace, Cellulose Trace, Non-fibrous 99.7%			
19 6	222102535-19 Location: Garage Bldg - 1st Fl. - Ceiling Plaster Brown Coat	Yes	0.3% (ELAP 400 PC) by Valeriu Voicu on 10/19/22
Analyst Description: Brown, Homogeneous, Non-Fibrous, Cementitious, Bulk Material Asbestos Types: Chrysotile 0.3 % Other Material: Animal hair Trace, Cellulose 0%, Non-fibrous 99.7%			
20 6	222102535-20 Location: Garage Bldg - 1st Fl. - Exterior Window Caulk	No	NAD (by NYS ELAP 198.6) by Valeriu Voicu on 10/20/22
Analyst Description: Off-White/Beige, Homogeneous, Non-Fibrous, Bulk Material Asbestos Types: Other Material: Non-fibrous 17.6%			
21 6	222102535-21 Location: Garage Bldg - 1st Fl. - Exterior Window Caulk	No	NAD (by NYS ELAP 198.6) by Valeriu Voicu on 10/20/22
Analyst Description: Off-White/Beige, Homogeneous, Non-Fibrous, Bulk Material Asbestos Types: Other Material: Non-fibrous 28.3%			
22 6	222102535-22 Location: Garage Bldg - 1st Fl. - Exterior Window Caulk	No	NAD (by NYS ELAP 198.6) by Valeriu Voicu on 10/20/22
Analyst Description: Off-White/Beige, Homogeneous, Non-Fibrous, Bulk Material Asbestos Types: Other Material: Non-fibrous 3%			
23 7	222102535-23 Location: Garage Bldg - 1st Fl. - Exterior Window Glazing	No	NAD (by NYS ELAP 198.6) by Valeriu Voicu on 10/20/22
Analyst Description: Beige, Homogeneous, Non-Fibrous, Bulk Material Asbestos Types: Other Material: Non-fibrous 17.2%			

PLM Bulk Asbestos Report

Welwyn Preserve; 100 Crescent Beach Road, Glen Cove, NY

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
24 7	222102535-24 Location: Garage Bldg - 1st Fl. - Exterior Window Glazing	No	NAD (by NYS ELAP 198.6) by Valeriu Voicu on 10/20/22
Analyst Description: Beige, Homogeneous, Non-Fibrous, Bulk Material Asbestos Types: Other Material: Non-fibrous 11.1%			
25 7	222102535-25 Location: Garage Bldg - 1st Fl. - Exterior Window Glazing	No	NAD (by NYS ELAP 198.6) by Valeriu Voicu on 10/20/22
Analyst Description: Beige, Homogeneous, Non-Fibrous, Bulk Material Asbestos Types: Other Material: Non-fibrous 0.8%			
26 8	222102535-26 Location: Garage Bldg - 1st Fl. - Glazed Brick Mortar	No	NAD (by NYS ELAP 198.1) by Valeriu Voicu on 10/19/22
Analyst Description: Beige, Homogeneous, Non-Fibrous, Cementitious, Bulk Material Asbestos Types: Other Material: Cellulose Trace, Non-fibrous 100%			
27 8	222102535-27 Location: Garage Bldg - 1st Fl. - Glazed Brick Mortar	No	NAD (by NYS ELAP 198.1) by Valeriu Voicu on 10/19/22
Analyst Description: Beige, Homogeneous, Non-Fibrous, Cementitious, Bulk Material Asbestos Types: Other Material: Cellulose Trace, Non-fibrous 100%			
28 8	222102535-28 Location: Garage Bldg - 1st Fl. - Glazed Brick Mortar	No	NAD (by NYS ELAP 198.1) by Valeriu Voicu on 10/19/22
Analyst Description: Beige, Homogeneous, Non-Fibrous, Cementitious, Bulk Material Asbestos Types: Other Material: Cellulose Trace, Non-fibrous 100%			
29 9	222102535-29 Location: Garage Bldg - Exterior Facade - Facade Brick Mortar	No	NAD (by NYS ELAP 198.1) by Valeriu Voicu on 10/19/22
Analyst Description: Brown, Homogeneous, Non-Fibrous, Cementitious, Bulk Material Asbestos Types: Other Material: Cellulose Trace, Non-fibrous 100%			

PLM Bulk Asbestos Report

Welwyn Preserve; 100 Crescent Beach Road, Glen Cove, NY

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
30 9	222102535-30 Location: Garage Bldg - Exterior Facade - Facade Brick Mortar	No	NAD (by NYS ELAP 198.1) by Valeriu Voicu on 10/19/22
Analyst Description: Brown, Homogeneous, Non-Fibrous, Cementitious, Bulk Material Asbestos Types: Other Material: Cellulose Trace, Non-fibrous 100%			
31 9	222102535-31 Location: Garage Bldg - Exterior Facade - Facade Brick Mortar	No	NAD (by NYS ELAP 198.1) by Valeriu Voicu on 10/19/22
Analyst Description: Brown, Homogeneous, Non-Fibrous, Cementitious, Bulk Material Asbestos Types: Other Material: Cellulose Trace, Non-fibrous 100%			
32 10	222102535-32 Location: Laundry Building Throughout - Wall Plaster White Coat	No	NAD (by NYS ELAP 198.1) by Valeriu Voicu on 10/19/22
Analyst Description: White, Homogeneous, Non-Fibrous, Bulk Material Asbestos Types: Other Material: Non-fibrous 100%			
33 10	222102535-33 Location: Laundry Building Throughout - Wall Plaster White Coat	No	NAD (by NYS ELAP 198.1) by Valeriu Voicu on 10/19/22
Analyst Description: White, Homogeneous, Non-Fibrous, Bulk Material Asbestos Types: Other Material: Non-fibrous 100%			
34 10	222102535-34 Location: Laundry Building Throughout - Wall Plaster White Coat	No	NAD (by NYS ELAP 198.1) by Valeriu Voicu on 10/19/22
Analyst Description: White, Homogeneous, Non-Fibrous, Bulk Material Asbestos Types: Other Material: Non-fibrous 100%			
35 10	222102535-35 Location: Laundry Building Throughout - Wall Plaster White Coat	No	NAD (by NYS ELAP 198.1) by Valeriu Voicu on 10/19/22
Analyst Description: White, Homogeneous, Non-Fibrous, Bulk Material Asbestos Types: Other Material: Non-fibrous 100%			

PLM Bulk Asbestos Report

Welwyn Preserve; 100 Crescent Beach Road, Glen Cove, NY

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
36 10	222102535-36 Location: Laundry Building Throughout - Wall Plaster White Coat	No	NAD (by NYS ELAP 198.1) by Valeriu Voicu on 10/19/22
Analyst Description: White, Homogeneous, Non-Fibrous, Bulk Material Asbestos Types: Other Material: Non-fibrous 100%			
37 11	222102535-37 Location: Laundry Building Throughout - Wall Plaster Brown Coat	Yes	Trace (<0.25 % pc) (ELAP 400 PC) by Valeriu Voicu on 10/19/22
Analyst Description: Brown, Homogeneous, Non-Fibrous, Cementitious, Bulk Material Asbestos Types: Chrysotile <0.25 % pc Other Material: Animal hair Trace, Cellulose Trace, Non-fibrous 100%			
38 11	222102535-38 Location: Laundry Building Throughout - Wall Plaster Brown Coat	Yes	Trace (<0.25 % pc) (ELAP 400 PC) by Valeriu Voicu on 10/19/22
Analyst Description: Brown, Homogeneous, Non-Fibrous, Cementitious, Bulk Material Asbestos Types: Chrysotile <0.25 % pc Other Material: Animal hair Trace, Cellulose Trace, Non-fibrous 100%			
39 11	222102535-39 Location: Laundry Building Throughout - Wall Plaster Brown Coat	Yes	0.3% (ELAP 400 PC) by Valeriu Voicu on 10/19/22
Analyst Description: Brown, Homogeneous, Non-Fibrous, Cementitious, Bulk Material Asbestos Types: Chrysotile 0.3 % Other Material: Animal hair Trace, Cellulose Trace, Non-fibrous 99.7%			
40 11	222102535-40 Location: Laundry Building Throughout - Wall Plaster Brown Coat	Yes	0.3% (ELAP 400 PC) by Valeriu Voicu on 10/19/22
Analyst Description: Brown, Homogeneous, Non-Fibrous, Cementitious, Bulk Material Asbestos Types: Chrysotile 0.3 % Other Material: Animal hair Trace, Cellulose Trace, Non-fibrous 99.7%			
41 11	222102535-41 Location: Laundry Building Throughout - Wall Plaster Brown Coat	Yes	Trace (<0.25 % pc) (ELAP 400 PC) by Valeriu Voicu on 10/19/22
Analyst Description: Brown, Homogeneous, Non-Fibrous, Cementitious, Bulk Material Asbestos Types: Chrysotile <0.25 % pc Other Material: Animal hair Trace, Cellulose Trace, Non-fibrous 100%			

PLM Bulk Asbestos Report

Welwyn Preserve; 100 Crescent Beach Road, Glen Cove, NY

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
42	222102535-42	No	NAD
12	Location: Laundry Building Throughout - Ceiling Plaster White Coat		(by NYS ELAP 198.1) by Valeriu Voicu on 10/19/22
Analyst Description: White, Homogeneous, Non-Fibrous, Bulk Material Asbestos Types: Other Material: Non-fibrous 100%			
43	222102535-43	No	NAD
12	Location: Laundry Building Throughout - Ceiling Plaster White Coat		(by NYS ELAP 198.1) by Valeriu Voicu on 10/19/22
Analyst Description: White, Homogeneous, Non-Fibrous, Bulk Material Asbestos Types: Other Material: Non-fibrous 100%			
44	222102535-44	No	NAD
12	Location: Laundry Building Throughout - Ceiling Plaster White Coat		(by NYS ELAP 198.1) by Valeriu Voicu on 10/19/22
Analyst Description: White, Homogeneous, Non-Fibrous, Bulk Material Asbestos Types: Other Material: Non-fibrous 100%			
45	222102535-45	No	NAD
12	Location: Laundry Building Throughout - Ceiling Plaster White Coat		(by NYS ELAP 198.1) by Valeriu Voicu on 10/19/22
Analyst Description: White, Homogeneous, Non-Fibrous, Bulk Material Asbestos Types: Other Material: Non-fibrous 100%			
46	222102535-46	No	NAD
12	Location: Laundry Building Throughout - Ceiling Plaster White Coat		(by NYS ELAP 198.1) by Valeriu Voicu on 10/19/22
Analyst Description: White, Homogeneous, Non-Fibrous, Bulk Material Asbestos Types: Other Material: Non-fibrous 100%			
47	222102535-47	Yes	Trace (<0.25 % pc)
13	Location: Laundry Building Throughout - Ceiling Plaster Brown Coat		(ELAP 400 PC) by Valeriu Voicu on 10/19/22
Analyst Description: Brown, Homogeneous, Non-Fibrous, Cementitious, Bulk Material Asbestos Types: Chrysotile <0.25 % pc Other Material: Animal hair Trace, Cellulose Trace, Non-fibrous 100%			

PLM Bulk Asbestos Report

Welwyn Preserve; 100 Crescent Beach Road, Glen Cove, NY

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
48 13	222102535-48 Location: Laundry Building Throughout - Ceiling Plaster Brown Coat	Yes	Trace (<0.25 % pc) (ELAP 400 PC) by Valeriu Voicu on 10/19/22
Analyst Description: Brown, Homogeneous, Non-Fibrous, Cementitious, Bulk Material Asbestos Types: Chrysotile <0.25 % pc Other Material: Animal hair Trace, Cellulose Trace, Non-fibrous 100%			
49 13	222102535-49 Location: Laundry Building Throughout - Ceiling Plaster Brown Coat	Yes	Trace (<0.25 % pc) (ELAP 400 PC) by Valeriu Voicu on 10/19/22
Analyst Description: Brown, Homogeneous, Non-Fibrous, Cementitious, Bulk Material Asbestos Types: Chrysotile <0.25 % pc Other Material: Animal hair Trace, Cellulose Trace, Non-fibrous 100%			
50 13	222102535-50 Location: Laundry Building Throughout - Ceiling Plaster Brown Coat	Yes	Trace (<0.25 % pc) (ELAP 400 PC) by Valeriu Voicu on 10/19/22
Analyst Description: Brown, Homogeneous, Non-Fibrous, Cementitious, Bulk Material Asbestos Types: Chrysotile <0.25 % pc Other Material: Animal hair 1%, Cellulose Trace, Non-fibrous 99%			
51 13	222102535-51 Location: Laundry Building Throughout - Ceiling Plaster Brown Coat	Yes	Trace (<0.25 % pc) (ELAP 400 PC) by Valeriu Voicu on 10/19/22
Analyst Description: Brown, Homogeneous, Non-Fibrous, Cementitious, Bulk Material Asbestos Types: Chrysotile <0.25 % pc Other Material: Animal hair Trace, Cellulose Trace, Non-fibrous 100%			
52 14	222102535-52 Location: Laundry Building Exterior Facade - Facade Brick Mortar	No	NAD (by NYS ELAP 198.1) by Valeriu Voicu on 10/19/22
Analyst Description: Brown, Homogeneous, Non-Fibrous, Cementitious, Bulk Material Asbestos Types: Other Material: Cellulose Trace, Non-fibrous 100%			
53 14	222102535-53 Location: Laundry Building Exterior Facade - Facade Brick Mortar	No	NAD (by NYS ELAP 198.1) by Valeriu Voicu on 10/19/22
Analyst Description: Brown, Homogeneous, Non-Fibrous, Cementitious, Bulk Material Asbestos Types: Other Material: Cellulose Trace, Non-fibrous 100%			

PLM Bulk Asbestos Report

Welwyn Preserve; 100 Crescent Beach Road, Glen Cove, NY

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
54 14	222102535-54 Location: Laundry Building Exterior Facade - Facade Brick Mortar	No	NAD (by NYS ELAP 198.1) by Valeriu Voicu on 10/19/22
Analyst Description: Brown, Homogeneous, Non-Fibrous, Cementitious, Bulk Material Asbestos Types: Other Material: Cellulose Trace, Non-fibrous 100%			
55 15	222102535-55 Location: Laundry Building Roof - Gravel Tar Layer	No	NAD (by NYS ELAP 198.6) by Valeriu Voicu on 10/20/22
Analyst Description: Black, Homogeneous, Non-Fibrous, Bulk Material Asbestos Types: Other Material: Non-fibrous 3.6%			
56 15	222102535-56 Location: Laundry Building Roof - Gravel Tar Layer	No	NAD (by NYS ELAP 198.6) by Valeriu Voicu on 10/20/22
Analyst Description: Black, Homogeneous, Non-Fibrous, Bulk Material Asbestos Types: Other Material: Non-fibrous 27.4%			
57 15	222102535-57 Location: Laundry Building Roof - Gravel Tar Layer	No	NAD (by NYS ELAP 198.6) by Valeriu Voicu on 10/20/22
Analyst Description: Black, Homogeneous, Non-Fibrous, Bulk Material Asbestos Types: Other Material: Non-fibrous 5.3%			
58 16	222102535-58 Location: Laundry Building Roof - Roof Membrane	Yes	2.1% (by NYS ELAP 198.6) by Valeriu Voicu on 10/20/22
Analyst Description: Black, Homogeneous, Fibrous, Bulk Material Asbestos Types: Chrysotile 2.1 % Other Material: Non-fibrous 20.4%			
59 16	222102535-59 Location: Laundry Building Roof - Roof Membrane		NA/PS
Analyst Description: Bulk Material Asbestos Types: Other Material:			

PLM Bulk Asbestos Report

Welwyn Preserve; 100 Crescent Beach Road, Glen Cove, NY

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
60 16	222102535-60 Location: Laundry Building Roof - Roof Membrane		NA/PS
Analyst Description: Bulk Material Asbestos Types: Other Material:			
61 17	222102535-61 Location: Greenhouse Bldg Basement Boiler Rm. - Big Boiler Insulation / Floor Debris	Yes	57.1% (by NYS ELAP 198.1) by Valeriu Voicu on 10/19/22
Analyst Description: Lt. Gray, Homogeneous, Fibrous, Bulk Material Asbestos Types: Chrysotile 57.1 % Other Material: Cellulose 20%, Non-fibrous 22.9%			
62 17	222102535-62 Location: Greenhouse Bldg Basement Boiler Rm. - Big Boiler Insulation / Floor Debris		NA/PS
Analyst Description: Bulk Material Asbestos Types: Other Material:			
63 17	222102535-63 Location: Greenhouse Bldg Basement Boiler Rm. - Big Boiler Insulation / Floor Debris		NA/PS
Analyst Description: Bulk Material Asbestos Types: Other Material:			
64 18	222102535-64 Location: Greenhouse - Basement Boiler Rm. - Small Boiler Insulation / Floor Debris	Yes	44.4% (by NYS ELAP 198.1) by Valeriu Voicu on 10/19/22
Analyst Description: Gray, Homogeneous, Fibrous, Bulk Material Asbestos Types: Chrysotile 44.4 % Other Material: Non-fibrous 55.6%			
65 18	222102535-65 Location: Greenhouse - Basement Boiler Rm. - Small Boiler Insulation / Floor Debris		NA/PS
Analyst Description: Bulk Material Asbestos Types: Other Material:			

PLM Bulk Asbestos Report

Welwyn Preserve; 100 Crescent Beach Road, Glen Cove, NY

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
66 18	222102535-66		NA/PS
Location: Greenhouse - Basement Boiler Rm. - Small Boiler Insulation / Floor Debris			
Analyst Description: Bulk Material			
Asbestos Types:			
Other Material:			
67 19	222102535-67	Yes	50%
Location: Greenhouse - Basement Open Area - Aircell Pipe Insulation / Floor Debris			
Analyst Description: Gray, Homogeneous, Fibrous, Bulk Material			
Asbestos Types: Chrysotile 50.0 %			
Other Material: Cellulose 25%, Non-fibrous 25%			
68 19	222102535-68		NA/PS
Location: Greenhouse - Basement Open Area - Aircell Pipe Insulation / Floor Debris			
Analyst Description: Bulk Material			
Asbestos Types:			
Other Material:			
69 19	222102535-69		NA/PS
Location: Greenhouse - Basement Open Area - Aircell Pipe Insulation / Floor Debris			
Analyst Description: Bulk Material			
Asbestos Types:			
Other Material:			
70 20	222102535-70	No	NAD
Location: Greenhouse - Basement Boiler Rm. - Chimney Brick Mortar			
Analyst Description: Brown, Homogeneous, Non-Fibrous, Cementitious, Bulk Material			
Asbestos Types:			
Other Material: Cellulose Trace, Non-fibrous 100%			
71 20	222102535-71	No	NAD
Location: Greenhouse - Basement Boiler Rm. - Chimney Brick Mortar			
Analyst Description: Brown, Homogeneous, Non-Fibrous, Cementitious, Bulk Material			
Asbestos Types:			
Other Material: Cellulose Trace, Non-fibrous 100%			

PLM Bulk Asbestos Report

Welwyn Preserve; 100 Crescent Beach Road, Glen Cove, NY

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
72 20	222102535-72 Location: Greenhouse - Basement Boiler Rm. - Chimney Brick Mortar	No	NAD (by NYS ELAP 198.1) by Valeriu Voicu on 10/19/22
Analyst Description: Gray, Homogeneous, Non-Fibrous, Cementitious, Bulk Material Asbestos Types: Other Material: Cellulose Trace, Non-fibrous 100%			
73 21	222102535-73 Location: Greenhouse - Roof - Roof Membrane / Floor Debris	No	NAD (by NYS ELAP 198.6) by Valeriu Voicu on 10/19/22
Analyst Description: Black, Homogeneous, Non-Fibrous, Bulk Material Asbestos Types: Other Material: Non-fibrous 1.5%			
74 21	222102535-74 Location: Greenhouse - Roof - Roof Membrane / Floor Debris	No	NAD (by NYS ELAP 198.6) by Valeriu Voicu on 10/19/22
Analyst Description: Black, Homogeneous, Non-Fibrous, Bulk Material Asbestos Types: Other Material: Non-fibrous 1.5%			
75 21	222102535-75 Location: Greenhouse - Roof - Roof Membrane / Floor Debris	No	NAD (by NYS ELAP 198.6) by Valeriu Voicu on 10/19/22
Analyst Description: Black, Homogeneous, Non-Fibrous, Bulk Material Asbestos Types: Other Material: Non-fibrous 1.5%			
76 22	222102535-76 Location: Greenhouse - Throughout - Terracotta Mortar	No	NAD (by NYS ELAP 198.1) by Valeriu Voicu on 10/19/22
Analyst Description: Brown, Homogeneous, Non-Fibrous, Cementitious, Bulk Material Asbestos Types: Other Material: Cellulose Trace, Non-fibrous 100%			
77 22	222102535-77 Location: Greenhouse - Throughout - Terracotta Mortar	No	NAD (by NYS ELAP 198.1) by Valeriu Voicu on 10/19/22
Analyst Description: Brown, Homogeneous, Non-Fibrous, Cementitious, Bulk Material Asbestos Types: Other Material: Cellulose Trace, Non-fibrous 100%			

PLM Bulk Asbestos Report

Welwyn Preserve; 100 Crescent Beach Road, Glen Cove, NY

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
78 22	222102535-78	No	NAD
Location: Greenhouse - Throughout - Terracotta Mortar			(by NYS ELAP 198.1) by Valeriu Voicu on 10/19/22
Analyst Description: Brown, Homogeneous, Non-Fibrous, Cementitious, Bulk Material			
Asbestos Types:			
Other Material: Cellulose Trace, Non-fibrous 100%			

Reporting Notes:

Analyzed by: Valeriu Voicu
Date: 10/19/2022



Reviewed by: Karol H. Lu



*NAD/NSD = no asbestos detected; NA = not analyzed; NA/PS = not analyzed/positive stop, (SOF-V) = Sprayed On Fireproofing containing Vermiculite; (SM-V) = Surfacing Material containing Vermiculite; PLM Bulk Asbestos Analysis using Olympus, Model BH-2 Pol Scope, Microscope, Serial #: 229915, by Appd E to Subpt E, 40 CFR 763 quantified by either CVES or 400 pt ct as noted for each analysis (NVLAP 200546-0), ELAP PLM Method 198.1 for NY friable samples, which includes the identification and quantitation of vermiculite, or ELAP 198.6 for NOB samples, or EPA 400 pt ct by EPA 600-M4-82-020 (NY ELAP Lab 11480); Note: PLM is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. NAD or Trace results by PLM are inconclusive, TEM is currently the only method that can be used to determine if this material can be considered or treated as non asbestos-containing in NY State (also see EPA Advisory for floor tile, FR 59,146,38970,8/1/94) National Institute of Standards and Technology Accreditation requirements mandate that this report must not be reproduced except in full without the approval of the lab. This PLM report relates ONLY to the items tested. RI Cert AAL-094, CT Cert PH-0186, Mass Cert AA000054, NJ Lab ID #NY031.

_____END OF REPORT_____



9.0 APPENDIX B

SAMPLE LOCATION DRAWING(S)



LiRo Engineers, Inc.

Sample Location Drawing

SITE: Welwyn Preserve – 100 Crescent Beach Road, Glen Cove, NY

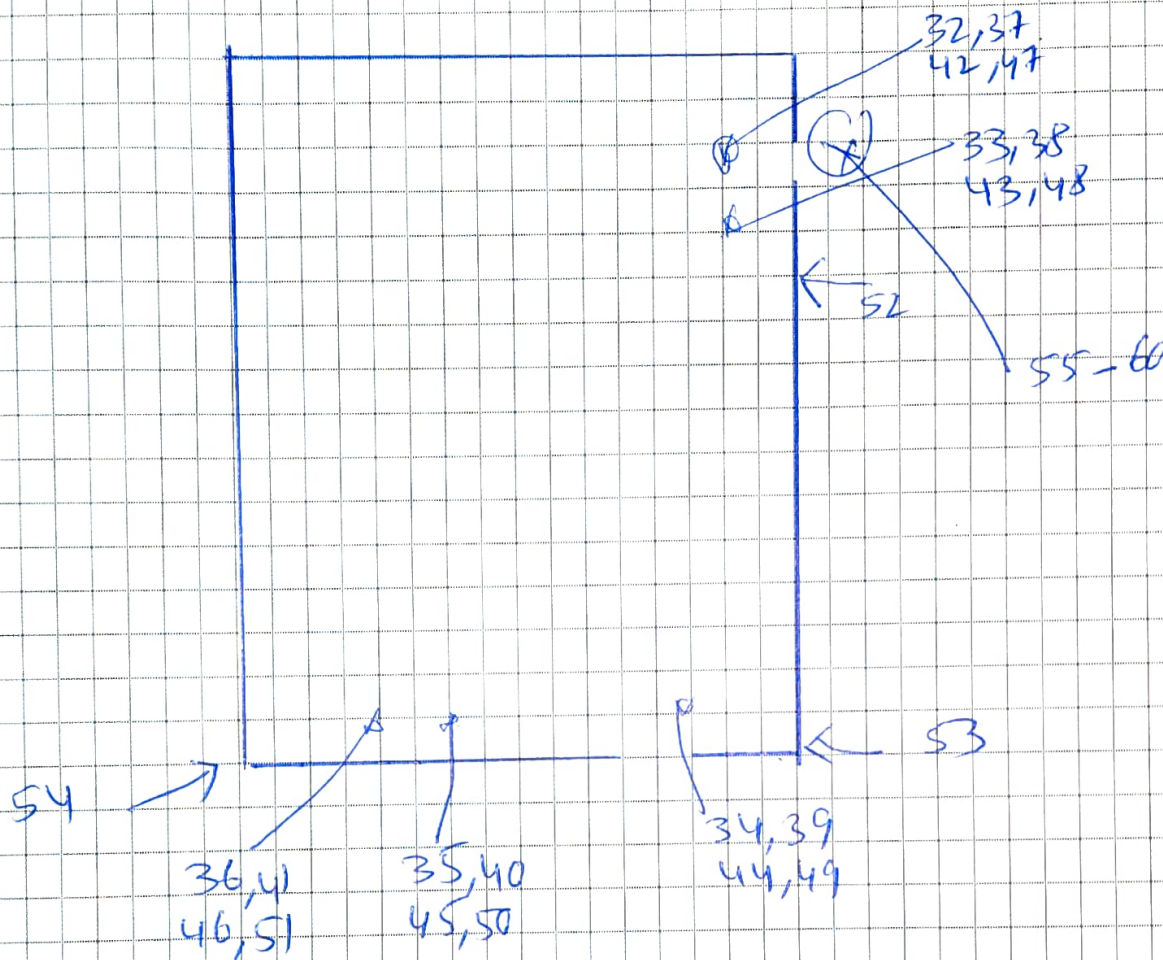
PROJECT: Pre-Demolition Inspection

NAME: Maher Abraham

DATE: 10/18/22

LiRo Job # :

Laundry Bldg





LiRo Engineers, Inc.

Sample Location Drawing

SITE: Welwyn Preserve – 100 Crescent Beach Road, Glen Cove, NY

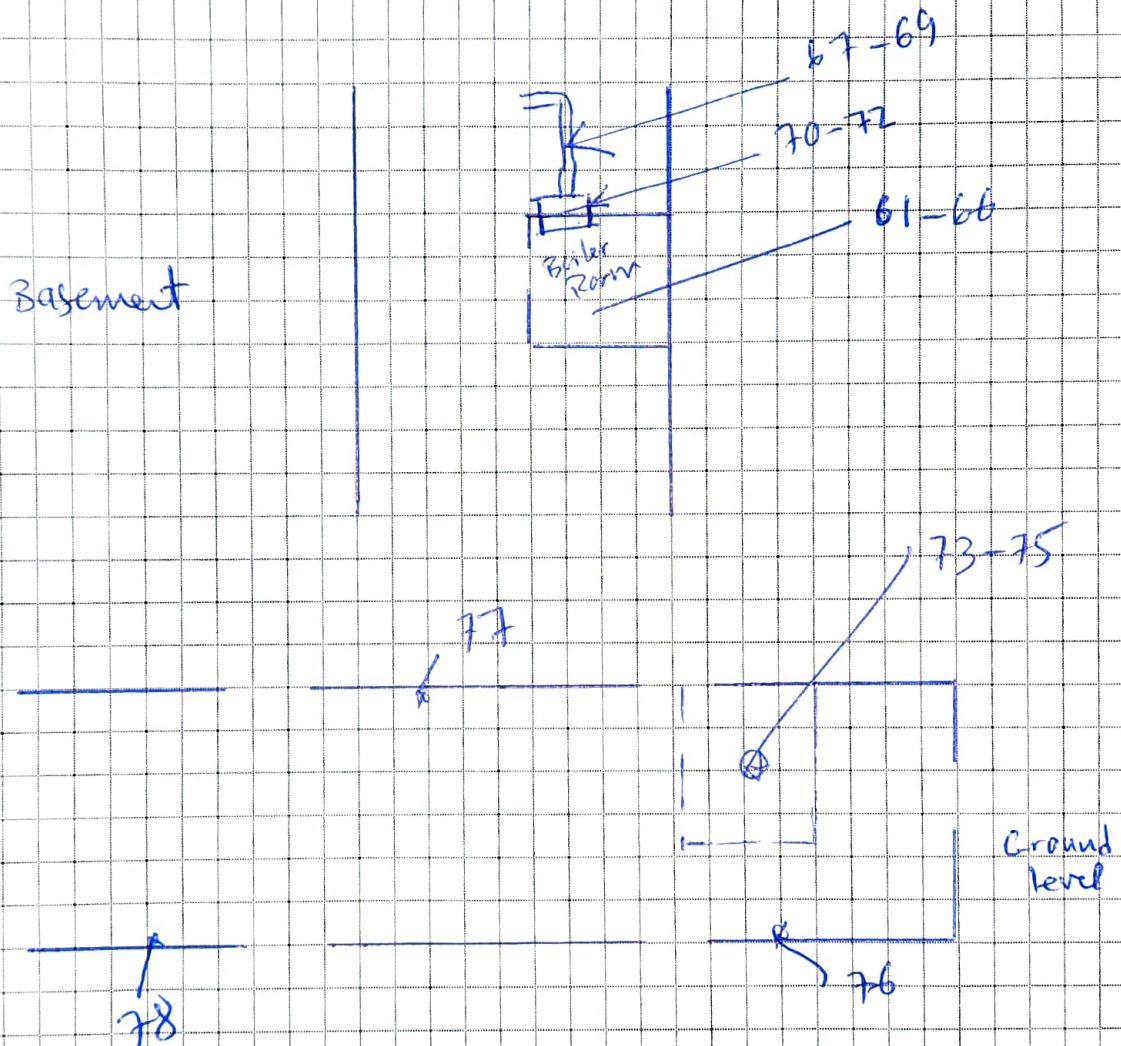
PROJECT: Pre-Demolition Inspection

NAME: Maher Abraham

DATE: 10/18/22

LiRo Job # :

Greenhouse Bldg





LiRo Engineers, Inc.

Sample Location Drawing

SITE: Welwyn Preserve – 100 Crescent Beach Road, Glen Cove, NY

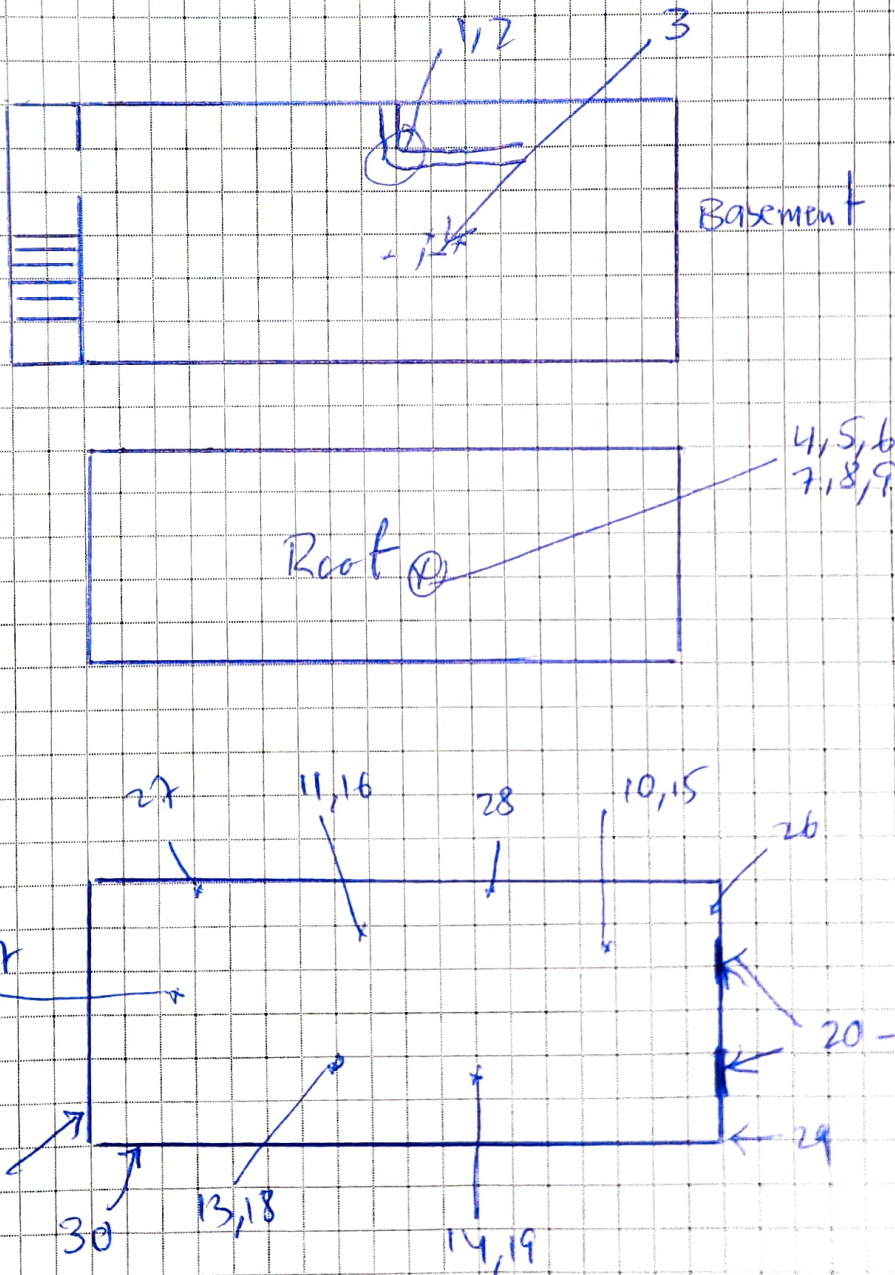
PROJECT: Pre-Demolition Inspection

NAME: Maher Abraham

DATE: 10/18/22

LiRo Job # :

Garage Bldg





10.0 APPENDIX C

PHOTOGRAPH(S)



LiRo Engineers, Inc.

A LiRo Group Company

100 Duffy Avenue, Suite 402, Hicksville, NY 11801

Phone: 516-595-2900 • Fax: 516-595-2948

PHOTOGRAPHIC DOCUMENTATION

CLIENT NAME:

County of Nassau –
Department of Public
Works

LOCATION NAME:

WELWYN PRESERVE

LIRO PROJECT NO.:

22-180-0248

PHOTO NO.:

01

DESCRIPTION:

Garage Building
exterior view.



PHOTO NO.:

02

DESCRIPTION:

Roof of the Garage
Building is
deteriorated, but
the structure
otherwise has not
been
compromised.





LiRo Engineers, Inc.

A LiRo Group Company

100 Duffy Avenue, Suite 402, Hicksville, NY 11801

Phone: 516-595-2900 • Fax: 516-595-2948

PHOTOGRAPHIC DOCUMENTATION

CLIENT NAME:

County of Nassau –
Department of Public
Works

LOCATION NAME:

WELWYN PRESERVE

LIRO PROJECT NO.:

22-180-0248

PHOTO NO.:

03

DESCRIPTION:

Piping and
insulation debris in
the basement of
the Garage.



PHOTO NO.:

04

DESCRIPTION:

Laundry Building
exterior view.
Building is
structurally
compromised
throughout.





LiRo Engineers, Inc.

A LiRo Group Company

100 Duffy Avenue, Suite 402, Hicksville, NY 11801

Phone: 516-595-2900 • Fax: 516-595-2948

PHOTOGRAPHIC DOCUMENTATION

CLIENT NAME:

County of Nassau –
Department of Public
Works

LOCATION NAME:

WELWYN PRESERVE

LIRO PROJECT NO.:

22-180-0248

PHOTO NO.:

05

DESCRIPTION:

Boiler and Piping
insulation
assumed to be
ACM in the
Laundry Building.



PHOTO NO.:

06

DESCRIPTION:

Greenhouse
interior view.





LiRo Engineers, Inc.

A LiRo Group Company

100 Duffy Avenue, Suite 402, Hicksville, NY 11801

Phone: 516-595-2900 • Fax: 516-595-2948

PHOTOGRAPHIC DOCUMENTATION

CLIENT NAME:

County of Nassau –
Department of Public
Works

LOCATION NAME:

WELWYN PRESERVE

LIRO PROJECT NO.:

22-180-0248

PHOTO NO.:

07

DESCRIPTION:

Roofing in the
Greenhouse
Building is visibly
deteriorated, but
the building is
otherwise
structurally intact.

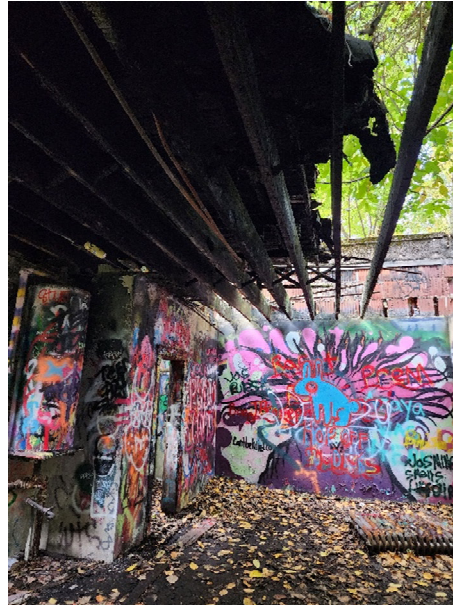


PHOTO NO.:

08

DESCRIPTION:

Boiler and piping
with associated
floor debris in the
basement of the
Greenhouse.





11.0 APPENDIX D

PERSONNEL CERTIFICATION(S)

New York State – Department of Labor

Division of Safety and Health
License and Certificate Unit
State Campus, Building 12
Albany, NY 12240

ASBESTOS HANDLING LICENSE

LiRo Engineers, Inc.
690 Delaware Avenue
Buffalo, NY 14209

FILE NUMBER: 99-1147
LICENSE NUMBER: 28866
LICENSE CLASS: RESTRICTED
DATE OF ISSUE: 12/06/2021
EXPIRATION DATE: 12/31/2022

Duly Authorized Representative – Robert Kreuzer:

This license has been issued in accordance with applicable provisions of Article 30 of the Labor Law of New York State and of the New York State Codes, Rules and Regulations (12 NYCRR Part 56). It is subject to suspension or revocation for a (1) serious violation of state, federal or local laws with regard to the conduct of an asbestos project, or (2) demonstrated lack of responsibility in the conduct of any job involving asbestos or asbestos material.

This license is valid only for the contractor named above and this license or a photocopy must be prominently displayed at the asbestos project worksite. This license verifies that all persons employed by the licensee on an asbestos project in New York State have been issued an Asbestos Certificate, appropriate for the type of work they perform, by the New York State Department of Labor.

Amy Phillips, Director
For the Commissioner of Labor

SH 432 (8/12)

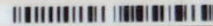
NYC DEP ASBESTOS CONTROL PROGRAM
ASBESTOS CERTIFICATE



ABRAHAM,
MAHER
INVESTIGATOR
117356

EXPIRES: 02/28/2024

MUST BE CARRIED ON ALL ASBESTOS PROJECTS



STATE OF NEW YORK - DEPARTMENT OF LABOR
ASBESTOS CERTIFICATE



MAHER F ABRAHAM

CLASS(EXPIRES)

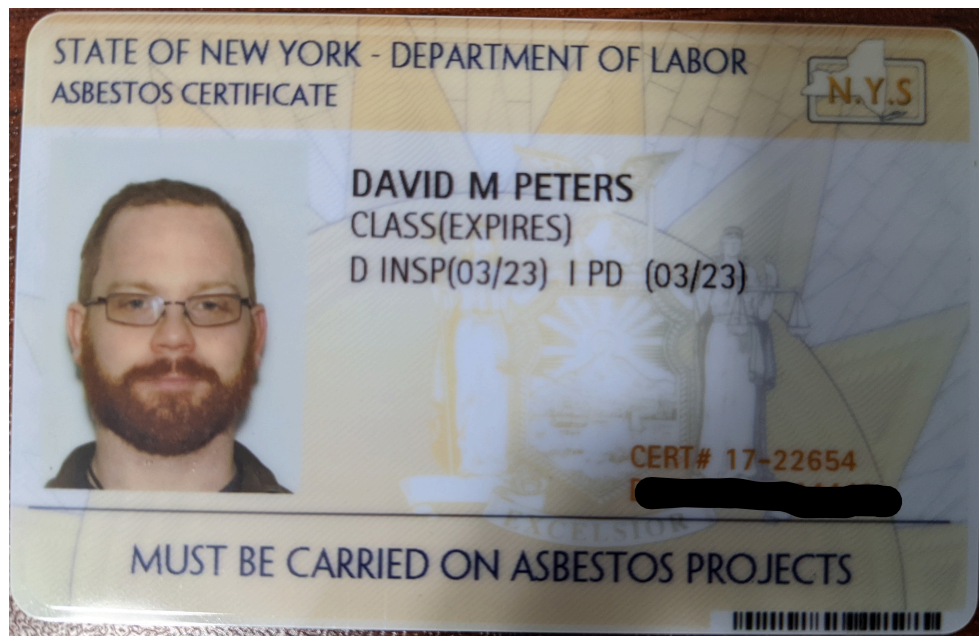
C ATEC(02/23) D INSP(02/23)

H PM (02/23)

CERT# 93-11399

MUST BE CARRIED ON ASBESTOS PROJECTS







12.0 APPENDIX E

LABORATORY ACCREDITATION

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER



Expires 12:01 AM April 01, 2023
Issued April 01, 2022

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MR. PAUL J. MUGHA
AMERICA SCIENCE TEAM NEW YORK, INC
117 EAST 30TH ST
NEW YORK, NY 10016

NY Lab Id No: 11480

is hereby APPROVED as an Environmental Laboratory for the category
ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE
All approved subcategories and/or analytes are listed below:

Miscellaneous

Asbestos in Friable Material	Item 198.1 of Manual
	EPA 600/M4/82/020
Asbestos in Non-Friable Material-PLM	Item 198.6 of Manual (NOB by PLM)
Asbestos in Non-Friable Material-TEM	Item 198.4 of Manual

Serial No.: 64683

Property of the New York State Department of Health. Certificates are valid only at the address shown, must be conspicuously posted, and are printed on secure paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify the laboratory's accreditation status.

Nassau County DPW

415 of 417

Contract No. B90405-01G
Demolition of Deteriorated Structures-Welwyn Preserve

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

AmeriSci New York
117 E. 30th Street
New York, NY 10016
Mr. Paul Mucha
Phone: 212-679-8600 Fax: 212-679-2711
Email: pmucha@amerisci.com
<http://www.amerisci.com>

ASBESTOS FIBER ANALYSIS

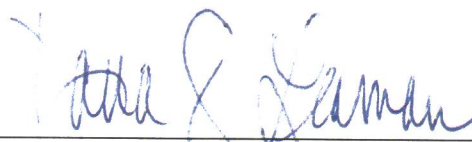
NVLAP LAB CODE 200546-0

Bulk Asbestos Analysis

<u>Code</u>	<u>Description</u>
18/A01	EPA -- 40 CFR Appendix E to Subpart E of Part 763, Interim Method of the Determination of Asbestos in Bulk Insulation Samples
18/A03	EPA 600/R-93/116: Method for the Determination of Asbestos in Bulk Building Materials

Airborne Asbestos Analysis

<u>Code</u>	<u>Description</u>
18/A02	U.S. EPA's "Interim Transmission Electron Microscopy Analytical Methods-Mandatory and Nonmandatory-and Mandatory Section to Determine Completion of Response Actions" as found in 40 CFR, Part 763, Subpart E, Appendix A.



For the National Voluntary Laboratory Accreditation Program

United States Department of Commerce
National Institute of Standards and Technology



Certificate of Accreditation to ISO/IEC 17025:2017

NVLAP LAB CODE: 200546-0

AmeriSci New York
New York, NY

*is accredited by the National Voluntary Laboratory Accreditation Program for specific services,
listed on the Scope of Accreditation, for:*

Asbestos Fiber Analysis

*This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017.
This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality
management system (refer to joint ISO-ILAC-IAF Communiqué dated January 2009).*

2022-07-01 through 2023-06-30

Effective Dates



Tara S. Laman

For the National Voluntary Laboratory Accreditation Program