SCOPE OF WORK

New Roof Replacement

New Jersey State Museum
Trenton, Mercer, NJ

Project No. A1430-00

STATE OF NEW JERSEY

Honorable Philip D. Murphy, Governor
Honorable Tahesha L. Way, Lt. Governor

DEPARTMENT OF THE TREASURY

Elizabeth Maher Muoio, Treasurer

DIVISION OF PROPERTY MANAGEMENT AND CONSTRUCTION

Thomas A. Edenbaum, Director

Date: September 24, 2025

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I. OBJECTIVE

The objective of this of this project is remove and replace approximately 16,000 square feet of roofing system on the New Jersey State Museum in Trenton, NJ. See **Exhibit 'B'** for the project site location map.

II. CONSULTANT QUALIFICATIONS

A. CONSULTANT & SUB-CONSULTANT PRE-QUALIFICATIONS

The Consultant shall be a firm pre-qualified with the Division of Property Management & Construction (DPMC) in the following discipline(s):

- **P035 Roofing Consultant**

The Consultant shall also have in-house capabilities or Sub-Consultants pre-qualified with DPMC in:

- **P007 Structural Engineering**
- **P025 Estimating/Cost Analysis**
- **P028 Roof Inspection**
- **P037 Asbestos Design**
- **P038 Asbestos Safety Control Monitoring**
- **P065 Lead Paint Evaluation**

As well as, **any and all** other Architectural, Engineering and Specialty Disciplines necessary to complete the project as described in this Scope of Work (SOW).

III. PROJECT BUDGET

A. CONSTRUCTION COST ESTIMATE (CCE)

The initial Construction Cost Estimate (CCE) for this project is $1,358,135.

The Consultant shall review this Scope of Work and provide a narrative evaluation and analysis of the accuracy of the proposed project CCE in its technical proposal based on its professional experience and opinion.

B. CURRENT WORKING ESTIMATE (CWE)

The Current Working Estimate (CWE) for this project is $1,692,513.

The CWE includes the construction cost estimate and all consulting, permitting and administrative fees.

The CWE is the client agency's financial budget based on this project Scope of Work and shall not be exceeded during the design and construction phases of the project unless DPMC approves the change in Scope of Work through a Contract amendment.

C. CONSULTANT'S FEES

The construction cost estimate for this project ***shall not*** be used as a basis for the Consultant's design and construction administration fees. The Consultant's fees shall be based on the information contained in this Scope of Work document and the observations made and/or the additional information received during the pre-proposal meeting.

IV. PROJECT SCHEDULE

A. SCOPE OF WORK DESIGN & CONSTRUCTION SCHEDULE

The following schedule identifies the estimated design and construction phases for this project and the estimated durations. The Consultant's proposed design and construction schedule shall be in Gantt chart format and calendar day durations with start and finish dates for each task.

PROJECT PHASE	**ESTIMATED DURATION (Calendar Days)**
1. Site Access Approvals & Schedule Design Kick-off Meeting	**14**
2. Design Development Phase	**42**
• *Project Team & DPMC Plan/Code Unit Review & Comment*	14
3. Final Design Phase	**42**
• *Project Team & DPMC Plan/Code Unit Review & Approval*	14
4. Final Design Re-Submission to Address Comments	**7 (See Note)**
• *Project Team & DPMC Plan/Code Unit Review & Approval*	14
5. DCA Submission Plan Review	**30**
6. Permit Application Phase	**7**
• *Issue Plan Release*	
7. Bid Phase	**42**

8. Award Phase	**28**
9. Construction Phase	**180**
10. Project Close Out Phase	**30**

Note: The Final Design Phase is considered complete upon the release of Construction Documents by either the DPMC Code Group or the Department of Community Affairs (DCA).

B. CONSULTANT'S PROPOSED DESIGN & CONSTRUCTION SCHEDULE

The Consultant shall submit a project design and construction schedule with its technical proposal that is similar in format and detail to the schedule depicted in **Exhibit 'A.'** The schedule developed by the Consultant shall reflect its recommended project phases, phase activities, and activity durations.

A written narrative shall also be included with the technical proposal explaining the schedule submitted and the reasons why and how it can be completed in the time frame proposed by the Consultant.

This schedule and narrative will be reviewed by the Consultant Selection Committee as part of the evaluation process and will be assigned a score commensurate with clarity and comprehensiveness of the submission.

V. PROJECT SITE LOCATION & TEAM MEMBERS

A. PROJECT SITE ADDRESS

The location of the project site is:

New Jersey State Museum
205 W State Street
Trenton, NJ

See **Exhibit 'B'** for the project site location map.

B. PROJECT TEAM MEMBER DIRECTORY

The following are the names, addresses, and phone numbers of the Project Team members.

1. DPMC Representative

Name:	Cristina Zozzaro, Project Manager
Address:	Division Property Management & Construction
	20 West State Street, 3rd Floor
	Trenton, NJ 08608-1206
Phone No:	(609)-777-4273
E-Mail:	Cristina.Zozzaro@treas.nj.gov

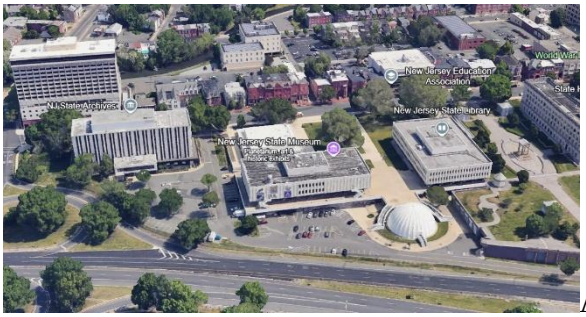
2. Client Agency Representative

Name:	Mark Dae, Chief, Property Management
Address:	Division Property Management & Construction
	20 West State Street, 3rd Floor
	Trenton, NJ 08608-1206
Phone No:	(609) 984-9711
E-Mail:	Mark.Dae@treas.nj.gov

VI. PROJECT DEFINITION

A. BACKGROUND

The State Museum Building is a 16,897 square foot 3-story masonry, reinforced concrete, and steel frame structure constructed within the Capital Cultural Complex in Trenton circa 1964. The building consists of three floors of exhibition, program, research, and collection space. A full basement provides additional space that houses offices, research space, storage, public toilet rooms and mechanical equipment. A penthouse containing approximately 4,045 square feet houses mechanical equipment, including elevator equipment.



Aerial View

B. FUNCTIONAL DESCRIPTION OF THE BUILDING

The New Jersey State Museum is a three story rectangular structure with a full basement and penthouse constructed of reinforced concrete and masonry slabs. The two upper floors overhang the first floor and are supported by masonry columns. The entire first floor of this structure is enclosed with glass paneling.

The museum is operational seven days a week and is open to the public Tuesday through Sunday. The main entrance is on the north side of the building and is primarily for the general public during museum operating hours. Employee entrance is through a doorway near the shipping/mailroom door on the south side of the building. Access to these building entrances and appropriate safety measures must be maintained during the construction phase of this project.

VII. CONSULTANT DESIGN RESPONSIBILITIES

A. NEW ROOF DESIGN REQUIREMENTS

The Consultant shall provide the Design, Construction Administration, Permitting and Bid/Award services to remove and replace approximately 16,000 square feet of roofing system on the New Jersey State Museum in Trenton.

Ronald A. Sebring Associates, LLC (RASA) was commissioned by the State of New Jersey, Department of the Treasury, Division of Property Management and Construction (DPMC) to conduct an assessment of the condition of the existing roof of the New Jersey State Museum and provide an evaluation study. See **Exhibit 'C'** for the State Museum Roof Conditions Assessment – 2021

1. Roof System Removal

The existing roof system, insulation, flashings, and related trims shall be completely removed to the original decking and legally disposed. The removal of the existing roof system shall be coordinated with the installation of the new roof to prevent exposure to weather conditions and potential water infiltration into the building.

Design documents shall identify all requirements for safety devices, dumpster location, chutes or other methods of roofing material removal, protection from exposure to the weather, protection of property and personnel, building access routes and circulation patterns, contractor use of the premises, parking, security procedures, equipment and materials storage, waste disposal, etc.

2. Caulking & Joint Sealants

All appropriate roof deck joint sealants shall be removed and replaced with high performance sealant as part of the roof system. The design shall include the cleaning, priming, and installation of new sealants with new backer rods and bond breakers.

Examine and measure all exterior joints and calculate the required joint width(s). Design for widening joints as required.

Observe the installation of the sealant joints, performing pull tests for cohesion and adhesion on a random sampling of each joint type.

Specify that the sealant manufacturer must provide a warranty for a minimum of twenty (20) years for any repairs to maintain joints in a leak free condition and at no cost to the State.

3. Insulation

Provide new high-density rigid insulation boards that comply with current energy code requirements. Ensure the roofing system manufacturer approves the method of fastening the insulation board to the roof deck system.
Flat roofs shall be avoided by using tapered insulation to promote positive drainage to the roof drains. Incorporate a roof design that shall slope a minimum of ¼" per foot (½" per foot preferred).

DPMC does not permit Urethane material insulation due to a history of gas release and bubbling under the roofing ply layer(s).

4. New Roofing System Criteria

Provide the design for the new roofing system in accordance with the requirements of the roofing manufacturer.

The manufacturer of the roofing system shall have no less than five (5) years successful experience in producing the materials required for this project. Membrane, flashing, and adhesive shall be the single product of a standard manufacturer.

The roofing system shall be in accordance with the latest ASHRAE 90.1 (Adopted Edition) energy standards.

The roofing system shall be in compliance with the "Factory Mutual Research Corp" (FMRC) standards and must meet all requirements of Factory Mutual I-90 classification for wind uplift.

The Contractor shall supply only a U.L. Class "A" fire rated roofing system.

If the roofing system and/or related components are not a replacement in kind, then the Consultant shall submit a signed and sealed calculations to the DPMC Design and Code Review Unit Manager verifying that the existing roof structure can support all loads of the new roofing system and components per current code requirements.

5. Flashing

All rooftop HVAC curbing, parapet walls, conduit, pipe supports, pipe vents, roof hatch, ventilation fans, and other roof penetrations must have new flashing installed as part of this project.

All pipe flashings are to be pre-molded and provided with stainless steel pipe clamps at each penetration.

6. Parapet Walls & Coping

Provide a design to repair or replace any damaged coping on the parapet walls as part of this project including design details to seal the coping joints.

7. Walkways

As applicable, provide new walkway protection from access points to and around all roof mounted HVAC units and/or other similar equipment requiring periodic servicing and any other trafficking areas.

8. Roof Drains

All drains shall be removed and reset or repositioned so that the drain is below the roof membrane surface. Provide for the interior cleaning, repair, replacement and additional drains as required and ensure that drainage water will be carried away from the building foundations, footings, lanes and sidewalks. Investigate the abandonment of leaking interior drain lines and the installation of new interior lines where access is impossible for repairs and/or replacement. Piping from HVAC units should properly discharge into drains.

Provide additional roof drains where required to eliminate standing or ponding water. New interior roof drain piping shall be designed to avoid interference with existing ductwork, structural members, and miscellaneous piping, electrical conduit, hangers, etc. The design documents shall include detailed information that describes the methods required to protect the furniture, equipment, and interior building finishes.

9. Night Seals

Specify in the design documents that only as much roofing insulation, membrane, and flashing as can be made weather tight shall be installed each day. Install temporary water tight night seals around all exposed edges of the roofing assembly at the end of each work day and when work must be postponed due to inclement weather.

10. Fire Protection Program

Address fire protection requirements during the demolition and installation of the roofing system. Language shall be included that states open flames such as propane torches, kettles, flame cutting, and welding cannot be used on the construction site until a fire watch program has been submitted by the Contractor and approved by the Consultant and Project Team members.

11. Allowable Roof System Installation

The design documents shall specify the weather and temperature installation restrictions based on the roof system manufacturer's recommendations.

12. Warranty

The roofing manufacturer's warranty shall be for a minimum of twenty (20) years.

13. Unit Prices

If the total amount or quantity of repair work cannot be determined for a roof related item by the roof inspection process, then the Consultant shall include a "Unit Price" Section in Division 1 of the specification for that item. Items may include deteriorated concrete or metal decking, plywood sheathing, wood blocking or curbing, vapor barriers, interior roof drains, etc.

B. HAZARDOUS BUILDING MATERIALS

Consultant shall survey the building and related components and, if deemed necessary, collect samples of materials that will be impacted by the construction/demolition activities and analyze them for the presence of hazardous materials including:

1. Asbestos in accordance with N.J.A.C. 5:23-8, Asbestos Hazard Abatement Sub-code.

2. Lead in accordance with N.J.A.C. 5:17, Lead Hazard Evaluation and Abatement Code.

3. PCB's in accordance with 40 CFR 761, Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions. Consultant shall engage a firm certified in the testing and analysis of materials containing PCB's.

4. Mold.

Consultant shall document their procedure, process and findings and prepare a "Hazardous Materials Survey Report" identifying building components impacted by construction activities requiring hazardous materials abatement. Consultant shall provide three copies of the "Hazardous Materials Survey Report" to the Project Manager.

Consultant shall estimate the cost of hazardous materials sample collection, testing, analysis and preparation of the Hazardous Materials Survey Report and include that amount in their fee proposal line item entitled **"Hazardous Materials Testing and Report Allowance,"** refer to paragraph **X.B**.

Based on the Hazardous Materials Survey Report, Consultant shall provide construction documents for abatement of the hazardous materials impacted by the work in accordance with the applicable code, sub-code and Federal regulations.

Consultant shall estimate the cost to prepare construction documents for hazardous materials abatement and include that amount in their fee proposal line item entitled **"Hazardous Materials Abatement Design Allowance,"** refer to paragraph **X.C**.

Consultant shall estimate the cost to provide "Construction Monitoring and Administration Services" for hazardous materials abatement activities and include that amount in their fee proposal line item entitled **"Hazardous Materials Construction Administration Allowance,"** refer to paragraph **X.D**.

There shall be no "mark-up" of sub-consultant or subcontractor fees if sub-consultants or subcontractors are engaged to perform any of the work defined in paragraph **VII.B** "**Hazardous Building Materials."** All costs associated with managing, coordinating, observing and administrating sub-consultants and subcontractors performing hazardous materials sampling, testing, analysis, report preparation, hazardous materials construction administration services shall
be included in the consultant's lump sum fee proposal.

B. DESIGN MEETINGS & PRESENTATIONS

1. Design Meetings

Conduct the appropriate number of review meetings with the Project Team members during each design phase of the project so they may determine if the project meets their requirements, question any aspect of the contract deliverables, and make changes where appropriate. The Consultant shall describe the philosophy and process used in the development of the design criteria and the various alternatives considered to meet the project objectives. Selected studies, sketches, cost estimates, schedules, and other relevant information shall be presented to support

the design solutions proposed. Special considerations shall also be addressed such as: contractor site access limitations, utility shutdowns and switchover coordination, phased construction and schedule requirements, security restrictions, available swing space, material and equipment delivery dates, etc.

It shall also be the responsibility of the Consultant to arrange and require all critical Sub-Consultants to be in attendance at the design review meetings.

Record the minutes of each design meeting and distribute within three (3) calendar days to all attendees and those persons specified to be on the distribution list by the Project Manager.

2. Design Presentations

The minimum number of design presentations required for each phase of this project is identified below for reference:

Design Development Phase: One (1) oral presentation at phase completion.

Final Design Phase: One (1) oral presentation at phase completion.

C. EXISTING DOCUMENTATION

Copies of the following documents will be provided to each Consulting firm at the pre-proposal meeting to assist in the bidding process.

- A0919-00 Roof replacement 2002, by Armm Associates, INC.
- State Museum - Additional Drawings 1962.
- Structural Drawings - State Museum

Review these documents and any additional information that may be provided at a later date such as reports, studies, surveys, equipment manuals, as-built drawings, etc. The State does not attest to the accuracy of the information provided and accepts no responsibility for the consequences of errors by the use of any information and material contained in the documentation provided. It shall be the responsibility of the Consultant to verify the contents and assume full responsibility for any determination or conclusion drawn from the material used. If the information provided is insufficient, the Consultant shall take the appropriate actions necessary to obtain the additional information required.

All original documentation shall be returned to the provider at the completion of the project.

VIII. PERMITS & APPROVALS

A. NJ UNIFORM CONSTRUCTION CODE PLAN REVIEW AND PERMIT

The project construction documents must comply with the latest adopted edition of the NJ Uniform Construction Code (NJUCC).

The latest NJUCC Adopted Codes and Standards can be found at:

https://www.nj.gov/dca/codes/codreg/ucc.shtml

1. NJUCC Plan Review

Consultant shall estimate the cost of the NJUCC Plan Review by DCA and include that amount in their fee proposal line item entitled **"Plan Review and Permit Fee Allowance,"** refer to paragraph XIII.A.

Upon approval of the Final Design Phase Submission by DPMC, the Consultant shall submit the construction documents to the DCA, Bureau of Construction Project Review to secure a complete plan release.

As of July 25, 2022, the DCA is only accepting digital signatures and seals issued from a third party certificate authority.

Procedures for submission to the DCA Plan Review Unit can be found at:

https://www.nj.gov/dca/codes/forms/pdf_bcpr/pr_app_guide.pdf

Consultant shall complete the "Project Review Application" and include the following on Block 5 as the "Owner's Designated Agent Name":

Trevor M. Dittmar, DPMC
PO Box 235
Trenton, NJ 08625-0235
Trevor.Dittmar@treas.nj.gov 609-984-5529

The Consultant shall complete the NJUCC "Plan Review Fee Schedule", determine the fee due and pay the NJUCC Plan Review fees, refer to Paragraph XIII.A.

The NJUCC "Plan Review Fee Schedule" can be found at:

https://www.nj.gov/dca/codes/forms/pdf_bcpr/pr_fees.pdf

2. NJUCC Permit

Upon receipt of a complete plan release from the DCA Bureau of Construction Project Review, the Consultant shall complete the NJUCC permit application and all applicable technical sub-code sections. The "Agent Section" of the application and certification section of the building sub-code section shall be signed. These documents, with **six (6) sets of DCA or DPMC released drawings and specifications, with raised seals and wet signatures** shall be forwarded to the DPMC Project Manager.

The Consultant may obtain copies of all NJUCC permit applications at the following website:

https://www.nj.gov/dca/codes/resources/constructionpermitforms.shtml

All other required project permits shall be obtained and paid for by the Consultant in accordance with the procedures described in Paragraph VIII.B.

3. Prior Approval Certification Letters

The issuance of a construction permit for this project may be contingent upon acquiring various "prior approvals" as defined by N.J.A.C. 5:23-1.4. It is the Consultant's responsibility to determine which prior approvals, if any, are required. The Consultant shall submit a general certification letter to the DPMC Plan & Code Review Unit Manager during the Permit Phase of this project that certifies all required prior approvals have been obtained.

In addition to the general certification letter discussed above, the following specific prior approval certification letters, where applicable, shall be submitted by the Consultant to the DPMC Plan & Code Review Unit Manager: Soil Erosion & Sediment Control; Water & Sewer Treatment Works Approval; Coastal Areas Facilities Review; Compliance of Underground Storage Tank Systems with N.J.A.C. 7:14B; Pinelands Commission; Highlands Council; Well Construction and Maintenance; Sealing of Abandoned Wells with N.J.A.C. 7:9D; Certification that all utilities have been disconnected from structures to be demolished; Board of Health Approval for Potable Water Wells; Health Department Approval for Septic Systems; and Notification to Adjoining Property Owners with N.J.A.C. 5:23-2.17(c). It shall be noted that in accordance with N.J.A.C. 5:23-2.15(a)5, a permit cannot be issued until the letter(s) of certification is received.

4. Multi-building or Multi-site Permits

A project that involves many buildings and/or sites requires that a separate permit shall be issued for each building or site. The Consultant must determine the construction cost estimate for *each* building and/or site location and submit that amount where indicated on the permit application.

5. Special Inspections

In accordance with the requirements of the NJUCC N.J.A.C. 5:23-2.20(b), Bulletin 03-5 and Chapter 17 of the International Building Code, the Consultant shall be responsible for the coordination of all special inspections during the construction phase of the project.

Bulletin 03-5 can be found at:

https://www.nj.gov/dca/codes/publications/pdf_bulletins/b_03_5.pdf

a. Definition

Special inspections are defined as an independent verification by a certified special inspector for **Class I buildings and smoke control systems in any class building**. The special inspector is to be independent from the contractor and responsible to the Consultant so that there is no possible conflict of interest.

Special inspectors shall be certified in accordance with the requirements in the NJUCC.

b. Responsibilities

The Consultant shall submit with the permit application, a list of special inspections and the agencies or special inspectors that will be responsible to carry out the inspections required for the project. The list shall be a separate document, on letter head, signed and sealed.

B. OTHER REGULATORY AGENCY PERMITS, CERTIFICATES AND APPROVALS

The Consultant shall identify and obtain all other State Regulatory Agency permits, certificates, and approvals that will govern and affect the work described in this Scope of Work. An itemized list of these permits, certificates, and approvals shall be included with the Consultant's Technical Proposal and the total amount of the application fees should be entered in the Fee Proposal line item entitled, **"Plan Review and Permit Fee Allowance."**

The Consultant may refer to the DPMC "Procedures for Architects and Engineers Manual," Paragraph "**9. REGULATORY AGENCY APPROVALS"** which presents a compendium of State permits, certificates, and approvals that may be required for this project.

The Consultant shall determine the appropriate phase of the project to submit the permit application(s) in order to meet the approved project milestone dates.

Where reference to an established industry standard is made, it shall be understood to mean the most recent edition of the standard unless otherwise noted. If an industry standard is found to be

revoked, or should the standard have undergone substantial change or revision from the time that the Scope of Work was developed, the Consultant shall comply with the most recent edition of the standard.

IX. BIDDING AND CONTRACT AWARD RESPONSIBILITIES

The Bidding and Contract Award Phase commences with receipt of the required permits, UCC plan release and verification that funding is in place for construction. The Consultant shall refer to the DPMC "Procedures for Architects and Engineers Manual", Paragraph "17. BIDDING AND CONTRACT AWARD" for all requirements for this phase available at https://www.nj.gov/treasury/dpmc/Assets/Files/ProceduresforArchitectsandEngineers.pdf.

X. CONSTRUCTION ADMINISTRATION RESPONSIBILITIES

The A/E and their sub-consultants shall, unless otherwise specified in the project specific Scope of Work, provide site administration during the construction of the project. The services required of such site administration shall include, but shall not be limited to, attend and chair the pre-construction meeting, conduct weekly field observations, attend and chair regularly scheduled bi-weekly job meetings, review/approve shop drawings, submittals, and respond to RFI's.

The Consultant shall refer to the DPMC "Procedures for Architects and Engineers Manual", Paragraph "18. CONSTRUCTION PHASE" for all construction administration requirements available at https://www.nj.gov/treasury/dpmc/Assets/Files/ProceduresforArchitectsandEngineers.pdf.

XI. PROJECT CLOSE-OUT PHASE

The DPMC Project Manager has the full responsibility for the planning, scheduling, and execution of project close-out activities. The A/E is responsible to cooperate with the DPMC Project Manager in the planning, scheduling, and execution of project close-out activities. The Consultant shall refer to the DPMC "Procedures for Architects and Engineers Manual", Paragraph "19. PROJECT CLOSE-OUT PHASE" for all requirements available at https://www.nj.gov/treasury/dpmc/Assets/Files/ProceduresforArchitectsandEngineers.pdf.

XII. ENERGY REBATE AND INCENTIVE PROGRAMS

The Consultant shall review any and all programs on the State and Federal level to determine if any proposed upgrades to the mechanical and/or electrical equipment and systems for this project qualify for approved rebates and incentives.

The Consultant shall review the programs available on the "New Jersey's Clean Energy Program" website at: http://www.njcleanenergy.com as well as federal websites and New Jersey electric and gas utility websites to determine if and how they can be applied to this project.

The Consultant shall identify all applicable rebates and incentives in their technical proposal and throughout the design phase.

The Consultant shall be responsible to complete the appropriate registration forms and applications, provide any applicable worksheets, manufacturer's specification sheets, calculations, attend meetings, and participate in all activities with designated representatives of the programs and utility companies to obtain the entitled financial incentives and rebates for this project.

All costs associated with this work shall be estimated by the Consultant and the amount included in the base bid of its fee proposal.

XIII. ALLOWANCES

A. PLAN REVIEW AND PERMIT FEE ALLOWANCE

The Consultant shall obtain and pay for all of the project permits in accordance with the guidelines identified below.

1. Permits

The Consultant shall determine the various permits, certificates, and approvals required to complete this project.

2. Permit Costs

The Consultant shall estimate the application fee costs for all of the required project permits, certificates, and approvals (excluding the NJUCC permit) and include that amount in its fee proposal line item entitled **"Plan Review and Permit Fee Allowance."** A breakdown of each permit and application fee shall be attached to the fee proposal for reference.

NOTE: The NJUCC permit is excluded since it will be paid for by the State.

3. Applications

The Consultant shall complete and submit all permit applications to the appropriate permitting authorities and the costs shall be paid from the Consultant's permit fee allowance. A copy of the application(s) and the original permit(s) obtained by the Consultant shall be given to the DPMC Project Manager for distribution during construction.

4. Consultant Fee

The Consultant shall determine what is required to complete and submit the permit applications, obtain supporting documentation, attend meetings, etc., and include the total cost in the base bid of its fee proposal.

Any funds remaining in the permit allowance will be returned to the State at the close of the project.

B. HAZARDOUS MATERIALS TESTING AND REPORT ALLOWANCE

Consultant shall estimate the costs to complete the hazardous materials survey, sample collection, testing and analysis and preparation of a "Hazardous Materials Survey Report" noted in paragraph **VII.B** and enter that amount on their fee proposal line item entitled **"Hazardous Materials Testing and Report Allowance,"** Consultant shall attach a detailed cost breakdown sheet for use by DPMC during the proposal review and potential fee negotiations. The cost breakdown sheet shall include, but not be limited to, the following information:

- Description of tasks and estimated cost for the following:
    - Sample collection;
    - Sample testing; and,
    - Preparation of a Hazardous Materials Survey Report.

Any funds remaining in the Hazardous Materials Testing and Report Allowance will be returned to the State at the close of the project.

C. HAZARDOUS MATERIALS ABATEMENT DESIGN ALLOWANCE

The Consultant shall estimate the costs to prepare construction documents for hazardous materials abatement noted in paragraph **VII.B** and enter that amount on their fee proposal line item entitled **"Hazardous Materials Abatement Design Allowance."** Consultant shall attach a detailed cost breakdown sheet for use by DPMC during the proposal review and potential fee negotiations. The cost breakdown sheet shall include a description of the tasks to be performed and the estimated cost of each task.

Any funds remaining in the Hazardous Materials Abatement Design Allowance will be returned to the State at the close of the project.

D. HAZARDOUS MATERIALS CONSTRUCTION ADMINISTRATION ALLOWANCE

Consultant shall estimate the cost to provide Construction Monitoring and Administration Services for hazardous materials abatement as noted in paragraph **VII.B** and enter that amount on their fee proposal line item entitled "**Hazardous Materials Construction Administration Allowance.**" Consultant shall attach a detailed cost breakdown sheet for use by DPMC during the proposal review and potential fee negotiations. The cost breakdown sheet shall include a description of the tasks to be performed and the estimated cost of each task.

Any funds remaining in the Hazardous Materials Construction Administration Allowance will be returned to the State at the close of the project.

E. ROOF MONITOR ALLOWANCE

The Consultant shall provide a full time roof monitor pre-qualified with DPMC in the P028 Roofing Inspection Specialty Discipline during the installation of the roof system on the building. See section VII, paragraph C of this Scope of Work for a description of services to be provided by a roof monitor.

The costs for the services provided by the roof monitor shall be included in the "**Roof Monitor Allowance"** of their fee proposal. A cost breakdown sheet shall accompany the fee proposal that identifies all costs associated with the Roof Monitoring services to be provided.

Any funds remaining in the Allowance shall be returned to the State at the end of the project.

XIV. SOW SIGNATURE APPROVAL SHEET

This Scope of Work shall not be considered a valid document unless all signatures appear in each designated area below.

The client agency approval signature on this page indicates that they have reviewed the design criteria and construction schedule described in this project Scope of Work (including the subsequent contract deliverables and exhibits) and verifies that the work will not conflict with the existing or future construction activities of other projects at the site.

SOW PREPARED BY: Lucy Ibrahim 09/24/2025

LUCY IBRAHIM, PROJECT MANAGER DATE
DPMC PROJECT PLANNING & INITIATION

SOW APPROVED BY: James Wright 10/1/2025

JAMES WRIGHT, MANAGER DATE
DPMC PROJECT PLANNING & INITIATION

SOW APPROVED BY: 10/07/25

MARK DAE, ASSISTANT CHIEF ENGINEER & PLANT DATE
DPMC PROJECT MANAGEMENT GROUP

SOW APPROVED BY: Cristina Zozzaro 10/10/2025

CRISTINA ZOZZARO, PROJECT MANAGER DATE
DPMC PROJECT MANAGEMENT GROUP

SOW APPROVED BY: Jeanette M Barnard 10.27.25

JEANETTE M. BARNARD, DEPUTY DIRECTOR DATE
DIV PROPERTY MGT & CONSTRUCTION

XV. CONTRACT DELIVERABLES

The following are checklists listing the Contract Deliverables that are required at the completion of each phase of this project. The Consultant shall refer to the DPMC publication entitled "Procedures for Architects and Engineers," 3.0 Edition, dated September 2022 available at https://www.nj.gov/treasury/dpmc/Assets/Files/ProceduresforArchitectsandEngineers.pdf for a detailed description of the deliverables required for each submission item listed. References to the applicable paragraphs of the "Procedures for Architects and Engineers" are provided.

Note that the Deliverables Checklist may include submission items that are "S.O.W. Specific Requirements." These requirements will be defined in the project specific scope of work and included on the deliverables checklist.

This project includes the following phases with the deliverables noted as "Required by S.O.W" on the Deliverables Checklist:

DESIGN DEVELOPMENT PHASE;

FINAL DESIGN PHASE;

PERMIT APPLICATION PHASE;

BIDDING AND CONTRACT AWARD;

CONSTRUCTION PHASE; and

PROJECT CLOSE-OUT PHASE

XVI. EXHIBITS

A. SAMPLE PROJECT SCHEDULE FORMAT
B. PROJECT SITE LOCATION MAP
C. STATE MUSEUM ROOF CONDITIONS ASSESSMENT – 2021

END OF SCOPE OF WORK

DPMC Project No.: A1430-00

Deliverables Checklist
Design Development Phase

A/E Name: _____

A/E Manual Reference	Submission Item	Required by S.O.W.		Previously Submitted		Enclosed	
		Yes	No	Yes	No	Yes	No
14.4.1.	A/E Statement of Site Visit						
14.4.2.	Narrative Description of Project						
14.4.3.	Building Code Information Questionnaire						
14.4.4.	Space Analysis						
14.4.5.	Special Features						
14.4.6.	Catalog Cuts						
14.4.7.	Site Evaluation						
14.4.8.	Subsurface Investigation						
14.4.9.	Surveys						
14.4.10.	Arts Inclusion						
14.4.11.	Design Rendering						
14.4.12.	Regulatory Approvals						
14.4.13.	Utility Availability						
14.4.14.	Drawings (6 Sets)						
14.4.15.	Specifications (6 Sets)						
14.4.16.	Current Working Estimate/Cost Analysis in CSI Format						
14.4.17.	Project Schedule						
14.4.18.	Formal Presentation						
14.4.19.	Plan Review/Scope of Work Compliance Statement						
14.4.20.	Design development Phase Deliverables Checklist						
S.O.W. Reference	**S.O.W. Specific Requirements**						

This checklist shall be completed by the Design Consultant and included as the cover sheet of this submission to document to the DPMC the status of all the deliverables required by the project specific Scope of Work.

_____ _____

Consultant Signature Date

DPMC Project No.: A1430-00

Deliverables Checklist
Final Design Phase

A/E Name: _____

A/E Manual Reference	Submission Item	Required by S.O.W.		Previously Submitted		Enclosed	
		Yes	No	Yes	No	Yes	No
15.4.1.	A/E Statement of Site Visit						
15.4.2.	Narrative Description of Project						
15.4.3.	Building Code Information Questionnaire						
15.4.4.	Space Analysis						
15.4.5.	Special Features						
15.4.6.	Catalog Cuts						
15.4.7.	Site Evaluation						
15.4.8.	Subsurface Investigation						
15.4.9.	Surveys						
15.4.10.	Arts Inclusion						
15.4.11.	Design Rendering						
15.4.12.	Regulatory Approvals						
15.4.13.	Utility Availability						
15.4.14.	Drawings (6 Sets)						
15.4.15.	Specifications (6 Sets)						
15.4.16.	Current Working Estimate/Cost Analysis in CSI Format						
15.4.17.	Project Schedule						
15.4.18.	Formal Presentation						
15.4.19.	Plan Review/Scope of Work Compliance Statement						
15.4.20.	Final Design Phase Deliverables Checklist						
S.O.W. Reference	**S.O.W. Specific Requirements**						

This checklist shall be completed by the Design Consultant and included as the cover sheet of this submission to document to the DPMC the status of all the deliverables required by the project specific Scope of Work.

_____ _____

Consultant Signature Date

DPMC Project No.: A1430-00

Deliverables Checklist
Permit Application Phase

A/E Name: _____

A/E Manual Reference	Submission Item	Required by S.O.W.		Previously Submitted		Enclosed	
		Yes	No	Yes	No	Yes	No
16.1.	N.J. UCC Permit Application						
16.4.	Drawings, Signed and Sealed (6 Sets)						
16.5.	Specifications, Signed and Sealed (6 Sets)						
16.6.	Current Working Estimate/Cost Analysis in CI Format						
16.7.	Project Schedule						
16.8.	Plan Review/Scope of Work Compliance Statement						
16.9.	Permit Application Phase Deliverables Checklist						
S.O.W. Reference	**S.O.W. Specific Requirements**						

This checklist shall be completed by the Design Consultant and included as the cover sheet of this submission to document to the DPMC Project Manager the status of all the deliverables required by the project specific Scope of Work.

_____ _____

Consultant Signature Date

Deliverables Checklist
Bidding and Contract Award Phase

A/E Name: _____

A/E Manual Reference	Submission Item	Required by S.O.W.		Previously Submitted		Enclosed	
		Yes	No	Yes	No	Yes	No
17.1.1.	Notice of Advertising						
17.1.2.	Bid Proposal Form						
17.1.3.	Bid Clearance Form						
17.1.4.	Drawings (6 Sets)						
17.1.5.	Specifications (6 Sets)						
17.1.6.	Construction Schedule						
17.3	Pre-Bid Conference/Mandatory Site Visit						
17.3.1.	Meeting Minutes						
17.4	Bulletins						
17.5	Post Bid Meeting						
17.6.	Contract Award "Letter of Recommendation"						
17.8.	Bid Protests - Hearings						
17.9.	Bidding and Contract Award Phase Deliverables Checklist						
S.O.W. Reference	**S.O.W. Specific Requirements**						

This checklist shall be completed by the Design Consultant and included as the cover sheet of this submission to document to the DPMC the status of all the deliverables required by the project specific Scope of Work.

_____ _____

Consultant Signature Date

Deliverables Checklist
Construction Phase

A/E Name: _____

A/E Manual Reference	Submission Item	Required by S.O.W.		Previously Submitted		Enclosed	
		Yes	No	Yes	No	Yes	No
18.2.	Pre-Construction Meeting						
18.3.	Submittal Log						
18.4.	Construction Schedule						
18.5.	Project Progress Meetings						
18.7.	Contractor's Invoicing and Payment Process						
18.8.	Contractor Submittals						
18.10.	Testing						
18.11.	Shop Drawings (6 Sets)						
18.12.	As-Built & Record Set Drawings (6 Sets)						
18.13.	Change Orders						
18.14.	Construction Photographs						
18.15.	Field Observations						
18.17.	Construction Phase Deliverables Checklist						
S.O.W. Reference	**S.O.W. Specific Requirements**						

This checklist shall be completed by the Design Consultant and included as the cover sheet of this submission to document to the DPMC the status of all the deliverables required by the project specific Scope of Work.

_____ _____

Consultant Signature Date

Deliverables Checklist
Project Close-Out Phase

A/E Name: _____

A/E Manual Reference	Submission Item	Required by S.O.W.		Previously Submitted		Enclosed	
		Yes	No	Yes	No	Yes	No
19.3.	Development of Punch List and Inspection Reports						
19.5.	Determination of Substantial Completion						
19.6.	Correction/Completion of Punch List						
19.7.	Submission of Close-Out Documentation						
19.7.1.	As-Built and Record Sets of Drawing (6 Sets)						
19.8.	Final Payment						
19.9.1.	Contractors Final Payment						
19.9.2.	A/E's Final Payment						
19.10.	Project Close-Out Phase Deliverables Checklist						
S.O.W. Reference	**S.O.W. Specific Requirements**						

This checklist shall be completed by the Design Consultant and included as the cover sheet of this submission to document to the DPMC the status of all the deliverables required by the project specific Scope of Work.

_____ _____

Consultant Signature Date

Typical DPMC Project - Random Selection of Design Consultant

ID	Task Name	Start	Finish	Duration
0	**Typical Project Model**	**Mon 5/19/...**	**Fri 4/9/27**	**691 days**
1	**Project Initiation Phase**	**Mon 5/19/25**	**Mon 7/14/25**	**57 days**
2	Project Funding Received	Mon 5/19/25	Mon 5/19/25	1 day
3	Schedule Site Visit	Thu 5/22/25	Thu 5/22/25	1 day
4	Site Visit	Fri 5/30/25	Fri 5/30/25	1 day
5	Prepare Draft SOW	Mon 6/2/25	Fri 6/6/25	5 days
6	Distribute Draft SOW for Review	Mon 6/9/25	Mon 6/9/25	1 day
7	Review SOW	Tue 6/10/25	Mon 6/23/25	10 days
8	Review SOW	Tue 6/10/25	Mon 6/23/25	10 days
9	Review SOW	Tue 6/10/25	Mon 6/23/25	10 days
10	Receive Comments Revise SOW	Tue 6/24/25	Mon 6/30/25	5 days
11	Distribute Final SOW for Review & Signature	Tue 7/1/25	Tue 7/1/25	1 day
12	Review & Sign SOW	Wed 7/2/25	Wed 7/2/25	1 day
13	Review & Sign SOW	Mon 7/7/25	Mon 7/7/25	1 day
14	Review & Sign SOW	Thu 7/10/25	Thu 7/10/25	1 day
15	Forward SOW to Procurement	Mon 7/14/25	Mon 7/14/25	1 day
16	**Consultant Selection Phase**	**Tue 7/15/25**	**Mon 9/1/25**	**49 days**
17	Prepare Solicitation, Advertise Proj	Tue 7/15/25	Wed 7/16/25	2 days
18	Select Firms - Random Selection	Thu 7/17/25	Thu 7/17/25	1 day
19	Conduct Preproposal Meeting	Mon 7/28/25	Mon 7/28/25	1 day
20	Consultant Questions Due - Prepare and Issue Addenda	Tue 7/29/25	Tue 7/29/25	1 day
21	Receive Proposals - Distribute for Review	Tue 8/12/25	Tue 8/12/25	1 day
22	Review & Rank Proposals	Wed 8/13/25	Tue 8/19/25	5 days
23	Review & Rank Proposals	Wed 8/13/25	Tue 8/19/25	5 days
24	Review & Rank Proposals	Wed 8/13/25	Tue 8/19/25	5 days
25	Determine Rankings, Open Fee Proposals and Distribute to Committee	Wed 8/20/25	Wed 8/20/25	1 day
26	Negotiate Fee	Thu 8/21/25	Wed 8/27/25	5 days
27	Provide Funding for Consultant Contract	Thu 8/28/25	Thu 8/28/25	1 day
28	Complete Recommendation to Awa	Thu 8/28/25	Fri 8/29/25	2 days
29	Consultant Contract Award	Sat 8/30/25	Mon 9/1/25	2 days
30	**Design Phase**	**Sun 9/7/25**	**Fri 5/8/26**	**244 days**
31	Design Contract "Kick-Off" Meeting	Sun 9/7/25	Mon 9/8/25	2 days
32	Program Design Phase	Tue 9/9/25	Mon 10/6/25	28 days
33	Receive Program Submittal & Distribute for Review	Tue 10/7/25	Thu 10/9/25	3 days

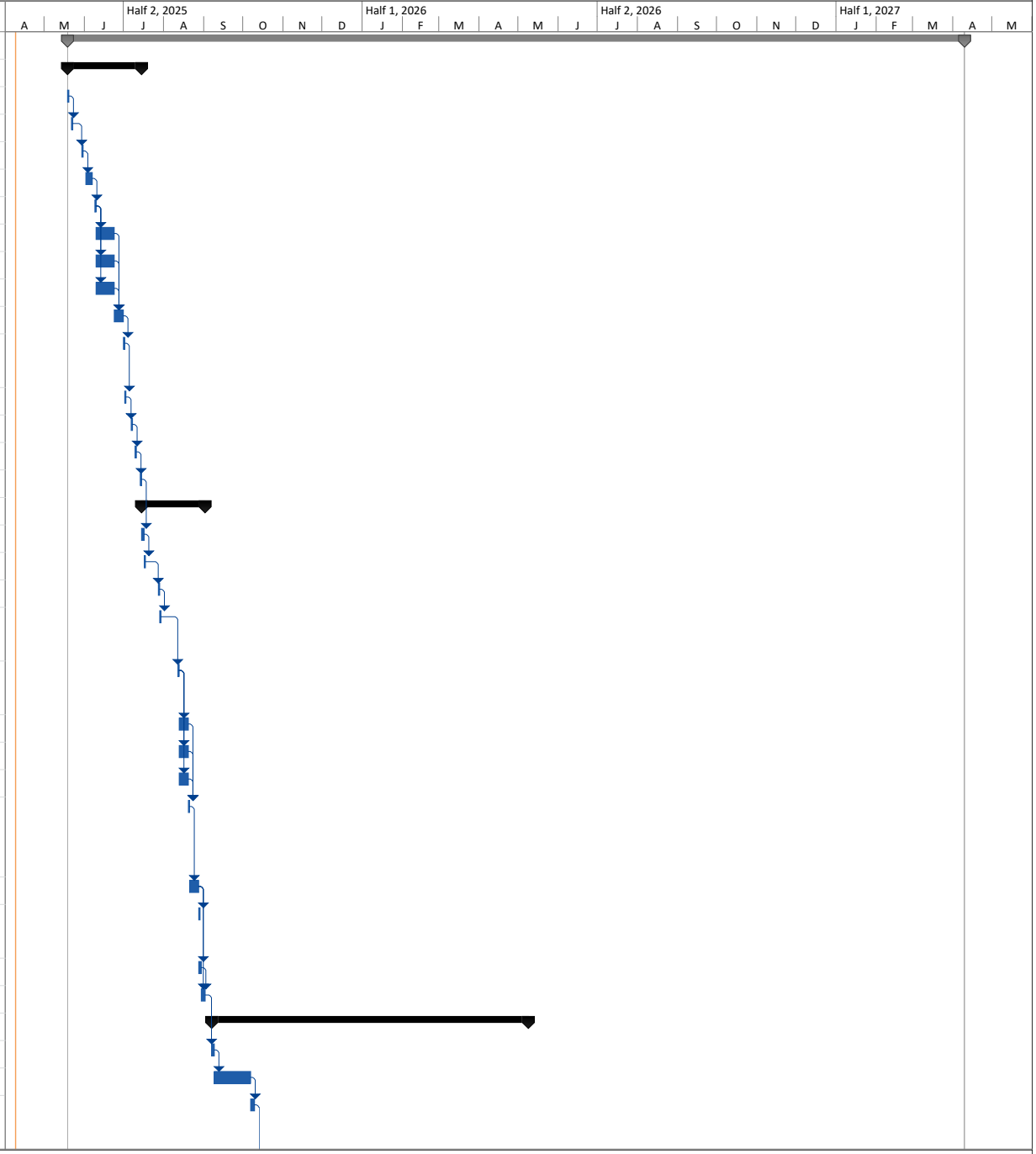


EXHIBIT 'A'

Typical DPMC Project - Random Selection of Design Consultant

ID	Task Name	Start	Finish	Duration
34	Program Phase Presentation/Submittal	Fri 10/10/25	Fri 10/10/25	1 day
35	Review Program Phase	Mon 10/13/25	Fri 10/24/25	10 days
36	Review Program Phase	Mon 10/13/25	Fri 10/24/25	10 days
37	Review Program Phase	Mon 10/13/25	Fri 10/24/25	10 days
38	Receive Program Phase Comments, Review & Consolidate and Forward to Consultant	Mon 10/27/25	Wed 10/29/25	3 days
39	Schematic Design Phase	Thu 10/30/25	Wed 11/26/25	28 days
40	Receive Schematic Submittal & Distribute for Review	Thu 11/27/25	Mon 12/1/25	3 days
41	Schematic Phase Presentation/Submittal	Tue 12/2/25	Tue 12/2/25	1 day
42	Review Schematic Phase	Wed 12/3/25	Tue 12/16/25	10 days
43	Review Schematic Phase	Wed 12/3/25	Tue 12/16/25	10 days
44	Review Schematic Phase	Wed 12/3/25	Tue 12/16/25	10 days
45	Receive Schematic Phase Comments, Review & Consolidate and Forward to Consultant	Wed 12/17/25	Fri 12/19/25	3 days
46	Design Development (DD) Design Phase	Sat 12/20/25	Fri 1/16/26	28 days
47	Receive DD Submittal & Distribute for Review	Mon 1/19/26	Wed 1/21/26	3 days
48	DD Phase Presentation/Submittal	Thu 1/22/26	Thu 1/22/26	1 day
49	Review DD Phase	Fri 1/23/26	Thu 2/5/26	10 days
50	Review DD Phase	Fri 1/23/26	Thu 2/5/26	10 days
51	Review DD Phase	Fri 1/23/26	Thu 2/5/26	10 days
52	Receive DD Phase Comments, Review & Consolidate and Forward to Consultant	Fri 2/6/26	Tue 2/10/26	3 days
53	Final Design Phase	Wed 2/11/26	Tue 3/10/26	28 days
54	Final Submittal & Distribute for Rev	Wed 3/11/26	Fri 3/13/26	3 days
55	Final Phase Presentation/Submittal	Sat 3/14/26	Mon 3/16/26	2 days
56	Review Final Phase	Tue 3/17/26	Mon 3/30/26	10 days
57	Review Final Phase	Tue 3/17/26	Mon 3/30/26	10 days
58	Review Final Phase	Tue 3/17/26	Mon 3/30/26	10 days
59	Review Final Phase	Tue 3/17/26	Mon 3/30/26	10 days
60	Receive Final Phase Comments, Review & Consolidate and Forward to Consultant	Tue 3/31/26	Thu 4/2/26	3 days
61	Final/Permit Design Phase	Fri 4/3/26	Thu 4/16/26	14 days

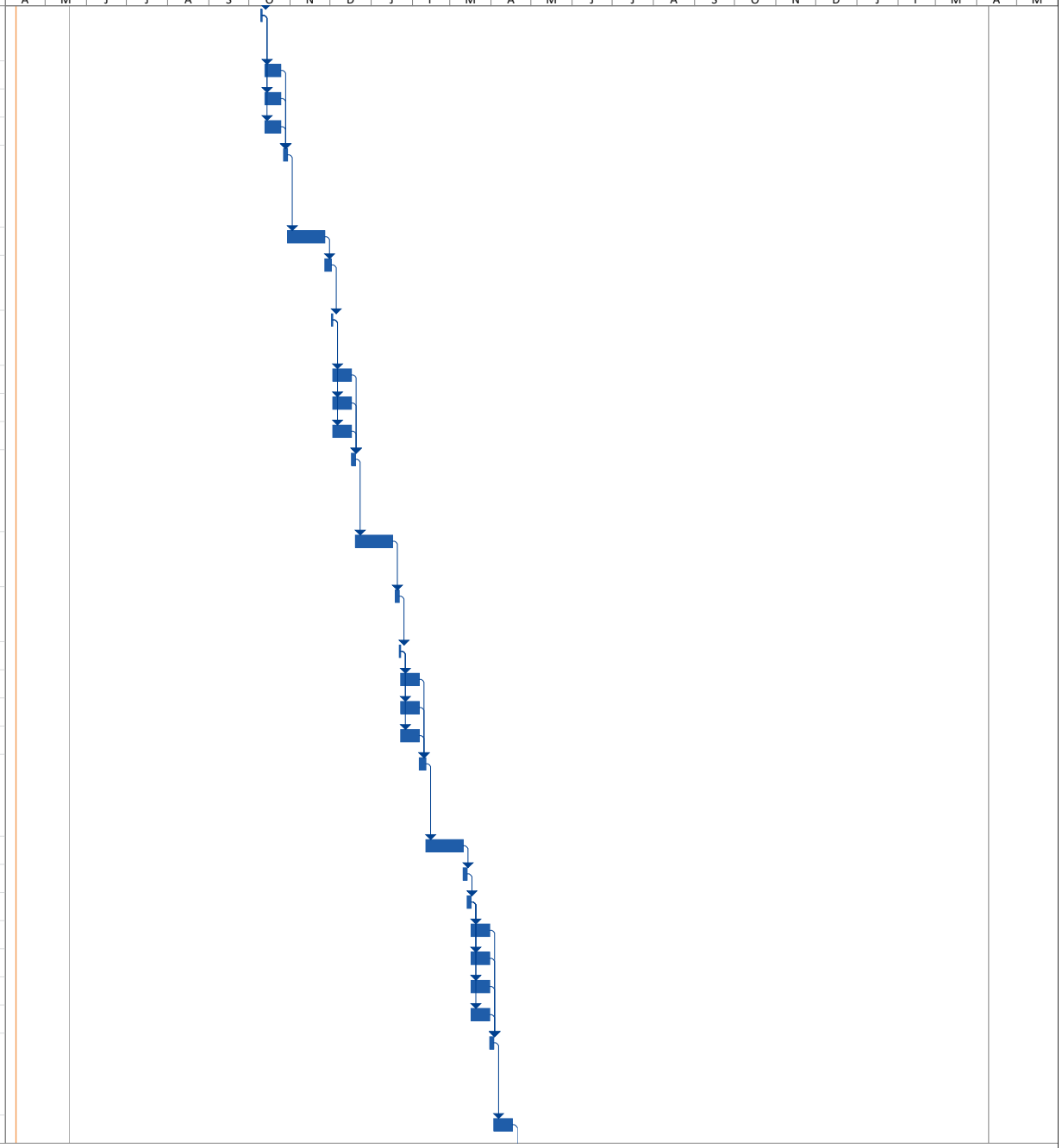


EXHIBIT 'A'

Typical DPMC Project - Random Selection of Design Consultant

ID	Task Name	Start	Finish	Duration
62	Final/Permit Submittal & Distribute for Review	Fri 4/17/26	Tue 4/21/26	3 days
63	Review Final/Permit Phase	Wed 4/22/26	Tue 5/5/26	10 days
64	Receive Final/Permit Phase Approval and Forward to	Wed 5/6/26	Fri 5/8/26	3 days
65	**Permit Acquisition Phase**	**Wed 4/22/26**	**Fri 5/22/26**	**31 days**
66	Prepare UCC Application, Bid Clearance & Submit Bid Package	Sat 5/9/26	Fri 5/15/26	7 days
67	Provide Funding for Construction	Wed 4/22/26	Wed 4/22/26	1 day
68	Secure Bid Clearance Including Funding Verification	Mon 5/18/26	Fri 5/22/26	5 days
69	**Advertise-Bid-Award Phase**	**Mon 5/25/26**	**Thu 7/23/26**	**60 days**
70	Advertise Project for Construction	Mon 5/25/26	Mon 5/25/26	1 day
71	Conduct Pre-Bid Meeting	Tue 6/9/26	Tue 6/9/26	1 day
72	Contractor Questions Due - Prepare and Issue Bulletin	Mon 6/15/26	Wed 6/17/26	3 days
73	Construction Bids Due - Open Bids	Tue 6/23/26	Tue 6/23/26	1 day
74	Conduct Post Bid Review Meeting	Mon 6/29/26	Mon 6/29/26	1 day
75	Prepare and Submit Recommendation for Award	Tue 6/30/26	Wed 7/1/26	2 days
76	Prepare and Submit Recommendation for Award	Thu 7/2/26	Fri 7/3/26	2 days
77	Prepare Contract and Schedule Award Meeting	Mon 7/6/26	Fri 7/10/26	5 days
78	Conduct Contract Award Meeting/Issue NTP	Thu 7/16/26	Thu 7/16/26	1 day
79	Sign/Seal UCC Permit Applications	Thu 7/16/26	Thu 7/16/26	1 day
80	Secure UCC Permit from DCA	Fri 7/17/26	Thu 7/23/26	5 days
81	**Construction Phase**	**Fri 7/24/26**	**Wed 1/20/27**	**181 days**
82	Conduct Construction "Kick-Off Meeting"	Fri 7/24/26	Fri 7/24/26	1 day
83	Complete Construction - Achieve Substantial Completion	Sat 7/25/26	Wed 1/20/27	180 days
84	**Project Close-Out Phase**	**Thu 1/21/27**	**Fri 4/9/27**	**79 days**
85	Complete Punch List	Thu 1/21/27	Fri 2/19/27	30 days
86	Close Out Construction Contract	Mon 2/22/27	Fri 2/26/27	5 days
87	Close Out Consultant Contract	Mon 3/1/27	Fri 4/9/27	30 days

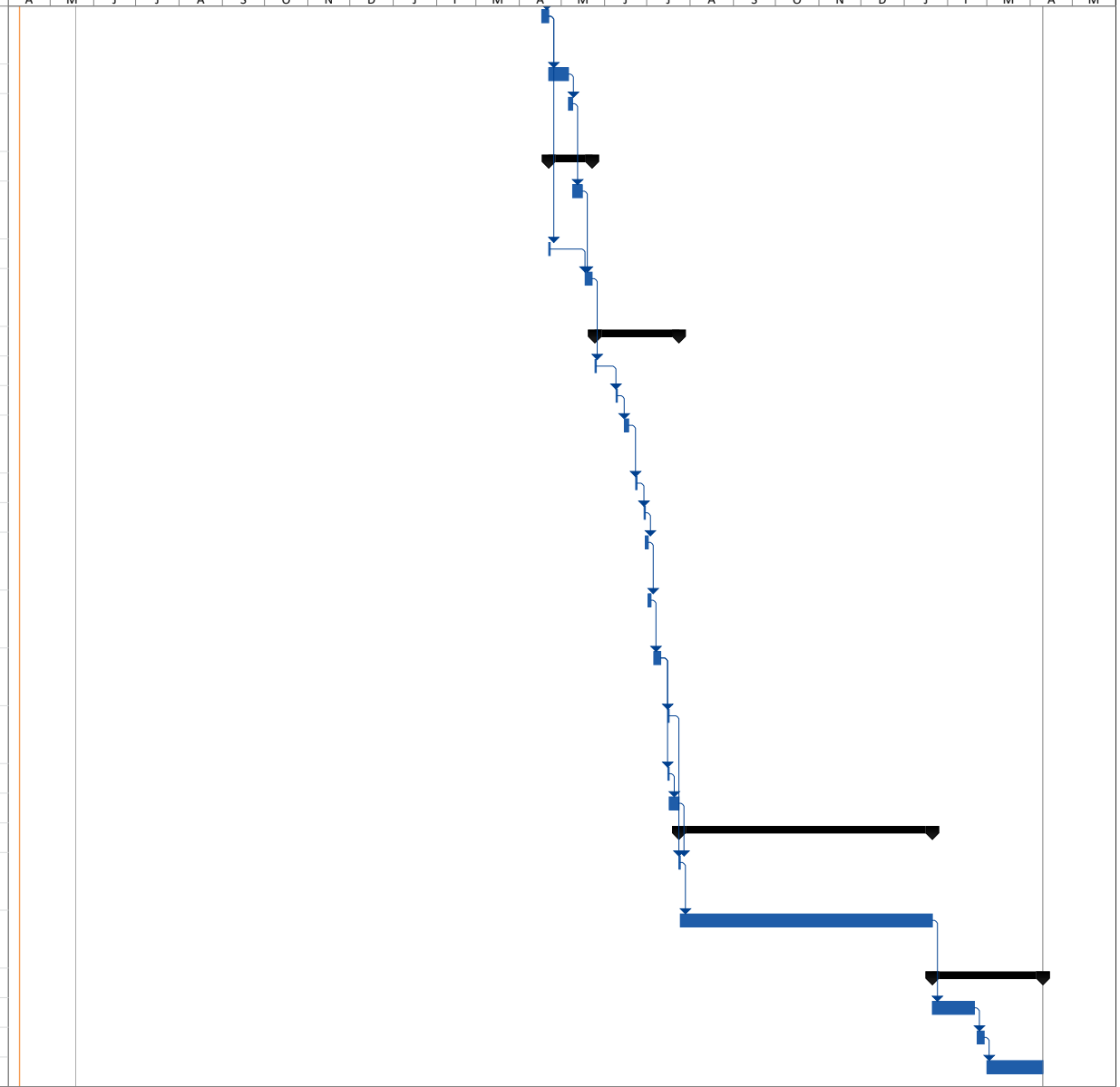
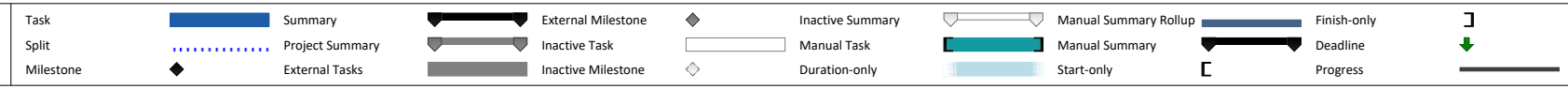


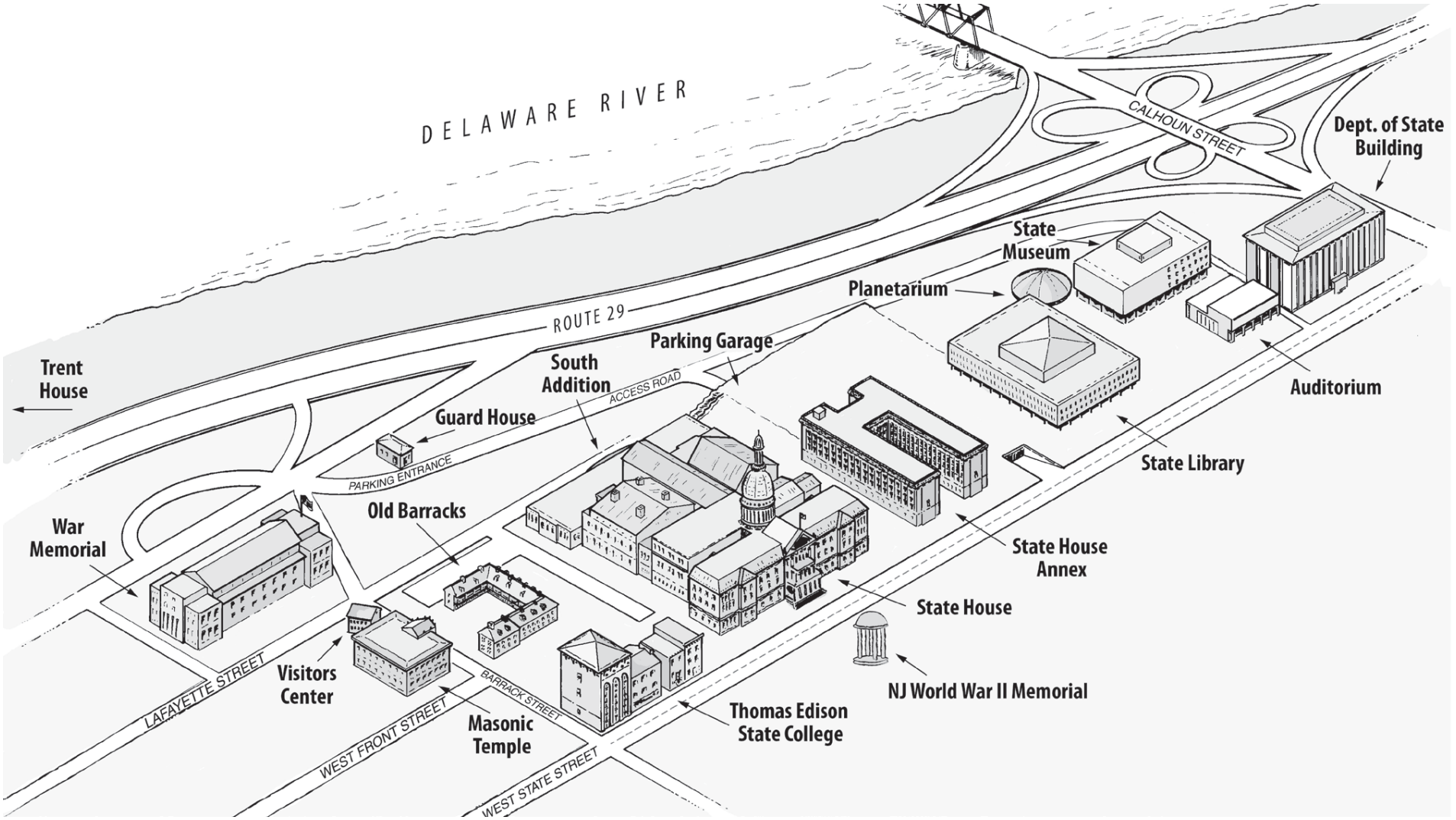
EXHIBIT 'A'

Typical DPMC Project - Random Selection of Design Consultant



Project: Typical Project Model
Date: Wed 4/9/25

EXHIBIT 'A'

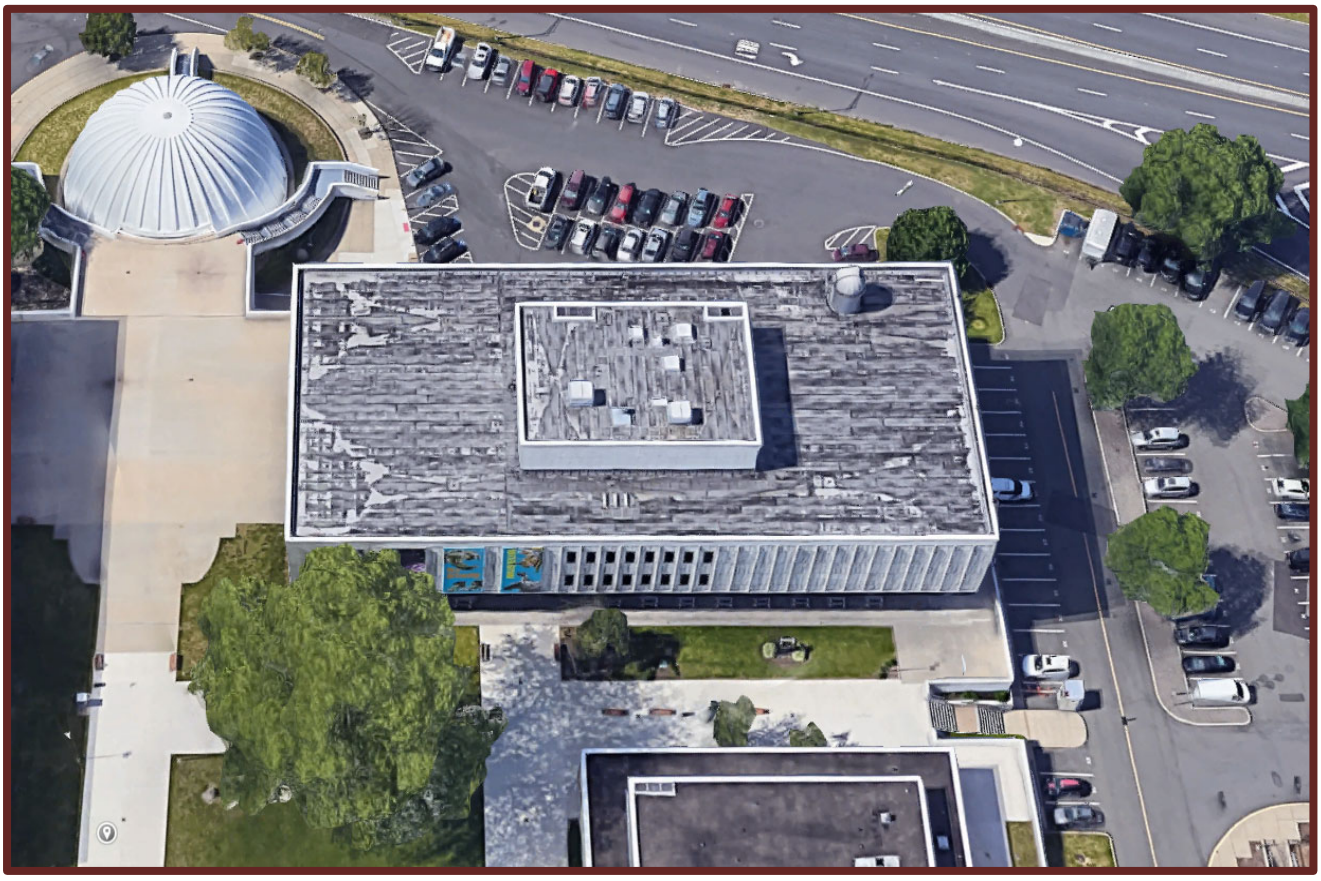


Capitol Complex

EXHIBIT 'B'

ROOF CONDITIONS ASSESSMENT
NEW JERSEY STATE MUSEUM

205 W STATE STREET, TRENTON, NJ 08608



Prepared by

RONALD A. SEBRING ASSOCIATES, LLC, ARCHITECTS
2156 Route 37 West, Suite 201, Manchester, NJ 08759 (732) 701-9444 FAX 701-9919

ENVIRONMENTAL CONNECTION, INC.
120 North Warren Street, Trenton, NJ 08607 (609) 392-4200

August 2, 2021

EXHIBIT 'C'

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TPO Single-Ply System	Page 12
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Appendix A - Construction Cost Estimates
Appendix B - Hazardous Materials Report
Appendix C - Photographs
Appendix D - Roof Plan Diagram and Core Sample Sections – Existing Conditions

EXHIBIT 'C'

EXECUTIVE SUMMARY

- The existing low-sloped built-up modified bitumen roofing systems on both the Main Roof and Penthouse Roof of the New Jersey State Museum are in fair to poor condition, show signs of continuing deterioration, moisture intrusion, and prior leaks.
- The roof systems are approaching their serviceable lifespans and based on the age and observed condition of the existing roofs, and the observed prior patch, it is recommended that the roofing systems and copings be replaced within the next 5 to 7 years.
- Samples of the roofing were tested and no asbestos content was found.
- The joint sealant associated with the rooftop observatory telescope is positive for asbestos content.
- The Main Roof parapet contains an inner side “shelf” covered with an EPDM membrane. the existing membrane will need to be removed and either TPO, PVC, or EPDM membrane fully adhered installed to provide a pliable flashing membrane between the underside of the coping and the top of the counterflashing below.
- Existing rooftop mounted exhaust fans, intake vents, gravity vents, and roof hatch are all in serviceable condition.
- To comply with Code requirements, railings should be added around the open sides of the roof hatch.
- The replacement of the existing roof will require an increase in rooftop insulation in order to comply with current Energy Code requirements. Equipment curbs and Penthouse Parapets will need to be raised to allow for the installation of base flashings at 8” minimum height above the roof surface.
- The existing prefinished metal copings should be replaced with new prefinished metal copings designed and ANSI/SPRI certified to resist the wind uplift.
- Existing conduits, junction boxes, cameras, etc. that are mounted on and along the interior of the Main roof parapet walls will need to be removed and reset as part of the roof replacement work by a New Jersey licensed electrician.
- Based on the estimated age of the roof at 18 years, it is possible that there is still a warranty in effect as the DPMC requires 20-year No Dollar Limit warranties for all newly installed roofing systems. The status of the warranty should be investigated.
- The Built-Up SBS Modified Bitumen roofing system is recommended. These systems can be hot-mopped, torch applied, or cold-applied. The estimated construction cost is $1,014,848.00 for this system.
- If the available budget does not allow for the provision of the recommended Built-Up SBS Modified Bitumen roofing system, the next recommended system would be the TPO single ply membrane. The estimated construction cost for this system is $791,910.00.

EXHIBIT 'C'

INTRODUCTION

Ronald A. Sebring Associates, LLC (***RASA***) was commissioned by the State of New Jersey, Department of the Treasury, Division of Property Management and Construction (DPMC) to conduct an assessment of the condition of the existing roof of the New Jersey State Museum and provide an evaluation study, including various alternatives with construction cost estimates, for repair and replacement of the roof.

Aerial View of the New Jersey State Museum Roof

BUILDING DESCRIPTION

The State Museum Building is a 16,897 square foot 3-story masonry, reinforced concrete, and steel frame structure constructed within the Capital Cultural Complex in Trenton circa 1964. The building consists of three floors of exhibition, program, research, and collection space. A full basement provides additional space that houses offices, research space, storage, public toilet rooms and mechanical equipment. A penthouse containing approximately 4,045 square feet houses mechanical equipment, including elevator equipment.

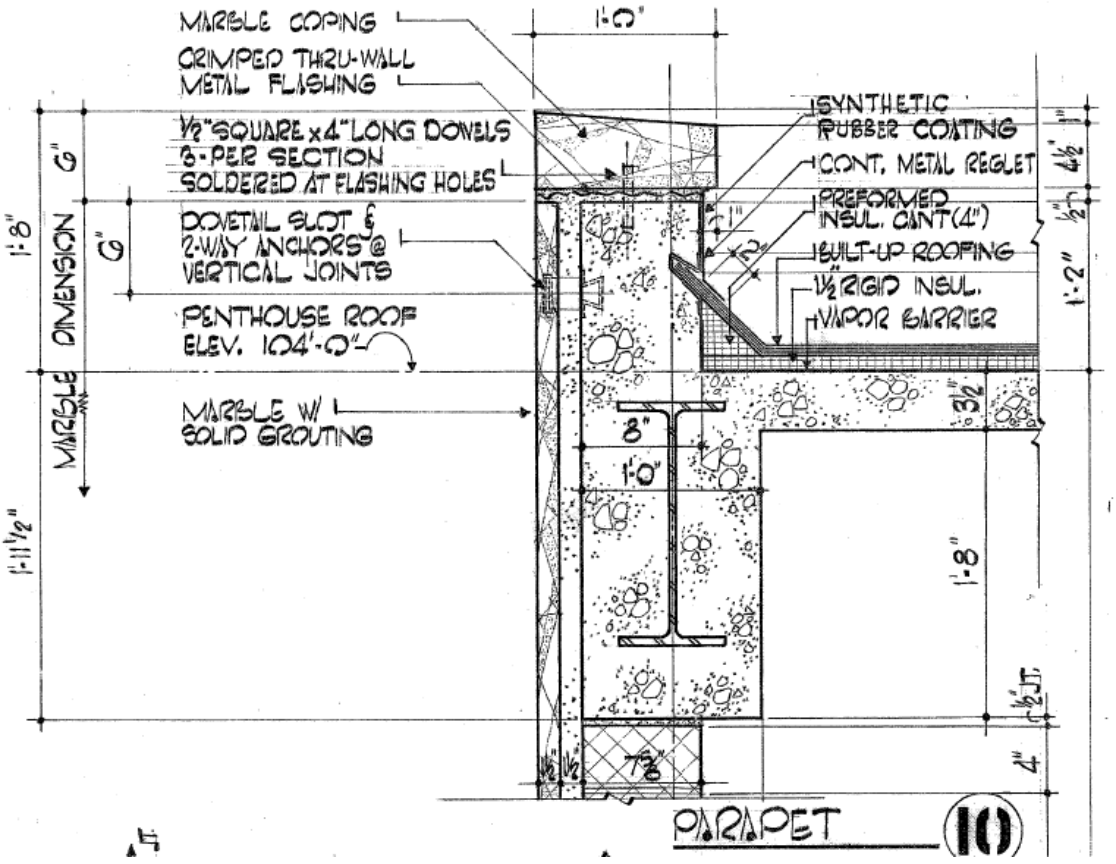
The structural roof deck of the Penthouse consists of 3 1/2” thick, cast-in-place reinforced concrete that spans east-west, over steel beams encased in concrete that span north-south. The structural roof deck over the Third Floor consists of precast concrete plank, 2” thick, that spans east-west, over steel beams spanning north-south, that are protected with spray-applied fireproofing.

EXHIBIT 'C'

A review of the original drawings and roof cores taken as part of this investigation, indicate that the roof decks are not structurally sloped. The slope present on the roofs is provided by tapered insulation.

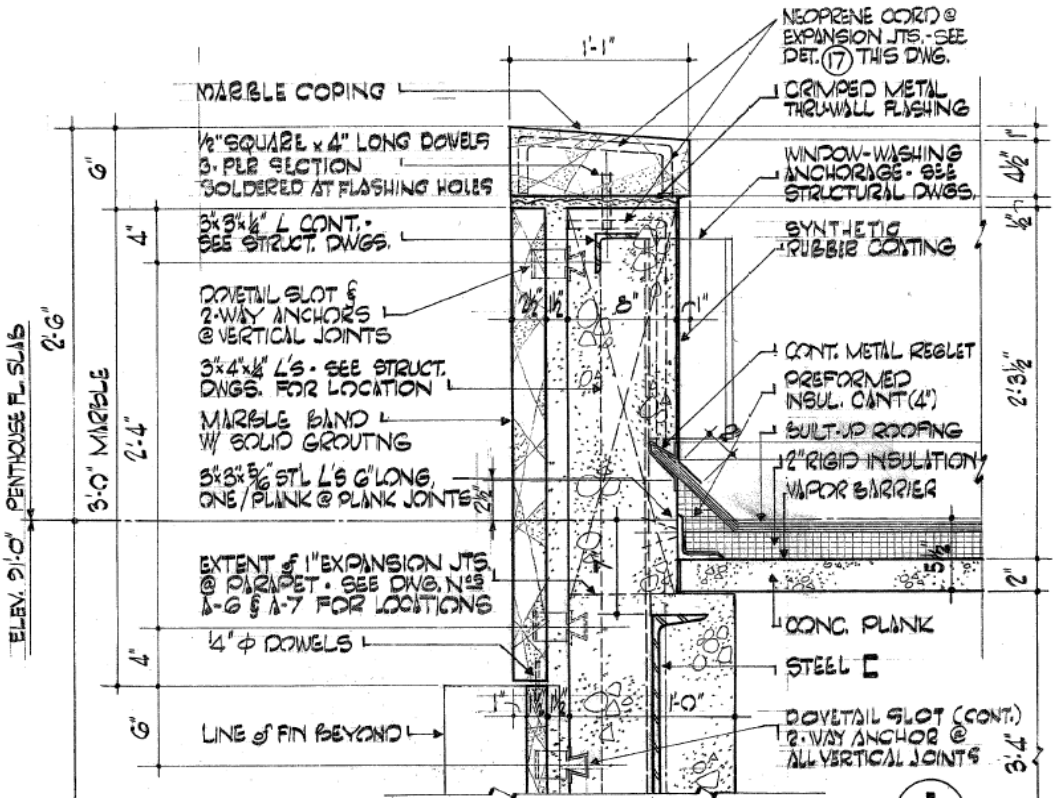
There are two air vent shafts that serve the mechanical equipment at the Penthouse. The shafts contain roofing systems at their base. These EPDM roofing systems drain through small diameter drainpipes through the exterior Penthouse wall discharging onto the main roof level. The drain pipes do not have strainers or screens at the discharge locations.

The building was constructed in 1964 and the original drawings indicate that “built-up roofing” was installed over rigid insulation, over the concrete roof decks at both roof levels. The original roofing was likely a coal-tar pitch system in that these were acceptable for dead-level roof decks. The most recent replacement of the roof appears to have occurred in 2003 based on review of historic aerial photographs. It is likely that the current prefinished aluminum copings covering the parapet walls were installed as part of the 2003 roof replacement.

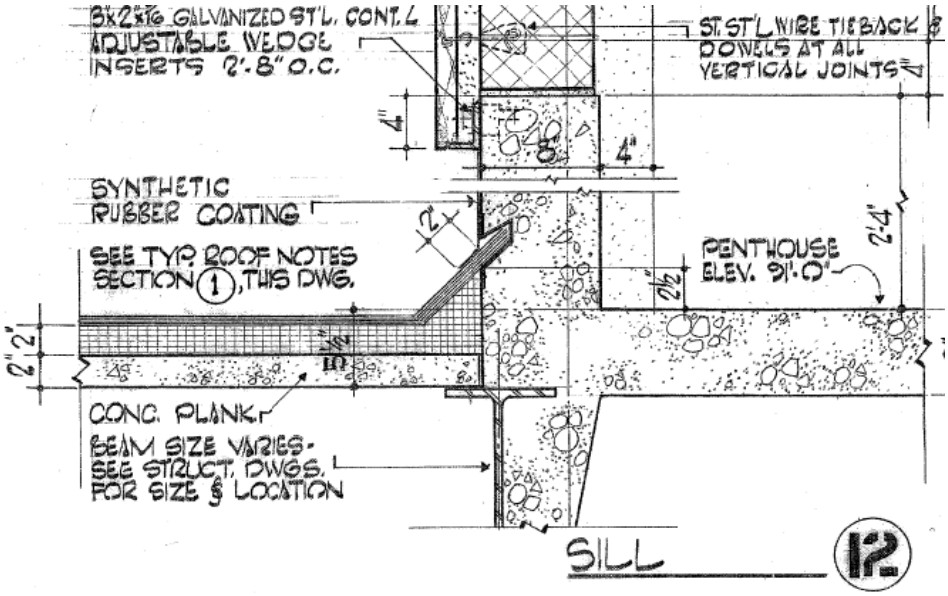


Roof Edge Detail at Penthouse
From Original 1964 Construction Drawings

EXHIBIT 'C'



Roof Edge Detail at Main Roof Level
From Original 1964 Construction Drawings



Roof/Wall Intersection Detail at Base of Penthouse
From Original 1964 Construction Drawings

EXHIBIT 'C'

EXISTING CONDITIONS

The existing modified bitumen built-up roofing throughout the building is in fair to poor condition. There are signs of wear and deterioration, including loss of granules from the cap sheet surface, blisters, bubbles, soft spots, exposed roofing plies, fishmouths, alligatoring, and split-open blisters.

Main Roof South Side.
Standing Water, Loss of Surface Granules, and Bubbles in Roofing Observed

A patch is present at a previous leak location on the west side of the Main Roof.

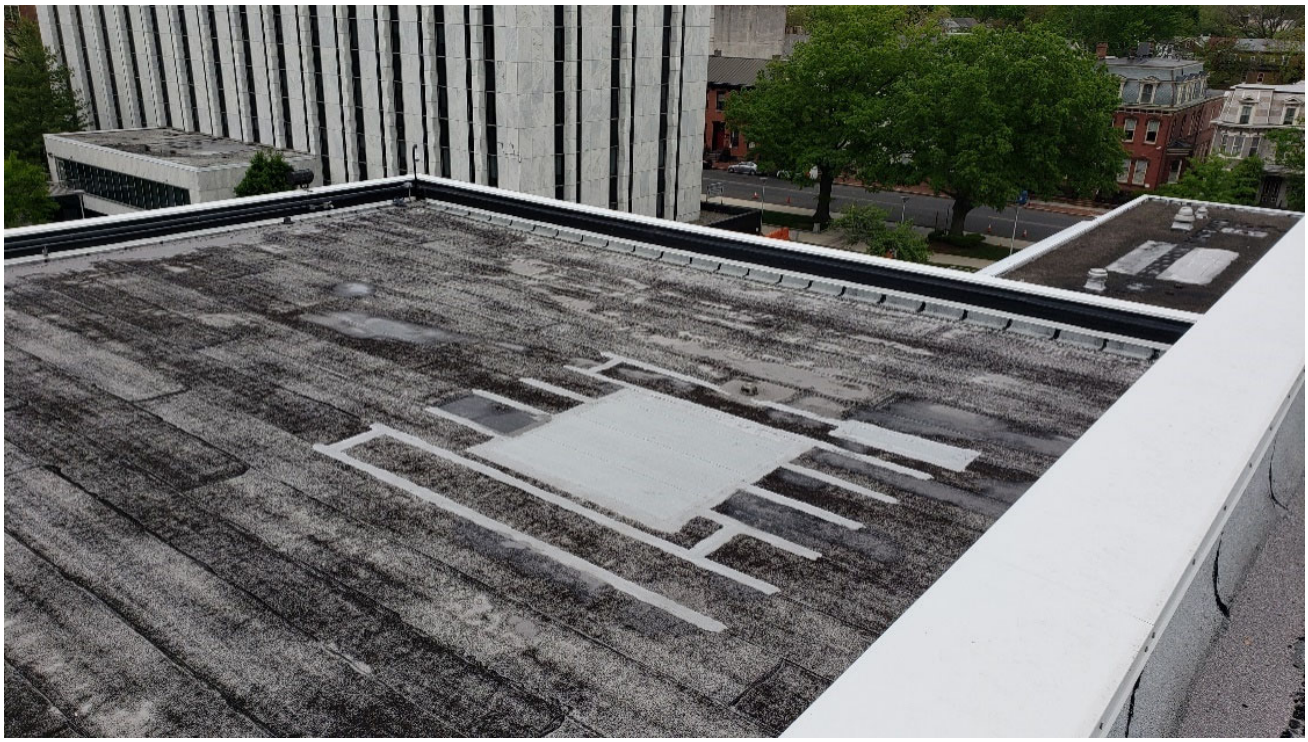
Several areas of standing water were observed at both roof levels, mostly located in the valleys that lead to the roof drains.

Piles of built-up loose granules from the roofing cap sheet are located in low spots throughout the roof. These granules can potentially end up in roof drains causing clogs and backups. They also impede the flow of water across the roof surface.

Roof cores were taken throughout the roof areas both to determine the thicknesses and components of the existing roofing system but also to allow for sampling and testing for the presence of asbestos containing materials (ACM). The drawings included in Appendix “D” identify the locations of the cores and provide cross-sectional views and descriptions of the cores. The samples show that the roofing systems at both the Main Roof and Penthouse Roof consist of modified bitumen built-up roofing over 1/2" perlite roof cover board, over layers of tapered and uniform thickness rigid insulation, over a layer of mopped in place

EXHIBIT 'C'

asphalt, over the concrete decks. The tapered insulation provides an approximate 1/4” per foot slope to the drains as indicated by the differential in thicknesses of the cores and per measurements taken onsite with a digital level. The 1/4” per foot slopes result in valleys that are less than 1/4" per foot resulting in areas of standing water.



Main Roof West Side. Previous Patch

The roof drains all appear to be in serviceable condition and appear to be clear of obstructions as no excessive standing water was observed at the drains after a recent rainfall event. Overflow roof drains that provide a secondary means of draining water from subject roof areas in the event of a backup in the main system, are present on both roofs. Two (2) standard roof drains provide overflow relief at the south side of the Penthouse Roof and four (4) through-wall drains provide relief at perimeter of the Main Roof.

The Main Roof is free from HVAC penetrations. There are three equipment rail curbs on the north side of the Main Roof that are no longer utilized. Electrical conduits are run along the inside of the Main Roof Parapet walls which serve cameras and lighting fixtures. The conduits originate from the south side of the Penthouse and are run within the roofing insulation above the Main Roof deck and rise at the parapet wall to junction boxes.

There are several intake and exhaust vents located on the Penthouse Roof. Other penetrations at the penthouse roof include the roof hatch, pipe vents, and the raised curbs surrounding the air shafts. It is noted that the screen cover for one of the shafts is no longer in place and was located loose at the bottom of the air shaft.

Access to the Penthouse Roof is through a roof hatch accessed from within the mechanical Penthouse and access to the Main Roof is through two (2) doorways on the south wall of the Penthouse. The roof hatch is in operable condition. The finish on the metal exterior doors is peeling.

The perimeter metal flashings appear to be prefinished aluminum and are in serviceable condition.

Prefinished metal copings are installed over the perimeter parapet walls surrounding both roofs. The copings appear to be in good condition. Sealant was observed to be installed over several of the movement joints in the copings which indicates that there may have been prior leaks. At the main roof the parapet contains a “shelf” that is covered with EPDM membrane roofing that likely extends up and over the parapet under the coping and then down over the base counterflashing. This detail does not correlate with the original construction drawings and the actual condition will need to be investigated prior to design of roof replacement.

Existing Camera, Coping, Junction Box, and Conduit at Northeast Corner of Main Roof. Note Build-up of Dislodged Cap Sheet Granules and Inner Shelf at Parapet Wall Covered with EPDM Membrane

BUILDING CODE AND DESIGN GUIDELINES

There are requirements that will affect the design of the roof replacement.

Building Code Criteria:

Area Largest Floor: 16,896 Square Feet Use Group: A-3
Height: Three Stories, 62'-0" +/- Construction Classification: Type IIB

Roof Replacement:

If the roof system is to be replaced, the work will need to comply with several requirements of the New Jersey Rehabilitation Code:

Structural Requirements: If the proposed new roof system imposes a greater load on the existing building structure than currently exists, the roof structure will need to be evaluated and, if necessary, reinforced.

Drainage: If the proposed new roof system alters the existing drainage pattern, the existing secondary drainage system and emergency relief scuppers will need to be evaluated for adequacy and proper height above the surface of the new roof.

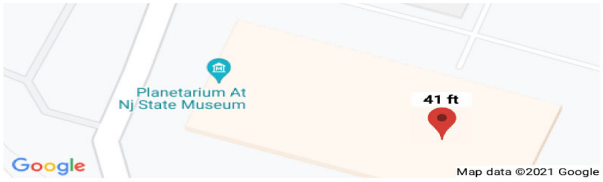
Fire Classification: All new roof systems should be Class A minimum.

Wind Uplift Resistance: The Building Code requires that the roofing system be designed to resist wind uplift loads in accordance with ASCE-7. Fastening will need to be in accordance with the applicable FM-Global standard based on the design uplift load and the Risk Category. The Risk Category for an assembly occupancy with greater than 300 occupants, is III. Based on review of New Jersey DCA Bulletin 03-4, the design windspeed is approximately 123 mph for Risk Category III.

ATC Hazards by Location

Search Information

Address:	205 W STATE STREET, TRENTON, NJ 08608
Coordinates:	40.2210006, -74.77316359999999
Elevation:	41 ft
Timestamp:	2021-08-02T23:24:24.983Z
Hazard Type:	Wind



ASCE 7-16

MRI 10-Year	75 mph
MRI 25-Year	82 mph
MRI 50-Year	88 mph
MRI 100-Year	95 mph
Risk Category I	105 mph
Risk Category II	113 mph
Risk Category III	123 mph
Risk Category IV	126 mph

ASCE 7-10

MRI 10-Year	76 mph
MRI 25-Year	84 mph
MRI 50-Year	90 mph
MRI 100-Year	96 mph
Risk Category I	105 mph
Risk Category II	115 mph
Risk Category III-IV	120 mph

ASCE 7-05

ASCE 7-05 Wind Speed	93 mph

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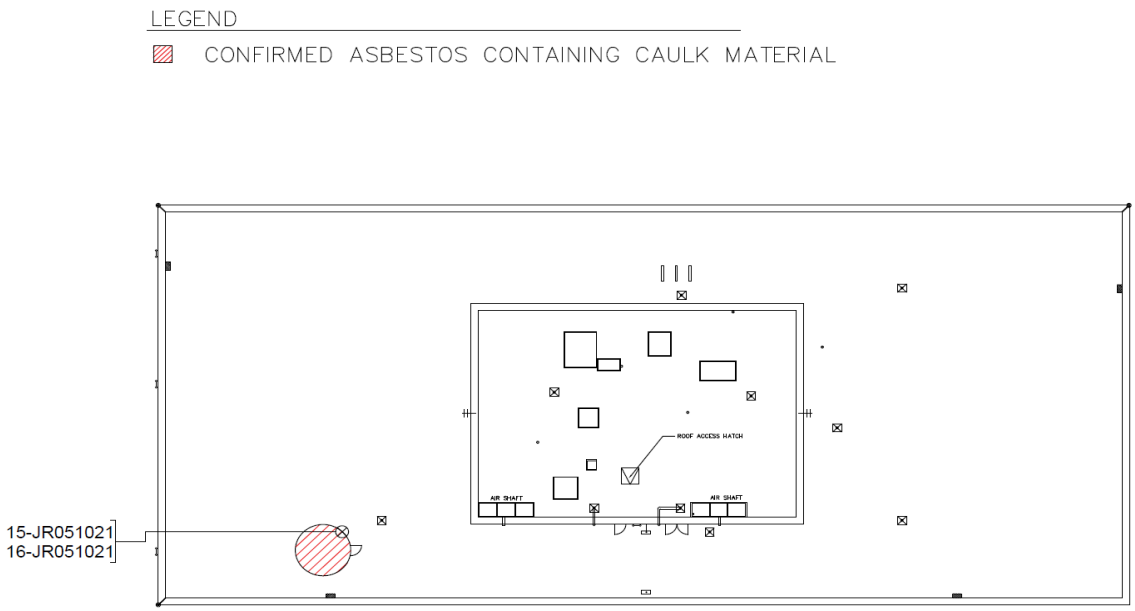
HAZARDOUS MATERIALS

Asbestos: As part of this Study, Environmental Connection, Inc. performed a limited Hazardous Materials Survey of the roofing and related joint sealant materials on the main and penthouse roofs of the New Jersey State Museum. Roof cuts were conducted and samples of roofing, flashings, sealants, and roofing asphalt, materials were taken and tested for asbestos content. No samples of the roofing were positive for asbestos content. One (1) sample of joint sealant was positive for asbestos content; the sealant associated with the rooftop observatory telescope.

Polychlorinated Biphenyls (PCBs): Joint sealants that may be disturbed by the proposed roof replacement work were all tested for PCB content. No PCBs were detected in any of the samples taken.

A Report of the findings of the Hazardous Materials Survey is presented in Appendix “C”.

Due to the age of the building, it is assumed that the existing paint is lead-based. Any proposed work that will disturb painted surfaces will need to be performed in accordance with New Jersey Lead-Safe Work Practices.



Hazardous Materials Sample Location Plan Showing Location of ACM Sealant

EXHIBIT 'C'

RECOMMENDATIONS

The roof systems are approaching their serviceable lifespans and based on the age and observed condition of the existing roofs, and the observed prior patch, it is recommended that the roofing systems and copings be replaced within the next 5 to 7 years.

ROOFING SYSTEM ALTERNATIVES

The roofing systems applicable to the building construction at the New Jersey State Museum include:

- EPDM elastomeric roofing
- PVC membrane roofing
- TPO membrane roofing
- Built-up bituminous roofing
- Modified bituminous roofing
- Fluid-applied roofing
- Hybrid roofing

The roofing systems can be divided into four categories; single-ply, multi-ply, fluid-applied and hybrid roofing systems.

Single ply systems include:

- EPDM
- CSPE (Hypalon)
- PVC
- TPO
- TPA

Multi-ply systems include:

- Built-up bituminous
- Built-up modified SBS bituminous
- Built-up bituminous hybrid roof, consisting of a three-ply built-up roofing system with two plies of glass felt and an *SBS* modified cap sheet.

Fluid-applied systems include:

- Aliphatic, polyurethane fluid-applied system (fully reinforced)
- Aliphatic, polyurethane fluid-applied system (partially reinforced)

Hybrid systems include:

- Built-up hybrid roofing system consisting of one (1), two (2), or three (3) ply sheets and a TPA fleeced-back single ply roofing membrane all installed in hot asphalt.

For the inner side “shelf” along the parapet encompassing the Main Roof, the existing membrane will need to be removed and either TPO, PVC, or EPDM membrane fully adhered installed to provide a pliable flashing membrane between the underside of the coping and the top of the counterflashing below. This membrane should be installed up and over the parapet below the new replacement copings. SBS roofing is not suitable for this application due to the presence of 90-degree corners.

SINGLE PLY ROOFING

EPDM System

EPDM roofing gained popularity in the United States during the 1980’s. The roofing system consists of a 45 or 60 mil membrane which is either mechanically fastened through the insulation to the roof deck, or fully adhered to the insulation board. The sheets are solvent welded or taped on site.

Failures in EPDM roofing occur most frequently at seams. Most seam failures are a result of poor workmanship during installation. Most manufacturers are now offering a pressure sensitive tape system which reduces workmanship failures.

Additional failures occur at high traffic areas or at mechanical equipment where tools and fasteners puncture the membrane. These failures can be reduced by specifying a thicker membrane with a fleece backing which is more puncture resistant. Some manufacturers offer a puncture resistant warranty when the thicker membrane is specified.

Trapped moisture within the roofing system degrades the insulation, resulting in loss of adhesion between the membrane and insulation for adhered systems, and rusting of the mechanical fasteners in mechanically fastened systems. Adhesion failures also occur as a result of poor workmanship during installation. Trapped moisture in the system accelerates the seam failure process resulting in further damage.

The EPDM membrane is easily punctured or cut. It is not uncommon for EPDM roofs to suffer catastrophic failure as a result of blow-off due to adhesion, fastener failure, or wind entering a split seam.

The life expectancy of an EPDM roof is between ten and twenty years. We have investigated EPDM roofing failures in roofs as young as three years and have seen EPDM roofs which have lasted over twenty years before requiring replacement. Life expectancy is a function of workmanship in EPDM systems. All manufacturers offer twenty-year warranties with some even offering thirty-year options on their premier system.

The estimated cost to install an EPDM roofing system at the New Jersey State Museum is $795,510.

The estimated life-cycle cost to maintain an EPDM roofing system increases throughout its service life because it is more prone to membrane punctures, seam failure, and adhesive failure than a redundant (multi-ply, fluid-applied, or hybrid) system. If maintained twice per year, the estimated cost to maintain an EPDM roofing system at the New Jersey State Museum would cost approximately $2,595.00 for the first ten (10) years, $3,892.00 each year from year 11-15, and $5,188.00 each year from year 16-20. Therefore, the owner should expect to pay approximately $71,350.00 total to maintain an EPDM roofing system for twenty (20) years of service life.

PVC System

Polyvinyl chloride, commonly known as PVC, is one of the most commonly used plastics in construction today. Over time PVC has a tendency to shrink, pulling on the seams and potentially causing leaks. Some types of PVC are prone to shatter as they dry out, and in all cases aged PVC can be difficult to repair because it is difficult to weld and few sealants will adhere for any length of time. Roof traffic must be limited when the temperatures are below 50 degrees making it an unsuitable roof membrane where mechanical equipment requiring servicing is present.

The life expectancy of a PVC roof is between 15 and 20 years. During the past decade nearly all roofing manufacturers have eliminated the system from their product line replacing them with TPO membranes.

The estimated cost to install a PVC roofing system at the New Jersey State Museum is $801,158.

The estimated life-cycle cost to maintain a PVC roofing system increases throughout its service life because it is more prone to membrane punctures, seam failure, and adhesive failure than a redundant (multiply, fluid-applied, or hybrid) system. If maintained twice per year, the estimated cost to maintain a PVC roofing system at the New Jersey State Museum would cost approximately $2,595.00 for the first ten (10) years, $3,892.00 each year from year 11-15, and $5,188.00 each year from year 16-20. Therefore, the owner should expect to pay approximately $71,350.00 total to maintain a PVC roofing system for twenty (20) years of service life.

TPO System

TPO stands for thermoplastic polyolefin. TPO membranes have been heralded because of their numerous advantages over other single ply materials. In fact, they claim to offer the benefits of both EPDM and PVC, without sharing their drawbacks. Theoretically TPOs are naturally UV and heat resistant while also remaining heat-weldable as they age. Additionally, TPOs are resistant to a wide variety of chemicals and are environmentally friendly and recyclable. On the other hand, the longer TPOs are in the real world of environmental exposure, the more they are purported to be showing signs of surface degradation, the loss of millage, and sheet shrinkage. As stated above, manufacturers are

EXHIBIT 'C'

transitioning away from TPO back to PVC. The typical service life of a TPO roofing system ranges from 10 to 20 years. Based on the movement within the roofing industry we do not recommend its usage.

Without historical experience with this membrane we conservatively guess that the life expectancy would be between ten to twelve years.

The estimated cost to install a TPO roofing system at the New Jersey State Museum is $791,910.

The estimated life-cycle cost to maintain a TPO roofing system increases throughout its service life because it is more prone to membrane punctures, seam failure, and adhesive failure than a redundant (multiply, fluid-applied, or hybrid) system. If maintained twice per year, the estimated cost to maintain a TPO roofing system at the New Jersey State Museum would cost approximately $2,595.00 for the first ten (10) years, $3,892.00 each year from year 11-15, and $5,188.00 each year from year 16-20. Therefore, the owner should expect to pay approximately $71,350.00 total to maintain a TPO roofing system for twenty (20) years of service life.

MULTI-PLY SYSTEMS

Built-Up Bituminous Roofing System / SBS Modified Bitumen Roofing

Built-up bituminous roofing has been the standard for years. Today fiberglass felts have replaced organic and asbestos felts, and flexible rubber flashings have become the standard. A three-ply built-up bituminous roofing system with a styrene butadiene styrene (SBS) modified asphalt coated granule surfaced membrane cap sheet, provides redundancy in the membrane construction, reducing the chances of workmanship failures. The roofing system is easily repaired or modified, and is resistant to abrasion and damage from repairs to mechanical equipment.

The life expectancy of this roofing system is between twenty (20) to (30) thirty years.

The estimated cost to install a three-ply built-up roofing system with an SBS modified bitumen cap sheet is $1,014,848.

The estimated life-cycle cost to maintain a built-up roofing system is lower than single-ply roofing systems because its multiple layers provide superior puncture resistance and waterproofing. The estimated cost to maintain a built-up roofing system is $2,594.00 per year. The cost to maintain built-up roofing systems is not expected to rise exponentially year after year because it is a superior system. If maintained twice per year, the estimated cost to maintain a built-up roofing system at the New Jersey State Museum would cost approximately $2,594.00 for each of the thirty years of service life. Therefore, the owner

should expect to pay approximately $77,820.00 total to maintain a built-up SBS modified bitumen roofing system for thirty (30) years of service life.

Fluid-applied Roofing System

Unlike built-up roofing systems that rely on the ply sheets for their performance characteristics, fluid-applied roofing systems rely on the chemicals themselves for puncture resistance, elongation, and seamless waterproofing. There are several types of fluid-applied systems and some perform better than others. Types include (but are not limited to) silicone, acrylic, methacrylate, polyurethane, and polymethylmethacrylate (PMMA).

Of the several types of fluid-applied systems, polyurethanes contain the superior chemical that provides high puncture resistance, seamless waterproofing, and resistance to ponding water. Polyurethane fluid-applied roofing systems are available with 20, 40, and even 60-year warranties.

A polyurethane fluid-applied roofing system can be installed as a newly constructed roofing system over traditional base systems or installed over an existing roofing system is in fair condition and contains sound, dry roofing components.

For restoration of existing roofing, manufacturer inspection will be required to determine if existing roofing is acceptable for fluid applied application prior to design. An infrared moisture survey is also required to identify any areas of the roof system that contain moisture. These areas would need to be cut out and replaced as part of the roof upgrade. For estimating purposes, based on our observations of blisters and bubbles, it is assumed that up to 20% of the roof may contain areas requiring replacement.

The advantages of the fluid-applied restoration include:

- The thickness of the roofing will not be increased, and rooftop curbs and parapets will not need to be raised as a result.
- Lower demolition costs and disturbance since it is assumed that 80% of the existing roof will remain.
- Reduction in on-site construction duration

The estimated cost to replace the existing roofing system and install a newly constructed fluid-applied roofing system with a 20-year warranty at the New Jersey State Museum is $984,910.

The estimated cost to restore the existing New Jersey State Museum roofing system with a polyurethane fluid-applied roofing system with a 20-year warranty is $721,883.

The estimated life-cycle cost to maintain a polyurethane fluid-applied roofing system is lower than single-ply roofing systems because it provides zero seams, is reinforced, and includes ~78 dry mils of polyurethane. The estimated cost to maintain a fluid-applied roofing system is $2,380.00 per year. The cost to maintain fluid-applied roofing systems is not expected to

rise exponentially year after year because it is a superior system. If maintained twice per year, the estimated cost to maintain a fluid applied roofing system at the New Jersey State Museum would cost approximately $2,594.00 for each of the twenty years of service life. Therefore, the owner should expect to pay approximately $51,880.00 total to maintain a built-up SBS modified bitumen roofing system for twenty (20) years of service life.

Hybrid Built-up Roofing System

Hybrid, built-up roofing systems contain one (1), two (2), or three (3) plies of fiberglass ply sheets and a fleeced-back TPA (tri-polymer alloy) membrane all installed in a type III or type IV hot asphalt. The redundancy of the plies, plus the fleeced-back membrane, provides superior puncture resistance. Additionally, the membrane does not include granules therefore no granules will wash to the crickets or drains.

Hybrid, built-up roofing systems are available with a 20-year NDL warranty and are recommended for roofing systems that demand superior puncture resistance.

The estimated cost to install a two-ply built-up hybrid roofing system with a .060 TPA fleece-back membrane is essentially the same as that for the SBS system at $1,014,848.

The estimated life-cycle cost to maintain a hybrid, built-up roofing system is lower than single-ply roofing systems because it provides superior puncture resistance and contains high solar reflectivity. The estimated cost to maintain a hybrid, built-up roofing system is $2,380.00 per year. The cost to maintain a hybrid, built-up roofing system is not expected to rise exponentially year after year because it is a superior system. If maintained twice per year, the estimated cost to maintain a hybrid, built-up roofing system at the New Jersey State Museum would cost approximately $2,594.00 for thirty years of service life. Therefore, the owner should expect to pay approximately $77,820.00 total to maintain a built-up roofing system for thirty (30) years of service life.

SUMMARY OF PROPOSED ROOF SYSTEM COSTS AND LIFESPANS

Description	Roof Installed Cost [1]	Lifespan [2] [3]	Total Maintenance Cost [4]	Total Lifespan Cost	Averaged Cost Per Year
EPDM	$795,511.	20 Years	$71,350.	$866,861.	$43,343.
PVC	$801,158.	20 Years	$71,350.	$872,508.	$43,625.
TPO	$791,910.	20 Years	$71,350.	$863,260.	$43,163.
Built-Up SBS	$1,014,848.	30 Years	$77,820.	$1,092,668.	$36,422.
Fluid-Applied Restoration	$721,882.	20 Years	$51,880.	$773,762.	$38,688.
Fluid-Applied New System[5]	$985,910.	20 Years	$51,880.	$1,037,790.	$518,895.
Hybrid Built-Up	$1,014,848.	30 Years	$77,820.	$1,092,668.	$36,422.

[1] The higher cost of the estimated roof replacement cost range is utilized in this table.

[2] The greater duration of anticipated roof system lifespan is utilized in this table.

[3] Fluid applied roofing manufacturers advise that the lifespan for these roofing systems can be up to 30 years. Since these systems have not been in service for this duration, 20-year service is estimated.

[4] Maintenance plans cannot be included in bid/contract costs for DPMC projects, therefore the extended maintenance costs may not be applicable for budgeting purposes. The relative costs illustrate the levels of maintenance likely required for each proposed system.

[5] Fluid-applied restoration will require pre-design infrared moisture testing to detect any moisture damaged areas of insulation requiring cut-out and replacement, and roofing manufacture inspection to determine applicability.

EXHIBIT 'C'

ADDITIONAL ROOF REPLACEMENT ITEMS ASSOCIATED WITH ALL PROPOSED SYSTEM ALTERNATIVES

Raising or Replacement of Rooftop Equipment Curbs

The existing rooftop mounted exhaust fans, intake vents, gravity vents, and roof hatch are all in serviceable condition. To comply with Code requirements, railings should be added around the open sides of the roof hatch. Prefabricated assemblies are available that serve this purpose.

The replacement of the existing roof will require an increase in rooftop insulation in order to comply with current Energy Code requirements. The increased thickness will result in the need to raise, modify, or replace equipment curbs to allow for the proper installation of base flashings at the prescribed 8” minimum height above the roof surface.

If nailers are added to raise the top of curb heights, fire-retardant treated wood will need to be utilized in that the building is of non-combustible construction and the blocking would be exposed to the interior of the building.

Parapet Wall Increase in Height and Coping Replacement

The existing prefinished metal copings should be replaced with new prefinished metal copings designed and ANSI/SPRI certified to resist the wind uplift. The copings should have factory mitered corners and properly designed slip-joints.

The increase in roofing thickness will likely also result in the necessity to provide greater height at the perimeter parapet walls at the Penthouse roof, in order to provide the prescribed minimum 8” height of base flashings above the roof surface. When the metal copings are replaced, preservative treated wood nailers can be added to the top of the existing structural parapet to provide the necessary height. The fastening of the nailers to the existing structure will need to be determined by structural engineering calculations to resist wind uplift.

The original construction drawings for the building indicate that a 6” x 12” marble coping is present, which is now covered with the present prefinished metal coping. It is recommended that, as part of roof replacement design investigation, a section of coping be removed and reinstalled to verify and document the existing conditions for proper coping replacement design.

Walkway Pads

Walkway pads will need to be installed along all pathways from access points to and around all serviceable rooftop equipment to comply with DPMC Roofing Manual requirements.

Pedestrian Protection

The design of the roof replacement will need to consider and provide requirements for pedestrian protection from overhead work. These measures may consist of sidewalk sheds, temporary fencing, other acceptable pedestrian barriers and signage, or a combination thereof.

Access

The roofing contractor will require an adequate area for placement of on-site stored materials, dumpsters, temporary toilets and for access to remove materials from the roofs during demolition and for loading of materials to the roofs for installation. It is understood that parking is premium in the subject area and the rear (south) side of the building is occupied by parking spaces. This area is the most logical place to provide for staging for the Contractor, avoiding the tunnels, changes in level, landscaped areas, and areas between the cultural complex buildings. As part of the roof replacement design, the area for staging and site access restrictions should be reviewed in detail and determined for inclusion in specifications for construction.

Electrical Work

The existing conduits, junction boxes, cameras, etc. that are mounted on and along the interior of the Main roof parapet walls will need to be removed and reset as part of the roof replacement work. Due to the extent of the work, a New Jersey licensed electrician should perform the disconnection and reconnection. As part of the design, the necessity of maintaining cameras and exterior lights in operation will need to be addressed.

Plumbing Work

The existing roof drains appear to be in serviceable conditions requiring at a minimum, replacement of the existing strainer baskets. For integration of the proposed new roofing membranes into the existing drains, the drain sumps and clamping rings will need to be removed and reinstalled. As part of the design investigation related to roof replacement, the existing drains and under deck connections should be reviewed and, if necessary, the drains replaced as part of the work. Typically, the integration will only require that new retrofit roof drain inserts be provided which does not require a plumbing permit. If replacement of the drains is deemed necessary, a NJ licensed Plumber will be required to perform this work.

Pre and post construction should be specified to be performed by the contractor and witnessed by the A/E as part of the specifications for roof replacement. This would identify any blockages that would need to be cleared by DPMC prior to construction and would clearly place responsibility on the Contractor to clear any blockages created during the roof replacement work.

Drain covers (strainers) should be added to the discharges of the through-wall drains at the base of the air shafts.

The existing through-wall “lambs tongue” outlets are in good condition and should remain.

Roofing Manufacturer’s Warranty

Based on the estimated age of the roof at 18 years, it is possible that there is still a warranty in effect as the DPMC requires 20-year No Dollar Limit warranties for all newly installed roofing systems. During our walkthrough interviews there was no indication that such warranty is in place. The warranty would be voided if work was performed on the roof that was not approved in advance by the manufacturer and performed by approved contractors. The status of the warranty should be investigated so that any leaks that may appear prior to the warranty expiration or the replacement of the roof, can be repaired at no additional cost to the State.

Per the DPMC Roofing Design Manual, new roofing systems will be required to have a 20-year no dollar limit manufacturer’s roofing warranty covering workmanship and materials as well as a roofing contractor’s 5-year performance agreement covering workmanship and materials.

CONCLUSION

The existing low slope roofs at the New Jersey State Museum are in need of replacement within the next 5 to 7 years.

Based on ease of and little need for maintenance, redundancy in installation via multiple layers of liquid and sheet roofing materials, and the anticipated lifespan, the Built-Up SBS system is recommended. These systems can be hot-mopped, torch applied, or cold-applied, with the hot mopped system being the most foolproof with respect to installation.

There is a significant difference in cost between the multi-ply and single ply systems representing over $200,000. If the available budget does not allow for the provision of the recommended Built-Up SBS Modified Bitumen roofing system, the next recommended system would be the TPO single ply membrane. This system provides a white surface, similar to PVC, and they are now widely available from several reputable manufacturers.

END OF ROOF CONDITION ASSESSMENT

EXHIBIT 'C'

Attachments:
Appendix “A” - Construction Cost Estimates
Appendix “B” - Hazardous Materials Report
Appendix “C” - Photographs
Appendix “D” - Roof Plan Diagram and Core Sample Sections – Existing Conditions

Prepared 8/6/21 by:

Ronald A. Sebring Associates, LLC
2156 Route 37 West, Suite 201,
Manchester, NJ 08759

EXHIBIT 'C'

Appendix “A”
Construction Cost Estimates

12 PAGES

EXHIBIT 'C'

CONSTRUCTION COST ESTIMATE
SBS BUILT-UP ROOFING SYSTEM

ROOF REPLACEMENT - NEW JERSEY STATE MUSEUM
STATE CAPITAL CULTURAL COMPLEX
TRENTON, MERCER COUNTY, NEW JERSEY

ITEM	QUAN.	UNIT AMOUNT		TOTAL	
		LABOR	TOTAL	LABOR	TOTAL
GENERAL REQUIREMENTS (DIVISION 1)					
GENERAL REQUIREMENTS					
BOND /L.S.	1.00	$0.00	$8,000.00	$0.00	$8,000.00
PROTECTION AROUND ROOF PERIMETER /L.S.	1.00	$1,200.00	$2,000.00	$1,200.00	$2,000.00
ADDITIONAL MANUFACTURERS INSPECTION /L.S.	1.00		$800.00	$0.00	$800.00
MANUFACTURERS NDL ROOFING WARRANTY /S.F.	23,890.00		$1.00	$0.00	$23,890.00
TELESCOPING FORKLIFT / WEEK	4.00	$0.00	$708.00	$0.00	$2,832.00
CRANE NO OPERATOR / MONTH	1.00	$0.00	$4,400.00	$0.00	$4,400.00
CRANE OPERATOR / DAY	20.00	$0.00	$500.00	$0.00	$10,000.00
STORAGE BOX / MONTH	1.00	$0.00	$120.00	$0.00	$120.00
TEMPORARY TOILET / MONTH	1.00	$0.00	$100.00	$0.00	$100.00
TEMPORARY FENCING /L.F.	300.00	$1.37	$9.05	$411.00	$2,715.00
SUPERVISION /WEEK	4.00	$0.00	$1,875.00		$7,500.00
EXISTING CONDITIONS (DIVISION 2)					
DEMOLITION					
INSULATION REMOVAL /S.F.	23,890.00	$0.46	$0.69	$10,989.40	$16,484.10
TAPERED INSULATION REMOVAL /B.F.	83,615.00	$0.23	$0.34	$19,231.45	$28,429.10
MODIFIED BITUMEN ROOF REMOVAL /S.F.	23,890.00	$0.69	$1.03	$16,484.10	$24,606.70
ASPHALT MOP COAT REMOVAL /S.F.	23,890.00	$0.15	$0.24	$3,583.50	$5,733.60
REMOVE EPDM ALONG PARAPET SHELFS /S.F.	1,550.00	$0.95	$1.50	$1,472.50	$2,325.00
ACM SEALANT REMOVAL /L.S.	1.00	$1,200.00	$1,800.00	$1,200.00	$1,800.00
2x10 WOOD NAILERS/ L.F.	865.00	$0.75	$1.00	$648.75	$865.00
COPING REMOVAL /L.F.	865.00	$1.48	$2.21	$1,280.20	$1,911.65
EDGE FLASHING-FASCIA REMOVAL /L.F.	633.00	$1.01	$1.56	$639.33	$987.48
REMOVE ROOFTOP CURBS /EACH	6.00	$7.50	$10.00	$45.00	$60.00
REMOVE ROOF DRAIN /EACH	10.00	$20.00	$30.00	$200.00	$300.00
REMOVE ROOF HATCH /EACH	1.00	$90.00	$120.00	$90.00	$120.00
RUBBISH HANDLING /C.Y.	665.00	$11.10	$20.82	$7,381.50	$13,845.30
DUMPSTERS /EACH	20.00	$0.00	$900.00	$0.00	$18,000.00
AREA ADJUSTMENT DIVISION 2		5.20%	0.00%	$3,288.78	$0.00
WOOD AND PLASTICS (DIVISION 6)					
CARPENTRY					
2x10 WOOD NAILERS /M.B.F.	2.90	$940.00	$2,975.00	$2,726.00	$8,627.50
RAISE CURBS /EACH	7.00	$170.00	$212.00	$1,190.00	$1,484.00
FASTENERS /L.S.	1.00	$0.00	$1,600.00	$0.00	$1,600.00
2x4 FRT WOOD NAILERS /M.B.F.	0.24	$1,650.00	$3,950.00	$396.00	$948.00
AREA ADJUSTMENT DIVISION 6		43.30%	23.10%	$1,867.10	$2,924.34
THERMAL AND MOISTURE PROTECTION (DIVISION 7)					
ROOF REPLACEMENT					
BASE PLY SBS ROOFING /S.F.	23,890.00	$1.20	$3.20	$28,668.00	$76,448.00
INTER-PLY SBS ROOFING /S.F.	23,890.00	$1.20	$3.20	$28,668.00	$76,448.00
GRANULE SBS CAP SHEET /S.F.	23,890.00	$1.26	$4.30	$30,101.40	$102,727.00
GRANULE SBS FLASHING /S.F.	2,940.00	$2.00	$4.50	$5,880.00	$13,230.00
SMOOTH SBS FLASHING /S.F.	2,760.00	$2.00	$4.30	$5,520.00	$11,868.00
NEW TPO OR PVC MEMBRANE AT PARAPET /S.F.	1,550.00	$1.40	$4.60	$2,170.00	$7,130.00
WALKPADS /EACH	120.00	$8.00	$25.00	$960.00	$3,000.00
NEW CANT /L.F.	1,230.00	$0.75	$1.70	$922.50	$2,091.00
2" INSULATION /S.F	23,890.00	$0.24	$1.75	$5,733.60	$41,807.50
TAPERED INSULATION /B.F.	89,587.00	$0.21	$1.08	$18,813.27	$96,753.96
METAL COUNTER- FLASHING /L.F.	290.00	$2.66	$7.20	$771.40	$2,088.00
METAL COPING /L.F.	865.00	$9.75	$26.00	$8,433.75	$22,490.00
MITERED CORNERS FOR COPING /EACH	8.00	$20.00	$225.00	$160.00	$1,800.00
PIPE VENT FLASHING /EACH	5.00	$50.00	$110.00	$250.00	$550.00
NEW PIPE PORTAL /EACH	2.00	$35.00	$150.00	$70.00	$300.00
NEW ROOF HATCH /EACH	1.00	$176.00	$1,025.00	$176.00	$1,025.00
NEW ROOF HATCH RAILING /EACH	1.00	$120.00	$1,500.00	$120.00	$1,500.00
NEW RAIL CURB /EACH	0.00	$25.00	$100.00	$0.00	$0.00
SCREEN/COVER AT THROUGH-WALL OUTLET /EACH	2.00	$50.00	$350.00	$100.00	$700.00
CUT INSULATION AT UNDER ROOF CONDUIT /EACH	1.00	$85.00	$110.00	$85.00	$110.00
CAULKING /L.F.	445.00	$1.90	$5.00	$845.50	$2,225.00
AREA ADJUSTMENT DIVISION 7		32.60%	14.50%	$45,134.18	$67,322.26

EXHIBIT 'C'

ITEM	QUAN.	UNIT AMOUNT LABOR	UNIT AMOUNT TOTAL	TOTAL LABOR	TOTAL TOTAL
MECHANICAL (DIVISION 22)					
PLUMBING					
MOBILIZATION /L.S.	1.00	$1,000.00	$1,200.00	$1,000.00	$1,200.00
PRE AND POST INSPECT & CLEAN DRAINS /L.S.	1.00	$3,000.00	$4,000.00	$3,000.00	$4,000.00
ROOF DRAINS /EACH	10.00	$250.00	$750.00	$2,500.00	$7,500.00
DEMOLITION /L.S.	2.00	$750.00	$1,000.00	$1,500.00	$2,000.00
AREA ADJUSTMENT DIVISION 22		24.60%	10.40%	$1,968.00	$1,528.80
ELECTRICAL (DIVISION 26)					
ELECTRICAL					
DISCONNECT / RECONNECT FANS /EACH	7.00	$1,750.00	$2,500.00	$12,250.00	$17,500.00
DISCONNECT / RECONNECT CAMERAS & LIGHTS /L.S.	1.00	$5,000.00	$7,500.00	$5,000.00	$7,500.00
AREA ADJUSTMENT DIVISION 26		23.90%	12.10%	$2,927.75	$2,117.50

SUB TOTAL GENERAL CONSTRUCTION		$725,022.50
TOTAL LABOR	$257,907.21	
LABOR ADJUSTMENT FACTOR		15.00%
LABOR ADJUSTMENT AMOUNT		$38,686.08
SUBTOTAL		$763,708.58
OVERHEAD	15.00%	$114,556.29
PROFIT	10.00%	$76,370.86
TOTAL GENERAL CONSTRUCTION		**$954,635.72**
SUB TOTAL PLUMBING		$16,228.80
TOTAL LABOR	$9,968.00	
LABOR ADJUSTMENT FACTOR		16.00%
LABOR ADJUSTMENT AMOUNT		$1,594.88
SUBTOTAL		$17,823.68
OVERHEAD	15.00%	$2,673.55
PROFIT	10.00%	$1,782.37
TOTAL PLUMBING		**$22,279.60**
SUB TOTAL ELECTRICAL		$27,117.50
TOTAL LABOR	$20,177.75	
LABOR ADJUSTMENT FACTOR		16.00%
LABOR ADJUSTMENT AMOUNT		$3,228.44
SUBTOTAL		$30,345.94
OVERHEAD	15.00%	$4,551.89
PROFIT	10.00%	$3,034.59
TOTAL ELECTRICAL		**$37,932.43**
TOTAL ALL TRADES SBS MODIFIED ROOFING		**$1,014,847.75**

EXHIBIT 'C'

CONSTRUCTION COST ESTIMATE
EPDM ROOFING SYSTEM

ROOF REPLACEMENT - NEW JERSEY STATE MUSEUM
STATE CAPITAL CULTURAL COMPLEX
TRENTON, MERCER COUNTY, NEW JERSEY

ITEM	QUAN.	UNIT AMOUNT		TOTAL	
		LABOR	TOTAL	LABOR	TOTAL
GENERAL REQUIREMENTS (DIVISION 1)					
GENERAL REQUIREMENTS					
BOND /L.S.	1.00	$0.00	$8,000.00	$0.00	$8,000.00
PROTECTION AROUND ROOF PERIMETER /L.S.	1.00	$1,200.00	$2,000.00	$1,200.00	$2,000.00
ADDITIONAL MANUFACTURERS INSPECTION /L.S.	1.00		$800.00	$0.00	$800.00
MANUFACTURERS NDL ROOFING WARRANTY /S.F.	23,890.00		$1.00	$0.00	$23,890.00
TELESCOPING FORKLIFT / WEEK	4.00	$0.00	$708.00	$0.00	$2,832.00
CRANE NO OPERATOR / MONTH	1.00	$0.00	$4,400.00	$0.00	$4,400.00
CRANE OPERATOR / DAY	20.00	$0.00	$500.00	$0.00	$10,000.00
STORAGE BOX / MONTH	1.00	$0.00	$120.00	$0.00	$120.00
TEMPORARY TOILET / MONTH	1.00	$0.00	$100.00	$0.00	$100.00
TEMPORARY FENCING /L.F.	300.00	$1.37	$9.05	$411.00	$2,715.00
SUPERVISION /WEEK	4.00	$0.00	$1,875.00		$7,500.00
EXISTING CONDITIONS (DIVISION 2)					
DEMOLITION					
INSULATION REMOVAL /S.F.	23,890.00	$0.46	$0.69	$10,989.40	$16,484.10
TAPERED INSULATION REMOVAL /B.F.	83,615.00	$0.23	$0.34	$19,231.45	$28,429.10
MODIFIED BITUMEN ROOF REMOVAL /S.F.	23,890.00	$0.69	$1.03	$16,484.10	$24,606.70
ASPHALT MOP COAT REMOVAL /S.F.	23,890.00	$0.15	$0.24	$3,583.50	$5,733.60
REMOVE EPDM ALONG PARAPET SHELFS /S.F.	1,550.00	$0.95	$1.50	$1,472.50	$2,325.00
ACM SEALANT REMOVAL /L.S.	1.00	$1,200.00	$1,800.00	$1,200.00	$1,800.00
2x10 WOOD NAILERS/ L.F.	865.00	$0.75	$1.00	$648.75	$865.00
COPING REMOVAL /L.F.	865.00	$1.48	$2.21	$1,280.20	$1,911.65
EDGE FLASHING-FASCIA REMOVAL /L.F.	633.00	$1.01	$1.56	$639.33	$987.48
REMOVE ROOFTOP CURBS /EACH	6.00	$7.50	$10.00	$45.00	$60.00
REMOVE ROOF DRAIN /EACH	10.00	$20.00	$30.00	$200.00	$300.00
REMOVE ROOF HATCH /EACH	1.00	$90.00	$120.00	$90.00	$120.00
RUBBISH HANDLING /C.Y.	665.00	$11.10	$20.82	$7,381.50	$13,845.30
DUMPSTERS /EACH	20.00	$0.00	$900.00	$0.00	$18,000.00
AREA ADJUSTMENT DIVISION 2		5.20%	0.00%	$3,288.78	$0.00
WOOD AND PLASTICS (DIVISION 6)					
CARPENTRY					
2x10 WOOD NAILERS /M.B.F.	2.90	$940.00	$2,975.00	$2,726.00	$8,627.50
RAISE CURBS /EACH	7.00	$170.00	$212.00	$1,190.00	$1,484.00
FASTENERS /L.S.	1.00	$0.00	$1,600.00	$0.00	$1,600.00
2x4 FRT WOOD NAILERS /M.B.F.	0.24	$1,650.00	$3,950.00	$396.00	$948.00
AREA ADJUSTMENT DIVISION 6		43.30%	23.10%	$1,867.10	$2,924.34
THERMAL AND MOISTURE PROTECTION (DIVISION 7)					
ROOF REPLACEMENT					
60 MIL EPDM ROOFING FULLY ADHERED /S.F.	23,890.00	$0.70	$2.50	$16,723.00	$59,725.00
EPDM PRIMER AND CLEANER /GALLON	34.00	$0.00	$42.00	$0.00	$1,428.00
EPDM ADHESIVE /CAN	238.00	$0.00	$226.00	$0.00	$53,788.00
EPDM FLASHING /S.F.	3,200.00	$1.30	$3.95	$4,160.00	$12,640.00
SEAM TAPE /ROLL	46.00	$5.00	$95.50	$230.00	$4,393.00
NEW TPO OR PVC MEMBRANE AT PARAPET /S.F.	1,550.00	$1.40	$4.60	$2,170.00	$7,130.00
WALKPADS /EACH	120.00	$8.00	$25.00	$960.00	$3,000.00
NEW CANT /L.F.	1,230.00	$0.75	$1.70	$922.50	$2,091.00
INSULATION ADHESIVE /CAN	40.00	$0.00	$225.00	$0.00	$9,000.00
2" INSULATION /S.F	23,890.00	$0.24	$1.75	$5,733.60	$41,807.50
TAPERED INSULATION /B.F.	89,587.00	$0.21	$1.08	$18,813.27	$96,753.96
METAL COUNTER- FLASHING /L.F.	290.00	$2.66	$7.20	$771.40	$2,088.00
METAL COPING /L.F.	865.00	$9.75	$26.00	$8,433.75	$22,490.00
MITERED CORNERS FOR COPING /EACH	8.00	$20.00	$225.00	$160.00	$1,800.00
PIPE VENT FLASHING /EACH	5.00	$50.00	$110.00	$250.00	$550.00
NEW PIPE PORTAL /EACH	2.00	$35.00	$150.00	$70.00	$300.00
NEW ROOF HATCH /EACH	1.00	$176.00	$1,025.00	$176.00	$1,025.00
NEW ROOF HATCH RAILING /EACH	1.00	$120.00	$1,500.00	$120.00	$1,500.00
NEW RAIL CURB /EACH	0.00	$25.00	$100.00	$0.00	$0.00
SCREEN/COVER AT THROUGH-WALL OUTLET /EACH	2.00	$50.00	$350.00	$100.00	$700.00
CUT INSULATION AT UNDER ROOF CONDUIT /EACH	1.00	$85.00	$110.00	$85.00	$110.00
CAULKING /L.F.	445.00	$1.90	$5.00	$845.50	$2,225.00
AREA ADJUSTMENT DIVISION 7		32.60%	14.50%	$19,796.03	$47,058.95

EXHIBIT 'C'

ITEM	QUAN.	UNIT AMOUNT LABOR	UNIT AMOUNT TOTAL	TOTAL LABOR	TOTAL TOTAL
MECHANICAL (DIVISION 22)					
PLUMBING					
MOBILIZATION /L.S.	1.00	$1,000.00	$1,200.00	$1,000.00	$1,200.00
PRE AND POST INSPECT & CLEAN DRAINS /L.S.	1.00	$3,000.00	$4,000.00	$3,000.00	$4,000.00
ROOF DRAINS /EACH	10.00	$250.00	$750.00	$2,500.00	$7,500.00
DEMOLITION /L.S.	2.00	$750.00	$1,000.00	$1,500.00	$2,000.00
AREA ADJUSTMENT DIVISION 22		24.60%	10.40%	$1,968.00	$1,528.80
ELECTRICAL (DIVISION 26)					
ELECTRICAL					
DISCONNECT / RECONNECT FANS /EACH	7.00	$1,750.00	$2,500.00	$12,250.00	$17,500.00
DISCONNECT / RECONNECT CAMERAS & LIGHTS /L.S.	1.00	$5,000.00	$7,500.00	$5,000.00	$7,500.00
AREA ADJUSTMENT DIVISION 26		23.90%	12.10%	$2,927.75	$2,117.50

SUB TOTAL GENERAL CONSTRUCTION		$565,012.18
TOTAL LABOR	$154,844.65	
LABOR ADJUSTMENT FACTOR		15.00%
LABOR ADJUSTMENT AMOUNT		$23,226.70
SUBTOTAL		$588,238.88
OVERHEAD	15.00%	$88,235.83
PROFIT	10.00%	$58,823.89
TOTAL GENERAL CONSTRUCTION		**$735,298.60**

SUB TOTAL PLUMBING		$16,228.80
TOTAL LABOR	$9,968.00	
LABOR ADJUSTMENT FACTOR		16.00%
LABOR ADJUSTMENT AMOUNT		$1,594.88
SUBTOTAL		$17,823.68
OVERHEAD	15.00%	$2,673.55
PROFIT	10.00%	$1,782.37
TOTAL PLUMBING		**$22,279.60**

SUB TOTAL ELECTRICAL		$27,117.50
TOTAL LABOR	$20,177.75	
LABOR ADJUSTMENT FACTOR		16.00%
LABOR ADJUSTMENT AMOUNT		$3,228.44
SUBTOTAL		$30,345.94
OVERHEAD	15.00%	$4,551.89
PROFIT	10.00%	$3,034.59
TOTAL ELECTRICAL		**$37,932.43**

TOTAL ALL TRADES EPDM ROOFING	**$795,510.62**

EXHIBIT 'C'

CONSTRUCTION COST ESTIMATE
PVC ROOFING SYSTEM

ROOF REPLACEMENT - NEW JERSEY STATE MUSEUM
STATE CAPITAL CULTURAL COMPLEX
TRENTON, MERCER COUNTY, NEW JERSEY

ITEM	QUAN.	UNIT AMOUNT		TOTAL	
		LABOR	TOTAL	LABOR	TOTAL
GENERAL REQUIREMENTS (DIVISION 1)					
GENERAL REQUIREMENTS					
BOND /L.S.	1.00	$0.00	$8,000.00	$0.00	$8,000.00
PROTECTION AROUND ROOF PERIMETER /L.S.	1.00	$1,200.00	$2,000.00	$1,200.00	$2,000.00
ADDITIONAL MANUFACTURERS INSPECTION /L.S.	1.00		$800.00	$0.00	$800.00
MANUFACTURERS NDL ROOFING WARRANTY /S.F.	23,890.00		$1.00	$0.00	$23,890.00
TELESCOPING FORKLIFT / WEEK	4.00	$0.00	$708.00	$0.00	$2,832.00
CRANE NO OPERATOR / MONTH	1.00	$0.00	$4,400.00	$0.00	$4,400.00
CRANE OPERATOR / DAY	20.00	$0.00	$500.00	$0.00	$10,000.00
STORAGE BOX / MONTH	1.00	$0.00	$120.00	$0.00	$120.00
TEMPORARY TOILET / MONTH	1.00	$0.00	$100.00	$0.00	$100.00
TEMPORARY FENCING /L.F.	300.00	$1.37	$9.05	$411.00	$2,715.00
SUPERVISION /WEEK	4.00	$0.00	$1,875.00		$7,500.00
EXISTING CONDITIONS (DIVISION 2)					
DEMOLITION					
INSULATION REMOVAL /S.F.	23,890.00	$0.46	$0.69	$10,989.40	$16,484.10
TAPERED INSULATION REMOVAL /B.F.	83,615.00	$0.23	$0.34	$19,231.45	$28,429.10
MODIFIED BITUMEN ROOF REMOVAL /S.F.	23,890.00	$0.69	$1.03	$16,484.10	$24,606.70
ASPHALT MOP COAT REMOVAL /S.F.	23,890.00	$0.15	$0.24	$3,583.50	$5,733.60
REMOVE EPDM ALONG PARAPET SHELFS /S.F.	1,550.00	$0.95	$1.50	$1,472.50	$2,325.00
ACM SEALANT REMOVAL /L.S.	1.00	$1,200.00	$1,800.00	$1,200.00	$1,800.00
2x10 WOOD NAILERS/ L.F.	865.00	$0.75	$1.00	$648.75	$865.00
COPING REMOVAL /L.F.	865.00	$1.48	$2.21	$1,280.20	$1,911.65
EDGE FLASHING-FASCIA REMOVAL /L.F.	633.00	$1.01	$1.56	$639.33	$987.48
REMOVE ROOFTOP CURBS /EACH	6.00	$7.50	$10.00	$45.00	$60.00
REMOVE ROOF DRAIN /EACH	10.00	$20.00	$30.00	$200.00	$300.00
REMOVE ROOF HATCH /EACH	1.00	$90.00	$120.00	$90.00	$120.00
RUBBISH HANDLING /C.Y.	665.00	$11.10	$20.82	$7,381.50	$13,845.30
DUMPSTERS /EACH	20.00	$0.00	$900.00	$0.00	$18,000.00
AREA ADJUSTMENT DIVISION 2		5.20%	0.00%	$3,288.78	$0.00
WOOD AND PLASTICS (DIVISION 6)					
CARPENTRY					
2x10 WOOD NAILERS /M.B.F.	2.90	$940.00	$2,975.00	$2,726.00	$8,627.50
RAISE CURBS /EACH	7.00	$170.00	$212.00	$1,190.00	$1,484.00
FASTENERS /L.S.	1.00	$0.00	$1,600.00	$0.00	$1,600.00
2x4 FRT WOOD NAILERS /M.B.F.	0.24	$1,650.00	$3,950.00	$396.00	$948.00
AREA ADJUSTMENT DIVISION 6		43.30%	23.10%	$1,867.10	$2,924.34
THERMAL AND MOISTURE PROTECTION (DIVISION 7)					
ROOF REPLACEMENT					
60 MIL PVC ROOFING FULLY ADHERED /S.F.	23,890.00	$0.70	$2.55	$16,723.00	$60,919.50
PRIMER AND CLEANER /GALLON	34.00	$0.00	$35.00	$0.00	$1,190.00
PVC ADHESIVE /CAN	238.00	$0.00	$231.00	$0.00	$54,978.00
PVC FLASHING /S.F.	3,200.00	$1.30	$4.00	$4,160.00	$12,800.00
HEAT-WELD SEAMS /L.S.	1.00	$1,200.00	$4,500.00	$1,200.00	$4,500.00
NEW TPO OR PVC MEMBRANE AT PARAPET /S.F.	1,550.00	$1.40	$4.60	$2,170.00	$7,130.00
WALKPADS /EACH	120.00	$8.00	$25.00	$960.00	$3,000.00
NEW CANT /L.F.	1,230.00	$0.75	$1.70	$922.50	$2,091.00
INSULATION ADHESIVE /CAN	40.00	$0.00	$225.00	$0.00	$9,000.00
2" INSULATION /S.F	23,890.00	$0.24	$1.75	$5,733.60	$41,807.50
TAPERED INSULATION /B.F.	89,587.00	$0.21	$1.08	$18,813.27	$96,753.96
METAL COUNTER- FLASHING /L.F.	290.00	$2.66	$7.20	$771.40	$2,088.00
METAL COPING /L.F.	865.00	$9.75	$26.00	$8,433.75	$22,490.00
MITERED CORNERS FOR COPING /EACH	8.00	$20.00	$225.00	$160.00	$1,800.00
PIPE VENT FLASHING /EACH	5.00	$50.00	$110.00	$250.00	$550.00
NEW PIPE PORTAL /EACH	2.00	$35.00	$150.00	$70.00	$300.00
NEW ROOF HATCH /EACH	1.00	$176.00	$1,025.00	$176.00	$1,025.00
NEW ROOF HATCH RAILING /EACH	1.00	$120.00	$1,500.00	$120.00	$1,500.00
NEW RAIL CURB /EACH	0.00	$25.00	$100.00	$0.00	$0.00
SCREEN/COVER AT THROUGH-WALL OUTLET /EACH	2.00	$50.00	$350.00	$100.00	$700.00
CUT INSULATION AT UNDER ROOF CONDUIT /EACH	1.00	$85.00	$110.00	$85.00	$110.00
CAULKING /L.F.	445.00	$1.90	$5.00	$845.50	$2,225.00
AREA ADJUSTMENT DIVISION 7		32.60%	14.50%	$20,112.25	$47,408.90

EXHIBIT 'C'

ITEM	QUAN.	UNIT AMOUNT LABOR	UNIT AMOUNT TOTAL	TOTAL LABOR	TOTAL TOTAL
MECHANICAL (DIVISION 22)					
PLUMBING					
MOBILIZATION /L.S.	1.00	$1,000.00	$1,200.00	$1,000.00	$1,200.00
PRE AND POST INSPECT & CLEAN DRAINS /L.S.	1.00	$3,000.00	$4,000.00	$3,000.00	$4,000.00
ROOF DRAINS /EACH	10.00	$250.00	$750.00	$2,500.00	$7,500.00
DEMOLITION /L.S.	2.00	$750.00	$1,000.00	$1,500.00	$2,000.00
AREA ADJUSTMENT DIVISION 22		24.60%	10.40%	$1,968.00	$1,528.80
ELECTRICAL (DIVISION 26)					
ELECTRICAL					
DISCONNECT / RECONNECT FANS /EACH	7.00	$1,750.00	$2,500.00	$12,250.00	$17,500.00
DISCONNECT / RECONNECT CAMERAS & LIGHTS /L.S.	1.00	$5,000.00	$7,500.00	$5,000.00	$7,500.00
AREA ADJUSTMENT DIVISION 26		23.90%	12.10%	$2,927.75	$2,117.50

SUB TOTAL GENERAL CONSTRUCTION		$567,775.64
TOTAL LABOR	$156,130.87	
LABOR ADJUSTMENT FACTOR		16.00%
LABOR ADJUSTMENT AMOUNT		$24,980.94
SUBTOTAL		$592,756.58
OVERHEAD	15.00%	$88,913.49
PROFIT	10.00%	$59,275.66
TOTAL GENERAL CONSTRUCTION		**$740,945.72**

SUB TOTAL PLUMBING		$16,228.80
TOTAL LABOR	$9,968.00	
LABOR ADJUSTMENT FACTOR		16.00%
LABOR ADJUSTMENT AMOUNT		$1,594.88
SUBTOTAL		$17,823.68
OVERHEAD	15.00%	$2,673.55
PROFIT	10.00%	$1,782.37
TOTAL PLUMBING		**$22,279.60**

SUB TOTAL ELECTRICAL		$27,117.50
TOTAL LABOR	$20,177.75	
LABOR ADJUSTMENT FACTOR		16.00%
LABOR ADJUSTMENT AMOUNT		$3,228.44
SUBTOTAL		$30,345.94
OVERHEAD	15.00%	$4,551.89
PROFIT	10.00%	$3,034.59
TOTAL ELECTRICAL		**$37,932.43**

TOTAL ALL TRADES PVC ROOFING **$801,157.75**

EXHIBIT 'C'

CONSTRUCTION COST ESTIMATE
TPO ROOFING SYSTEM

ROOF REPLACEMENT - NEW JERSEY STATE MUSEUM
STATE CAPITAL CULTURAL COMPLEX
TRENTON, MERCER COUNTY, NEW JERSEY

ITEM	QUAN.	UNIT AMOUNT		TOTAL	
		LABOR	TOTAL	LABOR	TOTAL
GENERAL REQUIREMENTS (DIVISION 1)					
GENERAL REQUIREMENTS					
BOND /L.S.	1.00	$0.00	$8,000.00	$0.00	$8,000.00
PROTECTION AROUND ROOF PERIMETER /L.S.	1.00	$1,200.00	$2,000.00	$1,200.00	$2,000.00
ADDITIONAL MANUFACTURERS INSPECTION /L.S.	1.00		$800.00	$0.00	$800.00
MANUFACTURERS NDL ROOFING WARRANTY /S.F.	23,890.00		$1.00	$0.00	$23,890.00
TELESCOPING FORKLIFT / WEEK	4.00	$0.00	$708.00	$0.00	$2,832.00
CRANE NO OPERATOR / MONTH	1.00	$0.00	$4,400.00	$0.00	$4,400.00
CRANE OPERATOR / DAY	20.00	$0.00	$500.00	$0.00	$10,000.00
STORAGE BOX / MONTH	1.00	$0.00	$120.00	$0.00	$120.00
TEMPORARY TOILET / MONTH	1.00	$0.00	$100.00	$0.00	$100.00
TEMPORARY FENCING /L.F.	300.00	$1.37	$9.05	$411.00	$2,715.00
SUPERVISION /WEEK	4.00	$0.00	$1,875.00		$7,500.00
EXISTING CONDITIONS (DIVISION 2)					
DEMOLITION					
INSULATION REMOVAL /S.F.	23,890.00	$0.46	$0.69	$10,989.40	$16,484.10
TAPERED INSULATION REMOVAL /B.F.	83,615.00	$0.23	$0.34	$19,231.45	$28,429.10
MODIFIED BITUMEN ROOF REMOVAL /S.F.	23,890.00	$0.69	$1.03	$16,484.10	$24,606.70
ASPHALT MOP COAT REMOVAL /S.F.	23,890.00	$0.15	$0.24	$3,583.50	$5,733.60
REMOVE EPDM ALONG PARAPET SHELFS /S.F.	1,550.00	$0.95	$1.50	$1,472.50	$2,325.00
ACM SEALANT REMOVAL /L.S.	1.00	$1,200.00	$1,800.00	$1,200.00	$1,800.00
2x10 WOOD NAILERS/ L.F.	865.00	$0.75	$1.00	$648.75	$865.00
COPING REMOVAL /L.F.	865.00	$1.48	$2.21	$1,280.20	$1,911.65
EDGE FLASHING-FASCIA REMOVAL /L.F.	633.00	$1.01	$1.56	$639.33	$987.48
REMOVE ROOFTOP CURBS /EACH	6.00	$7.50	$10.00	$45.00	$60.00
REMOVE ROOF DRAIN /EACH	10.00	$20.00	$30.00	$200.00	$300.00
REMOVE ROOF HATCH /EACH	1.00	$90.00	$120.00	$90.00	$120.00
RUBBISH HANDLING /C.Y.	665.00	$11.10	$20.82	$7,381.50	$13,845.30
DUMPSTERS /EACH	20.00	$0.00	$900.00	$0.00	$18,000.00
AREA ADJUSTMENT DIVISION 2		5.20%	0.00%	$3,288.78	$0.00
WOOD AND PLASTICS (DIVISION 6)					
CARPENTRY					
2x10 WOOD NAILERS /M.B.F.	2.90	$940.00	$2,975.00	$2,726.00	$8,627.50
RAISE CURBS /EACH	7.00	$170.00	$212.00	$1,190.00	$1,484.00
FASTENERS /L.S.	1.00	$0.00	$1,600.00	$0.00	$1,600.00
2x4 FRT WOOD NAILERS /M.B.F.	0.24	$1,650.00	$3,950.00	$396.00	$948.00
AREA ADJUSTMENT DIVISION 6		43.30%	23.10%	$1,867.10	$2,924.34
THERMAL AND MOISTURE PROTECTION (DIVISION 7)					
ROOF REPLACEMENT					
60 MIL TPO ROOFING FULLY ADHERED /S.F.	23,890.00	$0.70	$2.35	$16,723.00	$56,141.50
PRIMER AND CLEANER /GALLON	34.00	$0.00	$35.00	$0.00	$1,190.00
TPO ADHESIVE /CAN	238.00	$0.00	$231.00	$0.00	$54,978.00
TPO FLASHING /S.F.	3,200.00	$1.30	$3.90	$4,160.00	$12,480.00
HEAT-WELD SEAMS /L.S.	1.00	$1,200.00	$4,500.00	$1,200.00	$4,500.00
NEW TPO OR PVC MEMBRANE AT PARAPET /S.F.	1,550.00	$1.40	$4.60	$2,170.00	$7,130.00
WALKPADS /EACH	120.00	$8.00	$25.00	$960.00	$3,000.00
NEW CANT /L.F.	1,230.00	$0.75	$1.70	$922.50	$2,091.00
INSULATION ADHESIVE /CAN	40.00	$0.00	$225.00	$0.00	$9,000.00
2" INSULATION /S.F	23,890.00	$0.24	$1.75	$5,733.60	$41,807.50
TAPERED INSULATION /B.F.	89,587.00	$0.21	$1.08	$18,813.27	$96,753.96
METAL COUNTER- FLASHING /L.F.	290.00	$2.66	$7.20	$771.40	$2,088.00
METAL COPING /L.F.	865.00	$9.75	$26.00	$8,433.75	$22,490.00
MITERED CORNERS FOR COPING /EACH	8.00	$20.00	$225.00	$160.00	$1,800.00
PIPE VENT FLASHING /EACH	5.00	$50.00	$110.00	$250.00	$550.00
NEW PIPE PORTAL /EACH	2.00	$35.00	$150.00	$70.00	$300.00
NEW ROOF HATCH /EACH	1.00	$176.00	$1,025.00	$176.00	$1,025.00
NEW ROOF HATCH RAILING /EACH	1.00	$120.00	$1,500.00	$120.00	$1,500.00
NEW RAIL CURB /EACH	0.00	$25.00	$100.00	$0.00	$0.00
SCREEN/COVER AT THROUGH-WALL OUTLET /EACH	2.00	$50.00	$350.00	$100.00	$700.00
CUT INSULATION AT UNDER ROOF CONDUIT /EACH	1.00	$85.00	$110.00	$85.00	$110.00
CAULKING /L.F.	445.00	$1.90	$5.00	$845.50	$2,225.00
AREA ADJUSTMENT DIVISION 7		32.60%	14.50%	$20,112.25	$46,669.69

EXHIBIT 'C'

ITEM	QUAN.	UNIT AMOUNT LABOR	UNIT AMOUNT TOTAL	TOTAL LABOR	TOTAL TOTAL
MECHANICAL (DIVISION 22)					
PLUMBING					
MOBILIZATION /L.S.	1.00	$1,000.00	$1,200.00	$1,000.00	$1,200.00
PRE AND POST INSPECT & CLEAN DRAINS /L.S.	1.00	$3,000.00	$4,000.00	$3,000.00	$4,000.00
ROOF DRAINS /EACH	10.00	$250.00	$750.00	$2,500.00	$7,500.00
DEMOLITION /L.S.	2.00	$750.00	$1,000.00	$1,500.00	$2,000.00
AREA ADJUSTMENT DIVISION 22		24.60%	10.40%	$1,968.00	$1,528.80
ELECTRICAL (DIVISION 26)					
ELECTRICAL					
DISCONNECT / RECONNECT FANS /EACH	7.00	$1,750.00	$2,500.00	$12,250.00	$17,500.00
DISCONNECT / RECONNECT CAMERAS & LIGHTS /L.S.	1.00	$5,000.00	$7,500.00	$5,000.00	$7,500.00
AREA ADJUSTMENT DIVISION 26		23.90%	12.10%	$2,927.75	$2,117.50

SUB TOTAL GENERAL CONSTRUCTION		$561,938.43
TOTAL LABOR	$156,130.87	
LABOR ADJUSTMENT FACTOR		15.00%
LABOR ADJUSTMENT AMOUNT		$23,419.63
SUBTOTAL		$585,358.06
OVERHEAD	15.00%	$87,803.71
PROFIT	10.00%	$58,535.81
TOTAL GENERAL CONSTRUCTION		**$731,697.57**

SUB TOTAL PLUMBING		$16,228.80
TOTAL LABOR	$9,968.00	
LABOR ADJUSTMENT FACTOR		16.00%
LABOR ADJUSTMENT AMOUNT		$1,594.88
SUBTOTAL		$17,823.68
OVERHEAD	15.00%	$2,673.55
PROFIT	10.00%	$1,782.37
TOTAL PLUMBING		**$22,279.60**

SUB TOTAL ELECTRICAL		$27,117.50
TOTAL LABOR	$20,177.75	
LABOR ADJUSTMENT FACTOR		16.00%
LABOR ADJUSTMENT AMOUNT		$3,228.44
SUBTOTAL		$30,345.94
OVERHEAD	15.00%	$4,551.89
PROFIT	10.00%	$3,034.59
TOTAL ELECTRICAL		**$37,932.43**

TOTAL ALL TRADES TPO ROOFING **$791,909.60**

EXHIBIT 'C'

CONSTRUCTION COST ESTIMATE
FLUID APPLIED ROOFING SYSTEM OVER EXISTING ROOF

ROOF REPLACEMENT - NEW JERSEY STATE MUSEUM
STATE CAPITAL CULTURAL COMPLEX
TRENTON, MERCER COUNTY, NEW JERSEY

ITEM	QUAN.	UNIT AMOUNT		TOTAL	
		LABOR	TOTAL	LABOR	TOTAL
GENERAL REQUIREMENTS (DIVISION 1)					
GENERAL REQUIREMENTS					
BOND /L.S.	1.00	$0.00	$8,000.00	$0.00	$8,000.00
PROTECTION AROUND ROOF PERIMETER /L.S.	1.00	$1,200.00	$2,000.00	$1,200.00	$2,000.00
ADDITIONAL MANUFACTURERS INSPECTION /L.S.	1.00		$800.00	$0.00	$800.00
MANUFACTURERS NDL ROOFING WARRANTY /S.F.	23,890.00		$1.00	$0.00	$23,890.00
TELESCOPING FORKLIFT / WEEK	3.00	$0.00	$708.00	$0.00	$2,124.00
CRANE NO OPERATOR / MONTH	1.00	$0.00	$4,400.00	$0.00	$4,400.00
CRANE OPERATOR / DAY	15.00	$0.00	$500.00	$0.00	$7,500.00
STORAGE BOX / MONTH	1.00	$0.00	$120.00	$0.00	$120.00
TEMPORARY TOILET / MONTH	1.00	$0.00	$100.00	$0.00	$100.00
TEMPORARY FENCING /L.F.	300.00	$1.37	$9.05	$411.00	$2,715.00
SUPERVISION /WEEK	3.00	$0.00	$1,875.00		$5,625.00
EXISTING CONDITIONS (DIVISION 2)					
DEMOLITION					
INSULATION REMOVAL /S.F.	5,000.00	$0.46	$0.69	$2,300.00	$3,450.00
TAPERED INSULATION REMOVAL /B.F.	17,500.00	$0.23	$0.34	$4,025.00	$5,950.00
MODIFIED BITUMEN ROOF REMOVAL /S.F.	5,000.00	$0.69	$1.03	$3,450.00	$5,150.00
ASPHALT MOP COAT REMOVAL /S.F.	5,000.00	$0.15	$0.24	$750.00	$1,200.00
REMOVE EPDM ALONG PARAPET SHELFS /S.F.	1,550.00	$0.95	$1.50	$1,472.50	$2,325.00
ACM SEALANT REMOVAL /L.S.	1.00	$1,200.00	$1,800.00	$1,200.00	$1,800.00
2x10 WOOD NAILERS/ L.F.	433.00	$0.75	$1.00	$324.75	$433.00
COPING REMOVAL /L.F.	865.00	$1.48	$2.21	$1,280.20	$1,911.65
EDGE FLASHING-FASCIA REMOVAL /L.F.	633.00	$1.01	$1.56	$639.33	$987.48
REMOVE ROOFTOP CURBS /EACH	3.00	$7.50	$10.00	$22.50	$30.00
REMOVE ROOF DRAIN /EACH	10.00	$20.00	$30.00	$200.00	$300.00
REMOVE ROOF HATCH /EACH	1.00	$90.00	$120.00	$90.00	$120.00
RUBBISH HANDLING /C.Y.	665.00	$11.10	$20.82	$7,381.50	$13,845.30
DUMPSTERS /EACH	20.00	$0.00	$900.00	$0.00	$18,000.00
AREA ADJUSTMENT DIVISION 2		5.20%	0.00%	$1,203.06	$0.00
WOOD AND PLASTICS (DIVISION 6)					
CARPENTRY					
2x10 WOOD NAILERS /M.B.F.	1.45	$940.00	$2,975.00	$1,363.00	$4,313.75
FASTENERS /L.S.	1.00	$0.00	$1,600.00	$0.00	$1,600.00
AREA ADJUSTMENT DIVISION 6		43.30%	23.10%	$590.18	$1,366.08
THERMAL AND MOISTURE PROTECTION (DIVISION 7)					
ROOF REPLACEMENT					
BASE PLY SBS ROOFING /S.F.	23,890.00	$1.20	$3.37	$28,668.00	$80,509.30
INTER-PLY SBS ROOFING /S.F.	23,890.00	$1.20	$3.37	$28,668.00	$80,509.30
FLUID APPLIED POLYURETHANE COATING /S.F.	23,890.00	$0.51	$1.67	$12,183.90	$39,896.30
PRIMER /S.F.	26,830.00	$0.51	$1.60	$13,683.30	$42,928.00
FLUID APPLIED POLYURETHANE FLASHING /S.F.	2,940.00	$0.75	$1.90	$2,205.00	$5,586.00
SMOOTH SBS FLASHING /S.F.	2,760.00	$2.00	$4.51	$5,520.00	$12,447.60
NEW TPO OR PVC MEMBRANE AT PARAPET /S.F.	1,550.00	$1.40	$4.60	$2,170.00	$7,130.00
WALKPADS /EACH	120.00	$8.00	$25.00	$960.00	$3,000.00
NEW CANT /L.F.	1,230.00	$0.75	$1.70	$922.50	$2,091.00
2" INSULATION /S.F	5,000.00	$0.24	$1.75	$1,200.00	$8,750.00
TAPERED INSULATION /B.F.	17,500.00	$0.21	$1.08	$3,675.00	$18,900.00
METAL COUNTER- FLASHING /L.F.	290.00	$2.66	$7.20	$771.40	$2,088.00
METAL COPING /L.F.	865.00	$9.75	$26.00	$8,433.75	$22,490.00
MITERED CORNERS FOR COPING /EACH	8.00	$20.00	$225.00	$160.00	$1,800.00
PIPE VENT FLASHING /EACH	5.00	$50.00	$110.00	$250.00	$550.00
NEW PIPE PORTAL /EACH	2.00	$35.00	$150.00	$70.00	$300.00
NEW ROOF HATCH /EACH	1.00	$176.00	$1,025.00	$176.00	$1,025.00
NEW ROOF HATCH RAILING /EACH	1.00	$120.00	$1,500.00	$120.00	$1,500.00
NEW RAIL CURB /EACH	0.00	$25.00	$100.00	$0.00	$0.00
SCREEN/COVER AT THROUGH-WALL OUTLET /EACH	2.00	$50.00	$350.00	$100.00	$700.00
CUT INSULATION AT UNDER ROOF CONDUIT /EACH	1.00	$85.00	$110.00	$85.00	$110.00
CAULKING /L.F.	445.00	$1.90	$5.00	$845.50	$2,225.00
AREA ADJUSTMENT DIVISION 7		32.60%	14.50%	$36,142.76	$48,507.65

EXHIBIT 'C'

ITEM	QUAN.	UNIT AMOUNT LABOR	UNIT AMOUNT TOTAL	TOTAL LABOR	TOTAL TOTAL
MECHANICAL (DIVISION 22)					
PLUMBING					
MOBILIZATION /L.S.	1.00	$1,000.00	$1,200.00	$1,000.00	$1,200.00
PRE AND POST INSPECT & CLEAN DRAINS /L.S.	1.00	$3,000.00	$4,000.00	$3,000.00	$4,000.00
ROOF DRAINS /EACH	10.00	$250.00	$750.00	$2,500.00	$7,500.00
DEMOLITION /L.S.	2.00	$750.00	$1,000.00	$1,500.00	$2,000.00
AREA ADJUSTMENT DIVISION 22		24.60%	10.40%	$1,968.00	$1,528.80
ELECTRICAL (DIVISION 26)					
ELECTRICAL					
DISCONNECT / RECONNECT FANS /EACH	7.00	$1,750.00	$2,500.00	$12,250.00	$17,500.00
DISCONNECT / RECONNECT CAMERAS & LIGHTS /L.S.	1.00	$5,000.00	$7,500.00	$5,000.00	$7,500.00
AREA ADJUSTMENT DIVISION 26		23.90%	12.10%	$2,927.75	$2,117.50

SUB TOTAL GENERAL CONSTRUCTION		$503,099.40
TOTAL LABOR	$174,913.13	
LABOR ADJUSTMENT FACTOR		15.00%
LABOR ADJUSTMENT AMOUNT		$26,236.97
SUBTOTAL		$529,336.37
OVERHEAD	15.00%	$79,400.46
PROFIT	10.00%	$52,933.64
TOTAL GENERAL CONSTRUCTION		**$661,670.47**

SUB TOTAL PLUMBING		$16,228.80
TOTAL LABOR	$9,968.00	
LABOR ADJUSTMENT FACTOR		16.00%
LABOR ADJUSTMENT AMOUNT		$1,594.88
SUBTOTAL		$17,823.68
OVERHEAD	15.00%	$2,673.55
PROFIT	10.00%	$1,782.37
TOTAL PLUMBING		**$22,279.60**

SUB TOTAL ELECTRICAL		$27,117.50
TOTAL LABOR	$20,177.75	
LABOR ADJUSTMENT FACTOR		16.00%
LABOR ADJUSTMENT AMOUNT		$3,228.44
SUBTOTAL		$30,345.94
OVERHEAD	15.00%	$4,551.89
PROFIT	10.00%	$3,034.59
TOTAL ELECTRICAL		**$37,932.43**

TOTAL ALL TRADES FLUID APPLIED RESTORATION **$721,882.49**

EXHIBIT 'C'

CONSTRUCTION COST ESTIMATE
FLUID APPLIED ROOFING SYSTEM

ROOF REPLACEMENT - NEW JERSEY STATE MUSEUM
STATE CAPITAL CULTURAL COMPLEX
TRENTON, MERCER COUNTY, NEW JERSEY

ITEM	QUAN.	UNIT AMOUNT		TOTAL	
		LABOR	TOTAL	LABOR	TOTAL
GENERAL REQUIREMENTS (DIVISION 1)					
GENERAL REQUIREMENTS					
BOND /L.S.	1.00	$0.00	$8,000.00	$0.00	$8,000.00
PROTECTION AROUND ROOF PERIMETER /L.S.	1.00	$1,200.00	$2,000.00	$1,200.00	$2,000.00
ADDITIONAL MANUFACTURERS INSPECTION /L.S.	1.00		$800.00	$0.00	$800.00
MANUFACTURERS NDL ROOFING WARRANTY /S.F.	23,890.00		$1.00	$0.00	$23,890.00
TELESCOPING FORKLIFT / WEEK	4.00	$0.00	$708.00	$0.00	$2,832.00
CRANE NO OPERATOR / MONTH	1.00	$0.00	$4,400.00	$0.00	$4,400.00
CRANE OPERATOR / DAY	20.00	$0.00	$500.00	$0.00	$10,000.00
STORAGE BOX / MONTH	1.00	$0.00	$120.00	$0.00	$120.00
TEMPORARY TOILET / MONTH	1.00	$0.00	$100.00	$0.00	$100.00
TEMPORARY FENCING /L.F.	300.00	$1.37	$9.05	$411.00	$2,715.00
SUPERVISION /WEEK	4.00	$0.00	$1,875.00		$7,500.00
EXISTING CONDITIONS (DIVISION 2)					
DEMOLITION					
INSULATION REMOVAL /S.F.	23,890.00	$0.46	$0.69	$10,989.40	$16,484.10
TAPERED INSULATION REMOVAL /B.F.	83,615.00	$0.23	$0.34	$19,231.45	$28,429.10
MODIFIED BITUMEN ROOF REMOVAL /S.F.	23,890.00	$0.69	$1.03	$16,484.10	$24,606.70
ASPHALT MOP COAT REMOVAL /S.F.	23,890.00	$0.15	$0.24	$3,583.50	$5,733.60
REMOVE EPDM ALONG PARAPET SHELFS /S.F.	1,550.00	$0.95	$1.50	$1,472.50	$2,325.00
ACM SEALANT REMOVAL /L.S.	1.00	$1,200.00	$1,800.00	$1,200.00	$1,800.00
2x10 WOOD NAILERS/ L.F.	865.00	$0.75	$1.00	$648.75	$865.00
COPING REMOVAL /L.F.	865.00	$1.48	$2.21	$1,280.20	$1,911.65
EDGE FLASHING-FASCIA REMOVAL /L.F.	633.00	$1.01	$1.56	$639.33	$987.48
REMOVE ROOFTOP CURBS /EACH	6.00	$7.50	$10.00	$45.00	$60.00
REMOVE ROOF DRAIN /EACH	10.00	$20.00	$30.00	$200.00	$300.00
REMOVE ROOF HATCH /EACH	1.00	$90.00	$120.00	$90.00	$120.00
RUBBISH HANDLING /C.Y.	665.00	$11.10	$20.82	$7,381.50	$13,845.30
DUMPSTERS /EACH	20.00	$0.00	$900.00	$0.00	$18,000.00
AREA ADJUSTMENT DIVISION 2		5.20%	0.00%	$3,288.78	$0.00
WOOD AND PLASTICS (DIVISION 6)					
CARPENTRY					
2x10 WOOD NAILERS /M.B.F.	2.90	$940.00	$2,975.00	$2,726.00	$8,627.50
RAISE CURBS /EACH	7.00	$170.00	$212.00	$1,190.00	$1,484.00
FASTENERS /L.S.	1.00	$0.00	$1,600.00	$0.00	$1,600.00
2x4 FRT WOOD NAILERS /M.B.F.	0.24	$1,650.00	$3,950.00	$396.00	$948.00
AREA ADJUSTMENT DIVISION 6		43.30%	23.10%	$1,867.10	$2,924.34
THERMAL AND MOISTURE PROTECTION (DIVISION 7)					
ROOF REPLACEMENT					
BASE PLY SBS ROOFING /S.F.	23,890.00	$1.20	$3.37	$28,668.00	$80,509.30
INTER-PLY SBS ROOFING /S.F.	23,890.00	$1.20	$3.37	$28,668.00	$80,509.30
FLUID APPLIED POLYURETHANE COATING /S.F.	23,890.00	$0.51	$1.67	$12,183.90	$39,896.30
PRIMER /S.F.	26,830.00	$0.51	$1.60	$13,683.30	$42,928.00
FLUID APPLIED POLYURETHANE FLASHING /S.F.	2,940.00	$0.75	$1.90	$2,205.00	$5,586.00
SMOOTH SBS FLASHING /S.F.	2,760.00	$2.00	$4.51	$5,520.00	$12,447.60
NEW TPO OR PVC MEMBRANE AT PARAPET /S.F.	1,550.00	$1.40	$4.60	$2,170.00	$7,130.00
WALKPADS /EACH	120.00	$8.00	$25.00	$960.00	$3,000.00
NEW CANT /L.F.	1,230.00	$0.75	$1.70	$922.50	$2,091.00
2" INSULATION /S.F	23,890.00	$0.24	$1.75	$5,733.60	$41,807.50
TAPERED INSULATION /B.F.	89,587.00	$0.21	$1.08	$18,813.27	$96,753.96
METAL COUNTER- FLASHING /L.F.	290.00	$2.66	$7.20	$771.40	$2,088.00
METAL COPING /L.F.	865.00	$9.75	$26.00	$8,433.75	$22,490.00
MITERED CORNERS FOR COPING /EACH	8.00	$20.00	$225.00	$160.00	$1,800.00
PIPE VENT FLASHING /EACH	5.00	$50.00	$110.00	$250.00	$550.00
NEW PIPE PORTAL /EACH	2.00	$35.00	$150.00	$70.00	$300.00
NEW ROOF HATCH /EACH	1.00	$176.00	$1,025.00	$176.00	$1,025.00
NEW ROOF HATCH RAILING /EACH	1.00	$120.00	$1,500.00	$120.00	$1,500.00
NEW RAIL CURB /EACH	0.00	$25.00	$100.00	$0.00	$0.00
SCREEN/COVER AT THROUGH-WALL OUTLET /EACH	2.00	$50.00	$350.00	$100.00	$700.00
CUT INSULATION AT UNDER ROOF CONDUIT /EACH	1.00	$85.00	$110.00	$85.00	$110.00
CAULKING /L.F.	445.00	$1.90	$5.00	$845.50	$2,225.00
AREA ADJUSTMENT DIVISION 7		32.60%	14.50%	$42,555.79	$64,589.81

EXHIBIT 'C'

ITEM	QUAN.	UNIT AMOUNT LABOR	UNIT AMOUNT TOTAL	TOTAL LABOR	TOTAL TOTAL
MECHANICAL (DIVISION 22)					
PLUMBING					
MOBILIZATION /L.S.	1.00	$1,000.00	$1,200.00	$1,000.00	$1,200.00
PRE AND POST INSPECT & CLEAN DRAINS /L.S.	1.00	$3,000.00	$4,000.00	$3,000.00	$4,000.00
ROOF DRAINS /EACH	10.00	$250.00	$750.00	$2,500.00	$7,500.00
DEMOLITION /L.S.	2.00	$750.00	$1,000.00	$1,500.00	$2,000.00
AREA ADJUSTMENT DIVISION 22		24.60%	10.40%	$1,968.00	$1,528.80
ELECTRICAL (DIVISION 26)					
ELECTRICAL					
DISCONNECT / RECONNECT FANS /EACH	7.00	$1,750.00	$2,500.00	$12,250.00	$17,500.00
DISCONNECT / RECONNECT CAMERAS & LIGHTS /L.S.	1.00	$5,000.00	$7,500.00	$5,000.00	$7,500.00
AREA ADJUSTMENT DIVISION 26		23.90%	12.10%	$2,927.75	$2,117.50

SUB TOTAL GENERAL CONSTRUCTION		$703,445.54
TOTAL LABOR	$247,419.61	
LABOR ADJUSTMENT FACTOR		15.00%
LABOR ADJUSTMENT AMOUNT		$37,112.94
SUBTOTAL		$740,558.49
OVERHEAD	15.00%	$111,083.77
PROFIT	10.00%	$74,055.85
TOTAL GENERAL CONSTRUCTION		**$925,698.11**

SUB TOTAL PLUMBING		$16,228.80
TOTAL LABOR	$9,968.00	
LABOR ADJUSTMENT FACTOR		16.00%
LABOR ADJUSTMENT AMOUNT		$1,594.88
SUBTOTAL		$17,823.68
OVERHEAD	15.00%	$2,673.55
PROFIT	10.00%	$1,782.37
TOTAL PLUMBING		**$22,279.60**

SUB TOTAL ELECTRICAL		$27,117.50
TOTAL LABOR	$20,177.75	
LABOR ADJUSTMENT FACTOR		16.00%
LABOR ADJUSTMENT AMOUNT		$3,228.44
SUBTOTAL		$30,345.94
OVERHEAD	15.00%	$4,551.89
PROFIT	10.00%	$3,034.59
TOTAL ELECTRICAL		**$37,932.43**

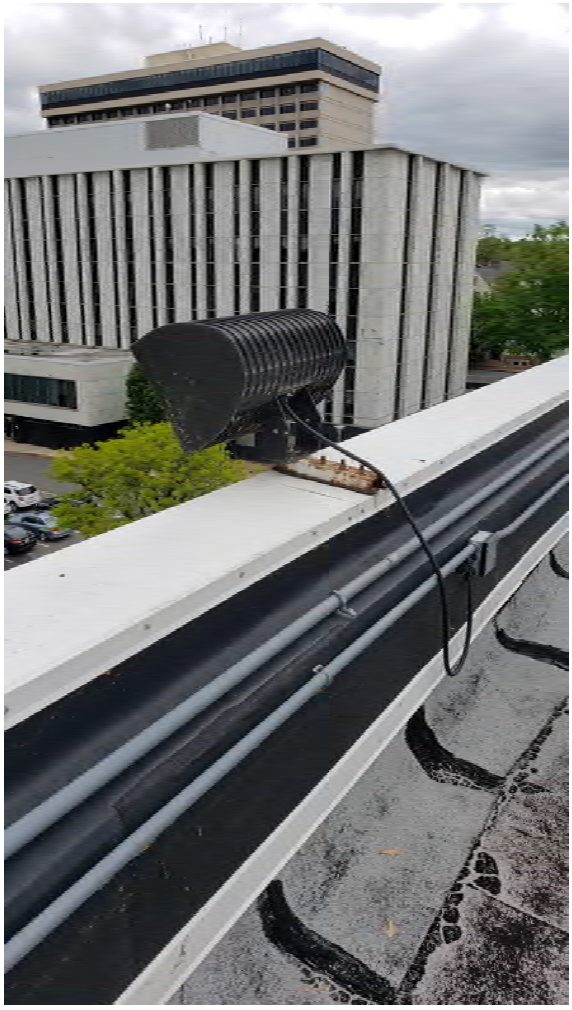
TOTAL ALL TRADES FLUID APPLIED ROOFING **$985,910.13**

EXHIBIT 'C'

Appendix “B”
Photographs

8 PAGES

EXHIBIT 'C'



Light Fixture and Conduits at Main Roof Parapet

Camera at Main Roof Parapet

Conduits Rise From Run Within Roof Insulation Through Pitch Pocket and Run Along Parapet

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Observatory

Roof/Wall at Penthouse

Conduits Down Though Pitch Pocket Into Roof Insulation. Drainage Outlets From Penthouse Overflow Drains

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Standing Water, Fishmouthed Ply Edge, Loss of Surface, and Bubble

Field of Main Roof, West Side, at Previous Patch

EXHIBIT 'C'

Drainage Outlet at Base of Air Shaft

Typical Through Wall Scupper at Sidewall Overflow Drain

EXHIBIT 'C'

Penthouse Roof Looking West

Top of Air Shaft at Penthouse Roof

EXHIBIT 'C'

Penthouse Roof Looking East

Roof Hatch at Penthouse Roof

EXHIBIT 'C'

Roof Hatch Opening to Penthouse Roof

EPDM Roof at Base of Air Shaft

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Standing Water and Overflow Roof Drain at Penthouse Roof

Rooftop Vents at Penthouse Roof

EXHIBIT 'C'

Appendix “C”
Limited Hazardous Materials Survey Report

34 PAGES

PREPARED BY ENVIRONMENTAL CONNECTION, INC.

EXHIBIT 'C'

ENVIRONMENTAL CONNECTION INC
A Vertical Technologies Corporation

REPORT

Asbestos Containing Material and Polychlorinated Biphenyls in Caulks Inspection
New Jersey State Museum
205 West State Street
Trenton, New Jersey 08608

Prepared For:

Ronald A Sebring Associates, LLC
2156 Route 37 West, Suite 201
Manchester, New Jersey 08759

Prepared By:

Environmental Connection, Inc.
120 North Warren Street
Trenton, New Jersey 08608

May 19, 2021

EC Project #: 21100-01

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Section 3.0 Polychlorinated Biphenyl Inspection 4

Section 4.0 Project Limitations/Disclaimers 5

Section 5.0 Conclusions and Recommendations 6

Appendix I Asbestos Containing Materials Inspection Data
Appendix II Confirmed Asbestos Containing Material Site Plan
Appendix III Polychlorinated Biphenyl Material Inspection
Appendix IV Certifications/Accreditations

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Section 1.0 Executive Summary

Environmental Connection, Inc., (EC) was contracted by Sebring Associates, LLC to perform a limited inspection of the roof to the New Jersey State Museum in Trenton, New Jersey. The assessment was performed as part of a feasibility study ordered by the State of New Jersey to estimate costs associated with the planned museum roof replacement project. As such, the assessment was limited to roofing materials likely to be impacted by the replacement project. The assessment included an inspection of the roof for suspect Asbestos Containing Materials (ACMs) and bulk sampling of suspect Polychlorinated Biphenyl (PCB) containing caulks. The assessment was performed by Mr. Michael Moore and Mr. Jordan Reed, both of whom are United States Environmental Protection Agency (USEPA) accredited Asbestos Building Inspectors, on May 10, 2021.

EC identified, quantified, and catalogued each suspect ACM. An adequate number of samples, as defined by the USEPA Asbestos Hazard Emergency Response Act (AHERA), were collected of each suspect asbestos containing material. Samples were submitted to an accredited laboratory for analysis via Polarized Light Microscopy (PLM) and where required, Transmission Electron Microscopy (TEM) to determine the presence of asbestos content. **One (1)** asbestos containing material was identified during the assessment.

Three (3) samples of suspect PCB containing caulks were analyzed and determined to be "None Detected" or to contain PCB concentrations below the USEPA established threshold for classification as a PCB containing material.

The following sections document the methodology and findings of the assessment.

Section 2.0 Asbestos Containing Material Inspection

Asbestos is a naturally occurring mineral categorized into two (2) groups based on morphology, Serpentine and Amphibole. The Serpentine group is comprised of Chrysotile asbestos, the Amphibole group consists of Amosite, Crocidolite, Tremolite, Anthophyllite, and other forms of asbestos. Asbestos was utilized in more than 3,600 products for its fire resistance, tensile strength, inertness, chemical binding properties, and durability. Due to enhanced durability, asbestos containing products remain present in the built environment decades after installation. Public awareness of the hazards associated with airborne asbestos fibers increased through the 1970s and culminated in the adoption of the Asbestos Hazard Emergency Response Act (AHERA), signed into law (40 CFR, Part 763) in 1986. Briefly, AHERA established Federal regulations pertaining to inspections to identify asbestos containing materials, appropriate response actions, and Asbestos Management Plan requirements.

The inspection was limited to spaces that may be impacted by the prospective roof replacement project. Samples of suspect asbestos containing materials were collected in sufficient quantity as mandated by 40 CFR, Part 763.87(a) and submitted to EMSL Analytical, Inc., in Cinnaminson, New Jersey for analysis. EMSL Analytical, Inc., is accredited by the American Industrial Hygiene Association (AIHA) and participates in the National Voluntary Laboratory Accreditation Program (NVLAP). The samples were analyzed utilizing Polarized Light Microscopy (PLM) via EPA Method 600/R-93/116. Emergency Regulatory Adoptions to New Jersey Administrative Codes (N.J.A.C.) 8:60 and 12:120, Volume 38, Issue 11, dated June 5, 2006, mandate that non-friable organically bound (NOB) suspect asbestos containing

EXHIBIT 'C'

materials be analyzed via TEM analysis when PLM analysis yields results of less than 1% asbestos by weight or "None Detected" for asbestos fibers.

Analytical results for both PLM and TEM analyses are reported in percentage by weight. According to the USEPA, materials containing greater than or equal to 1% asbestos content by weight are classified as asbestos containing materials. The asbestos sampling Analytical Certificates are included in Appendix I. The following table summarize the analytical results.

Table 1 – Analytical Results Summary
Sebring Associates
State of New Jersey Museum

ID #	Material	PLM Results	TEM Results
01	Built-up Roofing Field	None Detected	None Detected
02	Roof Flashing	None Detected	None Detected
02-A	Seam Tar associated with Roof Flashing	None Detected	None Detected
02-B	Roof Shingle Layer associated with Flashing	None Detected	None Detected
02-C	Tar 2 associated with Roof Flashing	None Detected	None Detected
02-D	Tar Felt associated with Roof Flashing	None Detected	None Detected
02-E	Insulation associated with Roof Flashing	None Detected	None Detected
03	Upper Flashing Top Layer	None Detected	None Detected
04	Caulk associated with Penthouse Flashing	None Detected	None Detected
05	White Pitch Pocket Material	None Detected	None Detected
06	Gray Roofing Field Patch	None Detected	None Detected
06-A	Gray Roofing Field Patch Seam Tar	None Detected	None Detected
07	White Flashing associated with Roof Top Telescope	None Detected	None Detected
07-A	Shingle associated with White Flashing	None Detected	None Detected
07-B	Tar associated with White Flashing	None Detected	None Detected
07-C	Tar Felt associated with White Flashing	None Detected	None Detected
08	**Caulk associated with Roof Top Telescope**	**5% Chrysotile**	**N/A**
09	Black Pitch Pocket	None Detected	None Detected
10	Penthouse Roof Field Shingle	None Detected	None Detected
10-A	Penthouse Roof Field Tar	None Detected	None Detected
10-B	Penthouse Roof Field	None Detected	None Detected
10-C	Penthouse Roof Field Tar Felt	None Detected	None Detected
10-D	Penthouse Roof Field Insulation	None Detected	N/A
10-E	Penthouse Roof Field Foam	None Detected	N/A
10-F	Penthouse Roof Field Tar Paper	None Detected	None Detected
11	Equipment Pad Flashing and Tar (Inseparable)	None Detected	None Detected
11-A	Equipment Pad Flashing Shingle	None Detected	None Detected
11-B	Equipment Pad Flashing Tar Felt	None Detected	None Detected
11-C	Equipment Pad Flashing Insulation	None Detected	N/A
12	Make-up Air Shaft Roofing Field Shingle	None Detected	None Detected
12-A	Make-up Air Shaft Roofing Field Tar	None Detected	None Detected
12-B	Make-up Air Shaft Roofing Field Tar Paper	None Detected	None Detected
12-C	Make-up Air Shaft Roofing Field Foam	None Detected	N/A
13	Gray Caulk associated with Make-up Air Shaft Field	None Detected	None Detected
13-A	Gray/Black Caulk associated with Air Shaft Field	None Detected	None Detected

| N/A – Not Applicable

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One (1) of the materials sampled was found to contain greater than 1% asbestos content by weight. The approximate total quantity of the identified asbestos containing material is included in Table 2 below.

Table 2- Asbestos Containing Material Quantity
Sebring Associates
State of New Jersey Museum Auditorium

Material	Location	Quantity
Caulk associated with Roof Top Telescope	Observatory Telescope	25 LF
	Total	**25 LF**

LF – Linear Feet |

Section 3.0 Polychlorinated Biphenyl Inspection

Polychlorinated Biphenyls (PCBs) were widely utilized between 1929 and 1977 in the United States as coolants and lubricants in electrical equipment (i.e., capacitors, transformers, light ballasts), plasticizers, surface coatings, inks, adhesives, flame retardants, pesticides, paints and carbonless duplicating paper, for their insulating properties, chemical stability and relative non-flammability. PCBs products were banned in the United States in 1977. However, many PCBs containing products remain in service to this day. The United States Environmental Protection Agency (USEPA) has classified PCBs as a possible human carcinogen.

Recently, PCBs in caulk have become a prevalent regulatory issue within the United States, prompted by studies conducted in Finland. The Finland investigation revealed a correlation between PCBs in caulk and that of airborne PCBs and PCBs in blood of construction workers coming in contact with such materials. The United States Environmental Protection Agency (USEPA) regulates disposal of caulking that contains greater than 50 parts per million (ppm) under the Toxic Substances Control Act (TSCA) and PCB regulations, 40 CFR, Part 761.

EC inspected the rooftop for the presence of caulk suspected of containing PCBs. A minimum of one (1) gram of material was collected and placed directly into a sampling jar. The sample was then labeled and submitted to the laboratory for analysis. Samples were analyzed by EMSL Analytical, Inc., of Cinnaminson, New Jersey, in accordance with USEPA SW-846 Method 8082. Detailed PCB sampling laboratory analytical reports and associated Chains of Custody documentation are attached within Appendix II.

None of the samples contained PCBs in concentrations greater than the 50 parts per million threshold established by the USEPA. The reporting limit indicates the lowest detectable concentration for the analysis method utilized. The reporting limit is determined by the original mass of the sample and is therefore a dependent variable of the samples mass. Aroclor was the proprietary/commercial name given to PCBs containing mixtures. The mixtures were further defined by their unique composition. The four (4) digit number following Aroclor refers to the composition of the mixture. The first two digits denote the number of carbon atoms present in the two phenyl rings. The second two digits indicate the mass percentage of Chlorine atoms in the mixture.

EXHIBIT 'C'

Table 3 – Polychlorinated Biphenyl Analytical Results Sebring Associates State of New Jersey Museum			
Material	**Analyte**	**Reporting Limit**	**Results**
Caulk at Base of Penthouse Wall	Aroclor 1016	0.89 mg/Kg	None Detected
	Aroclor 1221	0.89 mg/Kg	None Detected
	Aroclor 1232	0.89 mg/Kg	None Detected
	Aroclor 1242	0.89 mg/Kg	None Detected
	Aroclor 1248	0.89 mg/Kg	None Detected
	Aroclor 1254	0.89 mg/Kg	None Detected
	Aroclor 1260	0.89 mg/Kg	None Detected
	Aroclor 1262	0.89 mg/Kg	None Detected
	Aroclor 1268	0.89 mg/Kg	None Detected
Caulk associated with Observatory Telescope Door	Aroclor 1016	0.89 mg/Kg	None Detected
	Aroclor 1221	0.89 mg/Kg	None Detected
	Aroclor 1232	0.89 mg/Kg	None Detected
	Aroclor 1242	0.89 mg/Kg	None Detected
	Aroclor 1248	0.89 mg/Kg	None Detected
	Aroclor 1254	0.89 mg/Kg	None Detected
	Aroclor 1260	0.89 mg/Kg	None Detected
	Aroclor 1262	0.89 mg/Kg	None Detected
	Aroclor 1268	0.89 mg/Kg	None Detected
Caulk associated with Field Membrane in HVAC Air Shaft	Aroclor 1016	0.80 mg/Kg	None Detected
	Aroclor 1221	0.80 mg/Kg	None Detected
	Aroclor 1232	0.80 mg/Kg	None Detected
	Aroclor 1242	0.80 mg/Kg	None Detected
	Aroclor 1248	0.80 mg/Kg	None Detected
	Aroclor 1254	0.80 mg/Kg	None Detected
	Aroclor 1260	0.80 mg/Kg	None Detected
	Aroclor 1262	0.80 mg/Kg	None Detected
	Aroclor 1268	0.80 mg/Kg	None Detected

Section 4.0 Project Limitations/Disclaimers

The Client should be advised that quantities referenced herein are estimates/approximations. EC made every effort, inclusive of selective demolition, to access and sample all suspect hazardous materials. Where present, these materials were sampled in accordance with applicable Federal and State Regulations. EC does not claim that hidden materials may not still be present and inaccessible on, within, or beneath the various building components. EC does, however, assure that due diligence was observed in performing sampling as generally recognized by industry practices.

Should a previously unidentified suspect hazardous material be uncovered during demolition, activities should cease until the composition of the material is determined through sampling and analysis in accordance with 40 CFR, Part 763, and N.J.A.C. 8:60 and 12:120 for asbestos, inclusive of utilizing USEPA accredited Asbestos Building Inspectors to collect the appropriate number of samples and an AIHA accredited laboratory that is a NVLAP participant.

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Section 5.0 Conclusions and Recommendations

Laboratory analysis of samples collected during the inspection for Asbestos Containing Materials and Polychlorinated Biphenyls in caulk at the New Jersey State Museum revealed the presence of one (1) asbestos containing material. Analysis also revealed that the three (3) identified suspect PCB containing caulks do not contain PCBs.

Based on the results of the inspection, EC offers the following recommendations.

- Employ a USEPA accredited Asbestos Project Designer to develop Plans and Specifications for the asbestos abatement.
- Utilize a New Jersey Department of Labor licensed Asbestos Contractor to abate the asbestos containing material prior to renovation in accordance with federal and New Jersey requirements for asbestos abatement.
- Perform air monitoring in accordance with federal and New Jersey requirements for asbestos abatement. EC recommends daily air monitoring during abatement activities.

Should you have any questions or require additional information, please contact the undersigned at your convenience.

Respectfully Submitted:
ENVIRONMENTAL CONNECTION, INC.

Jordan Reed, CIH
Project Manager

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APPENDIX I

ASBESTOS CONTAINING MATERIALS INSPECTION DATA

EXHIBIT 'C'

EMSL Analytical, Inc.

200 Route 130 North Cinnaminson, NJ 08077
Phone/Fax: (800) 220-3675 / (856) 786-5974
http://www.EMSL.com / cinnasblab@EMSL.com

EMSL Order ID: 042110978
Customer ID: ENVI65
Customer PO:
Project ID:

Attn: Jordan Reed
Environmental Connection, Inc.
120 North Warren Street
Trenton, NJ 08608

Phone: (609) 392-4200
Fax:
Collected: 5/10/2021
Received: 5/10/2021
Analyzed: 5/17/2021

Proj: Sebring Associates / ACM Inspection / State Museum / 21100-01

Summary Test Report for Asbestos Analysis of Bulk Material via EPA 600/R-93/116

Client Sample ID: 01-JR051021-Shingle ***Lab Sample ID:*** **042110978-0001**
Sample Description: Southeast of Roof/Roofing Field

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/12/2021	White/Black	10.0%	90.0%	None Detected	
TEM Grav. Reduction	5/17/2021	White/Black	0.0%	100.0%	None Detected	

Client Sample ID: 01-JR051021-Tar ***Lab Sample ID:*** **042110978-0001A**
Sample Description: Southeast of Roof/Roofing Field

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/12/2021	Black	0.0%	100.0%	None Detected	
TEM Grav. Reduction	5/17/2021	Black	0.0%	100.0%	None Detected	

Client Sample ID: 01-JR051021-Tar Felt ***Lab Sample ID:*** **042110978-0001B**
Sample Description: Southeast of Roof/Roofing Field

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/12/2021	Black	25.0%	75.0%	None Detected	
TEM Grav. Reduction	5/17/2021	Black	0.0%	100.0%	None Detected	

Client Sample ID: 01-JR051021-Foam ***Lab Sample ID:*** **042110978-0001C**
Sample Description: Southeast of Roof/Roofing Field

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/12/2021	Beige	0.0%	100.0%	None Detected	

Client Sample ID: 01-JR051021-Tar Paper ***Lab Sample ID:*** **042110978-0001D**
Sample Description: Southeast of Roof/Roofing Field

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/12/2021	Brown/Black	40.0%	60.0%	None Detected	
TEM Grav. Reduction	5/17/2021	Brown/Black	0.0%	100.0%	None Detected	

Client Sample ID: 01-JR051021-Insulation ***Lab Sample ID:*** **042110978-0001E**
Sample Description: Southeast of Roof/Roofing Field

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/12/2021	Brown	90.0%	10.0%	None Detected	

Client Sample ID: 02-JR051021-Shingle ***Lab Sample ID:*** **042110978-0002**
Sample Description: Southwest of Roof/Roofing Field

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/13/2021	Black	22.0%	78.0%	None Detected	

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EMSL Order ID: 042110978
Customer ID: ENVI65
Customer PO:
Project ID:

Summary Test Report for Asbestos Analysis of Bulk Material via EPA 600/R-93/116

Client Sample ID: 02-JR051021-Tar ***Lab Sample ID:*** **042110978-0002A**
Sample Description: Southwest of Roof/Roofing Field

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Fibrous	Asbestos	Comment
PLM	5/13/2021	Black	0.0%	100.0%	None Detected	

Client Sample ID: 02-JR051021-Tar Felt ***Lab Sample ID:*** **042110978-0002B**
Sample Description: Southwest of Roof/Roofing Field

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Fibrous	Asbestos	Comment
PLM	5/13/2021	Black	45.0%	55.0%	None Detected	

Client Sample ID: 02-JR051021-Foam ***Lab Sample ID:*** **042110978-0002C**
Sample Description: Southwest of Roof/Roofing Field

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Fibrous	Asbestos	Comment
PLM	5/13/2021	Yellow	0.0%	100.0%	None Detected	

Client Sample ID: 02-JR051021-Tar Paper ***Lab Sample ID:*** **042110978-0002D**
Sample Description: Southwest of Roof/Roofing Field

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Fibrous	Asbestos	Comment
PLM	5/13/2021				Layer Not Present	

Client Sample ID: 02-JR051021-Insulation ***Lab Sample ID:*** **042110978-0002E**
Sample Description: Southwest of Roof/Roofing Field

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Fibrous	Asbestos	Comment
PLM	5/13/2021	Brown	95.0%	5.0%	None Detected	

Client Sample ID: 03-JR051021-Flashing ***Lab Sample ID:*** **042110978-0003**
Sample Description: West Knee Wall of Roof/Roof Flashing with Seam Tar

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Fibrous	Asbestos	Comment
PLM	5/12/2021	Black	0.0%	100.0%	None Detected	
TEM Grav. Reduction	5/17/2021	Black	0.0%	100.0%	None Detected	

Client Sample ID: 03-JR051021-Tar ***Lab Sample ID:*** **042110978-0003A**
Sample Description: West Knee Wall of Roof/Roof Flashing with Seam Tar

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Fibrous	Asbestos	Comment
PLM	5/12/2021	Black	0.0%	100.0%	None Detected	
TEM Grav. Reduction	5/17/2021	Black	0.0%	100.0%	None Detected	

Client Sample ID: 03-JR051021-Shingle ***Lab Sample ID:*** **042110978-0003B**
Sample Description: West Knee Wall of Roof/Roof Flashing with Seam Tar

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Fibrous	Asbestos	Comment
PLM	5/12/2021	Gray/Black	8.0%	92.0%	None Detected	
TEM Grav. Reduction	5/17/2021	Gray/Black	0.0%	100.0%	None Detected	

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Summary Test Report for Asbestos Analysis of Bulk Material via EPA 600/R-93/116

Client Sample ID: 03-JR051021-Tar 2 ***Lab Sample ID:*** **042110978-0003C**
Sample Description: West Knee Wall of Roof/Roof Flashing with Seam Tar

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/12/2021	Black	0.0%	100.0%	None Detected	
TEM Grav. Reduction	5/17/2021	Black	0.0%	100.0%	None Detected	

Client Sample ID: 03-JR051021-Tar Felt ***Lab Sample ID:*** **042110978-0003D**
Sample Description: West Knee Wall of Roof/Roof Flashing with Seam Tar

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/12/2021	Black	20.0%	80.0%	None Detected	
TEM Grav. Reduction	5/17/2021	Black	0.0%	100.0%	None Detected	

Client Sample ID: 03-JR051021-Insulation ***Lab Sample ID:*** **042110978-0003E**
Sample Description: West Knee Wall of Roof/Roof Flashing with Seam Tar

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/12/2021	Brown	90.0%	10.0%	None Detected	

Client Sample ID: 04-JR051021-Flashing ***Lab Sample ID:*** **042110978-0004**
Sample Description: West Knee Wall of Roof/Roof Flashing with Seam Tar

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/13/2021	Black	10.0%	90.0%	None Detected	

Client Sample ID: 04-JR051021-Tar ***Lab Sample ID:*** **042110978-0004A**
Sample Description: West Knee Wall of Roof/Roof Flashing with Seam Tar

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/13/2021	Black	0.0%	100.0%	None Detected	

Client Sample ID: 04-JR051021-Shingle ***Lab Sample ID:*** **042110978-0004B**
Sample Description: West Knee Wall of Roof/Roof Flashing with Seam Tar

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/13/2021	Black	20.0%	80.0%	None Detected	

Client Sample ID: 04-JR051021-Tar 2 ***Lab Sample ID:*** **042110978-0004C**
Sample Description: West Knee Wall of Roof/Roof Flashing with Seam Tar

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/13/2021	Black	0.0%	100.0%	None Detected	

Client Sample ID: 04-JR051021-Tar Felt ***Lab Sample ID:*** **042110978-0004D**
Sample Description: West Knee Wall of Roof/Roof Flashing with Seam Tar

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/13/2021				Layer Not Present	

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Summary Test Report for Asbestos Analysis of Bulk Material via EPA 600/R-93/116

Client Sample ID: 04-JR051021-Insulation ***Lab Sample ID:*** **042110978-0004E**
Sample Description: West Knee Wall of Roof/Roof Flashing with Seam Tar

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/13/2021				Layer Not Present	

Client Sample ID: 05-JR051021 ***Lab Sample ID:*** **042110978-0005**
Sample Description: West Knee Wall of Roof/Upper Flashing Top Layer

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/12/2021	Black	0.0%	100.0%	None Detected	
TEM Grav. Reduction	5/17/2021	Black	0.0%	100.0%	None Detected	

Client Sample ID: 06-JR051021 ***Lab Sample ID:*** **042110978-0006**
Sample Description: East Knee Wall of Roof/Upper Flashing Top Layer

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/13/2021	Black	0.0%	100.0%	None Detected	

Client Sample ID: 07-JR051021-Caulk ***Lab Sample ID:*** **042110978-0007**
Sample Description: Penthouse West Wall/Caulk with Penthouse Flashing

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/12/2021	Tan	0.0%	100.0%	None Detected	
TEM Grav. Reduction	5/17/2021	Tan	0.0%	100.0%	None Detected	

Client Sample ID: 07-JR051021-Flashing ***Lab Sample ID:*** **042110978-0007A**
Sample Description: Penthouse West Wall/Caulk with Penthouse Flashing

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/12/2021	Black	0.0%	100.0%	None Detected	
TEM Grav. Reduction	5/17/2021				Insufficient Material	

Client Sample ID: 08-JR051021-Caulk ***Lab Sample ID:*** **042110978-0008**
Sample Description: Penthouse South Wall/Caulk with Penthouse Flashing

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/13/2021	Tan	0.0%	100.0%	None Detected	

Client Sample ID: 08-JR051021-Flashing ***Lab Sample ID:*** **042110978-0008A**
Sample Description: Penthouse South Wall/Caulk with Penthouse Flashing

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/13/2021	Black	0.0%	100.0%	None Detected	

Client Sample ID: 09-JR051021 ***Lab Sample ID:*** **042110978-0009**
Sample Description: South Vent by Penthouse/White Pitch Pocket

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/12/2021	White	0.0%	100.0%	None Detected	
TEM Grav. Reduction	5/17/2021	White	0.0%	100.0%	None Detected	

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Client Sample ID: 10-JR051021 ***Lab Sample ID:*** **042110978-0010**
Sample Description: South Vent by Penthouse/White Pitch Pocket

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Fibrous	Asbestos	Comment
PLM	5/13/2021	White	0.0%	100.0%	None Detected	

Client Sample ID: 11-JR051021-Patch ***Lab Sample ID:*** **042110978-0011**
Sample Description: North Roof/Roofing Field Patch

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Fibrous	Asbestos	Comment
PLM	5/12/2021	Gray/Silver	15.0%	85.0%	None Detected	
TEM Grav. Reduction	5/17/2021	Gray/Silver	0.0%	100.0%	None Detected	

Client Sample ID: 11-JR051021-Tar ***Lab Sample ID:*** **042110978-0011A**
Sample Description: North Roof/Gray Seam Tar

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Fibrous	Asbestos	Comment
PLM	5/12/2021	Gray/Black	0.0%	100.0%	None Detected	
TEM Grav. Reduction	5/17/2021	Gray/Black	0.0%	100.0%	None Detected	

Client Sample ID: 12-JR051021-Patch ***Lab Sample ID:*** **042110978-0012**
Sample Description: North Roof/Roofing Field Patch

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Fibrous	Asbestos	Comment
PLM	5/13/2021	Black	8.0%	92.0%	None Detected	

Client Sample ID: 12-JR051021-Tar ***Lab Sample ID:*** **042110978-0012A**
Sample Description: North Roof/Gray Seam Tar

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Fibrous	Asbestos	Comment
PLM	5/13/2021	Gray	0.0%	100.0%	None Detected	

Client Sample ID: 13-JR051021-Flashing ***Lab Sample ID:*** **042110978-0013**
Sample Description: North Roof at Telescope/White Flashing associated with Roof Top Telescope

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Fibrous	Asbestos	Comment
PLM	5/12/2021	White	0.0%	100.0%	None Detected	
TEM Grav. Reduction	5/17/2021	White	0.0%	100.0%	None Detected	

Client Sample ID: 13-JR051021-Shingle ***Lab Sample ID:*** **042110978-0013A**
Sample Description: North Roof at Telescope/White Flashing associated with Roof Top Telescope

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Fibrous	Asbestos	Comment
PLM	5/12/2021	White/Black	20.0%	80.0%	None Detected	
TEM Grav. Reduction	5/17/2021	White/Black	0.0%	100.0%	None Detected	

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Summary Test Report for Asbestos Analysis of Bulk Material via EPA 600/R-93/116

Client Sample ID: 13-JR051021-Tar ***Lab Sample ID:*** **042110978-0013B**
Sample Description: North Roof at Telescope/White Flashing associated with Roof Top Telescope

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/12/2021	Black	0.0%	100.0%	None Detected	
TEM Grav. Reduction	5/17/2021	Black	0.0%	100.0%	None Detected	

Client Sample ID: 13-JR051021-Tar Felt ***Lab Sample ID:*** **042110978-0013C**
Sample Description: North Roof at Telescope/White Flashing associated with Roof Top Telescope

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/12/2021	Black	15.0%	85.0%	None Detected	
TEM Grav. Reduction	5/17/2021	Black	0.0%	100.0%	None Detected	

Client Sample ID: 14-JR051021-Flashing ***Lab Sample ID:*** **042110978-0014**
Sample Description: North Roof at Telescope/White Flashing associated with Roof Top Telescope

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/13/2021	White	0.0%	100.0%	None Detected	

Client Sample ID: 14-JR051021-Shingle ***Lab Sample ID:*** **042110978-0014A**
Sample Description: North Roof at Telescope/White Flashing associated with Roof Top Telescope

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/13/2021	Black	15.0%	85.0%	None Detected	

Client Sample ID: 14-JR051021-Tar ***Lab Sample ID:*** **042110978-0014B**
Sample Description: North Roof at Telescope/White Flashing associated with Roof Top Telescope

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/13/2021	Black	0.0%	100.0%	None Detected	

Client Sample ID: 14-JR051021-Tar Felt ***Lab Sample ID:*** **042110978-0014C**
Sample Description: North Roof at Telescope/White Flashing associated with Roof Top Telescope

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/13/2021	Black	45.0%	55.0%	None Detected	

Client Sample ID: 15-JR051021 ***Lab Sample ID:*** **042110978-0015**
Sample Description: North Roof at Telescope/Caulk with Roof Top Telescope

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/12/2021	Tan	0.0%	95.0%	**5% Chrysotile**	

Client Sample ID: 16-JR051021 ***Lab Sample ID:*** **042110978-0016**
Sample Description: North Roof at Telescope/Caulk with Roof Top Telescope

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/12/2021				Positive Stop (Not Analyzed)	

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Client Sample ID: 17-JR051021 ***Lab Sample ID:*** **042110978-0017**
Sample Description: Pitch at West Wall of Roof/Black Pitch Pocket

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/12/2021	Black	0.0%	100.0%	None Detected	
TEM Grav. Reduction	5/17/2021	Black	0.0%	100.0%	None Detected	

Client Sample ID: 18-JR051021 ***Lab Sample ID:*** **042110978-0018**
Sample Description: West Wall of Penthouse at Drain/Black Pitch Pocket

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/13/2021	Black	10.0%	90.0%	None Detected	

Client Sample ID: 19-JR051021-Shingle ***Lab Sample ID:*** **042110978-0019**
Sample Description: Penthouse Roof/Penthouse Roof Field

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/12/2021	White/Black	10.0%	90.0%	None Detected	
TEM Grav. Reduction	5/17/2021	White/Black	0.0%	100.0%	None Detected	

Client Sample ID: 19-JR051021-Tar ***Lab Sample ID:*** **042110978-0019A**
Sample Description: Penthouse Roof/Penthouse Roof Field

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/12/2021	Black	0.0%	100.0%	None Detected	
TEM Grav. Reduction	5/17/2021	Black	0.0%	100.0%	None Detected	

Client Sample ID: 19-JR051021-Roofing ***Lab Sample ID:*** **042110978-0019B**
Sample Description: Penthouse Roof/Penthouse Roof Field

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/12/2021	Black	10.0%	90.0%	None Detected	
TEM Grav. Reduction	5/17/2021	Black	0.0%	100.0%	None Detected	

Client Sample ID: 19-JR051021-Tar Felt ***Lab Sample ID:*** **042110978-0019C**
Sample Description: Penthouse Roof/Penthouse Roof Field

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/12/2021	Black	25.0%	75.0%	None Detected	
TEM Grav. Reduction	5/17/2021	Black	0.0%	100.0%	None Detected	

Client Sample ID: 19-JR051021-Insulation ***Lab Sample ID:*** **042110978-0019D**
Sample Description: Penthouse Roof/Penthouse Roof Field

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/12/2021	Brown	90.0%	10.0%	None Detected	

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Summary Test Report for Asbestos Analysis of Bulk Material via EPA 600/R-93/116

Client Sample ID: 19-JR051021-Foam **Lab Sample ID:** **042110978-0019E**
Sample Description: Penthouse Roof/Penthouse Roof Field

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/12/2021	Beige	0.0%	100.0%	None Detected	

Client Sample ID: 19-JR051021-Tar Paper **Lab Sample ID:** **042110978-0019F**
Sample Description: Penthouse Roof/Penthouse Roof Field

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/12/2021	Brown/Black	45.0%	55.0%	None Detected	
TEM Grav. Reduction	5/17/2021	Brown/Black	0.0%	100.0%	None Detected	

Client Sample ID: 20-JR051021-Shingle **Lab Sample ID:** **042110978-0020**
Sample Description: Penthouse Roof/Penthouse Roof Field

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/13/2021	Black	10.0%	90.0%	None Detected	

Client Sample ID: 20-JR051021-Tar **Lab Sample ID:** **042110978-0020A**
Sample Description: Penthouse Roof/Penthouse Roof Field

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/13/2021	Black	0.0%	100.0%	None Detected	

Client Sample ID: 20-JR051021-Roofing **Lab Sample ID:** **042110978-0020B**
Sample Description: Penthouse Roof/Penthouse Roof Field

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/13/2021				Layer Not Present	

Client Sample ID: 20-JR051021-Tar Felt **Lab Sample ID:** **042110978-0020C**
Sample Description: Penthouse Roof/Penthouse Roof Field

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/13/2021	Black	45.0%	55.0%	None Detected	

Client Sample ID: 20-JR051021-Insulation **Lab Sample ID:** **042110978-0020D**
Sample Description: Penthouse Roof/Penthouse Roof Field

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/13/2021	Brown	95.0%	5.0%	None Detected	

Client Sample ID: 20-JR051021-Foam **Lab Sample ID:** **042110978-0020E**
Sample Description: Penthouse Roof/Penthouse Roof Field

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/13/2021	Yellow	0.0%	100.0%	None Detected	

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Client Sample ID: 20-JR051021-Tar Paper **Lab Sample ID:** **042110978-0020F**
Sample Description: Penthouse Roof/Penthouse Roof Field

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/13/2021	Black	10.0%	90.0%	None Detected	

Client Sample ID: 21-JR051021-Flashing **Lab Sample ID:** **042110978-0021**
Sample Description: Penthouse Roof/Equipment Pad Flashing

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/12/2021	Gray/Black	15.0%	85.0%	None Detected	
TEM Grav. Reduction	5/17/2021	Gray/Black	0.0%	100.0%	None Detected	Flashing and tar inseparable for gravimetric reduction. Samples prepped together.

Client Sample ID: 21-JR051021-Tar **Lab Sample ID:** **042110978-0021A**
Sample Description: Penthouse Roof/Equipment Pad Flashing

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/12/2021	Black	0.0%	100.0%	None Detected	
TEM Grav. Reduction	5/17/2021				Not Analyzed	

Client Sample ID: 21-JR051021-Shingle **Lab Sample ID:** **042110978-0021B**
Sample Description: Penthouse Roof/Equipment Pad Flashing

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/12/2021	White/Black	15.0%	85.0%	None Detected	
TEM Grav. Reduction	5/17/2021	White/Black	0.0%	100.0%	None Detected	Shingle and tar 2 inseparable for gravimetric reduction. Samples prepped together.

Client Sample ID: 21-JR051021-Tar 2 **Lab Sample ID:** **042110978-0021C**
Sample Description: Penthouse Roof/Equipment Pad Flashing

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/12/2021	Black	0.0%	100.0%	None Detected	
TEM Grav. Reduction	5/17/2021				Not Analyzed	

Client Sample ID: 21-JR051021-Tar Felt **Lab Sample ID:** **042110978-0021E**
Sample Description: Penthouse Roof/Equipment Pad Flashing

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/12/2021	Black	30.0%	70.0%	None Detected	
TEM Grav. Reduction	5/17/2021	Black	0.0%	100.0%	None Detected	

Client Sample ID: 21-JR051021-Insulation **Lab Sample ID:** **042110978-0021F**
Sample Description: Penthouse Roof/Equipment Pad Flashing

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/12/2021	Brown	90.0%	10.0%	None Detected	

EXHIBIT 'C'

EMSL Analytical, Inc.
200 Route 130 North Cinnaminson, NJ 08077
Phone/Fax: (800) 220-3675 / (856) 786-5974
http://www.EMSL.com / cinnasblab@EMSL.com

EMSL Order ID: 042110978
Customer ID: ENVI65
Customer PO:
Project ID:

Summary Test Report for Asbestos Analysis of Bulk Material via EPA 600/R-93/116

Client Sample ID: 22-JR051021-Flashing ***Lab Sample ID:*** **042110978-0022**
Sample Description: Penthouse Roof/Equipment Pad Flashing

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/13/2021	Black	5.0%	95.0%	None Detected	

Client Sample ID: 22-JR051021-Tar ***Lab Sample ID:*** **042110978-0022A**
Sample Description: Penthouse Roof/Equipment Pad Flashing

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/13/2021	Black	0.0%	100.0%	None Detected	

Client Sample ID: 22-JR051021-Shingle ***Lab Sample ID:*** **042110978-0022B**
Sample Description: Penthouse Roof/Equipment Pad Flashing

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/13/2021	Black	15.0%	85.0%	None Detected	

Client Sample ID: 22-JR051021-Tar 2 ***Lab Sample ID:*** **042110978-0022C**
Sample Description: Penthouse Roof/Equipment Pad Flashing

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/13/2021	Black	0.0%	100.0%	None Detected	

Client Sample ID: 22-JR051021-Tar Felt ***Lab Sample ID:*** **042110978-0022D**
Sample Description: Penthouse Roof/Equipment Pad Flashing

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/13/2021	Black	45.0%	55.0%	None Detected	

Client Sample ID: 22-JR051021-Insulation ***Lab Sample ID:*** **042110978-0022E**
Sample Description: Penthouse Roof/Equipment Pad Flashing

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/13/2021	Brown	95.0%	5.0%	None Detected	

Client Sample ID: 23-JR051021-Shingle ***Lab Sample ID:*** **042110978-0023**
Sample Description: Make Up Air Shaft/Roof Field Membrane

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/13/2021	Gray/Black	25.0%	75.0%	None Detected	
TEM Grav. Reduction	5/17/2021	Gray/Black	0.0%	100.0%	None Detected	

Client Sample ID: 23-JR051021-Tar ***Lab Sample ID:*** **042110978-0023A**
Sample Description: Make Up Air Shaft/Roof Field Membrane

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/13/2021	Black	0.0%	100.0%	None Detected	
TEM Grav. Reduction	5/17/2021	Black	0.0%	100.0%	None Detected	

EXHIBIT 'C'

EMSL Analytical, Inc.
200 Route 130 North Cinnaminson, NJ 08077
Phone/Fax: (800) 220-3675 / (856) 786-5974
http://www.EMSL.com / cinnasblab@EMSL.com

EMSL Order ID: 042110978
Customer ID: ENVI65
Customer PO:
Project ID:

Summary Test Report for Asbestos Analysis of Bulk Material via EPA 600/R-93/116

Client Sample ID: 23-JR051021-Tar Paper ***Lab Sample ID:*** **042110978-0023B**
Sample Description: Make Up Air Shaft/Roof Field Membrane

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/13/2021	Black	80.0%	20.0%	None Detected	
TEM Grav. Reduction	5/17/2021	Black	0.0%	100.0%	None Detected	

Client Sample ID: 23-JR051021-Foam ***Lab Sample ID:*** **042110978-0023C**
Sample Description: Make Up Air Shaft/Roof Field Membrane

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/13/2021	Yellow	0.0%	100.0%	None Detected	

Client Sample ID: 24-JR051021-Shingle ***Lab Sample ID:*** **042110978-0024**
Sample Description: Make Up Air Shaft/Roof Field Membrane

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/13/2021	Black	25.0%	75.0%	None Detected	

Client Sample ID: 24-JR051021-Tar ***Lab Sample ID:*** **042110978-0024A**
Sample Description: Make Up Air Shaft/Roof Field Membrane

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/13/2021	Black	0.0%	100.0%	None Detected	

Client Sample ID: 24-JR051021-Tar Paper ***Lab Sample ID:*** **042110978-0024B**
Sample Description: Make Up Air Shaft/Roof Field Membrane

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/13/2021	Black	65.0%	35.0%	None Detected	

Client Sample ID: 24-JR051021-Foam ***Lab Sample ID:*** **042110978-0024C**
Sample Description: Make Up Air Shaft/Roof Field Membrane

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/13/2021	Yellow	0.0%	100.0%	None Detected	

Client Sample ID: 25-JR051021-Caulk ***Lab Sample ID:*** **042110978-0025**
Sample Description: Make Up Air Shaft/Caulk at Air Shaft

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/13/2021	Gray/Black	0.0%	100.0%	None Detected	
TEM Grav. Reduction	5/17/2021	Gray/Black	0.0%	100.0%	None Detected	

Client Sample ID: 25-JR051021-Caulk 2 ***Lab Sample ID:*** **042110978-0025A**
Sample Description: Make Up Air Shaft/Caulk at Air Shaft

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/13/2021	Black	5.0%	95.0%	None Detected	
TEM Grav. Reduction	5/17/2021	Black	0.0%	100.0%	None Detected	

EXHIBIT 'C'

EMSL Analytical, Inc.
200 Route 130 North Cinnaminson, NJ 08077
Phone/Fax: (800) 220-3675 / (856) 786-5974
http://www.EMSL.com / cinnasblab@EMSL.com

EMSL Order ID: 042110978
Customer ID: ENVI65
Customer PO:
Project ID:

Summary Test Report for Asbestos Analysis of Bulk Material via EPA 600/R-93/116

Client Sample ID: 26-JR051021-Caulk ***Lab Sample ID:*** **042110978-0026**
Sample Description: Make Up Air Shaft/Caulk at Air Shaft

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/13/2021	Gray/Black	0.0%	100.0%	None Detected	

Client Sample ID: 26-JR051021-Caulk 2 ***Lab Sample ID:*** **042110978-0026A**
Sample Description: Make Up Air Shaft/Caulk at Air Shaft

TEST	Analyzed Date	Color	Non-Asbestos Fibrous	Non-Asbestos Non-Fibrous	Asbestos	Comment
PLM	5/13/2021	Tan/Black	5.0%	95.0%	None Detected	

Analyst(s):

Michelle Quach	PLM (6)
Nicholas Montoya-Orozco	PLM (37)
Quynh Vu	PLM (6)
Sarah Kleinbrahm	PLM (32)
Sarah Richey	TEM Grav. Reduction (32)

Reviewed and approved by:

Samantha Rundstrom, Laboratory Manager
or Other Approved Signatory

Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ NVLAP Lab Code 101048-0, AIHA-LAP, LLC-IHLAP Lab 100194, NYS ELAP 10872, NJ DEP 03036, PA ID# 68-00367, LA #04127

Initial report from: 05/13/202114:59:04

EXHIBIT 'C'

OrderID: 042110978

042110978

ENVIRONMENTAL CONNECTION INC

A Vertical Technologies Corporation

Survey Form 04

CLIENT : SEBRING ASSOCIATES
PROJECT : ACM Inspection
BUILDING : STATE MUSEUM

DATE : 05.10.21
TECHNICIAN: MOORE / REED
PROJECT # : 21100-01

ASBESTOS ANALYSIS OF BULK MATERIALS via EPA600/R-93/116 USING PLM

MATERIAL DESCRIPTION	SAMPLE	HOMO. AREA ID	ROOM NUMBER	PLM or TEM NOB
ROOFING FIELD	01 -JR051021	01	SOUTH EAST OF ROOF	PLM → TEM
ROOFING FIELD	02 -JR051021	01	SOUTH WEST OF ROOF	PLM
ROOF FLASHING W/ SEAM TAR	03 -JR051021	02	KNEE WEST WALL OF ROOF	PLM → TEM
ROOF FLASHING W/ SEAM TAR	04 -JR051021	02	WEST KNEE WALL OF ROOF	PLM
NEW UPPER FLASHING TOP LAYER	05 -JR051021	03	KNEE WEST WALL OF ROOF	PLM → TEM
UPPER FLASHING TOP LAYER	06 -JR051021	03	EAST KNEE WALL OF ROOF	PLM
CAULK W/ PENTHOUSE FLASHING	07 -JR051021	04	PENTHOUSE WEST WALL	PLM → TEM
CAULK W/ PENTHOUSE FLASHING	08 -JR051021	04	PENTHOUSE SOUTH WALL	PLM
WHITE PITCH POCKET	09 -JR051021	05	SOUTH VENT BY PENTHOUSE	PLM → TEM
WHITE PITCH POCKET	10 -JR051021	05	SOUTH VENT BY PENTHOUSE	PLM
ROOFING FIELD PATCH W/ GRAY SEAM TAR	11 -JR051021	06	NORTH ROOF	PLM → TEM
ROOFING FIELD PATCH W/ GRAY SEAM TAR	12 -JR051021	06	NORTH ROOF	PLM → TEM
WHITE FLASHING ASSOC W/ ROOF TOP TELESCOPE	13 -JR051021	07	NORTH ROOF @ TELESCOPE	PLM → TEM
WHITE FLASHING ASSOC W ROOF TOP TELESCOPE	14 -JR051021	07	NORTH ROOF @ TELESCOPE	PLM
CAULK W/ ROOF TOP TELESCOPE	15 -JR051021	08	NORTH ROOF @ TELESCOPE	PLM → TEM
CAULK W/ ROOF TOP TELESCOPE	16 -JR051021	08	NORTH ROOF @ TELESCOPE	PLM
BLACK PITCH POCKET	17 -JR051021	09	PITCH @ WEST WALL OF ROOF	PLM → TEM

RECEIVED ON 5/10/21 BY LAB FOR ANALYSIS

CHECK EACH BOX THAT APPLIES

☐ Point Count Sample if <10% Asbestos by Weight
☐ NOB's - TEM if Sample(s) are None Detected or <1%
☒ Stop at First Positive Homo. Area ID Code
☐ 6 hr. TAT
☐ 24 hr. TAT
☐ 5 Day TAT
☒ Other 48 Hour

CHAIN OF CUSTODY RECORD (CCR)

RELINQUISHED BY	DATE	TIME	RECEIVED BY	DATE	TIME	REASON FOR CCR
	5-10-21			5/10/21	855	

COMMENTS:

120 North Warren Street • Trenton, New Jersey 08608 • tel: 609-392-4200 • fax: 609-392-1216

EXHIBIT 'C'

OrderID: 042110978

042110978

ENVIRONMENTAL CONNECTION INC

A Vertical Technologies Corporation

Survey Form 04

CLIENT : Sebring Associates
PROJECT : ACM Inspection
BUILDING : State Museum

DATE : 05.10.21
TECHNICIAN: Moore / Reed
PROJECT # : 21100-01

ASBESTOS ANALYSIS OF BULK MATERIALS via EPA600/R-93/116 USING PLM

MATERIAL DESCRIPTION	SAMPLE	HOMO. AREA ID	ROOM NUMBER	PLM or TEM NOB
Black Pitch Pocket	18-JR051021	09	West wall of Penthouse @ Drain	PLM
Penthouse Roof Field	19-JR051021	10	Penthouse Roof	PLM → TEM
Penthouse Roof Field	20-JR051021	10	Penthouse Roof	PLM
Equipment Pad Flashing	21-JR051021	11	Penthouse Roof	PLM → TEM
Equipment Pad Flashing	22-JR051021	11	Penthouse Roof	PLM
Roof Field Membrane	23-JR051021	12	Make Up- Air Shaft	PLM → TEM NOB
Roof Field Membrane	24-JR051021	12	Make Up- Air Shaft.	PLM
Caulk @ Air Shaft	25-JR051021	13	Make Up- Air Shaft	PLM → TEM NOB
Caulk @ Air Shaft	26-JR051021	13	Make Up Air Shaft	PLM → TEM

RECEIVED
EMSL
AMINSON, NJ
MAY 10 PM 5:58

CHECK EACH BOX THAT APPLIES

- ☐ Point Count Sample if <10% Asbestos by Weight
- ☐ NOB's - TEM if Sample(s) are None Detected or <1%
- ☒ Stop at First Positive Homo. Area ID Code
- ☐ 6 hr. TAT
- ☐ 24 hr. TAT
- ☐ 5 Day TAT
- ☒ Other 48 Hour

CHAIN OF CUSTODY RECORD (CCR)

RELINQUISHED BY	DATE	TIME	RECEIVED BY	DATE	TIME	REASON FOR CCR
	5-10-21					

COMMENTS:

120 North Warren Street • Trenton, New Jersey 08608 • tel: 609-392-4200 • fax: 609-392-1216

EXHIBIT 'C'

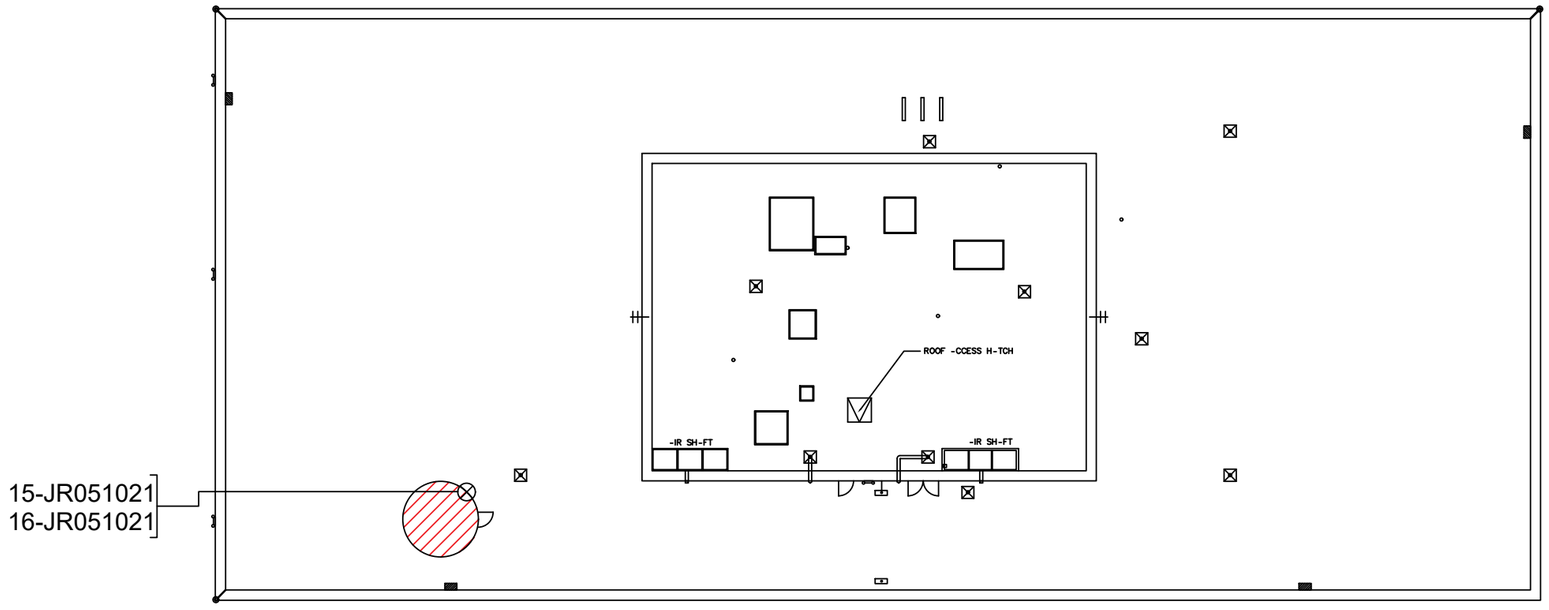
APPENDIX II

CONFIRMED ASBESTOS CONTAINING MATERIAL SITE PLAN

EXHIBIT 'C'

LEGEND

CONFIRMED ASBESTOS CONTAINING CAULK MATERIAL



ENVIRONMENTAL CONNECTION INC
A Vertical Technologies Corporation

Environmental Consulting, Auditing & Investigations

120 North Warren Street
Trenton, NJ 08608
TEL: 609-392-4200 FAX: 609-392-1216
EMAIL: info@vtihq.com WEB: www.VTIHQ.com

No.	Date	Issue or Revision
01	N/A	Issued for Review

ASBESTOS SAMPLE LOCATION PLAN
NEW JERSEY STATE MUSEUM
205 WEST STATE STREET
TRENTON, NEW JERSEY 08608

Date:	July 12, 2021
Scale:	NTS
Drawn By:	JJR
Project No:	21100-01

Drawing Title

CONFIRMED ACM SAMPLE LOCATION PLAN

Drawing No.

SL-01

EXHIBIT 'C'

APPENDIX III

POLYCHLORINATED BIPHENYL MATERIAL INSPECTION

EXHIBIT 'C'

EMSL Analytical, Inc.
200 Route 130 North, Cinnaminson, NJ 08077
Phone: (856) 303-2500 Fax: (856) 858-4571 Email: EnvChemistry2@emsl.com

Attn: **Jordan Reed**
Environmental Connection, Inc.
120 North Warren Street
Trenton, NJ 08608
Phone: (609) 392-4200
Fax:

5/18/2021

The following analytical report covers the analysis performed on samples submitted to EMSL Analytical, Inc. on 5/10/2021. The results are tabulated on the attached data pages for the following client designated project:

Roof Assessment 21100-01

The reference number for these samples is EMSL Order #012104833. Please use this reference when calling about these samples. If you have any questions, please do not hesitate to contact me at (856) 303-2500.

Approved By:

Phillip Worby, Environmental Chemistry
Laboratory Director

The test results contained within this report meet the requirements of NELAP and/or the specific certification program that is applicable, unless otherwise noted.
NELAP Certifications: NJ 03036, NY 10872, PA 68-00367, CA ELAP 1877

EXHIBIT 'C'

EMSL Analytical, Inc.
200 Route 130 North, Cinnaminson, NJ 08077
Phone/Fax: (856) 303-2500 / (856) 858-4571
http://www.EMSL.com EnvChemistry2@emsl.com

EMSL Order: 012104833
CustomerID: ENVI65
CustomerPO:
ProjectID:

Attn: **Jordan Reed**
Environmental Connection, Inc.
120 North Warren Street
Trenton, NJ 08608

Phone: (609) 392-4200
Fax:
Received: 05/10/21 5:50 PM

Project: **Roof Assessment 21100-01**

Analytical Results

Client Sample Description 01-PCB-JR051021
Caulk at base of penthouse wall
Collected: 5/10/2021 ***Lab ID:*** *012104833-0001*

Method	*Parameter*	*Result*	*RL*	*Units*	*Prep Date & Analyst*		*Analysis Date & Analyst*	
GC-SVOA								
3540C/8082A	Aroclor-1016	ND D	0.89	mg/Kg	5/11/2021	PG	05/12/21 0:00	EH
3540C/8082A	Aroclor-1221	ND D	0.89	mg/Kg	5/11/2021	PG	05/12/21 0:00	EH
3540C/8082A	Aroclor-1232	ND D	0.89	mg/Kg	5/11/2021	PG	05/12/21 0:00	EH
3540C/8082A	Aroclor-1242	ND D	0.89	mg/Kg	5/11/2021	PG	05/12/21 0:00	EH
3540C/8082A	Aroclor-1248	ND D	0.89	mg/Kg	5/11/2021	PG	05/12/21 0:00	EH
3540C/8082A	Aroclor-1254	ND D	0.89	mg/Kg	5/11/2021	PG	05/12/21 0:00	EH
3540C/8082A	Aroclor-1260	ND D	0.89	mg/Kg	5/11/2021	PG	05/12/21 0:00	EH
3540C/8082A	Aroclor-1262	ND D	0.89	mg/Kg	5/11/2021	PG	05/12/21 0:00	EH
3540C/8082A	Aroclor-1268	ND D	0.89	mg/Kg	5/11/2021	PG	05/12/21 0:00	EH

Client Sample Description 02-PCB-JR051021
Caulk w/ observatory telescope door
Collected: 5/10/2021 ***Lab ID:*** *012104833-0002*

Method	*Parameter*	*Result*	*RL*	*Units*	*Prep Date & Analyst*		*Analysis Date & Analyst*	
GC-SVOA								
3540C/8082A	Aroclor-1016	ND D	0.89	mg/Kg	5/11/2021	PG	05/12/21 0:00	EH
3540C/8082A	Aroclor-1221	ND D	0.89	mg/Kg	5/11/2021	PG	05/12/21 0:00	EH
3540C/8082A	Aroclor-1232	ND D	0.89	mg/Kg	5/11/2021	PG	05/12/21 0:00	EH
3540C/8082A	Aroclor-1242	ND D	0.89	mg/Kg	5/11/2021	PG	05/12/21 0:00	EH
3540C/8082A	Aroclor-1248	ND D	0.89	mg/Kg	5/11/2021	PG	05/12/21 0:00	EH
3540C/8082A	Aroclor-1254	ND D	0.89	mg/Kg	5/11/2021	PG	05/12/21 0:00	EH
3540C/8082A	Aroclor-1260	ND D	0.89	mg/Kg	5/11/2021	PG	05/12/21 0:00	EH
3540C/8082A	Aroclor-1262	ND D	0.89	mg/Kg	5/11/2021	PG	05/12/21 0:00	EH
3540C/8082A	Aroclor-1268	ND D	0.89	mg/Kg	5/11/2021	PG	05/12/21 0:00	EH

Client Sample Description 03-PCB-JR051021
Caulk assoc. w/ membrane in HVAC shaft
Collected: 5/10/2021 ***Lab ID:*** *012104833-0003*

Method	*Parameter*	*Result*	*RL*	*Units*	*Prep Date & Analyst*		*Analysis Date & Analyst*	
GC-SVOA								
3540C/8082A	Aroclor-1016	ND D	0.80	mg/Kg	5/11/2021	PG	05/12/21 0:00	EH
3540C/8082A	Aroclor-1221	ND D	0.80	mg/Kg	5/11/2021	PG	05/12/21 0:00	EH
3540C/8082A	Aroclor-1232	ND D	0.80	mg/Kg	5/11/2021	PG	05/12/21 0:00	EH
3540C/8082A	Aroclor-1242	ND D	0.80	mg/Kg	5/11/2021	PG	05/12/21 0:00	EH
3540C/8082A	Aroclor-1248	ND D	0.80	mg/Kg	5/11/2021	PG	05/12/21 0:00	EH

EXHIBIT 'C'

EMSL Analytical, Inc.
200 Route 130 North, Cinnaminson, NJ 08077
Phone/Fax: (856) 303-2500 / (856) 858-4571
http://www.EMSL.com EnvChemistry2@emsl.com

EMSL Order: 012104833
CustomerID: ENVI65
CustomerPO:
ProjectID:

Attn: **Jordan Reed**
Environmental Connection, Inc.
120 North Warren Street
Trenton, NJ 08608

Phone: (609) 392-4200
Fax:
Received: 05/10/21 5:50 PM

Project: **Roof Assessment 21100-01**

Analytical Results

Client Sample Description 03-PCB-JR051021
Caulk assoc. w/ membrane in HVAC shaft

Collected: 5/10/2021

Lab ID: *012104833-0003*

Method	*Parameter*	*Result*	*RL*	*Units*	*Prep Date & Analyst*		*Analysis Date & Analyst*	
GC-SVOA								
3540C/8082A	Aroclor-1254	ND D	0.80	mg/Kg	5/11/2021	PG	05/12/21 0:00	EH
3540C/8082A	Aroclor-1260	ND D	0.80	mg/Kg	5/11/2021	PG	05/12/21 0:00	EH
3540C/8082A	Aroclor-1262	ND D	0.80	mg/Kg	5/11/2021	PG	05/12/21 0:00	EH
3540C/8082A	Aroclor-1268	ND D	0.80	mg/Kg	5/11/2021	PG	05/12/21 0:00	EH

Definitions:

MDL - method detection limit
J - Result was below the reporting limit, but at or above the MDL
ND - indicates that the analyte was not detected at the reporting limit
RL - Reporting Limit (Analytical)
D - Dilution Sample required a dilution which was used to calculate final results

EXHIBIT 'C'

ENVIRONMENTAL CONNECTION INC
A Vertical Technologies Corporation

012104833

Chain of Custody and Field Data Record

Client : Sebring Associates
Project : Roof Assessment
Building : State Museum

Date : 05/10/21
Technician : Moore/Reed
Project # : 21100-01

	Sample Identification #	Location	Matrix	Date	Analysis Required (Specify Method if Known)	Quantity
1	01-PCB JR051021	CAULK AT BASE OF PENTHOUSE WALL	CAULK	05/10/21	PCB's 3540C/8082A	5"
2	02-PCB JR051021	CAULK W/ OBSERVATORY TELESCOPE DOOR	CAULK	05/10/21	3540C	4"
3	03-PCB JR051021	CAULK ASSOC. W/ MEMBRANE IN HVAC AIR SHAFT	CAULK	05/10/21	3540C	5"
				/ /		
				/ /		
				/ /		
				/ /		
				/ /		
				/ /		
				/ /		
				/ /		
				/ /		

Relinquished by (Print and Sign Name) JORDAN REED — Date 05.10.21 — Time

Received by (Print and Sign Name) Barbara Loth — Date 5/10/21 — Time 5:50pm

Reason for Change of Custody

NOTES: **1 Week Turn Around Time**

20.7°C

3RA

120 North Warren Street • Trenton, New Jersey 08608 • tel: 609-392-4200

OrderID: 012104833

Page 1 Of 1

EXHIBIT 'C'

APPENDIX IV

CERTIFICATIONS/ACCREDITATIONS

EXHIBIT 'C'

Certificate of Completion

awarded to

Jordan Reed

for successfully completing the prescribed course of study in

Pennsylvania Asbestos Building Inspector Refresher Course

under TSCA Title II, Virtual Teleconference

presented by

ACCESS TRAINING SERVICES, INC.
7921 River Road, Pennsauken, NJ 08110
(856) 665-3449

8/6/20	N/A	8/6/21
Course Date	*Exam Date*	*Expiration Date*
Not Provided	**ACC-0820-6-006**	*Mark K. Schläger*
Social Security Number	*Certificate Number*	*Training Director*

EXHIBIT 'C'

57085

NAETI Inc.

CERTIFICATE OF COMPLETION

AHERA/EPA Accredited Per 40 CFR Part 763
Asbestos Accreditation under TSCA Title II

This is to certify that

Mike Moore

Successfully completed the course entitled

1/2-Day New York State/EPA/AHERA Asbestos Building Inspector Annual Refresher on June 1, 2020

Examination Passed on June 1, 2020 *Expiration Date on June 1, 2021*

Lee Wasserman
President, NAETI Inc.

Per 10 NYCRR Part 73.2 (L) (1), DOH 2832 Certificate of Completion of Asbestos Safety Training is the only official record of training for N.Y.S. students.

Language: English ABIH 1/2 CM POINT

3321 Doris Avenue, Building B, Ocean, NJ 07712 **Phone (732) 531-5571** **Fax (732) 531-5956** **www.naeti.com**

EXHIBIT 'C'

United States Department of Commerce
National Institute of Standards and Technology

Certificate of Accreditation to ISO/IEC 17025:2017

NVLAP LAB CODE: 101048-0

EMSL Analytical, Inc.

Cinnaminson, NJ

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 Communique dated January 2009).

2020-07-01 through 2021-06-30

Effective Dates

For the National Voluntary Laboratory Accreditation Program

EXHIBIT 'C'

National Voluntary
Laboratory Accreditation Program

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

EMSL Analytical, Inc.
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Cinnaminson, NJ 08077
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Phone: 856-303-2577
Email: srundstrom@emsl.com
http://www.emsl.com

ASBESTOS FIBER ANALYSIS **NVLAP LAB CODE 101048-0**

Bulk Asbestos Analysis

Code	*Description*
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

Code	*Description*
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

Effective 2020-07-01 through 2021-06-30

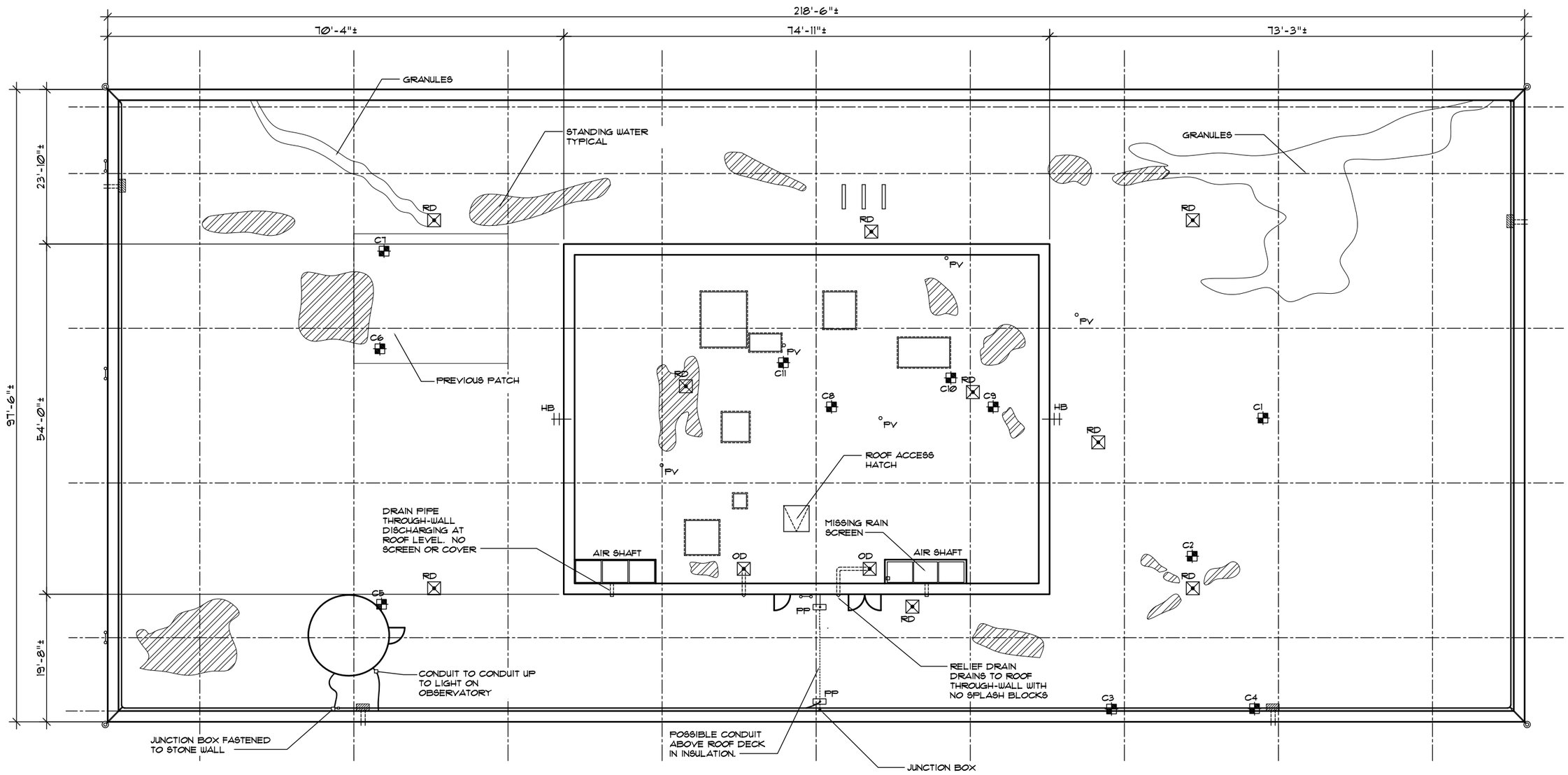
EXHIBIT 'C'

Appendix “D”
Roof Plan Diagram
and Core Sample Sections

Existing Conditions

2 PAGES

EXHIBIT 'C'



MUSEUM ROOF PLAN

SCALE: 1/16" = 1'-0"

LEGEND

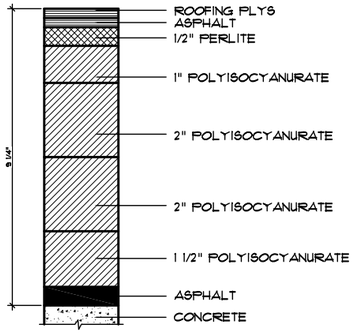
- EXISTING THROUGH-WALL OVERFLOW DRAIN
- RD — EXISTING 4" DIAMETER ROOF DRAIN
- OD — EXISTING 4" DIAMETER OVERFLOW DRAIN
- UNDER DECK DRAIN PIPING AND OUTFLOW DOWNSPOUT NOZZLE AT FACE OF EXTERIOR WALL
- ROOF ACCESS HATCH
- EF — EXISTING EXHAUST FAN
- GV — EXISTING GRAVITY VENT
- HOSE BIBB
- PV — EXISTING PIPE VENT
- PP — EXISTING PITCH POCKET
- EXISTING RAIL CURB
- EXISTING ELECTRICAL CONDUIT UNDER ROOFING
- EXISTING WALL MOUNTED CAMERA
- # — PHOTOGRAPH REFERENCE NUMBER
- C1 — CORE SAMPLE
- LIGHT FIXTURE

NEW JERSEY STATE MUSEUM
205 WEST STATE STREET
TRENTON, MERCER COUNTY, NEW JERSEY

RONALD A. SEBRING ASSOCIATES, LLC
ARCHITECTURE AND DESIGN

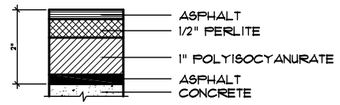
AUGUST 6, 2021

EXHIBIT 'C'



CORE SAMPLE C1

SCALE: 6" = 1'-0"



CORE SAMPLE C2

SCALE: 6" = 1'-0"

BASE FLASH OVER PERLITE CANT

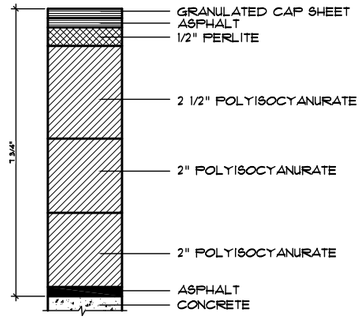
CORE SAMPLE C3

SCALE: 6" = 1'-0"

SAMPLE OF ASPHALTIC MASTIC TAKEN FROM EDGE OF LEAD FLANGE ADJACENT TO SCUPPER

CORE SAMPLE C4

SCALE: 6" = 1'-0"



SAMPLE TAKEN AT OBSERVATORY BASE LIQUID APPLIED FLASHING OVER 2 PLY BASE

CORE SAMPLE C5

SCALE: 6" = 1'-0"

SAMPLE TAKEN OF UPPER LAYER OF PREVIOUS PATCH

CORE SAMPLE C6

SCALE: 6" = 1'-0"

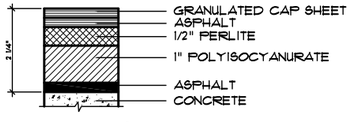
SAMPLE TAKEN OF UPPER LAYER OF PREVIOUS PATCH

CORE SAMPLE C7

SCALE: 6" = 1'-0"

CORE SAMPLE C8

SCALE: 6" = 1'-0"



CORE SAMPLE C9

SCALE: 6" = 1'-0"

SAMPLE TAKEN OF BASE FLASHING AT VENT AT UPPER ROOF

CORE SAMPLE C10

SCALE: 6" = 1'-0"

SAMPLE TAKEN OF BASE FLASHING AT VENT AT UPPER ROOF

CORE SAMPLE C11

SCALE: 6" = 1'-0"

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