CARLYLE HOUSE HISTORIC PARK

WOOD SHINGLE ROOFING AND STUCCO SIDING REPLACEMENT

121 N. Fairfax Street
Alexandria, Virginia 22314

PROJECT MANUAL

November 9, 2026



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Attachment 1:
Shingle Roof Replacement Plan Sheets A1 - A5

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Stucco and Masonry Maintenance Plan Sheets 1 - 13

City of Alexandria
Sean Kumar
Scott Price

Arlington County
Paul Ferguson
Michael A. Nardolilli

Fairfax County
Patricia Harrison
Stella Koch

City of Fairfax
Mark Chandler
Douglas Stewart

City of Falls Church
Paul Baldino
David Gustafson

Loudoun County
James Bonfils
Eric Woodall

Section 1

Invitation to Bid

INVITATION TO BID – PAGE 1 OF 3
CARLYLE HOUSE HISTORIC PARK
WOOD SHINGLE ROOFING AND STUCCO SIDING REPLACEMENT
121 N. Fairfax Street
Alexandria, Virginia 22314

The Project includes the replacement of an existing wood shingle roofing system (approximately 3,000 sf), replacement of stucco siding (approximately 3,000 sf), masonry repairs and pointing, and miscellaneous associated work on a historic 18th century home in Old Town Alexandria. Contractors must meet the experience requirements outlined in the Project Manual.

NOVA Parks is a government body headquartered in the state of Virginia. The bidding and contracting process for the Project shall be governed by the Virginia Public Procurement Act.

Sealed bids will be received by mail, email or in person at the NOVA Parks Headquarters, 5400 Ox Road, Fairfax Station, Virginia 22039, until the submission deadline of **Thursday, January 7, 2027, at 11:00 a.m. EST.** Bids will be opened in public at the NOVA Parks Headquarters on **Thursday, January 7, 2027, at 1:00 p.m. EST.**

Bids and bid bonds (if applicable) may be (1) submitted in person at the NOVA Parks Headquarters, (2) sent via U.S. Mail or other delivery service, or (3) electronically transmitted by emailing to NOVAParksBids@nvrpa.org.

Any bid received after the submission deadline as noted above will not be accepted or considered. The time of receipt shall be determined as the time the bid is received by NOVA Parks. Bidders are solely responsible for ensuring that their bid and supporting documents are received by NOVA Parks by the submission deadline. Bidders may request written confirmation of receipt of their bid.

NOVA Parks is not responsible for delays in the delivery of email, or emails misdirected to incorrect email addresses.

For bids submitted in person or via U.S. Mail or other delivery service, Bidders should:

- Label the sealed envelope as "Project Bid" and address to the attention of the Director of Planning and Development.
- Include on the outside of the bid the name of the bidder and the project name as noted on the cover sheet of the Project Manual.

For bids submitted via email, bidders should:

- Include in the bid email subject line the name of the bidder and the project name as noted on the cover sheet of the Project Manual.
- Send the bid email to NOVAParksBids@nvrpa.org with an automated request for a receipt to be sent back to the bidder when the email is read/opened. Bid emails will not be opened by NOVA Parks until the submission deadline.
- Submit the bid Form of Proposal, and any other required supporting documents, as PDF attachments to the email. Do not include these documents in the body of the email.
- Notify the NOVA Parks Project Manager of their intent to submit an electronic bid at least 24 hours prior to the bid deadline.

A five percent bid bond or certified check must be submitted with the sealed bid for all total bids over $500,000. For bonding purposes, the bonded amount shall be the Total Bid which equals the sum of the Base Bid, Add Alternates and Unit Price totals. Emailed bid bonds will be accepted provided the original bond is received at NOVA Parks headquarters within 10 days of the bid opening.

All bids and bid bonds shall remain valid for ninety days. Performance and Labor and Material Payment bonds shall be required of the successful bidder for all contracts awarded over $500,000.

Contract documents may be obtained at https://www.novaparks.com/about/bids-proposals on the NOVA Parks Website (www.novaparks.com). Bidders shall be responsible for verifying and obtaining any addenda issued prior to the bid date. Project addenda will be posted on the website. Contract documents include the following:

- Project Manual dated November 9, 2026
- Shingle Roof Replacement Plans sheets A1 through A5
- Stucco and Masonry Maintenance plan sheets 1 through 13

All interested Bidders shall formally register with NOVA Parks prior to the bid date by emailing Todd Hafner at Thafner@nvrpa.org. Bidders shall include in the email the following information:

- Company Name and Address
- Contact Person Name and Title
- Phone Number and Email Address

A virtual pre-bid Teams Meeting will be held on Thursday, December 10, 2026, at 1:00 p.m. EST. Bidders wanting to participate in the pre-bid meeting must notify Todd Hafner in advance to obtain the Teams Meeting invitation.

Bidders may visit the Carlyle House to view the exterior of the building at any time during daylight hours.

There will be one opportunity for Bidders to enter the building and view the attic space. An attic inspection meeting will he held on Wednesday, December 16, 2026, at 9 a.m. EST. This is not a formal pre-bid meeting, and design consultants will not be in attendance. The inspection meeting will begin on the front lawn (Fairfax Street side) of the Carlyle House. Bidders wanting to participate in the attic inspection meeting must notify Todd Hafner in advance.

All questions regarding the project or the bidding process shall be directed to Project Manager Todd Hafner at Thafner@nvrpa.org or 703-795-2297.

******END OF INVITATION TO BID******

Section 2

Form of Proposal

FORM OF PROPOSAL - PAGE 1 OF 3
CARLYLE HOUSE HISTORIC PARK
WOOD SHINGLE ROOFING AND STUCCO SIDING REPLACEMENT

PROPOSAL

To furnish all material, labor, tools, equipment and supplies to perform all work specified herein and shown in the contract documents.

Name of Bidder: _____

Address of Bidder: _____

Signature: _____

Print Name and Title: _____

Date: _____

Contact Phone Number: _____

Bidder's Virginia Contractor's License # _____

To: Brian Nolan, Director of Planning and Development
Northern Virginia Regional Park Authority
5400 Ox Road Fairfax Station, Virginia 22039

Bidders shall fill in all blank spaces on the Form of Proposal. The low bid shall be determined by the Total Bid which equals the sum of the Base Bid, the two Add Alternates, and the nine Unit Price totals.

Pursuant to and in compliance with the contract documents, the undersigned proposes and agrees, if this proposal is accepted, to furnish all labor, materials, supplies, equipment, and other facilities, and to perform all work described in the project manual in the manner therein prescribed for consideration of the following amounts:

FORM OF PROPOSAL - PAGE 2 OF 3

BASE BID: All Work as described in the Project Manual and Project Plans, excluding the Add Alternates and Unit Prices listed separately below.

_____Dollars / $_____

Add Alternate #1: Added cost to replace gutters and downspouts (Ref Roofing Plan Sheet A3).

_____Dollars / $_____

Add Alternate #2: Added cost to install wind uplift anchors (Ref Roofing Plan Sheet A3).

_____Dollars / $_____

UNIT PRICES

Part 1: Reference SECTION 04 0410.62 – MASONRY REPOINTING

A. Repointing Chimney Stone Coping 100% $_____/Total
B. Repointing Brick Chimneys 100% $_____/Total
C. Repointing Water Table Brick 100% $_____/Total
D. Repointing 400 SF of Main Wall Section (100 SF per Elevation) $_____/Total
E. Repointing Stone Cornice per Linear Foot $_____/LF

Part 2: Reference SECTION 04 0410.92 – MASONRY RESTORATION

A. Clean Walls with Biological Cleaner and Efflorescence Remover 100%.
$_____/Total
B. Rebuild Wall Section = 10’ x 10’. Assume Outer Wythe of Brick Only.
$_____/Each
C. Rebuild Wall Section Under 10’ x 10’. Assume Outer Wythe of Brick Only.
$_____/Each
D. Pinning of Stone .5’ to 3’ with Two SS Pins.
$_____/Each

TOTAL BID: Insert the sum of the Base Bid, the two Add Alternate prices and the nine Unit Price amounts listed above.

_____Dollars / $_____

FORM OF PROPOSAL - PAGE 3 OF 3

Roofing Contractor

Company Name: _____

Address: _____

Contact Name, Email and Phone Number:

_____

Stucco and Masonry Contractor

Company Name: _____

Address: _____

Contact Name, Email and Phone Number:

_____

Acknowledges Receipt of Addendum #_____dated_____.

Acknowledges Receipt of Addendum #_____dated_____.

Acknowledges Receipt of Addendum #_____dated_____.

******END OF FORM OF PROPOSAL******

Section 3

Supplemental General Conditions / General Specifications

SUPPLEMENTAL GENERAL CONDITIONS/GENERAL SPECIFICATIONS – PAGE 1 OF 3

1. All Bidders shall submit their Bids using the attached 3-page Form of Proposal. The Form of Contract is provided for reference only and is not to be submitted with Bid.

2. NOVA Parks will be awarding a contract to a single entity that will be responsible for the entire project. Bidders can be a general contractor or a team of trade contractors with one contractor taking the lead role.

3. Bidders must have a valid Virginia Contractor's License at the time bids are submitted and must include the license number on the Form of Proposal.

4. All contractors must comply with City of Alexandria Business License requirements. The lead Contractor/Bidder must have or obtain a City of Alexandria Business License with 10 days of the Award of Contract.

5. Bidders shall provide where indicated on the Form of Proposal the names, addresses, and contact information for the roofing and stucco/masonry contractors that will work on the Project. Any subcontractor substitutions after the award of contract must be approved by NOVA Parks.

6. Stucco/masonry contractor must meet the experience requirements noted in SECTION 09 0120.91 – HISTORIC STUCCO RESTORATION, part 1.6. Bidders must provide with their bid the submission documents detailed in part 1.6 B.

7. Roofing contractor shall have a minimum of five years of experience installing wood shingles similar in material, design, and extent to that indicated for this project. It shall have completed at least two roofing projects on historic buildings.

   Bidders must provide with their bid for the roofing contractor a list of at least five similar completed projects including two for work completed on historic structures. The project list shall include the following:

   - Project description, location, and date of completion.
   - Total project cost completed by roofing contractor.
   - Client reference with contact name, telephone number, and email address.

8. NOVA Parks reserves the right to disqualify any Bidders who are determined not to have adequate experience or favorable client references. Any disqualifications shall be at the sole discretion of NOVA Parks.

9. NOVA Parks intends to award a contract and issue a Notice to Proceed to the successful Bidder no later than February 5, 2027. The Project shall be completed by September 1, 2027. If the work is not completed within the time required, as that time may be adjusted by change orders, there shall be imposed on the Contractor liquidated damages of $500.00 per calendar day for each day beyond the contract time it takes to complete the work.

10. NOVA Parks has obtained approval for the Work from the City of Alexandria Board of Architectural Review and will obtain a roofing building permit prior to the commencement of the roof replacement. A building permit is not required for the stucco and masonry work. Contractor shall be responsible for obtaining any other required permits or approvals.

11. The Contractor shall submit for review and approval a detailed plan indicating how the house will be protected from the elements during the construction process. Special emphasis must be placed on stopping all possible water infiltration.

12. The Contractor shall submit for review and approval a plan for protecting the east façade of the building and the sandstone cornice during the project.

13. The Contractor shall submit for review and approval scaffolding plans that are signed and sealed by an engineer registered in the state of Virginia. If applicable, the Contractor shall be required to obtain a scaffolding permit from the City of Alexandria.

14. The Contractor shall coordinate the scaffolding design and installation to accommodate the needs of both the stucco/masonry and roofing contractors.

15. The Carlyle House will remain open to the public during the project. The scaffolding design shall include safe covered access routes to main doors on the north, east and west sides of the building.

16. Scaffolding shall not have any bearing points located on the east building side stairs down to the terrace, or directly beyond the end of the stairs. This is a requirement to protect the masonry vault below the stairs and terrace.

17. All chimney stucco and masonry work shall be completed prior to the demo and installation of the new roof.

18. NOVA Parks may have its own contractors completing various minor exterior building inspections and repairs during the Project. Provided there is no direct interference with the Work, the Contractor shall allow NOVA Parks access to the scaffolding.

19. NOVA Parks will relocate the outdoor ADA lift on the south side of the building to allow full access to the exterior wall.

*******END OF SUPPLEMENTAL GENERAL CONDITIONS/GENERAL SPECIFICATIONS*******

Section 4

Roofing Specifications

ROOFING SPECIFICATIONS

CCA PRESSURE-TREATED ALASKAN YELLOW CEDAR ROOFING

LEAD-COATED COPPER FLASHING

LEAD-COATED COPPER GUTTERS AND DOWNSPOUTS

TYPE 316 STAINLESS STEEL ROOFING AND FLASHING FASTENERS

CCA PRESSURE-TREATED ALASKAN YELLOW CEDAR ROOFING

1. Scope: Provide new 3/4-inch butt thickness, random-width, 20-inch-long tapersawn Alaskan yellow cedar shakes, including starter courses, hip and ridge units, and associated accessories. At valley sweeps and hip fans longer shakes may be required and should be ordered. “Shakes” in this specification refers to the specified heavy tapersawn product, commonly classified commercially as tapersawn shakes. Coordinate with retained historic wood lath battens, Type 316 stainless steel fasteners, and lead-coated copper flashing.

2. Quality and Dimensions: Provide sound Alaskan yellow cedar, 100 percent edge grain, with clear heartwood throughout the exposed and weather-critical portions. Product basis of design reference is the tapersawn product manufactured by The Waldun Group, contact Chris Caviggia, ccaviggia@waldun.com, 604-309-4146. Provide sawn faces, tapered thickness, and square-cut butts matching approved historic appearance, except that butt-ends shall be hand-shaped to a fish-scale curved profile. Reject decay, bark, through-splits, and defects impairing installation or weather resistance. Length shall be 20 inches except where longer shakes are required at hips and valleys; nominal butt thickness shall be 3/4 inch. Provide random widths matching the approved sample range. Random widths shall be from 3-1/2 inches to 5-1/2 inches wide, except where narrower shakes may be required at swept valleys and hip fans. Submit manufacturer’s dimensional tolerances and grading certification for this custom product. Comply with applicable Certi-Label product requirements referenced in the Cedar Shake & Shingle Bureau’s Roof Manual (New Roof Construction Manual). For custom dimensions and hand-shaped profiles outside standard Certi-Label product classifications, submit documentation identifying applicable grading requirements and any deviations for Architect’s approval. Do not substitute standard 18- or 24-inch lengths.

3. Preservative Treatment: Factory pressure-impregnate with chromated copper arsenate (CCA) preservative suitable for the specified species and roofing application, with a minimum preservative retention of 0.40 lb./cu. ft. of wood. Treatment shall conform to applicable AWPA U1 and T1 requirements for the species, product, and preservative combination, or an approved independently evaluated treatment specification expressly covering the proposed product. Comply with the preservative’s registered labeling. Submit treatment certification identifying preservative formulation, required and achieved retention in lb./cu. ft., penetration criteria, assay basis, treating plant, and independent inspection agency. Brush, spray, or dip treatment is not an acceptable substitute for pressure treatment. Complete preservative fixation and required post-treatment conditioning before shipment.

4. Submittals and Samples: Submit manufacturer and treatment-company product data; grading and treatment certifications; installation instructions specific to the 20-inch product; and applicable warranties. Submit representative treated samples showing butt thickness, taper, grain, surface texture, and width range. Provide a roof mockup incorporating starter courses, typical coursing, fastening, and lead-coated copper flashing. Obtain Architect's approval before general installation. Document compatibility of treated shakes with fasteners, flashing, underlayment, and other contacting materials. Submit Benjamin Obdyke product data and installation instructions for Cedar Breather and VaporDry SA, coordinated with the specified roof assembly.

5. Historic Substrate: Inspect existing wood lath battens for thickness, spacing, soundness, and fastening capacity. Preserve retained historic wood. Report deteriorated, split, loose, or inadequately positioned battens before covering. Repair, supplement, or replace only as indicated or approved. Do not alter historic batten spacing or roof-edge details without Architect's written approval. Existing historic lath battens shall remain in place on top of the existing historic rafters. Install 3/4-inch exterior-grade plywood directly over and on top of the retained historic lath battens.

6. Roof Assembly and Layout: Install in accordance with approved manufacturer and treatment-company instructions and applicable Cedar Shake & Shingle Bureau guidance for the actual product classification. Reference the Cedar Shake & Shingle Bureau's Roof Manual (New Roof Construction Manual), specifically its Certi-Label Shake and Shingle application guidelines, for applicable installation requirements. Identify conflicts between those guidelines and the specified custom product or roof assembly, and obtain resolution before installation. Provide the following roof assembly, listed from exterior to interior: new wood shakes; Cedar Breather by Benjamin Obdyke; VaporDry SA by Benjamin Obdyke; 3/4-inch exterior-grade plywood; retained existing historic lath battens; and existing historic rafters. Install Cedar Breather over VaporDry SA, and install VaporDry SA over the plywood, in accordance with the respective manufacturer's instructions. Exposure, headlap, joint spacing, sidelap, starter courses, and underlayment/interlayment shall be as detailed and approved for the custom 20-inch product and actual roof slopes. Shakes shall never be less than triple stacked; provide a minimum of three overlapping layers of wood shakes throughout the roof covering. Installation consultation was provided by Willie Graham, Architectural Historian, and Wagner Roofing. Both may be contacted as possible cedar shake roofing installers.

Willie Graham: w.graham@verizon.net or 804-399-4339

Sergio Luise at Wagner Roofing: Sergio.Luise@wagnerroofing.com or 301-927-9030

7. Fasteners and Predrilling: Provide solid Type 316 stainless steel shake nails complying with the separate fastener specification. Use smooth-shank nails wherever fasteners enter or pass through historic wood lath battens; ring-shank nails are prohibited at these locations. Hand-drive nails at historic battens. Select nail length, shank diameter, head size, and penetration for the actual roof assembly and required wind resistance. Predrill the thick tapersawn shakes where necessary to prevent splitting and permit controlled driving; predrill historic battens where necessary using approved pilot-hole dimensions that preserve required withdrawal resistance. Drive heads flush without crushing or splitting the wood. Staples are not permitted.

8. Flashing and Accessories: Provide lead-coated copper flashing as separately specified. Coordinate valleys, eaves, roof-to-wall intersections, chimneys, penetrations, hips, and ridges with the approved roof

assembly. Interleave step flashing with individual courses. Maintain manufacturer-required clearances and drainage paths. Do not rely on sealant or roofing cement as a substitute for properly integrated flashing.

9. Installation and Protection: Blend random widths throughout each roof plane; maintain straight courses and properly staggered joints. Install only properly conditioned material within the manufacturer's moisture limits. Protect incomplete roofing and historic interiors from weather throughout construction. Replace split, damaged, improperly fastened, or otherwise defective units before acceptance. Leave roofing natural and unpainted unless otherwise indicated.

LEAD-COATED COPPER FLASHING

1. General: Provide new lead-coated copper flashing at valleys, roof-to-wall intersections, chimneys, penetrations, and other locations indicated, coordinated with the new CCA pressure-treated Alaskan yellow cedar shingle roofing. Use installers experienced in traditional copper sheet-metal work on historic buildings.

2. Submittals: Submit product data, material sample, and shop drawings showing flashing profiles, seams, attachment, expansion provisions, and interfaces with existing construction. Provide manufacturer's certification of copper base weight and lead-coating weight. Submit written confirmation from the shingle manufacturer/treatment company and flashing manufacturer that the proposed flashing, fasteners, and separation materials are suitable for the specified CCA-treated shingles.

3. Sheet Metal: Lead-coated copper complying with ASTM B101; nominal copper base weight 20 oz./sq. ft., exclusive of coating, approximately 0.027 inch copper thickness. Provide factory hot-dipped lead coating on both faces, totaling not less than 12 nor more than 15 lb. per 100 sq. ft. of sheet (6-7.5 lb. per 100 SF per face), approximately equally distributed between faces. Provide continuous, adherent coating free of defects impairing performance. Finish shall be natural, unpainted lead gray. Tin-zinc-coated copper and terne-coated stainless steel are substitutions requiring Architect's written approval.

4. Accessories: Provide compatible copper cleats of sufficient thickness for secure attachment. Fasteners shall be Type 316 stainless steel or copper-alloy fasteners specifically accepted by the flashing manufacturer and shingle treatment company for the intended application. Solder shall comply with ASTM B32, alloy Sn60, nominally 60 percent tin and 40 percent lead. Use flux recommended for lead-coated copper; remove flux residue after soldering. Provide compatible underlayment and separation materials as required by the approved roof assembly.

5. Fabrication and Installation: Follow the Copper Development Association's Architectural Sheet Copper Manual, applicable SMACNA Architectural Sheet Metal Manual details, and approved shop drawings. Form profiles to match documented historic conditions and details indicated. Hem exposed edges; provide concealed attachment wherever practicable. Interleave individual step flashings with shingle courses. Mechanically form and solder joints requiring watertight construction; provide separate movement joints where required. Do not rigidly solder across expansion joints. Sealant shall not replace required formed or soldered joints.

6. Coordination and Protection: Integrate flashings with roofing underlayment and shingles to drain water to the exterior. Provide separation from incompatible materials as recommended by the manufacturers. Install counterflashing in masonry mortar joints unless otherwise detailed; avoid cutting historic masonry units. Protect adjacent historic materials from heat, flux, staining, and damage. Replace flashing with cracked, delaminated, or otherwise impaired coating. Clean completed work using methods approved by the flashing manufacturer.

LEAD-COATED COPPER GUTTERS AND DOWNSPOUTS

1. Scope: Provide complete bracket-hung lead-coated copper gutters and downspouts, including outlets, end caps, miters, elbows, offsets, conductor heads where existing, brackets, straps, fasteners, expansion joints, and connections to drainage systems indicated. Coordinate with new CCA pressure-treated Alaskan yellow cedar shingle roofing.

2. Existing Conditions and Submittals: Before removal, field-measure and photograph existing gutters, downspouts, and accessories. Submit shop drawings showing existing and proposed profiles, dimensions, beads, seams, outlets, offsets, attachment details, support spacing, and expansion provisions. Match existing configurations and visible details unless otherwise indicated. Retain representative existing pieces as fabrication templates until new work is accepted. Submit a gutter profile sample and representative downspout assembly for Architect's approval before fabrication. Identify drainage-capacity deficiencies or conflicts requiring changes before proceeding.

3. Sheet Material: Lead-coated copper complying with ASTM B101, factory hot-dipped on both faces. Copper base shall be nominal 20 oz./sq. ft., exclusive of lead coating, approximately 0.027 inch copper thickness. Lead coating shall total not less than 12 nor more than 15 lb. per 100 sq. ft. of sheet, approximately equally distributed between faces. Provide manufacturer's certification of copper base weight and coating weight. Finish shall be natural, unpainted lead gray. Provide continuous, adherent coating free of defects impairing serviceability. Alternative metals or coatings require Architect's written approval.

4. Accessories: Provide copper, brass, or bronze supports and attachments, sized for gutter dimensions and applicable water, snow, ice, and wind loads. Match existing visible bracket and strap designs. Lead-coat exposed copper accessories to match adjacent work. Use compatible copper-alloy or Type 316 stainless steel fasteners appropriate to the substrate and accepted by the metal manufacturer. Solder shall comply with ASTM B32, alloy Sn60, nominally 60 percent tin and 40 percent lead. Use flux recommended for lead-coated copper and remove residues after soldering.

5. Fabrication: Custom-fabricate profiles and fittings to match approved samples and shop drawings. Form gutter joints with minimum 1-inch laps, mechanically secured and fully soldered, except at designated expansion joints. Provide watertight end caps, miters, and outlet connections. Match existing downspout cross-sections, seam locations, elbows, offsets, and decorative features. Provide downspout joints that shed water in the direction of flow. Sealant shall not substitute for required soldered gutter joints.

6. Installation: Follow applicable Copper Development Association and SMACNA details. Support hung gutters at maximum 30 inches on center, and closer where required by loading, profile, or support design. Anchor to sound construction; report deteriorated substrates before installation. Provide positive gutter drainage to outlets without distorting historic profiles. Provide expansion joints and attachments permitting thermal movement; do not rigidly solder across movement joints. Secure downspouts with brackets allowing longitudinal movement. Coordinate gutter back edges and aprons with roof underlayment and shingle flashing to prevent water entry behind gutters. Maintain existing discharge locations unless otherwise indicated.

7. Treated-Shingle Compatibility: Submit written confirmation from the shingle treatment company and metal manufacturer that the proposed metals, fasteners, and separation materials are suitable for contact with, or runoff from, the specified CCA-treated Alaskan yellow cedar shingles. Provide required compatible separation materials without obstructing drainage.

8. Protection and Acceptance: Protect historic masonry, woodwork, roofing, and finishes during removal, fabrication, and installation. Replace components with damaged or delaminated coating. Clean completed work using manufacturer-approved methods. Water-test gutters, outlets, and downspout connections; correct leaks, ponding, and improper discharge before acceptance.

TYPE 316 STAINLESS STEEL ROOFING AND FLASHING FASTENERS

1. Scope: Provide fasteners for new CCA pressure-treated 3/4-inch tapersawn Alaskan yellow cedar shingles, lead-coated copper flashing, and associated roof accessories. Coordinate fastener selection with existing historic wood lath battens, new substrates, and approved roofing details.

2. Material: Fasteners, including nails, screws, bolts, nuts, and washers, shall be solid Type 316 stainless steel, UNS S31600. Stainless steel plating or coating over carbon steel is not acceptable. Type 304, Type 410, galvanized steel, and aluminum fasteners are not acceptable for work covered by this specification. Nails shall comply with ASTM F1667 and be manufactured for the intended roofing application.

3. Shingle Nails: Provide full-round-head nails specifically suitable for wood shingles, with shank diameter, head diameter, and length accepted by the shingle manufacturer and treatment company and adequate for project wind loads. Staples, clipped-head nails, brads, and finish nails are not permitted.

4. Historic Wood Lath Battens: Provide smooth-shank nails only wherever nails enter or pass through retained historic wood lath battens. Ring-shank nails are prohibited at these locations. Screw-shank or spiral-shank nails shall not be substituted. Hand-drive nails at historic battens. Predrill where necessary to prevent splitting, using pilot-hole dimensions accepted for the selected fastener. The 3/4-inch tapersawn shingles may require additional predrilling through the shingles to prevent splitting and facilitate controlled hand-driving into historic battens; verify predrilling requirements with the shingle manufacturer. Do not enlarge holes to the extent that withdrawal resistance is impaired. Do not reuse enlarged existing nail holes or fasten into split, decayed, or otherwise unsound wood.

5. New Wood Substrates: Provide smooth-shank or ring-shank Type 316 stainless steel shingle nails as indicated in the approved fastening schedule. Ring-shank nails shall not penetrate retained historic battens, including where new material overlays those battens.

6. Length and Placement: Select nail length for the actual shingle thickness, number of layers, and supporting substrate. Provide minimum 3/4-inch penetration into sound wood, or full penetration through thinner wood substrates where permitted by the approved roof assembly. Full penetration through thin historic battens alone shall not establish adequate withdrawal resistance. Provide two nails per shingle, located approximately 3/4 inch from each side edge and 1-1/2 inches above the exposure line, unless the approved product instructions require otherwise. Drive heads flush without crushing shingles, overdriving, or leaving heads proud. Conceal fasteners beneath succeeding courses.

7. Flashing and Accessory Fasteners: Provide Type 316 stainless steel fasteners sized for the metal thickness, substrate, and design loads. Attach lead-coated copper flashing through concealed cleats or concealed fastening locations wherever practicable. Locate fixed points and sliding attachments to accommodate thermal movement. Do not solder stainless steel fasteners to copper as a substitute for a properly detailed mechanical connection. Avoid exposed penetrations through water-carrying flashing surfaces.

8. Submittals and Verification: Submit manufacturer's certification of Type 316 alloy and a fastening schedule identifying nail shank type, diameter, head size, length, spacing, and penetration for each substrate. Obtain written acceptance from the shingle manufacturer and treatment company for use with the specified CCA-treated shingles, expressly including smooth-shank nails at historic battens. Verify existing batten thickness and condition before installation. Refer inadequate substrate or withdrawal resistance to the Architect for resolution; do not substitute ring-shank nails at historic battens or alter historic wood without written approval.

9. Protection: Protect historic wood during removal of existing fasteners and installation of new work. Use clean tools and handling methods that prevent carbon-steel contamination of stainless steel. Replace damaged fasteners and report split or loosened battens before covering.

*******END OF ROOFING SPECIFICATIONS*******

Section 5

Stucco and Masonry Specifications

SECTION 01 3591.00 – HISTORIC TREATMENT PROCEDURES

PART 1 – GENERAL

Project Goals: The primary objective of this intervention is to retain and protect as much original historic masonry fabric as possible. Sound, intact prior repairs and patches performing satisfactorily shall remain undisturbed. Interventions shall be strictly limited to conditions actively accelerating or causing masonry failure. Specifically for this Section, the objective is to implement site-wide protection protocols, containment safeguards, quality assurance standards, and progress documentation to prevent collateral damage to historic fabric and adjacent construction during all conservation operations.

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to the work of this Section.

1.2 SUMMARY

This Section includes general protection and treatment procedures for the entire Project, with specific work focused on historic building restoration; refer to Section 02 4119.00 "Selective Demolition" for detailed requirements regarding specific protection installed prior to removals.

A. This Section includes the following items where indicated on the Drawings:

1. Historic Building Treatment Procedures

B. Related Sections include the following:

1. Section 02 4119.00 – Selective Demolition
2. Section 04 0140.62 – Masonry Repointing
3. Section 04 0140.92 – Masonry Restoration
4. Section 09 0120.91 – Historic Stucco Restoration

1.3 REFERENCE STANDARDS

A. In general, follow all requirements, recommendations, and procedures of the following standards and publications, except where these Contract Documents are more stringent.

1. Secretary of the Interior’s Standards for the Treatment of Historic Properties.

1.4 DEFINITIONS

1. "Abandoned Embedments": Miscellaneous obsolete wiring, straps, ferrous or non-ferrous metal anchors, expansion anchors, masonry nails, fasteners, brackets, and related hardware embedded in historic masonry or stucco substrates that serve no active functional, architectural, or structural purpose.
2. Arrises": The sharp, distinct external edges or corners formed by the intersection of two adjacent plane surfaces of historic brick or dressed stone units.
3. "Character-Defining Feature": Prominent or distinctive physical elements, forms, finishes, details, or materials that identify a building or site as historic, contributing directly to its historical and architectural significance.
4. "Conserve": To preserve and protect historic materials, elements, and assemblies from loss, decay, or damage through minimal physical intervention, stabilization, and preventative care.
5. "Demolition": The systematic deconstruction, dismantling, clearing, or removal of non-historic, deteriorated, or designated exterior finishes, accessories, or materials explicitly indicated to be removed from the structure.
6. "Depth-Limiting Shrouded Tool": Handheld diamond rotary cutting equipment fitted with vacuum-assisted dust extraction shrouds (HEPA) and mechanical depth-limiting guards adjusted strictly to the thickness of the outer stucco coat to prevent scoring, notching, or grooving of underlying historic brick faces during stucco demolition.
7. "Dismantle" / "Selective Dismantlement": To carefully take apart, disconnect, or detach specified components, assemblies, or accessories (e.g., chimney grates, lightning protection hardware, leaders) by hand to the limits indicated, using small manual hand tools so as to protect nearby historic surfaces; and legally dispose of dismantled items off-site, unless indicated to be salvaged or reinstalled.
8. "Existing to Remain" / "Retain": Existing historic fabric, character-defining elements, site paving, plantings, and architectural finishes that are not indicated to be removed, dismantled, or demolished, which shall remain undisturbed and fully protected for the duration of the project.
9. "Historic Fabric": All original, early, or character-defining exterior and interior materials, elements, and assemblies comprising the landmark, including but not limited to historic clay brick masonry, sandstone trim, limestone ashlar/quoins/architraves, historic wood windows and doors, wood cornices, wrought iron, and related historic features.
10. "In Situ": Preservation, cleaning, masonry repair, repointing, render application, and surface treatment procedures executed while historic elements, stone units, or wall assemblies remain in their original positions and fabric alignment on the building.
11. "Low-Pressure Water Wash": Washing and rinsing procedures utilizing potable water delivered at a working nozzle pressure not exceeding 300 psi with soft

natural-bristle hand brushes, without abrasive blasting, mechanical scrapers, or wire brushes.

12. "Match": To blend with adjacent construction and manifest no apparent difference in material type, cut, form, detail, color, texture, or finish as verified via on-site mockups and approved by the Architectural Conservator.

13. "Mineral Silicate Coating System": A three-coat, non-film-forming, microcrystalline, vapor-permeable exterior coating composed of liquid potassium silicate binder and inorganic mineral pigments, chemically bonding to cured and etched render substrates.

14. “Pre-Dubbing" / "Dubbing Out": The preliminary filling and leveling of deep joint recesses or surface voids exceeding 1/2 inch (13 mm) up to 3/4 inch (19 mm) in depth using approved base render material, placed 24 hours in advance of the full scratch coat application to produce an even substrate without shrinkage cracking.

15. "Pre-Repointing": The complete structural repointing of voids, through-joints, or joint recesses exceeding 3/4 inch (19 mm) in depth with compatible historic lime mortar, fully cured prior to the application of subsequent base render coats.

16. "Preserve": To apply measures necessary to sustain the existing form, integrity, and materials of an historic property, character-defining features, and associated site elements strictly in accordance with The Secretary of the Interior’s Standards for the Treatment of Historic Properties.

17. "Rehabilitate": To make possible a compatible use for a property through repair, alterations, and additions while preserving those portions or features which convey its historical, cultural, or architectural values.

18. "Reinstall": To protect removed or dismantled items, repair, clean, or service them as indicated for reuse, and remount them securely in their original positions using approved non-corrosive fasteners set strictly into mortar joints (e.g., chimney grates, lightning protection, leaders).

19. "Render" and "Stucco": “Render” used interchangeably with "stucco" throughout the Contract Documents to refer generally to the exterior plaster finishes; however, the term "Render" specifically designates the newly installed, breathable mineral-based multi-coat exterior plaster replacement assembly.

20. "Repair": To correct damage and defects, retaining existing materials, features, and finishes while employing as little new material as possible; includes patching, stabilizing, consolidating, repointing, or rebuilding deteriorated historic masonry matching sound original work.

21. "Restore": To accurately depict the form, features, and character of a property as it appeared at a particular period of time by means of the removal of features from other periods and reconstruction of missing features from the restoration period.

22. "Reversible": Preservation treatments, mortars, coatings, or attachment methods designed so that they can be removed or retreated in the future with mini

23. "Root Protection Zone (RPZ) / Lawn Protection": Designated protective ground buffer areas encompassing lawn turf, root zones of mature specimen trees, brick paths, and landscape beds protected against heavy staging, vehicular traffic, and chemical discharge.
24. "Salvage": The careful retrieval, cataloging, handling, cleaning, and secure on-site storage of sound historic brick, architectural elements, or hardware designated for reuse, reinstallation, or turnover to the Owner.
25. "Sandstone": Historic sedimentary rock utilized on site for decorative cornices, belt courses, and exterior elements; highly susceptible to impact damage, mechanical tool abrasion, moisture retention, and contour spalling. Tooling intervention is restricted to light manual hand chisels and wooden mallets to remove detached flakes without altering profiles or removing sound weathered surfaces.
26. "Saturated Surface-Dry (SSD)": The condition of the historic brick substrate in which the inner pore structure is thoroughly saturated with clean water, but the exposed face is free of standing surface water, glistening films, or droplets, ensuring optimal adhesion and preventing water suction from newly applied lime mortars or mineral renders.
27. "Stabilize": To provide structural reinforcement, re-anchoring, grouting, shimming, or relaying of loose, fractured, or displaced historic masonry to maintain structural equilibrium and reestablish a weather-resistant enclosure prior to rendering.
28. "Strip": To completely remove existing exterior stucco and associated non-historic parge coatings down to the underlying bare historic brick masonry substrate within designated 10-foot horizontal work increments.
29. "Three-Coat Render Assembly": The multi-layer breathable exterior plaster system totaling approximately 3/4 inch (19 mm) in thickness, consisting of:
    a. Scratch Coat (Base Render): The initial mortar coat applied directly over the pre-wetted masonry substrate, fully encapsulating an embedded alkali-resistant reinforcement mesh.
    b. Intermediate Coat (Brown Coat): The leveling render coat combed or keyed over the base coat to establish a true, flat planar alignment across wall fields.
    c. Finish Render Coat: The fine-aggregate top render layer, floated to match approved mockup texture and profile, terminating cleanly against stone quoins, window architraves, door surrounds, and wood trim without lap marks.

1.5 MATERIAL OWNERSHIP

A. Historic items, relics, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, antiques, and other items of interest or value to Owner that may be encountered during removal and dismantling work remain Owner's property. Carefully dismantle and salvage each item or object.

B. Coordinate with the Architectural Conservator, who will establish special procedures for dismantling and salvage.

1.6 SUBMITTALS

A. General: Submit the following in accordance with Conditions of the Contract and Division 1 Specification Sections.

1. Construction Schedule for Historic Treatments: Submit a concise sequence of exterior treatment work indicating start and completion dates for masonry repointing, stucco patching, curing periods, and paint application. Coordinate sequencing with Owner's building access and daily operations.

2. Preconstruction and Progress Documentation: Prior to commencing work, submit pre-treatment documentation photographs showing preexisting conditions of adjoining construction, finish surfaces, and site improvements that could be misconstrued as damage caused by historic treatment operations; update and resubmit documentation during the progress of work and upon final completion.

3. Inventory of Salvaged Items: After removal or dismantling work is complete, submit a list of items that have been salvaged. Also submit photographs of the salvaged items to aid in inventory. Indicate how each object will be stored and how its condition will be monitored during storage.

1.7 QUALITY ASSURANCE

A. Single-Source Contractor Responsibility: The Contractor performing protection, surface preparation, and documentation under this Section must be the same Contractor performing the stucco restoration. Refer to Section 09 0120.91 "Historic Stucco Restoration – Quality Assurance.

B. Supervisory Personnel and Qualifications:

1. Ensure that qualified supervisory personnel are on-site and on duty when historic treatment work begins and during its progress.

2. The designated field supervisor shall remain continuously present throughout all selective removals, masonry dismantling, stucco stripping, and substrate repair operations.

3. Substitution of specific tradesmen or supervisory personnel during the work must be approved in writing by the Architectural Conservator.

B. Preservation Plan: Prepare a combined written plan for historic treatment for the whole Project, including each phase or process and protection of surrounding materials during operations. Describe in detail materials, methods, and equipment to be used for each phase of work. Show compliance with indicated methods and procedures specified in this and other sections. See individual specifications for related sections.

1. Dust and Noise Control: Include locations of proposed temporary dust- and noise-control partitions and means of egress from occupied areas coordinated with continuing on-site operations and other known work in progress.
2. Debris Hauling: Include plans clearly marked to show debris hauling routes, turning radii, and locations and details of temporary protective barriers.

C. Historic Treatment Preconstruction Conference: Schedule and conduct an on-site conference at the Project location before starting historic treatment operations.

1. General: Review methods and procedures related to historic treatment including, but not limited to, the following:

a. Review manufacturers' written instructions for precautions and effects of historic treatment procedures on materials, components, and vegetation.

b. Review and finalize historic treatment construction schedule; verify availability of materials, equipment, and facilities needed to make progress and avoid delays.
c. Review qualifications of personnel assigned to the work and assign duties.
d. Review material application, work sequencing, tolerances, and required clearances.
e. Review areas where existing construction is to remain and requires protection.
f. Removal and Dismantling: Inspect and discuss the condition of construction to be removed or dismantled.
g. Review requirements of other work that relies on substrates exposed by removal and dismantling work.

1.8 DOCUMENTARY PHOTOGRAPHY

A. General Requirements: Provide documentary photography prepared by the Contractor or a photographer under the Contractor's supervision where indicated. All photographs must be keyed to floor plans or elevation drawings to indicate camera location and viewing angle. Photograph both front and back or top and bottom where applicable.

B. Format and Deliverables:

1. Color digital format (.JPG), minimum 1920 × 2560 pixels (5.0 megapixels).

2. File naming convention: Date taken (YYYY-MM-DD), Item Identification Number (IIN), and descriptive keywords.
3. Turn over full-size digital images to the Architectural Conservator.

C. Required Views: Each photographic set shall include a minimum of two (2) overall views and five (5) detailed views documenting:

1. Pre-Construction: Conditions prior to starting work.
2. Removals: Labeling/tagging historic elements, adjacent surface conditions before protection is installed, removal methods, and packing/storage procedures.
3. Treatment & Re-installation: Conservation treatment processes, re-installation procedures, and completed treatments.
4. Post-Treatment & Closeout: Final cleaning and conditions of adjacent surfaces after protective coverings are removed.
5. Non-Conformance: Any non-conforming conditions or damaged elements.
6. Emergency Work: All emergency work, stabilization procedures, and unexpected conditions must be photographed immediately prior to, during, and after mitigation.

PART 2 – PRODUCTS

NOT USED

PART 3 – EXECUTION

3.1 GENERAL PROTECTION

A. Schedule and execute all work without exposing the building interior to the effects of inclement weather. Protect the existing building, site work, landscaping, and the building interior from all risks associated with the work. Protect persons, property, and site as required. Provide protective coverings over the windows as required to prevent damage. Repair all damaged elements of the building caused by the work of this Section at no additional cost to the Owner.

B. Protect persons, motor vehicles, surrounding surfaces of building, building site, plants, and surrounding buildings from harm resulting from historic treatment procedures:

1. Use only proven protection methods, appropriate to each area and surface being protected.
2. Provide barricades, barriers, and temporary directional signage to exclude public from areas where historic treatment work is being performed.

3. Erect temporary protective covers over walkways and at points of pedestrian and vehicular entrance and exit that must remain in service during course of historic treatment work.

4. Contain dust and debris generated by removal and dismantling work and prevent it from reaching the public or adjacent surfaces.

5. Provide shoring, bracing, and supports as necessary. Do not overload structural elements.

6. Protect pathways and other surfaces along haul routes from damage, wear, and staining.

C. Temporary Protection of Historic Materials:

1. Protect existing historic materials with temporary protections and construction. Do not deface or remove existing materials.

2. Do not attach temporary protection to historic surfaces except as indicated as part of the historic treatment program and approved by the Architectural Conservator.

D. Comply with each product manufacturer's written instructions for protections and precautions. Protect against adverse effects of products and procedures on people and adjacent materials, components, and vegetation.

E. Existing Drains: Prior to the start of work in an area, test the drainage system to ensure that it is functioning properly. Notify the Architectural Conservator immediately of inadequate drainage or blockage. Do not begin work in an area until the drainage system is in working order.

1. Prevent solids such as stone, stucco, or mortar residue from entering the drainage system. Clean out drains and drain lines that become sluggish or blocked by sand or other materials resulting from historic treatment work.

2. Protect drains from pollutants. Block drains or filter out sediments, allowing only clean water to pass.

3.2 PROTECTION DURING APPLICATION OF CHEMICALS

A. Protect motor vehicles, surrounding surfaces of the building being restored, building site, plants, and surrounding buildings from harm or damage resulting from applications of chemical cleaners and paint removers.

B. Cover adjacent surfaces with protective materials that are proven to resist chemicals selected for the Project unless the chemicals being used will not damage adjacent surfaces, as indicated in the historic treatment program. Use covering materials and masking agents that are waterproof, UV-resistant, and will not stain or leave residue on surfaces to which they are applied. Apply protective materials according to the manufacturer's written instructions. Do not apply liquid masking agents or adhesives

to painted or porous surfaces. When no longer needed, promptly remove protective materials and staining.

C. Do not apply chemicals during winds of sufficient force to spread them to unprotected surfaces.

D. Neutralize and collect alkaline and acid wastes and legally dispose of off Owner's property.

E. Collect and dispose of runoff from chemical operations by legal means and in a manner that prevents soil contamination, soil erosion, undermining of paving and foundations, damage to landscaping, or water penetration into building interior.

3.3 GENERAL HISTORIC TREATMENT

A. Halt the process of deterioration and stabilize conditions, unless otherwise indicated. Perform work as indicated on Drawings. Follow the procedures in subparagraphs below and procedures approved in the historic treatment program.

1. Retain as much existing material as possible; repair and consolidate rather than replace.
2. Use additional material or structure to reinforce, strengthen, prop, tie, and support existing material or structure.
3. Use reversible processes wherever possible.
4. Use historically accurate repair and replacement materials and techniques unless otherwise indicated.
5. Record existing work before each treatment procedure (preconstruction) and record progress during the work with digital documentation (photographs). Record completed work with digital documentation (photographs). Comply with requirements in 1.8 Documentary Photography.

B. Notify the Architectural Conservator of visible changes in the integrity of material or components whether due to environmental causes including biological attack, UV degradation, freezing, or thawing; or due to structural defects including cracks, movement, or distortion.

1. Do not proceed with the work in question until directed by the Architectural Conservator.

C. Where missing features are indicated to be repaired or replaced, provide features whose designs are based on accurate duplications rather than on conjectural designs, subject to the approval of the Architect Conservator.

D. Where Work requires existing features to be removed or dismantled and reinstalled, perform these operations without damage to the material itself, to adjacent materials, or to the substrate.

3.4 HISTORIC REMOVAL AND DISMANTLING

A. Perform work in accordance with the historic treatment program and approved mockup(s).

1. Provide supports or reinforcement for existing construction that becomes temporarily weakened by the work, until the work is completed.

2. Perform cutting by hand or with small power tools wherever possible. Cut holes and slots neatly to the required size, with minimum disturbance of adjacent work.

END OF SECTION 01 3591.00

SECTION 02 4119.00 – SELECTIVE DEMOLITION

PART 1 – GENERAL

Project Goals: The primary objective of this intervention is to retain and protect as much original historic masonry fabric as possible. Sound, intact prior repairs and patches performing satisfactorily shall remain undisturbed. Interventions shall be strictly limited to conditions that actively accelerate or cause masonry failure. Specifically for this Section, the main objective is the controlled removal of Portland cement stucco to minimize its impact on the underlying historic brick substrate.

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to the work of this Section.

1.2 SUMMARY

A. Provide materials, labor, equipment, and services necessary to furnish, deliver, and install all work of this Section as shown on the drawings, as specified herein, and/or as required by job conditions.

B. This Section includes the following items where indicated on the Drawings:

1. Removal of Exterior Stucco
2. Protection of Historic Fabric
3. Removal of Abandoned Anchors or Penetrations

C. Related Sections include the following:

1. Section 01 3591.00 – Historic Treatment Procedures.
2. Section 04 0140.62 – Masonry Repointing
3. Section 04 0140.92 – Masonry Restoration
4. Section 09 0120.91 – Historic Stucco Restoration

1.3 REFERENCE STANDARDS

A. In general, follow all requirements, recommendations, and procedures of the following standards and publications, except where these Contract Documents are more stringent.

1. Secretary of the Interior's Standards for the Treatment of Historic Properties.
2. ACI 530 – Building Code Requirements for Masonry Structures.

1.4 UNIT PRICES

A. Not Applicable

1.5 SUBMITTALS

A. General: Submit the following in accordance with Conditions of the Contract and Division 1 Specification Sections.

1. Selective Demolition & Public Safety Plan: Submit a safety plan describing proposed means and methods to protect the public, tenants, pedestrian traffic, and adjacent structures from demolition operations.

1.6 QUALITY ASSURANCE

A. Contractor performing selective demolition in this section must be the same contractor performing the stucco restoration. See section 09 01120 Quality Assurance.

B. Substitution of specific tradesmen during work must be approved by the Architectural Conservator.

C. Contractor shall submit a statement describing experience and qualifications of firm and of key personnel who will work on this project, include information on technicians, craftsmen, and artisans. Include names and addresses of projects successfully completed and, for each, include information on the name, address, and phone numbers of the owner, and the name and address of the architect, if any. All personnel performing mortar restoration must satisfy all qualifications, and documentation must be presented with the bid package.

D. Report any proposed changes from procedures and materials used in original Field Mockup. Submit new sample having same dimensions and texture as original Field Mockup for review. Upon acceptance, construct another Field Mockup with new materials and procedures for acceptance prior to proceeding further with restoration work.

E. Field Supervision: Require restoration specialist firms to maintain an experienced full-time supervisor on the Project site during times that masonry restoration is in progress.

F. Mockups: Prepare field samples for restoration methods to demonstrate aesthetic effects and qualities of materials and execution. Use materials and methods proposed for completed Work and prepare samples under same weather conditions to be expected during remainder of Work.

1. Locate mockups on the building where directed by the Architectural Conservator.
2. Protection & Demolition Mockups: Prepare sample panels of size indicated for each type of stone material indicated to be repaired or replaced. Erect sample panels into an existing wall, unless otherwise indicated, to demonstrate the quality of materials and workmanship.

   a. Window Protection_ 2 EA
   b. Stucco Removal_ 10 x 10 SF test panel of cementitious stucco removal on the historic brick substrate to verify that removal can be achieved without spalling or fracturing underlying historic bricks.

3. Notify Architectural Conservator 7 days in advance of the dates and times when samples will be prepared.
4. Obtain Architectural Conservator's approval of mockups before starting the remainder of masonry restoration. Note it is possible that not all procedures outlined in this specification will be used during construction.
5. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work. Approved mockups will become part of the Work.

G. Source of Materials: Obtain materials for stone restoration from a single source for each type of material required to ensure a match of quality, color, pattern, and texture.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Deliver other materials to Project site in manufacturer's original and unopened containers, labeled with type and name of product and manufacturer.

B. Store materials off the ground, under cover, and in a dry location.

1.8 PROJECT CONDITIONS

A. Weather Conditions: Do not proceed with work during inclement weather or forecast of inclement weather, or when the temperature is above or below the manufacturer's recommended limitations for installation. Architectural Conservator has final approval of permitting or halting Work based on weather.

B. Repairs shall be made by qualified personnel skilled in the type of repairs required, to the satisfaction of the Architectural Conservator.

C. Protection of Historic Fabric: Use every possible precaution to prevent damage to existing construction to remain. Protect adjacent areas and surfaces not being worked on. Provide protective coverings, plywood sheeting, and impact barriers over adjacent floors, stairs, sills, ledges, and projections to protect against mechanical impact and droppings. Immediately remove any dropped material in contact with exposed stone and other surfaces. The Contractor shall repair any damage caused to existing fabric

or adjacent structures at no additional cost to the Owner, using qualified personnel skilled in historic restoration, to the satisfaction of the Architectural Conservator. Maintain protection in-place until completion of Work.

1.9 SEQUENCING AND SCHEDULING

A. Order replacement materials at the earliest possible date, to avoid delaying completion of the Work.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Products listed below represent materials that will likely be used. This section assures quality of Work by listing regulatory language and by setting standards of quality for materials. Information from the testing shall guide product selection and restoration procedures.

B. Order replacement materials at the earliest possible date to avoid delaying completion of the Work.

2.2 TEMPOARY PROTECTION

A. Protection Sheets & Impact Barriers: Minimum 1/2-inch exterior-grade plywood or OSB, flame-retardant polyethylene sheeting (minimum 6 mil), and impact-absorbing closed-cell foam padding or felt underlayment. Direct mechanical anchors or adhesives into historic stone, brick, or decorative metals are strictly prohibited.

B. Temporary Framing & Shoring Materials: Sound dimensional lumber, heavy timber, structural steel shapes, and adjustable steel screw jacks sized to carry all imposed temporary dead and live construction loads.

C. Dust & Debris Control Enclosures: Heavy-duty reinforced flame-retardant poly sheeting, zipper access doors, and negative air filtration units as required to contain dust within designated work compartments.

D. Debris Chutes: Fully enclosed, dustproof, heavy-gauge plastic or steel drop chutes. Do not install chutes on the West Elevations.

PART 3 – EXECUTION

3.1 EXAMINATION & INSPECTION

A. Verify site conditions, utility connections, structural stability, and actual dimensions by field measurements before beginning removals.

B. Convene a pre-demolition site conference with the Architectural Conservator, Owner, and relevant utility representatives to confirm work limits, salvaged items, and utility locations.

C. Inspect and verify that all utilities serving demolition zones are properly isolated, locked out, tagged, or protected. Notify the Architectural Conservator immediately of any unexpected structural movement, utility conflicts, or substrate conditions.

3.2 PROTECTION

A. Schedule and execute all work without exposing the building interior to the effects of inclement weather. Protect the existing building, site work, landscaping, and the building interior from all risks associated with the work. Protect persons, property, and site as required. Provide protective coverings over the windows as required to prevent damage. Repair all damaged elements of the building caused by the work of this Section at no additional cost to the Owner.

3.3 GENERAL SITE CONTROLS & PROTECTION

A. Utility Protection: Protect all overhead and underground active utilities from disruption and physical damage. Clearly tag all active utility lines using the designated color-coded tagging system. If an uncharted or damaged utility is encountered, cease work immediately and notify the Architectural Conservator & staff at the museum office.

B. Pedestrian & Traffic Control: Erect sturdy barricades, perimeter fences, , directional signage, and around all demolition zones and material handling areas as required by local authorities and the Owner.

C. Fire Protection & Hot Work Controls:

1. Provide Type A extinguishers in the field office and Type ABC extinguishers on each floor level within 25 feet of work areas.

2. Cutting Equipment and Hot Work Limitations: The Contractor's selection of cutting tools and methods dictates the level of required site safety controls. Cutting metal using abrasive wheels, chop saws, or angle grinders generates sparks and slag, triggering full hot work requirements—including burn permits, noncombustible shields, dedicated fire extinguishers, and a minimum 2-hour post-operation fire watch. In contrast, wet or dust-controlled cutting of masonry and concrete using diamond-blade saws is exempt from hot work controls, provided operations do not generate friction sparks directed toward combustible materials.

The Contractor shall utilize cold-cutting methods or diamond tooling wherever feasible to minimize fire risks.

D. Follow the manufacturer's instructions.

3.4 STUCCO DEMOLITION

A. Elevation Phasing & Progression: Sequence stucco removal strictly by elevation in the following order:
   1. East Elevation
   2. South Elevation
   3. North Elevation
   4. West Elevation. Minimize time on the front elevation when possible.

B. On each elevation, commence stucco demolition at the top of the wall and work systematically downward toward the base to maintain structural equilibrium and control debris discharge. Make sure you temporarily remove soil or other barriers to fully reach the base of the wall. On elevations with soil, hand-excavate a localized continuous trench along the foundation perimeter down to the bottom of the existing stucco or to a depth of 12 inches below finished grade.

C. Work Area Limitations: Confine stucco removal to localized sections no wider than 10-foot horizontal bands across the elevation. Do not proceed to adjacent sections or lower drops until the preceding section is fully cleared, inspected, and structurally stabilized.

D. Scoring & Mechanical Separation:

   1. Score the existing stucco surface in a uniform grid pattern using handheld masonry saws or angle grinders equipped with depth-limiting guards and dust-collection shrouds.
   2. Substrate Protection: Set cutting blade depths strictly to the thickness of the stucco render coat. Do not cut, notch, score, or abrade the underlying historic brick masonry units or mortar joints.
   3. Carefully fracture and relieve the scored sections using light, non-destructive hand chisels and mallets driven parallel to the masonry face. Heavy pneumatic impact breakers, rotary hammers, and pry bars are strictly prohibited.
   4. Where cementitious stucco is tenaciously bonded and mechanical separation risks spalling or tearing historic brick faces, halt removals immediately and notify the Architectural Conservator for evaluation.
   5. Where substrate conditions prove more difficult than demonstrated during the approved mockup, halt removals immediately and contact the Architectural Conservator for on-site evaluation; contractor shall perform additional test mockups as directed to refine removal means and methods at no additional cost to the Owner or adjustment to project schedule.

D. Substrate Inspection & Masonry Intervention:

1. Upon clearing 10-foot horizontal bands across the elevation, gently brush away residual dust and debris to expose the bare masonry substrate for visual review.
2. Inspect the exposed brickwork for structural fractures, displacement, loose backup units, debonded mortar, or void spaces.
3. If structural instability, loose units, or deteriorated assemblies are identified, immediately engage qualified historic master masons to perform brick resetting, localized wall rebuilding, or deep repointing under Section 04 0140.92 (Masonry Restoration) and Section 04 0140.62 (Masonry Repointing) prior to removing stucco from adjacent wall areas.
4. If structural instability, loose units, or deteriorated assemblies are identified, halt adjacent removals and immediately notify the Architectural Conservator for evaluation; engage qualified historic masons to perform work in accordance with Section 04 0140.92 (Masonry Restoration) and Section 04 0140.62 (Masonry Repointing) prior to resuming stucco removal on adjacent wall areas.

E. Stability & Shoring:

1. The Contractor shall remain responsible for the structural integrity and lateral stability of the wall during all phases of stucco dismantling.
2. If loose wythes, unbonded brick, or framing movement are observed at any point during demolition, cease operations immediately, secure the area with temporary shoring or bracing, and notify the Architectural Conservator and Structural Engineer.

3.5 CLEAN-UP

A. Clean masonry not less than 5 days after completion of work, using clean water and stiff-bristled fiber brushes. Do not use wire brushes, acid-type cleaning agents, caustic or harsh cleaners, or other materials or methods that could damage installed masonry.

B. Remove all trash, splatters, and debris resulting from masonry restoration work from the site and adjacent areas around the building on a daily basis and upon final completion of work. Prevent any accumulation of debris on-site, and ensure debris and runoff do not collect in or obstruct site drains. Upon completion, remove all protective coverings and tapes.

END OF SECTION 02 4119.00

SECTION 04 0410.62 – MASONRY REPOINTING

PART 1 – GENERAL

Project Goals: The primary objective of this intervention is to retain and protect as much original historic masonry fabric as possible. Sound, intact prior repairs and patches performing satisfactorily shall remain undisturbed. Interventions shall be strictly limited to conditions actively accelerating or causing masonry failure. Specifically for this Section, the objective is to re-establish joint structural integrity and vapor permeability using non-destructive joint preparation and compatible, site-mixed Natural Hydraulic Lime (NHL) mortars, executing full 100% joint repointing across the chimneys while limiting repointing at walls, water tables, and sandstone cornices strictly to localized spot repairs where mortar is deteriorated, missing, or compromised.

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to the work of this Section.

1.2 SUMMARY

A. Provide materials, labor, equipment, and services necessary to furnish, deliver, and install all work of this section as shown on the drawings, as specified herein, and/or as required by job conditions.

B. This Section includes the following items where indicated on the Drawings:

1. Chimneys: Cut out 100% of joints back to sound masonry and fully repoint.
2. Main Brick Walls: Perform incidental joint raking and repointing as needed beneath the replacement stucco.
3. Water Tables: Perform incidental joint raking and repointing as needed beneath the replacement stucco.
4. Sandstone Cornice: Spot-repoint defective joints

C. Related Sections include the following:

1. Section 01 3591.00 – Historic Treatment Procedures.
2. Section 02 4119.00 – Selective Demolition.
3. Section 04 0140.92 – Masonry Restoration
4. Section 09 0120.91 – Historic Stucco Restoration

1.3 REFERENCE STANDARDS

A. In general, follow all requirements, recommendations, and procedures of the following standards and publications, except where these Contract Documents are more stringent.

1. Secretary of the Interior's Standards for the Treatment of Historic Properties.
2. National Park Service, Preservation Brief #2, "Repointing Mortar Joints in Historic Masonry Buildings."
3. ACI 530 – Building Code Requirements for Masonry Structures.
4. American Society of Testing and Materials (ASTM): Standards as specified or referenced herein.
   a. ASTM C144-18 - *Standard Specification for Aggregate for Masonry Mortar*
   b. ASTM C1713 – *Standard Specification for Comprehensive and Mortar Formulations Using Natural Hydraulic Lime (NHL) for Historic Masonry*
   c. ASTM C144 – *Standard Specification for Aggregate for Masonry Mortar*
   d. ASTM C270 – *Standard Specification for Mortar for Unit Masonry*
   e. ASTM C109 – *Standard Test Method for Compressive Strength of Hydraulic Cement Mortars*
   f. ASTM E2260 – *Standard Guide for Repointing (Tuckpointing) Historic Masonry [Use for joint prep only.]*
5. European Committee for Standardization or European Standards (EN): Standards as specified or referenced herein.
   a. EN 459-1 – Building Lime: Definitions, Specifications, and Conformity Criteria
6. Product manufacturer's written instructions and recommendations.

1.4 DEFINITIONS

A. In-situ Mortar: Existing mortar, including original and subsequently installed mortar.

1.5 UNIT PRICES

A. Include the cost in unit prices requested in other sections of this Specification. Costs shall be all-inclusive, including mobilization costs.

REPOINT 100% CHIMNEY STONE COPING _____ /TOTAL

REPOINT 100% BRICK CHIMNEYS _____ /TOTAL

REPOINT 100% WATER TABLE BRICK _____ /TOTAL

REPONT MAIN WALL SECTION 100 SF/PER ELEVATION _____/400 SF

REPOINT STONE CORNICE ON WEST ELEVATION _____ /LF

1.6 SUBMITTALS

A. General: Submit the following in accordance with Conditions of the Contract and Division 1 Specification Sections.

B. Submit a current copy of the pertinent referenced standards.

C. Manufacturer’s installation recommendations. Include the instructions and recommendations for all phases of work, including preparation of substrate, application of materials, weather limitations, and protection of installed material.

D. Submit the manufacturer's product data and Safety Data Sheets (S.D.S.) for each product indicated.

E. Any warranty information provided by the manufacturer.

F. Submit a statement from the manufacturer that product(s) to be used will be compatible with the different types of masonry surfaces where they will be used and that the material and process will not be in conflict with other products that will be used during the Work.be used during the Work.

G. Qualifications: Verifiable documentation demonstrating compliance with “QUALITY ASSURANCE," section, including project histories and names of key tradesmen who will actively perform the work.

H. Samples

1. Provide a sample of sand and its data proposed for use, including any test reports.
2. Provide three samples of cured mortar of each mortar type.

1.7 QUALITY ASSURANCE

A. Contractor and specific tradesmen performing work of this section shall have a minimum of 10 years' experience in masonry restoration similar in material, design, and extent to that indicated for this project. Substitution of specific tradesmen during work must be approved by the Architectural Conservator.

B. Contractor shall submit a statement describing experience and qualifications of firm and of key personnel who will work on this project, include technicians, craftsmen, and artisans. Include names and addresses of projects successfully completed and for each include information on the name, address, and phone numbers of owner, and name and address of architect, if any. All personnel performing mortar restoration must satisfy all qualifications with documentation must be presented with the bid package.

C. Report any proposed changes from procedures and materials used in original Field Mockup. Submit new sample having same dimensions and texture as original Field Mockup for review. Upon acceptance, construct another Field Mockup with new materials and procedures for acceptance prior to proceeding further with restoration work.

D. Field Supervision: Require restoration specialist firms to maintain an experienced full-time supervisor on the Project site during times that masonry restoration is in progress.

E. Mockups: Prepare field samples for restoration methods to demonstrate aesthetic effects and qualities of materials and execution. Use materials and methods proposed for completed Work and prepare samples under same weather conditions to be expected during remainder of Work.

1. Locate mockups on the building where directed by Architectural Conservator.
2. Mortar: Prepare sample panels of size indicated for each type of stone material indicated to be repaired or replaced. Erect sample panels into an existing wall, unless otherwise indicated, to demonstrate the quality of materials and workmanship.

   a. Chimney, remove mortar, prep joint, and repoint_ 4’ x 4’ SF Minimum.

   b. General Wall location at first occurrence _ 4’ x 4’ SF Minimum.

   c. At water table location at first occurrence _ 4’ x 4’ SF Minimum.

   d. Stone Cornice_ Repoint as necessary at two locations or 2 LF.
3. Notify the Architectural Conservator 7 days in advance of the dates and times when samples will be prepared.
4. Obtain Architectural Conservator's approval of mockups before starting the remainder of masonry restoration. Note it is possible that not all procedures outlined in this specification will be used during construction.

5. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work. Approved mockups will become part of the Work.

F. Source of Materials: Obtain materials for stone restoration from a single source for each type of material required to ensure a match of quality, color, pattern, and texture.

G. All mortar materials shall be mixed by the same person for each mortar type to ensure consistency.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Deliver other materials to Project site in manufacturer's original and unopened containers, labeled with type and name of product and manufacturer.

B. Store materials off the ground, under cover, and in a dry location.

1.9 PROJECT CONDITIONS

A. Weather Conditions: Do not proceed with work during inclement weather or forecast of inclement weather, or when the temperature is above or below the manufacturer's recommended limitations for installation. Architectural Conservator has final approval of permitting or halting Work based on weather.

B. Cold Weather Requirements: Provide a detailed cold-weather work plan if temperatures may fall below 45 deg F.

C. Hot-Weather Requirements: Provide a detailed hot-weather work plan if temperatures may rise above 80-85 deg F. Provide artificial shade and windbreaks and use cooled materials as required.

D. Do not apply mortar to substrates in extreme temperatures without an approved plan. Contractor shall be responsible for the repair of all damage to adjacent materials due to the execution of the masonry work at no additional expense to the Owner. If working during extreme temperatures, the Contractor shall install a temperature and Relative Humidity data logger on site in a location approved by the Architectural Conservator. Reading intervals shall be no greater than 30 minutes. Contractor shall deliver all readings to the Architectural Conservator as requested and at least weekly. The data logger shall be used as the instrument upon which all project conditions are judged.

E. Repairs shall be made by qualified personnel skilled in the type of repairs required, to the satisfaction of the Architectural Conservator.

F. Protect adjacent areas and surfaces not being worked on. Including the protection of all sills, ledges, and projections from droppings. Immediately remove dropped material in contact with exposed stone and other surfaces.

G. Maintain protection in-place until completion of Work.

1.10 SEQUENCING AND SCHEDULING

A. Order replacement materials at the earliest possible date, to avoid delaying completion of the Work.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Products listed below represent materials that will likely be used. This section assures quality of Work by listing regulatory language and by setting standards of quality for materials. Information from the testing shall guide product selection and restoration procedures.

B. Basic Lime: Fresh Natural Hydraulic Lime 3.5 NHL and 2 NHL or approved equal. Lime shall be as free of magnesium as possible and must contain < 5%. Note careful attention must be given to specifying lime as the compressive strength can vary significantly with lime properties.

C. Sand shall be free of silt, loam, soluble salts and organic matter and shall meet the requirements of ASTM C 144. Match the color and texture of the original mortar sand.

D. Water to be potable, non-staining, and free of minerals detrimental to the concrete being cleaned. Test water source provided by the Owner to confirm acceptability prior to commencing Work.

E. Bonding agents are not permitted.

F. Hand tools: All scrapers, brushes, etc. must be non-marring, made of wood or nylon.

G. Other Materials: All other materials, not specifically described, but required for a complete and proper installation of the Work of this Section, shall be new, first quality of their respective kinds, and as selected by the Architectural Conservator.

H. Order replacement materials at the earliest possible date to avoid delaying completion of the Work.

2.2 MIXES

A. Mortar mix shall be in accordance with ASTM C270 and mortar analysis.

B. Mortar mixes shall not be at any time stronger in compressive strength than the masonry they are being used for.

C. Mortar mixes are intended to be a starting point for the contractor. Final mortar selection by the Architectural Conservator will be based on the evaluation of the material submittals for the binder, pigment, and sand for the proposed work and will be based on observation of field samples (test panels).

D. All parts should be measured by volume using an accurate measuring tool, such as a coffee can or bucket (not a shovel). Mix dry ingredients (including pigments) thoroughly before adding water; water addition must be more carefully monitored for pigmented mortars than for mortars without pigment. To avoid over-sanding, the sand must be added in damp, loose condition.

E. All NHL mixes shall not exceed 500 psi in 28-day strength. Mix Ratios for each mortar type:

TYPE 1: CHIMNEY REPOINTING

Target Compressive Strength 750-900 psi

1 Part 5 Natural Hydraulic Lime
2.5 Parts Sand

TYPE 2: MAIN WALL REPOINTING OR RESETTING BRICK SECTIONS

Target Compressive Strength 350-500 psi

1 Part 3.5 Natural Hydraulic Lime
3 Parts Sand

TYPE 3: WATER TABLE REPOINTING

Target Compressive Strength 600-800 psi

1 Part 3.5 Natural Hydraulic Lime
2.5 Part Sand
Use sharp, angular silica sand (6 to #100 sieve) to maximize interlocking matrix strength and density against rising damp.

TYPE 4: STONE CORNICE

Target Compressive Strength 100 psi

1 Part 2.0 Natural Hydraulic Lime
3 Parts Sand

PART 3 – EXECUTION

3.1 EXAMINATION & PROTECTION

A. Prior to the start of work, verify the applicable conditions with an on-site inspection.

B. Before removing any deteriorated work, establish bonding patterns, levels, and coursing.

C. Cover partially completed work when work is not in progress.

D. Protect sills, ledges, and projections from droppings.

E. Provide temporary support where necessary to prevent displacement of brick and stone during repointing and until mortar has achieved sufficient strength.

3.2 PROTECTION

A. Schedule and execute all work without exposing the building interior to the effects of inclement weather. Protect the existing building, site work, landscaping, and the building interior from all risks associated with the work. Protect persons, property, and site as required. Inspect existing protective coverings over the windows as required to prevent damage. Repair all damaged elements of the building caused by the work of this Section at no additional cost to the Owner.

3.3 PREPARATION – RAKING OUT THE JOINTS

A. Remove and discard loose anchors, nails, pins, or other metal embedments, unless called out on the drawings. Do not allow portions to remain.

B. Cut out and remove miscellaneous joint sealant that has been used to patch joints.

C. Do not chip historic brick during removal.

D. Joint depth shall be at least 2 1/2 times joint width, but no less than 1 inch, and in all cases raked back to expose sound mortar. If voids are found in the bedding mortar during raking operations beyond the 1-inch depth, fill all voids to 1-inch depth in the same manner as pointing mortar installation.

1. Substrate Preparation for Rendered/Stuccoed Masonry: Where masonry walls are scheduled to receive new render (stucco), joint repointing shall be governed strictly by the following depth criteria:

a. Joint Loss < 1/2 in. (12 mm): Do not repoint. Loose material shall be brushed out, and shallow recesses shall be packed flush with the specified render base coat during full-field application. Repointing shallow recesses under 1/2

inch beneath applied render results in thin feather-edging and poor mortar bond, whereas the polymer- or mineral-modified render base coat achieves superior mechanical interlock when pressed directly into clean, shallow profiles under trowel pressure.

b. Joint Loss 1/2 in. to 3/4 in. (12 to 19 mm): Pre-dub flush using the specified base-coat render minimum 24 hours prior to full-field render installation.

c. Joint Loss > 3/4 in. (19 mm) or Deep Bedding Voids: Pack flush with specified repointing mortar in lifts not exceeding 1/4 in. (6 mm) and allow full cure prior to render application. Deep joint recesses and voids exceeding 3/4 inch must be repointed flush with compatible mortar prior to rendering to prevent excessive localized wet-render thickness, slumping, and differential drying shrinkage (ghosting) through finish coats.

E. Brush, vacuum or flush joints or cracks to remove dirt and loose debris. Joints shall be left in a damp condition for repointing, with no standing water.

3.4 MIXING PROCEDURES

A. Follow manufacturer's instructions for all mortars.

1. In cold weather, heat the water and sand sufficiently to maintain the temperature of the mortar at the time of use above 50 degrees F.
2. Measure materials by volume or equivalent weight. Do not measure by shovel.
3. Mix mortar or grout ingredients in clean mechanical batch mixer 3 to 5 minutes.
4. Repointing mortar shall be pre-hydrated to reduce shrinkage.
5. Lime and sand shall be thoroughly mixed. Add only enough water to produce a damp, unworkable mix that retains its form when pressed into a ball. Mortar shall stand in this condition for 1 to 2 hours.
6. Proper curing and misting are essential to provide for slow curing.
7. Some joints can stay pliable and can be pushed in with a finger even after a few days.

3.5 INSTALLATION

A. Inclusive areas of brick and stone to be repointed.

B. Place all mortar within 1-1/2 hours of initial mixing at temperatures of 80 degrees F. and above, and within 2 hours below 80 degrees F.

C. Do not retemper mortar or use any mortar that has begun to set.

D. Verify Joint depth. See preparation section.

E. Apply mortar in 1/4-inch thick layers, allowing each layer to reach thumbprint hardness before applying the succeeding layer. Final layer shall be held back ½" from the face of masonry. Do not allow mortar to spread over edges, or to featheredge.

F. When the final layer of mortar is thumbprint hard, tool joint to match existing. Remove excess mortar from joint edge by brushing.

G. Contractor must tool joints to precisely match all existing historic joint profiles.

H. Follow curing methodology as directed by the manufacturer.

1. Prewetting: Brush joint faces and flush out joints with water to remove dirt and loose debris, working from top to bottom of wall.

2. Rinse masonry joints with water to remove dust and mortar particles. Thoroughly wet the wall below to avoid soiling. Joint surfaces should be damp but free from standing water. Prior wetting is necessary to achieve the proper absorption rate before masonry repair commences and is essential to good masonry practice. Pre-soak walls and joints with water as required by project and weather conditions. During hot or windy weather, wet walls and joints several times in advance of pointing. Re-wet walls and joints yet to be pointed if masonry dries out before pointing. Masonry shall be damp but without standing water at the time of pointing.

3. Maintain hand mister bottles or a garden sprayer with clean, clear, potable water immediately available to maintain the wall condition.

3.6 LOCALISED WALL REBUILDING

B. Provide temporary support where necessary to prevent displacement of brick or stone during repointing and until mortar has achieved sufficient strength.

C. Where required to maintain support of bricks, rake out and repoint each brick in stages, allowing freshly repointed portions to cure sufficiently before raking out and repointing remaining portion of joints supporting the bricks.

3.7 CLEAN-UP

A. Clean masonry not less than 5 days after completion of work, using clean water and stiff-bristled fiber brushes. Do not use wire brushes, acid-type cleaning agents, caustic or harsh cleaners, or other materials or methods that could damage installed masonry.

B. Remove all trash, splatters, and debris resulting from masonry restoration work from the site and adjacent areas around the building on a daily basis and upon final completion of work. Prevent any accumulation of debris on-site, and ensure debris and runoff do not collect in or obstruct site drains. Upon completion, remove all protective coverings and tapes.

END OF SECTION 04 0140.62

SECTION 04 0410.92 – MASONRY RESTORATION

PART 1 – GENERAL

Project Goals: The primary objective of this intervention is to retain and protect as much original historic masonry fabric as possible. Sound, intact prior repairs and patches performing satisfactorily shall remain undisturbed. Interventions shall be strictly limited to conditions actively accelerating or causing masonry failure. Specifically for this Section, the objective is the localized rebuilding and resetting of displaced brickwork using salvaged units, minimal hand-tooling of delaminated sandstone to maintain shedding washes, and safe handling of lightning protection hardware.

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to the work of this Section.

1.2 SUMMARY

A. Provide materials, labor, equipment, and services necessary to furnish, deliver, and install all work of this Section as shown on the drawings, as specified herein, and/or as required by job conditions.

B. This Section includes the following items where indicated on the Drawings:

1. Temporary Removal and Reinstallation of Lightning Rod
2. Prepare Walls for Masonry Repairs – Including Biological & Efflorescence Removal
3. Resetting Individual or small quantities of displaced brick.
4. Rebuilding Brick Wall Sections
5. Tooling Stone
6. Resetting Stone

C. Related Sections include the following:

1. Section 01 3591.00 – Historic Treatment Procedures.
2. Section 02 4119.00 – Selective Demolition.
3. Section 04 0140.62 – Masonry Repointing
4. Section 09 0120.91 – Historic Stucco Restoration

1.3 REFERENCE STANDARDS

A. In general, follow all requirements, recommendations, and procedures of the following standards and publications, except where these Contract Documents are more stringent.

1. Secretary of the Interior's Standards for the Treatment of Historic Properties.
2. ACI 530 – Building Code Requirements for Masonry Structures.
3. American Society of Testing and Materials (ASTM): Standards as specified or referenced herein.
4. Product manufacturer's written instructions and recommendations.

1.4 UNIT PRICES

A. Include the cost of anchor pins, epoxy, and other related components in unit prices requested in other sections of this Specification.

CLEANING WALLS WITH BIOLOGICAL
CLEANER & EFFLORESCENCE REMOVAL 100% _____ /TOTAL

REBUIDNG WALL SECTION = 10' x10' SF
ASSUME OUTER WYTH OF BRICK ONLY _____ /EA

REBUILDING WALL Under 10' x 10'
ASSUME OUTER WYTH OF BRICK ONLY _____ /EA

PINNING OF STONE .5' to 3' WITH TWO SS. PINS _____ /EA

1.5 SUBMITTALS

A. General: Submit the following in accordance with Conditions of the Contract and Division 1 Specification Sections.

B. Submit a current copy of the pertinent referenced standards.

C. Manufacturer's installation recommendations. Include the instructions and recommendations for all phases of work, including preparation of substrate, application of materials, weather limitations, and protection of installed material.

D. Submit the manufacturer's product data and Safety Data Sheets (S.D.S.) for each product indicated.

E. Any warranty information provided by the manufacturer.

F. Submit a statement from the manufacturer that product(s) to be used will be compatible with the different types of masonry surfaces where they will be used and that the material and process will not be in conflict with other products that will be used during the Work.be used during the Work.

G. Sample of dowels, anchor pins or rods, and stone anchors.

H. Qualifications: Verifiable documentation demonstrating compliance with “QUALITY ASSURANCE," section, including project histories and names of key tradesmen who will actively perform the work.

1.6 QUALITY ASSURANCE

A. Contractor and specific tradesmen performing work of this section shall have a minimum of 10 years' experience in masonry restoration similar in material, design, and extent to that indicated for this project. They shall have a minimum of 7 years in tooling and carving decorative stone. They shall have successfully completed 3 granite restoration projects using specified materials. Note: Master masons, stone carvers, or other key personnel must be identified by name and be available to perform work in this section and not simply supervise others' work.

A. Substitution of specific tradesmen during work must be approved by the Architectural Conservator.

B. Contractor shall submit a statement describing experience and qualifications of firm and of key personnel who will work on this project, including technicians, craftsmen, and artisans. Include names and addresses of projects successfully completed and for each include information on the name, address, and phone numbers of owner, and name and address of architect, if any. All personnel performing mortar restoration must satisfy all qualifications, and documentation must be presented with the bid package.

C. Report any proposed changes from procedures and materials used in original Field Mockup. Submit new sample having same dimensions and texture as original Field Mockup for review. Upon acceptance, construct another Field Mockup with new materials and procedures for acceptance prior to proceeding further with restoration work.

D. Field Supervision: Require restoration specialist firms to maintain an experienced full-time supervisor on the Project site during times that masonry restoration is in progress.

E. Mockups: Prepare field samples for restoration methods to demonstrate aesthetic effects and qualities of materials and execution. Use materials and methods proposed for completed Work and prepare samples under same weather conditions to be expected during remainder of Work.

1. Locate mockups on the building where directed by Architectural Conservator.

2. Stonework Repair: Prepare sample panels of size indicated for each type of stone material indicated to be repaired or replaced. Erect sample panels into an existing wall, unless otherwise indicated, to demonstrate the quality of materials and workmanship.

a. Resetting Individual Brick_ 2 EA
b. Rebuilding Brick Wall (If necessary, upon first occurrence) _ 6 SF min.
c. Tooling Sandstone. – 3 each.
d. Removal of biological growth – 2 SF.
e. Removal of efflorescence – 2 SF.
f. Resetting Stone (If necessary, upon first occurrence) – EA

3. Notify Architectural Conservator 7 days in advance of the dates and times when samples will be prepared.

4. Obtain Architectural Conservator's approval of mockups before starting the remainder of masonry restoration. Note it is possible that not all procedures outlined in this specification will be used during construction.

5. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work. Approved mockups will become part of the Work.

F. Source of Materials: Obtain materials for stone restoration from a single source for each type of material required to ensure a match of quality, color, pattern, and texture.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Deliver other materials to Project site in manufacturer's original and unopened containers, labeled with type and name of product and manufacturer.

B. Store materials off the ground, under cover, and in a dry location.

1.8 PROJECT CONDITIONS

A. Weather Conditions: Do not proceed with work during inclement weather or forecast of inclement weather, or when the temperature is above or below the manufacturer's recommended limitations for installation. Architectural Conservator has final approval of permitting or halting Work based on weather.

B. Cold Weather Requirements: Provide a detailed cold-weather work plan if temperatures may fall below 45 degrees.

C. Hot-Weather Requirements: Provide a detailed hot-weather work plan if temperatures may rise above 90 deg F. Provide artificial shade and windbreaks and use cooled materials as required.

D. Do not apply restoration products to substrates in extreme temperatures without an approved plan. Contractor shall be responsible for the repair of all damage to adjacent materials due to the execution of the masonry work at no additional expense to the Owner.

E. Repairs shall be made by qualified personnel skilled in the type of repairs required, to the satisfaction of the Architectural Conservator.

F. Protect adjacent areas and surfaces not being worked on. Including the protection of all sills, ledges, and projections from droppings. Immediately remove dropped material in contact with exposed stone and other surfaces.

G. Maintain protection in-place until completion of Work.

1.9 SEQUENCING AND SCHEDULING

A. Order replacement materials at the earliest possible date, to avoid delaying completion of the Work.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Products listed below represent materials that will likely be used. This section assures quality of Work by listing regulatory language and by setting standards of quality for materials. Information from the testing shall guide product selection and restoration procedures.

B. Order replacement materials at the earliest possible date to avoid delaying completion of the Work.

2.2 MORTAR MATERIALS AND MIXES

A. Mortars - See Section 04 0140.62.

2.3 RESTORATION MATERIALS

A. Masonry Pins / Rods: Threaded rod of sizes noted on the Drawings or listed herein, AISI Type 302 or 304 stainless steel.

B. Biological Growth Cleaner: Use a water-borne disinfectant that has no special handling or storage requirements for removal of algae growth as necessary. Such as D/2 Biological Solution. https://www.d2bio.com/

C. Efflorescence Remover (for All Masonry), manufactured by Cathedral Stone Products, Inc., 7266 Park Circle Drive, Hanover, MD 21076; Phone: (410) 782-9150; Toll-Free: (800) 684-0901; Email: info@cathedralstone.com; Web: www.cathedralstone.com.

D. Material for stainless steel helical masonry pins: Masonry pins shall have a 1/4” di-

ameter and be 3” long, stainless steel helical masonry tying pins. Acceptable Manufacturer: Masonry tie materials available from Helifix North America Corporation, 110 Maplecrete Road, Concord Ontario LK4 1A4,Canada Tel: 905 761-0042.

E. Tooling: Work shall be performed exclusively using small manual hand chisels and light mallets. All rotary tools, pneumatic carving or scaling tools, percussion hammers, angle grinders, and mechanical grinding or abrasive wheels are strictly prohibited.

F. Miscellaneous:

1. Stone shims: Use only non-corrosive shims such as nylon shims. Cushions to maintain joint widths shall be lead or plastic of thickness to match joint size. Do not use wood shims.
2. Use plastic or stainless steel setting buttons, steel washers are prohibited.

PART 3 – EXECUTION

3.1 EXAMINATION & INSPECTION

A. Verify all site conditions and dimensions by field measurements. Notify the Architectural Conservator immediately of any issues.

3.2 PROTECTION

A. Schedule and execute all work without exposing the building interior to the effects of inclement weather. Protect the existing building, site work, landscaping, and the building interior from all risks associated with the work. Protect persons, property, and site as required. Provide protective coverings over the windows as required to prevent damage. Repair all damaged elements of the building caused by the work of this Section at no additional cost to the Owner.

3.3 GENERAL

A. Remove contaminants such as grease, oil, and wax from exposed surfaces. Remove dust, dirt, loose stone, and debris. The substrate must be completely dry and free from dirt.

B. Follow the manufacturer's instructions.

C. Conduct all masonry work in a neat and workmanlike manner to prevent staining any surface with mortar or other spills. Keep all exposed surfaces of the stone free from a mortar at all times. Avoid dropping mortar on completed masonry work or other elements of the building. If mortar drops or spills, spot clean immediately using a clean sponge and clean water before the mortar can set.

D. Follow all cold and hot weather work plan requirements.

3.4 TEMPOARRY REMOVAL AND REINSTALLATION OF LIGHTING ROD

A. Documentation: Before removal, photograph, tag, and measure the complete assembly in place—including lightning rods, conductors, grates, and all attachment hardware, to ensure accurate reinstallation. Report any damaged components prior to removal.

B. Grate Removal and Temporary Chimney Protection

1. Unbolt the protective metal chimney grates from stone caps and anchor points using non-destructive methods.
2. Label all grates and salvageable fasteners; transport to a secure, weather-protected on-site storage area.
3. Immediately install a breathable, weather-tight temporary flue covering (such as a framed heavy-gauge wire mesh with temporary breathable membrane) over the flue openings to prevent rain, pest, or construction debris infiltration during masonry and stucco operations.

C. Flue Inspection

1. With grates and terminals removed, allow time for the structural engineer to inspect the chimney as they see fit.

D. Reinstallation of Grates and Anchor Assemblies

1. Following completion and proper curing of chimney masonry repointing, brick repairs, and stucco, and flashing, reinstall the protective grates.
2. Fasten securely using stainless steel or approved non-corrosive, architecturally compatible hardware.

3.5 PREPARE WALLS FOR MASONRY REPAIRS – INCLUDING BIOLOGICAL & EFFLORESCENCE REMOVAL

A. Prep walls in areas to receive masonry repairs, including repointing.

1. Physically remove all heavy biological growth, roots, clinging vines, or other large debris on masonry by hand using wooden scrapers or dull, non-metallic putty knives without gouging or abrading historic brick edges.
2. Gently remove loose surface dirt, dust, and dried biological crusts from masonry surfaces using a soft natural or nylon-bristle hand brush. Wire brushes and power-driven abrasive wheels are strictly prohibited.

3. Pre-wet masonry with clean, low-pressure potable water and apply specified water-borne biological cleaner per manufacturer's instructions. Work cleaner into joints and pores with a soft nylon-bristle brush to loosen and detach deposits; do not allow cleaner to dry on the wall. For localized algae growth and deep-set spores within the substrate, allow cleaner to dwell for a minimum of four (4) hours in affected areas prior to rinsing.

4. Pressure rinse the surface thoroughly with clean, potable water using a wide fan tip; water pressure shall not exceed 500 psi. Repeat application, agitation, and rinsing as necessary to remove stubborn biological stains and achieve uniform results across the substrate.

5. Allow masonry surfaces to dry thoroughly; inspect the dried substrate for active moisture paths or residual soiling prior to mortar work.

6. If efflorescence or subflorescence is present following initial cleaning and drying, dry-brush with a stiff natural-bristle brush and vacuum to remove loose surface salt crystals without dispersing them into adjacent joints. Apply specified efflorescence cleaner and salt remover strictly following manufacturer's instructions. Pressure rinse the surface thoroughly (water pressure not to exceed 300 psi) until surface runoff is pH-neutral. Verify that masonry is completely dry before proceeding with repointing or patching.

3.6 REPOINTING

A. Section 04 0140.62 – Masonry Repointing

3.7 RESETTING OF BRICK

A. Rake out deteriorated mortar joints of exterior masonry surfaces by hand using a chisel 1/4 inch or less in width. Clean mortar from surfaces within the joint so that the new pointing mortar bonds to the building material, not old mortar. Do not chip or spall edges of brick or stone. If work is found unacceptable, raking shall cease, without additional cost to the Owner, until deficiencies in tools, workmanship, or methodologies have been corrected to the satisfaction of Architectural Conservator.

B. Rake back to expose sound mortar and remove bricks that are displaced.

C. Carefully remove and brush clean bricks. All bricks are to be salvaged.

D. Set brick with the following techniques:

1. Replace brick with clean salvage brick that matches the historic brick in size, color, texture, and finish.

2. Fill a bucket with water, place the brick in the water, and keep the brick submerged for three hours.

3. Remove the brick from the bucket and shake off excess water.

4. Apply setting mortar (see Mortar Specification).

5. Spread the mortar in the empty spot with a trowel and apply mortar to the sides of the brick.
6. Reset the brick in place and scrape off any excess mortar.

3.8 REBUILDING BRICK WALL SECTION (IF NECESSARY)

A. Limitation of Work Area: Limit wall rebuilding, dismantling, and deep repointing operations to small areas not exceeding 100 square feet (10 feet by 10 feet) at any one time. Do not proceed to adjacent areas until the newly rebuilt section is fully set, stabilized, and approved by the Architectural Conservator.

B. Shoring and Temporary Support:

1. If necessary, provide temporary bracing or supports for masonry walls, chimneys, and existing construction that become weakened by the work to prevent unexpected movement or collapse.
2. Stop removal immediately and inform the Architectural Conservator if any structural elements above or adjacent to the work show signs of distress or dislocation.
3. The Contractor is responsible for the stability of the partially remaining wall throughout dismantling and rebuilding operations.

C. Dismantling and Brick Removal:

1. Cut out joints and dismantle masonry units by hand or using small power tools without impact or grinders. Maintain non-destructive techniques within 12 inches of historic surfaces; do not use pry bars.
2. Dismantle the wall in manageable sections from the top downward and from the sides inward. Support each unit as it is loosened to prevent stress and breakage.
3. Rake out deteriorated joints back to sound mortar.

D. Salvage and Preparation of Existing Brick:

1. Carefully clean, salvage, and store all sound bricks removed from the wall for reuse.
2. Clean all adhering mortar and debris from salvaged brick faces and beds using hand scrapers and stiff natural bristle brushes.
3. Verify that salvaged exterior bricks are selected for exterior face exposures. All replacement units shall match the existing historic wall in size, color, texture, and finish.

E. Rebuilding and Deep Repointing Execution:

1. Prior to laying, submerge cleaned salvaged bricks in a container of clean, potable water for three hours. Remove and shake off excess surface water immediately before placement.
2. Prepare setting and pointing mortar in accordance with Section 04 05 15 Historic Mortar Restoration.
3. Apply a full bed of mortar to the receiving masonry substrate using a trowel, and butter the head joints and sides of each salvaged brick.
4. Reset salvaged brick units in place to match original bond pattern, coursing height, alignment, and joint thickness. Scrape off excess mortar flush with the face without smearing adjacent brick surfaces.
5. For deep repointing of remaining sound backing or adjacent masonry, pack mortar solidly into prepared joints in uniform lifts, compressing each lift firmly to eliminate internal voids before applying subsequent passes. Tool joints to match approved mockup profile once thumbprint-hard.

3.9 TOOLING STONE

A. Scope and Retention Limits:
1. Tooling is strictly limited to the minimal removal of loose, friable, or delaminated stone that forms pockets or ledges capable of catching water subject to freeze-thaw cycles.
2. Retain all original stone fabric to the greatest extent possible. Stone that is weathered, soft, or not entirely solid shall remain undisturbed provided it is not in immediate danger of detachment or actively trapping standing water. Do not re-face or tool stable stone to achieve a uniform profile.

B. Tool Limitations:
1. Perform all work strictly by hand using light, manual tools (small hand chisels, rifflers, rasps, and wooden or rawhide mallets); the use of pneumatic tools, grinders, rotary cutters, or heavy mason's hammers is strictly prohibited, taking care not to bruise, chip, or mark adjacent sound stone.

C. Execution:
1. Identify loose fragments and water-retaining shelves by visual inspection and gentle hand sounding. Lightly scale away detached flakes with glancing strikes parallel to the stone contour.
2. Where voids or ledges hold water, lightly dress surfaces by hand only enough to create a positive outward wash to shed water. Cease tooling immediately once sound or stable stone is reached and positive drainage is established, preserving original architectural profiles and details.
3. Brush cleaned areas with soft natural-bristle brushes to clear away dust and debris. Do not use wire brushes or high-pressure water.

3.10 CLEAN-UP

A. Clean masonry not less than 5 days after completion of work, using clean water and stiff-bristled fiber brushes. Do not use wire brushes, acid-type cleaning agents, caustic or harsh cleaners, or other materials or methods that could damage installed masonry.

B. Remove all trash, splatters, and debris resulting from masonry restoration work from the site and adjacent areas around the building on a daily basis and upon final completion of work. Prevent any accumulation of debris on-site, and ensure debris and runoff do not collect in or obstruct site drains. Upon completion, remove all protective coverings and tapes.

END OF SECTION 04 0140.92

SECTION 09 0120.91 – HISTORIC STUCCO RESTORATION

PART 1 – GENERAL

Project Goals: The primary objective of this intervention is to retain and protect as much original historic masonry fabric as possible. Sound, intact prior repairs and patches performing satisfactorily shall remain undisturbed. Interventions shall be strictly limited to conditions that actively accelerate or cause masonry failure. Specifically for this Section, the objective is to completely remove all existing Portland cement stucco from historic masonry facades, water table, and chimneys, and replace it with a breathable, mesh-reinforced mineral render system finished and protected with a vapor-permeable coating.

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to the work of this Section.

1.2 SUMMARY

A. Provide materials, labor, equipment, and services necessary to furnish, deliver, and install all work of this Section as shown on the drawings, as specified herein, and/or as required by job conditions.

B. This Section includes the following items where indicated on the Drawings:

1. Complete removal of existing Portland cement stucco from historic masonry facades, water table, and chimneys.
2. Masonry substrate remediation, including selective repointing, localized rebuilding of deteriorated historic brickwork, and desalination chemical treatment.
3. Application of a multi-coat, breathable mineral-based render system incorporating reinforcement mesh.
4. Surface conditioning, hydrophobic impregnation, and multi-coat sol-silicate finish paint application.

C. Related Sections include the following:

1. Section 01 3591.00 – Historic Treatment Procedures.
2. Section 02 4119.00 – Selective Demolition.
3. Section 04 0140.62 – Masonry Repointing
4. Section 04 0140.92 – Masonry Restoration

1.3 REFERENCE STANDARDS

A. In general, follow all requirements, recommendations, and procedures of the following standards and publications, except where these Contract Documents are more stringent.

1. Secretary of the Interior's Standards for the Treatment of Historic Properties.
2. NPS Preservation Brief 22: The Preservation and Repair of Historic Stucco:

   Applies only to general preservation principles, substrate prep, weather protection, and surface texturing. Provisions regarding field-mix proportions, scoring between coats, coat thickness, and metal lath do not apply; manufacturer written instructions govern.
3. American Society for Testing and Materials (ASTM): Standards as specified or referenced herein.
   a. ASTM C926: Standard Specification for Application of Portland Cement-Based Plaster (governs substrate preparation, surface plane tolerances, and general plastering workmanship only; mix proportions and coat thicknesses governed by manufacturer instructions).
   b. ASTM C109 / C109M: Standard Test Method for Compressive Strength of Hydraulic Cement Mortars.
4. European Committee for Standardization or European Standards (EN): Standards as specified or referenced herein.
   a. EN 998-1: Specification for Mortar for Masonry – Part 1: Rendering and Plastering Mortar (governing standard for factory-blended mineral base and intermediate renders).
   b. EN 459-1: Building Lime – Part 1: Definitions, Specifications, and Conformity Criteria (hydraulic lime binder criteria).
   c. EN 15824: Specifications for External Renders and Internal Plasters Based on Organic and Inorganic Binders (sol-silicate and mineral finish systems).
   d. EN 1062-3: Paints and Varnishes – Coating Materials and Coating Systems for Exterior Masonry and Concrete – Part 3: Determination of Liquid Water Permeability (hydrophobic impregnation and coating performance).
5. Product manufacturer's written instructions and recommendations.

1.4 UNIT PRICES

A. Not Applicable

1.5 SUBMITTALS

A. General: Submit the following in accordance with Conditions of the Contract and Division 1 Specification Sections.

B. Submit a current copy of the pertinent, referenced standards.

C. Manufacturer’s installation recommendations. Include the instructions and recommendations for all phases of work, including preparation of substrate, application of materials, weather limitations, and protection of installed material.

D. Submit the manufacturer's product data and Safety Data Sheets (S.D.S.) for each product indicated.

E. Any warranty information provided by the manufacturer.

F. Submit a statement from the manufacturer that product(s) to be used will be compatible with the different types of masonry surfaces where they will be used and that the material and process will not be in conflict with other products that will be used during the Work.be used during the Work.

G. Qualifications: Verifiable documentation demonstrating compliance with “QUALITY ASSURANCE," section, including project histories and names of key tradesmen who will actively perform the work.

1.6 QUALITY ASSURANCE

A. Contractors and specific tradesmen performing work of this Section shall have a minimum of five (5) consecutive years of documented experience in historic plaster and stucco restoration similar in material, design, and extent to that indicated for this project. The Contractor shall have a minimum of five (5) years of documented experience utilizing factory-blended, mesh-reinforced pozzolanic silicate-mineral render systems and sol-silicate coating assemblies (specifically KEIM Universal Render and KEIM Soldalit systems) or provide verifiable proof of a local project involving a minimum 1,000 sq ft installation using the specified KEIM systems. Lead plasterers, render mechanics, and other key personnel must be identified by name and be available on-site to actively perform work of this Section, not simply supervise the work of others.

B. Substitution of specific tradesmen during work must be approved by the Architectural Conservator.

C. Contractor shall submit a statement describing experience and qualifications of firm and of key personnel who will work on this project, include technicians, craftsmen, and artisans. Include names and addresses of projects successfully completed and for each include information on the name, address, and phone numbers of owner, and name and address of architect, if any. All personnel performing mortar restoration must satisfy all qualifications with documentation must be presented with the bid package.

D. Report any proposed changes from procedures and materials used in original Field Mockup. Submit a new sample having the same dimensions and texture as the original Field Mockup for review. Upon acceptance, construct another Field Mockup

with the new materials and procedures for acceptance before proceeding with restoration work.

E. Field Supervision: Require restoration specialist firms to maintain an experienced full-time supervisor on the Project site during times that masonry restoration is in progress.

F. Mockups: Prepare field samples for restoration methods to demonstrate aesthetic effects and qualities of materials and execution. Use materials and methods proposed for completed Work and prepare samples under same weather conditions to be expected during remainder of Work.

1. Locate mockups on the building where directed by Architectural Conservator.
2. Stucco Mockup Panels: Prepare contiguous 4 ft x 4 ft field mockups on existing walls and chimneys, in locations representative of each material and stage of work, to demonstrate the quality of materials, workmanship, and execution.
   a. Stucco removal and joint raking.
   b. Substrate desalination and masonry repair/repointing.
   c. Base render and intermediate coat with embedded reinforcement mesh. Followed by the top coat.
   d. Surface conditioning, water repellent, and finished three-coat sol-silicate paint system.
3. Notify the Architectural Conservator 7 days in advance of the dates and times when samples will be prepared.
4. Obtain Architectural Conservator's approval of mockups before starting the remainder of stucco restoration. Note it is possible that not all procedures outlined in this specification will be used during construction.
5. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work. Approved mockups will become part of the Work.

G. Source of Materials: Obtain materials for stone restoration from a single source for each type of material required to ensure a match of quality, color, pattern, and texture.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Deliver other materials to the Project site in the manufacturer's original and unopened containers, labeled with the type and name of product and manufacturer.

B. Store materials off the ground, undercover, and in a dry location.

1.8 PROJECT CONDITIONS

A. Weather Conditions: Do not proceed with work during inclement weather or forecast of inclement weather, or when the temperature is above or below the manufacturer's recommended limitations for installation. Architectural Conservator has final approval of permitting or halting Work based on weather. Maintain ambient and surface temperatures between 45°F (7°C) and 85°F (29°C) during application and throughout the initial 72-hour curing cycle. Protect fresh render and coatings from direct hot sun, drying winds, frost, and driving rain until fully cured.

B. Cold Weather Requirements: Provide a detailed cold-weather work plan if temperatures may fall below 45 degrees.

C. Hot-Weather Requirements: Provide a detailed hot-weather work plan if temperatures may rise above 90 deg F. Provide artificial shade and windbreaks and use cooled materials as required.

D. Do not apply restoration products to substrates in extreme temperatures without an approved plan. Contractor shall be responsible for the repair of all damage to adjacent materials due to the execution of the masonry work at no additional expense to the Owner.

E. Repairs shall be made by qualified personnel skilled in the type of repairs required, to the satisfaction of the Architectural Conservator.

F. Protect adjacent areas and surfaces not being worked on. Including the protection of all sills, ledges, and projections from droppings. Immediately remove dropped material in contact with exposed stone and other surfaces.

G. Maintain protection in-place until completion of Work.

1.9 SEQUENCING AND SCHEDULING

A. Order replacement materials at the earliest possible date, to avoid delaying completion of the Work.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Products listed below represent materials that will likely be used. This section assures quality of Work by listing regulatory language and by setting standards of quality for materials. Information from the testing shall guide product selection and restoration procedures.

B. Order replacement materials at the earliest possible date to avoid delaying completion of the Work.

2.2 MORTAR MATERIALS AND MIXES

A. Mortars - See Section 04 0140.62.

2.3 MASONRY RESTORATION

B. Masonry Repair Materials - See Section 04 0140.92.

2.4 DESALINAZATION TREATMENT

A. Soluble Salt Remover: Aqueous liquid chemical wash designed to break surface tension and solubilize deep-seated chlorides, sulfates, and nitrates: a. CHLOR*RID Soluble Salt Remover, manufactured by Corrosion Innovations (CHLOR*RID Products), 3500 South Richey Street, Suite 320, Houston, TX 77017; Phone: (713) 625-7537; Toll-Free: (800) 422-3217; Email: info@corrinnovations.com; Web: www.corrinnovations.com / www.chlor-rid.com. Distributed regionally by The Sherwin-Williams Company (Protective & Marine branches) and authorized commercial coating distributors.

2.5 RENDER & REINFORCEMENT

A. Mineral Base & Intermediate Render: Factory-blended, lightweight, fiber-reinforced, breathable mineral render based on hydraulic lime and mineral aggregate: a. Keim Universal Render, manufactured by KEIM Mineral Coatings of America, Inc. Local Mid-Atlantic Representative (DC, MD, VA, Eastern PA, DE, WV): Shannon Cohalan, Cohalan Company; Office: (302) 684-3299; Mobile: (202) 615-3595; Email: Shannon@keimmineralsystems.com; Web: www.keim-usa.com.

B. Reinforcement Mesh: High-tensile, alkali-resistant glass fiber grid fabric designed for embedding within mineral render matrices: a. Keim Reinforcement Mesh, manufactured by KEIM Mineral Coatings of America, Inc. Local Mid-Atlantic Representative (DC, MD, VA, Eastern PA, DE, WV): Shannon Cohalan, Cohalan Company; Office: (302) 684-3299; Mobile: (202) 615-3595; Email: Shannon@keimmineralsystems.com; Web: www.keim-usa.com.

2.6 SURFACE CONDITIONING & FINISH COATING SYSTEM

A. Surface Conditioning Agent: Acidic mineral cleaning agent formulated to remove free lime, sinter layers, and laitance from fresh lime renders: a. Keim Lime Remover, manufactured by KEIM Mineral Coatings of America, Inc. Local Mid-Atlantic Representative (DC, MD, VA, Eastern PA, DE, WV): Shannon Cohalan, Cohalan Company; Office: (302) 684-3299; Mobile: (202) 615-3595; Email: Shannon@keimmineralsystems.com; Web: www.keim-usa.com.

B. Hydrophobic Water Repellent: 100% active, solvent-free monomeric silane impregnation: a. Keim Silan-100 Water Repellent, manufactured by KEIM Mineral Coatings of America, Inc. Local Mid-Atlantic Representative (DC, MD, VA, Eastern PA, DE, WV): Shannon Cohalan, Cohalan Company; Office: (302) 684-3299; Mobile: (202)

615-3595; Email: Shannon@keimmineralsystems.com; Web: www.keim-usa.com.

C. Exterior Sol-Silicate Finish Paint: Lightfast, vapor-permeable exterior mineral coating combining potassium silicate and colloidal silica sol binders: a. Keim Soldalit Exterior Sol-Silicate Paint, manufactured by KEIM Mineral Coatings of America, Inc. Local Mid-Atlantic Representative (DC, MD, VA, Eastern PA, DE, WV): Shannon Cohalan, Cohalan Company; Office: (302) 684-3299; Mobile: (202) 615-3595; Email: Shannon@keimmineralsystems.com; Web: www.keim-usa.com.

D. Miscellaneous:

1. Use only clean tools including shovels, trowels, and floats. Use only stainless steel trowels.

PART 3 – EXECUTION

3.1 EXAMINATION & INSPECTION

A. Verify all site conditions and dimensions by field measurements. Notify the Architectural Conservator immediately of any issues.

3.2 PROTECTION

A. Schedule and execute all work without exposing the building interior to the effects of inclement weather. Protect the existing building, site work, landscaping, and the building interior from all risks associated with the work. Protect persons, property, and site as required. Provide protective coverings over the windows as required to prevent damage. Repair all damaged elements of the building caused by the work of this Section at no additional cost to the Owner.

B. Protect adjacent historic fabric, glass, architectural trim, roof slates, landscaping, and flashings from mechanical impact, overspray, and chemical contact.

3.3 STUCCO REMOVAL

A. See Section 02 4119.00 – Selective Demolition for information in stucco removal.

3.4 MASONRY REBUILDING & REPOINTING

A. Ensure that the masonry substrate across the entire elevation currently being worked has been fully inspected, stabilized, rebuilt, and repointed in accordance with project specifications, with all repairs properly cured and accepted by the Architectural Conservator, prior to commencing installation of the new stucco render system on that elevation. See Sections 04 0140.92 – Masonry Restoration & 04 0140.62 – Masonry Repointing.

3.5 SUBSTRATE PREPARATION & DESALINATION

A. Rinse exposed brickwork thoroughly with clean, low-pressure potable water (< 400 psi) to remove dust, fractured particles, and loose binder.

3.6 SUBSTRATE PREPARATION

A. Rinse exposed brickwork thoroughly with clean, low-pressure potable water (< 400 psi) to remove dust, fractured particles, and loose binder. Allow to dry.

B. Dilute and apply Clor-Rid Liquid Soluble Salt Remover in strict accordance with the manufacturer's technical instructions.

C. Apply two separate flooding coats over a period of two days (one application per day).

3.7 Following chemical dwell intervals, rinse masonry thoroughly with clean, low-pressure potable water to flush out liberated salt residues. Allow substrate to dry before stucco application.

3.8 STUCCO APPLICATION

A. Total Render Thickness: Apply Keim Universal Render in 2-3 successive coats to achieve a nominal total thickness of approximately 3/4 inch across all vertical surfaces and chimney stacks.

B. Apply new mineral render system strictly to the documented footprint of the pre-existing stucco, terminating flush at the original termination line below finished grade. Tool the subgrade bottom edge flat and square against the historic masonry substrate

C. Base Coat:

1. Pre-wet brickwork to control suction.
2. Apply initial base coat of Keim Universal Render across the substrate.

D. Intermediate Coat & Reinforcement:

1. Apply subsequent coats of Keim Universal Render to achieve uniform plane, plumb, and approved surface texture. Maintain wet work margins to prevent cold joints.
2. Fully embed Keim Reinforcement Mesh into the wet intermediate coat, troweling flat from center to perimeter without wrinkles, maintaining a minimum 4-inch overlap at all edges and seams.

E. Finish Render Coats:

1. Apply subsequent coat of Keim Universal Render to achieve uniform plane, plumb, and approved surface texture. Maintain wet work margins to prevent

cold joints.

F. Curing: Mist with clean water and protect render from direct wind and sun for a minimum of 24 hours per millimeter of applied thickness.

3.9 SURFACE CONDITIONING & FINISH COATING

A. Lime Etching: After render has fully cured, rinse and etch the entire render surface using Keim Lime Remover diluted 1:3 with clean water to neutralize free lime and remove surface laitance. Rinse thoroughly with clean water and allow to dry completely.

B. Water Repellent: Flood-apply Keim Silan-100 Water Repellent in a single, continuous saturated pass using low-pressure spray or wide masonry brushes. Allow to cure for a minimum of 4 hours.

C. Finish Sol-Silicate Paint Application: a. First Coat: Apply Keim Soldalit diluted 10% by volume with clean water, working thoroughly into surface pores. Allow a minimum of 12 hours drying time. b. Second Coat: Apply undiluted Keim Soldalit in a uniform cross-hatch pattern. c. Third Coat: Apply third coat of undiluted Keim Soldalit to produce uniform opacity, color density, and complete weather barrier protection.

3.10 CLEAN-UP

A. Clean masonry not less than 5 days after completion of work, using clean water and stiff-bristled fiber brushes. Do not use wire brushes, acid-type cleaning agents, caustic or harsh cleaners, or other materials or methods that could damage installed masonry.

B. Remove all trash, splatters, and debris resulting from masonry restoration work from the site and adjacent areas around the building on a daily basis and upon final completion of work. Prevent any accumulation of debris on-site, and ensure debris and runoff do not collect in or obstruct site drains. Upon completion, remove all protective coverings and tapes.

END OF SECTION 09 0120.91

Section 6

Instructions to Bidders and General Conditions of the Contract for Construction

NVRPA DOCUMENT GC 101

INSTRUCTIONS TO BIDDERS AND GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION

THIS DOCUMENT HAS IMPORTANT LEGAL CONSEQUENCES;
CONSULTATION WITH AN ATTORNEY IS ENCOURAGED
2018 EDITION

ARTICLE NUMBER	TITLE
1.	Definitions
2.	Contract Documents
3.	Laws and Regulations
4.	Conditions at Site or Structure
5.	Explanation to Bidders
6.	Preparation and Submission of Bids
7.	Bid Guarantee
8.	Withdrawal or Modification of Bids
9.	Receipt and Opening of Bids
10.	Errors in Bids
11.	Rejection of Bids
12.	Standard Forms
13.	Award of Contract
14.	Contract Security
15.	Progress Schedules
16.	Shop Drawings, Product Data, Samples
17.	Materials, Services and Facilities
18.	Inspection and Testing
19.	Substitutions
20.	Patents
21.	Surveys, Permits, Regulations
22.	Protection of Work, Property and Persons
23.	Supervision by Contractor
24.	Changes in the Work
25.	Changes in the Contract Sum or Other Relief
26.	Time for Completion and Liquidated Damages
27.	Correction of Work
28.	Suspension of Work, Authority's Right to Stop and Carry Out the Work
29.	Termination
30.	Uses of the Premises
31.	Payment to the Contractor
32.	Substantial Completion of the Work
33.	Final Completion and Final Payment
34.	Insurance
35.	Assignments
36.	Indemnification
37.	Contractor Liability
38.	Separate Contracts
39.	Subcontracting
40.	Engineer
41.	Warranty
42.	Contractual Disputes

GENERAL CONDITIONS
OF THE CONSTRUCTION CONTRACT WITH
THE NORTHERN VIRGINIA REGIONAL PARK AUTHORITY

Article 1: DEFINITIONS

(a) **Addenda – Written or graphic instruments issued prior to the Award of the Contract which modify or interpret the Contract Documents, Drawings, and Specifications by additions, deletions, clarifications, or corrections**

(b) **Engineer – The design professional, including an architect, that has contracted with the Authority to design the Project and administer the Contract on behalf of the Authority. If no Project Engineer is designated all duties and responsibilities which the Engineer would otherwise have shall be the duties and responsibilities of the Authority.**

(c) **Authority – The Northern Virginia Regional Park Authority.**

(d) **Change Order – A written order to the Contractor authorizing an addition, deletion or revision in the Work within the general scope of the Contract Documents or authorizing an adjustment in the Contract Price or Contract Time. A Change Order, which adjusts the Contract Price or Contract Time, must be signed by the Authority, Contractor and Engineer. A Change Order includes a Field Order, as hereafter defined.**

(e) **Construction Change Directive - A written order to the Contractor signed by the Authority directing an addition, deletion or revision in the Work within the general scope of the Contract Documents prior to an agreement between the Authority and the Contractor as to an adjustment in the Contract Price or Contract Time. Upon receipt of a Construction Changes Directive, the Contractor shall promptly proceed with the change in the Work described therein.**

(f) **Contract Sum – The total monies payable to the Contractor under the terms and Conditions of the Contract Documents.**

(g) **Contract Time – The specific date or the number of days stated in the Contract Documents or the Notice to Proceed for Substantial Completion of the Work.**

(h) **Contractor – Any person of entity who has a contract directly with the Authority for the performance of the Work or a part thereof.**

(i) **Day – A calendar day of 24 hours lasting from midnight one day to midnight the next day.**

(j) **Drawings – The graphic and pictorial part of the Contract Documents that show the characteristics and scope of the Work to be performed and that has been prepared by or for the Authority. The term is used interchangeably with the word "Plans" and includes Standard Details.**

(k) **Field Order – A written order issued by the Engineer or the Authority to the Contractor during construction effecting a change in the Work, but not involving an adjustment in the Contract Price or an extension of the Contract Time.**

(l) **Inspector – The authorized representative of the Authority assigned to make detailed inspection of any or all portions of the Work. The Inspector is authorized to stop the Work in accordance with Article 29.**

(m) **Notice of Award – The written notice of the acceptance of the Bid from the Authority to the successful Bidder.**

(n) **Special Conditions – General requirements that are unique to a particular Contract.**

(o) **Standard Details – Details showing standard products, methods, and materials contained within the Plans or other agency standards such as the current versions of the Fairfax County Public Facilities Manual or the Virginia Department of Highways and Transportation Road and Bridge standards and specifications.**

(p) **Specifications – Special Conditions, Standard Specifications and Standard Details.**

(q) **Subcontractor – An individual, firm or corporation having a direct contract with the Contractor or with any other subcontractor for the performance of a part of the Work at the site.**

Substantial Completion – That date as certified by the Engineer when the construction of the Project or a specified part thereof is sufficiently completed in accordance with the Contract Documents so that the Project or specified part can be utilized for the purposes for which it is intended and when the Contractor has received all final inspections and occupancy permits from the appropriate jurisdictions.

(r) **Supplementary General Conditions – Modifications to General Conditions required for the Project.**

(s) **Supplier – Any person or organization who supplies materials or equipment for the Work (including that fabricated to a special design) but who does not perform labor at the site.**

(t) **Work – Any and all labor, materials, equipment, and all obligations, duties, and responsibilities expressly stated or reasonably implied for the successful completion of the construction required by the Contract Documents. The Contractor's Work includes payment of all sales, consumer, use, and other similar taxes required by law.**

(u) **Written Notice – Any notice to any party of the Contract relative to any part of the Contract in writing and considered delivered and the service thereof completed when posted by mail to the party at its last given address, or delivered in person to the party or its authorized representative at the Project.**

Article 2: CONTRACT DOCUMENTS

(a) **The agreement entered into by the parties shall consist of the Form of Construction Contract, the Form of Proposal submitted by the Contractor, the Supplemental General Conditions, these General Conditions, the specifications and drawings, including all modifications thereof, all of which shall be referred to collectively as the "Contract Documents." The Form of Construction Contract shall be signed by the Authority and Contractor in as many original counterparts as may be mutually agreed upon. The Contract may be amended only by a written amendment to the Contract or a Change Order signed by both parties.**

(b) **The Contract Documents are complimentary and what is required by one shall be binding on the Contractor as if required by all. In the event of any inconsistency between the Contract Documents, Contractor shall provide the greater quality or quantity of Work with no increase in the Contract Sum. The intent of the Contract Documents is that the Contractor shall furnish all labor, materials, tools, equipment, utilities, transportation and incidental work necessary for the proper execution of the Work in accordance with, or reasonably inferable from, the Contract Documents. In the event of conflicts among the Contract Documents, the Authority may designate the written or drawn provision or feature which shall be used and no additions to or deductions from the Contract Sum, or modification to the Contract Time, shall result from the choice. In case of conflicts, the Contract Documents shall take precedence in the following order: the Construction Contract; The Supplemental General Conditions; the General Conditions; the Special Conditions; the specifications; and the drawings.**

(c) **This Contract is an entire and integrated agreement and is not severable.**

(d) **Contractor shall identify in writing to the Authority and the Engineer, as soon as possible, any discrepancies, errors, omissions and/or inconsistencies or ambiguities, discovered by the Contractor in the Contract Documents. Work done by the Contractor after its discovery of such discrepancies, errors, omissions and/or inconsistencies or ambiguities and prior to response from the Engineer shall be done at the Contractor's sole risk and cost.**

Article 3: LAWS AND REGULATIONS

(a) In the performance of the Work, the Contractor shall comply with the requirements of all local, state and federal laws, codes, statutes, ordinances, rules, regulations and lawful orders of any public authority relating to the performance of the Work (the "Legal Requirements").

(b) All Contractors and Subcontractors for the Project must be properly licensed under the laws of the Commonwealth of Virginia and in good standing before submitting any bid and before commencing any Work. Upon the request of the Authority, any Contractor or Subcontractor for the Project shall promptly provide proof of its licensure.

(c) The Contract and all other contracts and subcontracts are subject to the provisions of Article 3 and 5, Chapter 4, Title 40.1, Code of Virginia, 1950, as amended, relating to labor unions and the "right to work," and all Contractors or Subcontractors, whether residents or nonresidents of the Commonwealth, who perform any work related to the project shall comply with all of the provisions of these code sections.

(d) The Contractor shall furnish the Authority copies of affidavits upon request giving the original dates, renewal dates and expiration dates of all labor contracts related to any phase of the work to be performed on the project site under this Contract.

(e) Contractor shall comply with all local, state and federal safety codes, statutes, rules, practices and regulations.

(f) EQUAL OPPORTUNITY EMPLOYMENT

(1) During the performance of the Agreement, the Contractor agrees as follows:

(i) The Contractor shall not discriminate against any employee or applicant for employment because of race, religion, color, sex, national origin, age, disability or other basis prohibited by federal or state law relating to discrimination in employment, except where there is a bona-fide occupational qualification reasonably necessary to the normal operation of the Contractor. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the provisions of this nondiscrimination clause.

(ii) The Contractor, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, shall state that Contractor is an equal opportunity employer.

(iii) Notices, advertisements and solicitations placed in accordance with federal law, rule or regulation shall be deemed sufficient for the purpose of meeting the notice, advertisement, and solicitation requirements of this paragraph.

(2) The Contractor shall cause to be included the provisions of the foregoing paragraphs a.(i), a.(ii) and a.(iii) (substituting the subcontractor or vendor for Contractor as the obligated party) in every subcontract or purchase order of over $10,000, so that the provisions will be binding upon each subcontractor or vendor.

(g) DRUG-FREE WORKPLACE

(1) During the performance of the Agreement, the Contractor agrees to (i) provide a drug-free workplace for the Contractor's employees, (ii) post in conspicuous places, available to employees and applicants for employment, a statement notifying employees that the unlawful manufacture, sale, distribution, dispensation, possession, or use of a controlled substance or marijuana is prohibited in the Contractor's workplace and specifying the actions that will be taken against employees for violations of such prohibition, (iii) state in all solicitations or advertisements for employees placed by or on behalf of the Contractor that the Contractor maintains a drug-free workplace, and (iv) cause to be included the provisions of the foregoing clause (substituting the subcontractor or vendor for the Contractor as the

obligated party) in every subcontract or purchase order of over $10,000, so that the provisions will be binding upon each subcontractor or vendor.

(2) For the purposes of this section, "drug-free workplace" means a site for the performance of work done in connection with the Agreement by Contractor where its employees are prohibited from engaging in the unlawful manufacture, sale, distribution, dispensation, possession or use of any controlled substance or marijuana during the performance of the Agreement.

(h) NO EMPLOYMENT OF UNAUTHORIZED ALIENS

Contractor represents and warrants that Contractor does not, and shall not during the performance of this Agreement, knowingly employ any unauthorized alien as defined in the Federal Immigration Reform and Control Act of 1986.

(i) STATEMENT OF NONDISCRIMINATION AGAINST FAITH-BASED ORGANIZATIONS

The Authority does not discriminate against faith-based organizations. (See Va. Code § 2.2-4343.1).

(j) PROMPT PAYMENT REQUIREMENTS

Within seven days after Contractor receives amounts paid for work subject to the Agreement performed by any "subcontractor," as defined in Code of Virginia § 2.2-4347, Contractor shall take one of the two following actions:

(1) Pay the subcontractor for the proportionate share of the total payment received from Owner attributable to the work performed by the subcontractor; or

(2) Notify Owner and the subcontractor in writing of Contractor's intent to withhold all or part of the subcontractor's payment and the reason for nonpayment.

(k) Contractor shall provide its Federal employer identification number with each application to Owner for payment.

(l) Contractor shall pay interest to any "subcontractor" on all amounts owed by Contractor that remain unpaid after seven days following receipt by Contractor of payment from Owner for work performed by such subcontractor relating to the Agreement except as to amounts withheld as retainage.

(m) Contractor shall include in its subcontracts a provision requiring each subcontractor to include or otherwise be subject to the same payment and interest requirements with respect to each lower-tier subcontractor.

(n) No obligation imposed by this section shall be construed to create any obligation of Owner under Code of Virginia § 2.2-4354, no modification to the Agreement may be made for the purpose of providing reimbursement for the interest charge, and Contractor shall not invoice Owner for any such charge.

(o) LIMITATION ON OWNER'S LIABILITY FOR INTEREST

Owner shall not be liable to pay any interest to Contractor under any circumstance except in the case of amounts that Owner does not dispute to be due and payable to Contractor; interest shall accrue beginning on the 60th day after payment is due at a rate of 3% per annum.

(p) AUTHORIZATION TO CONDUCT BUSINESS IN VIRGINIA

The provisions of Va. Code § 2.2-4311.2 are incorporated by reference. If Contractor is a business entity described in Va. Code § 2.2-4311.2.A, Contractor must be authorized to transact business in Virginia if required by law to be so authorized and shall not allow its existence or certificate authority or registration to transact business to lapse or be revoked or cancelled during the term of the contract.

Article 4: CONDITIONS AT SITE OR STRUCTURE

(a) All Bidders and Contractors shall visit the site and shall be responsible for having ascertained pertinent local conditions such as location, accessibility and general character of the site or building, and the character and extent of existing work within or adjacent to the site and to compare those conditions with the Contract Documents and the Legal Requirements. Claims, as a result of the Bidder's and/or Contractor's failure to comply with the foregoing, will not be considered by the Authority and are waived by the Contractor.

If in the performance of the Contract the Contractor discovers subsurface or latent conditions at the site that are materially different from those typical for the locality or indicated in the Contract Documents, the Contractor shall report the conditions to the Engineer and the Authority in writing before the conditions are disturbed. Upon such notice, or upon its own observation of such conditions, the Engineer shall promptly make such recommendations as it finds necessary to address the different conditions. Any change in the cost of the work or time needed for completion must be processed pursuant to the requirements of the Contract Documents.

Article 5: EXPLANATION TO BIDDERS

No oral explanation in regard to the meaning of drawings and specifications will be made and no oral instructions will be given before the award of the contract. Bidders shall identify in writing to the Authority and the Engineer any believed discrepancies, omissions, ambiguities or errors in the Contract Documents. Bidders must submit such a writing at least six (6) days prior to the time set for the receipt of bids to allow a sufficient time for a reply to reach them before the submission of their bids, but if there are two (2) weeks or less between the first bid advertisement and the time set for receipt of bids, then bidders may act up to three (3) days prior to the time set for receipt of bids. Any interpretation made will be in the form of an addendum to the specifications, which will be forwarded to all bidders, and its receipt by the bidder shall be acknowledged on the Bid Form.

Article 6: PREPARATION AND SUBMISSION OF BIDS

(a) Bids shall be submitted in duplicate on the forms furnished, or true copies thereof, and shall be signed in ink. Erasures or other changes in a bid shall be explained or noted over the signature of the bidder. Bids containing any conditions, omissions, unexplained erasures, alterations or items not called for in the proposal, or irregularities of any kind, may be rejected by the Authority as being incomplete.

(b) Each bid must give the full business address and contact information for the bidder and must be signed by a person with authority to bind the bidder. Bids by partnerships must furnish the full name of all partners and must be signed in the partnership name by one of the members of the partnership or an authorized representative, followed by the signature and designation of the person signing. Bids by corporations must be signed with the legal name of the corporation followed by the name of the state in which they are incorporated and by the signature and designation of the president, secretary or other person authorized to bind it in the matter. The name of each person signing shall also be typed or printed below the signature. A bid by a person who affixes to its signature the word "President," "Secretary," "Agent," or other designation without disclosing its principal, may be held to be the bid of the individual signing. When requested by the Authority, satisfactory evidence of the authority of the officer signing on behalf of the corporation shall be furnished.

(c) Bids with the bid guarantee shall be enclosed in a sealed envelope, which shall be marked and addressed as indicated by the advertisement or invitation to bid. Prior to submitting a bid, the bidder must be in compliance with and have the licenses required under Virginia Code Section 54.1-

1100, et seq. The bidder shall place on the outside of the envelope containing the bid and shall place in the bid over its signature whichever of the following notations is appropriate, inserting its Contractor license number.

If the bidder shall fail to provide this information on its bid or on the envelope containing the bid and shall fail to promptly provide the Contractor license number to the Authority in writing when requested to do so before the opening of bids, its bid will not be considered.

(d) The owner reserves the right to disqualify any Contractor and refuse to accept the bid of any bidder which has been convicted, or entered a plea of guilty or nolo contendere in any federal or state court to any charge involving any unlawful, corrupt or collusive practice involving a public contract either federal, state, or local or which has been determined in any judicial proceeding to have violated any antitrust, bid-rigging or collusive practice statute in connection with any public contract, or against whom such formal criminal prosecution or other judicial proceeding has been initiated.

Article 7: BID GUARANTEE

(a) Any bid exceeding Five Hundred Thousand Dollars ($500,000) shall be accompanied by a bid guarantee of not less than five percent (5%) of the amount of the bid, which may be certified check or cashier's check, or a Bid Bond made payable to the Authority. Bid Bonds shall be submitted on AIA Document A310. Such Bid Bond or check shall be submitted with the understanding that it shall guarantee that the bidder will not withdraw its bid during the period up to and including ninety (90) days following the opening of bids; that if its bid is accepted, it will enter into a formal contract with the Authority in accordance with the Form of Construction Contract included as a part of the Contract Documents, and that the referenced Performance Bond and Labor and material Payment Bond will be given; and that in the event of the withdrawal of the bid within the period, or failure to enter into the contract and give the bonds within ten (10) days after it has received notice of acceptance of its bid, the bidder shall be liable to the Authority for the difference between the amount of the bidder's bid and the amount of the bid for the next higher bidder to perform the Work but such amount shall not exceed the amount of the bid guarantee.

(b) The Bid Bonds and checks will be returned to all except the three lowest bidders after the formal opening of the bids. The remaining Bid Bonds and checks will be returned to the lowest bidders after the Authority and the accepted bidder have executed the Contract and the Performance Bond and the Payment Bond have been approved by the Authority.

(c) If the required Contract and bonds have not been executed within ninety (90) days after the date of the opening of the bids, then the bond or check of any bidder will be returned upon its request, provided it has not been notified of the acceptance of the bid prior to the date of such request.

Article 8: WITHDRAWAL OR MODIFICATION OF BIDS

A bidder may withdraw or modify its bid only by written notice delivered to the Authority prior to the time fixed for receipt of bids.

Article 9: RECEIPT AND OPENING BIDS

(a) It is the responsibility of the bidder to assure that its bid is delivered to the place designated for receipt of bids and prior to the time set for receipt of bids. The Authority will not consider bids received after the time set for receipt of bids.

(b) Bids will be opened at the time and place stated in the advertisement and the lowest bidder will be announced. The officer or agent of the Authority, whose duty it is to open the bids, will decide when the specified time has arrived. No responsibility will be attached to any officer or agent for the premature opening of a bid not properly addressed and identified.

Article 10: ERRORS IN BIDS

A bidder may withdraw its bid from consideration if the price bid was substantially lower than the other bids due solely to a mistake in the bid, provided the bid was submitted in good faith, and the mistake was a clerical mistake as opposed to a judgment mistake, and was actually due to an unintentional arithmetic error or an unintentional omission of quantity of work, labor or material made directly in the complication of a bid, which unintentional arithmetic error or unintentional omission can be clearly shown by objective evidence drawn from inspection of original work papers, documents and materials used in the preparation of the bid sought to be withdrawn. Under this provision a bidder requesting to withdraw its bid shall follow the procedures set forth in Section 2.2-4330 of the Code of Virginia. The bidder must give notice in writing of its claim of right to withdraw its bid within the time frame required by Section 2.2-4330 of the Code of Virginia and shall submit its original work papers to the Authority in compliance with the requirements of Section 2.2-4330 of the Code of Virginia. Failure to strictly comply with the requirements of Section 2.2-4330 of the Code of Virginia shall constitute a waiver of the right to withdraw the bid.

No bid may be withdrawn when the result would be the awarding of the Contract on another bid of the same bidder. No bidder who is permitted to withdraw a bid shall for compensation supply any material or labor to or perform any subcontract or other work agreement for the person or firm to whom the contract is awarded or otherwise benefit, directly or indirectly, from the performance of the project for which the withdrawn bid was submitted, without the approval of the Authority. The person or firm to whom the Contract was awarded and the withdrawing bidder are jointly liable to the Authority in an amount equal to any compensation paid to or for the benefit of the withdrawing bidder without such approval.

If a bid is withdrawn under authority of this section, the next higher bidder shall be deemed to be the low bidder on the project.

Article 11: REJECTION OF BIDS

The Authority reserves the right to reject any and all bids when such rejection is in the interest of the Authority, and will reject the bid of a bidder who is not a responsible bidder. (See § 2.2-4319, Code of Virginia, 1950, as amended.)

Article 12: STANDARD FORMS

The copies of the Form of Construction Contract, and AIA Document A312, Performance Bond and the Labor and Material Payment Bond are incorporated into the General Conditions by reference and are made a part hereof to the same extent as though fully set forth herein.

Article 13: AWARD OF CONTRACT

(a) **The Contract will be awarded as soon as possible to the lowest responsive and responsible bidder, provided its bid is reasonable and it is in the interest of the Authority to accept it. The Authority reserves the right to waive any informality in bids received when such waiver is in the interest of the Authority; also to accept any item in the bid unless otherwise specified by the Authority. Each bidder shall be prepared, if so requested by the Authority, to present evidence of its experience, qualifications and financial ability to carry out the terms of the Contract.**

(b) **If the bid forms contain alternate prices, the Authority may in its sole discretion, unless otherwise specified in the invitation for bid, select whatever alternates it chooses to accept subsequent to the bid opening but prior to the determination of the low bidder. The low bidder shall be determined by comparing each bidder's bid total based on the sum of the base bid and the alternates selected by the Authority.**

(c) **Pursuant to the Virginia Public Procurement Act, in the event the lowest responsible bid exceeds available funds for the project, the Authority may enter into negotiations with the lowest responsible bidder in an effort to arrive at a contract amount within the limits of available funds. In such event, the Authority will inform the bidder of the amount of funds available, and will negotiate in good faith toward achieving the funding limit, preferably without any change in the scope or other change in the Contract Documents. However, negotiations may include change in scope, quantity of materials, or other changes, so long as any such changes are within the general scope of the original design. If the Authority and bidder reach agreement, the Authority may award a contract in accordance with procedures or actions approved by the Authority Board. The Authority may terminate negotiations**

at any time prior to the award of a contract, and proceed as otherwise permitted by the Virginia Public Procurement Act.

Article 14: CONTRACT SECURITY

For all contracts of Five Hundred Thousand Dollars ($500,000.00) or more, the Contractor shall deliver to the Authority or its designated representative, an AIA Document A312, Performance Bond and Labor and Material Payment Bond, each fully executed by one or more surety companies legally authorized to do business in Virginia and each in an amount equal to one hundred percent (100%) of the original Contract Sum. The bonds shall be conditioned as set forth in § 2.2-4337 of the Code of Virginia, as amended. Sureties shall be selected by the Contractor subject to approval by the Authority. No contract shall be deemed to be in effect until the bonds have been approved by the Authority. For the purposes of all Labor and Material Payment Bonds entered into pursuant to this Article, the term "subcontractors" as used in § 2.2-4337 A.2 of the Code of Virginia is interpreted to mean any contractors who participated in the prosecution of the Work undertaken by the Contractor, whether such subcontractor had a direct contract with the Contractor or whether there were one or more other intervening subcontractors.

Article 15: PROGRESS SCHEDULES

(a) The Contractor shall, within ten (10) days of receipt of notice of award, prepare and submit to the Authority and Engineer a schedule for the completion of the Work within the timeframe set forth in the Contract Documents. This progress schedule shall be related to the entire Project; shall include all the Work; and shall meet the time for completion requirements of the Contract. It shall include an allowance for anticipated delay caused by ordinary adverse weather conditions and shall provide for the expeditious and practical execution of the Work within the time requirements of the Contract Documents. The schedule shall set forth as much detail as deemed necessary by the Authority.

(b) The Authority's acceptance of the schedule is not a representation or agreement that the schedule is logical or can be performed in the time or sequence indicated, but only that the Authority approves of the construction in that time and in that sequence.

Article 16: SHOP DRAWINGS, PRODUCT DATA and SAMPLES

(a) Shop Drawings are drawings, diagrams, schedules and other data specially prepared for the Work by the Contractor or any Subcontractor, manufacturer, supplier or distributor to illustrate some portion of the Work.

(b) Product Data are illustrations, standard schedules, performance charts, instruction, brochures, diagrams and other information furnished by the Contractor to illustrate a material, product or system for some portion of Work.

(c) Samples are physical examples, which illustrate materials, equipment or workmanship and establish standards of quality and esthetics by which the Work will be judged.

(d) The Contractor shall review, approve and submit, with reasonable promptness and in such sequence as to cause no delay in the Work or in the work of the Authority or any separate contractor, all Shop Drawings, Product Data and Samples required by the Contract Documents.

(e) By preparing and submitting Shop Drawings, Product Data and Samples, the Contractor represents that it has determined and verified all materials, field measurements, and field construction criteria related thereto, or will do so, and that it has checked and coordinated the information contained within such submittals with the requirements of the Work and the Contract Documents.

(f) The Contractor shall not be relieved of responsibility for any deviation from the requirements of the Contract Documents by the Engineer's approval of Shop Drawings, Product Data or Samples unless the Contractor had specifically informed the Engineer in writing of such deviation at the time of submission and the Engineer has given written approval to the specific deviation. The Contractor shall not be relieved from responsibility of errors or omissions in the Shop Drawings, Product Data or Samples by the Engineer's approval thereof.

(g) **The Contractor shall direct specific attention, inviting or on resubmitted Shop Drawings, Product Data or Samples, to revisions other than those requested by the Engineer on previous submittals.**

(h) **No portion of the Work requiring submission of a Shop Drawing, Product Data or Sample shall be commenced until the submittal has been approved by the Engineer. All such portions of the Work shall be in accordance with approved submittals.**

Article 17: MATERIALS, SERVICES, AND FACILITIES

(a) **Materials and equipment shall be so stored as to insure the preservation of their quality and fitness for the work. Stored materials and equipment to be incorporated in the Work shall be located so as to facilitate prompt inspection.**

(b) **Manufactured articles, materials, and equipment shall be stored, applied, installed, connected, erected, used, cleaned, and conditioned as directed by the manufacturer, and as approved by the Engineer.**

(c) **Materials, supplies, and equipment shall be in accordance with samples, shop drawings, and catalogue cuts submitted by the Contractor and approved by the Engineer and Authority.**

(d) **Materials, supplies, or equipment to be incorporated into the work shall not be purchased by the Contractor or the Subcontractor subject to a chattel mortgage or under a conditional sale contract or other agreement by which an interest is retained by the seller.**

(e) **All Work included in this Contract shall be performed to the standards specified. The Contractor shall employ no plant, equipment, materials, methods or persons to which the Engineer or the Authority reasonably objects, and shall remove no plant, equipment or other facilities from the site of the work without permission of the Engineer and the Authority. The Contractor's failure to comply with these requirements will constitute a breach of Contract and as such may result in a termination of the Contractor by the Authority.**

Article 18: INSPECTION AND TESTING

(a) **All materials and equipment used in the construction of the Project shall be subject to adequate inspection and testing in accordance with generally accepted industry standards and the Legal Requirements as defined in the Contract Documents.**

(b) **If the Contract Documents or the Legal Requirements require any part of the Work to specifically be inspected, tested or approved by someone other than the Contractor, the Contractor shall initiate and coordinate those inspections, test, or approvals with the proper authorities and shall give the Engineer and the Authority three (3) working days written notice of each such inspection. The Contractor shall then furnish the Engineer and the Authority with the required certificates of inspection, testing or approval. Unless otherwise specifically provided for, the Contractor shall bear all costs of such inspections, tests or approvals.**

(c) **Inspection, test, or approvals by the Engineer or others will not relieve the Contractor from its obligations to perform the Work in accordance with the requirements of the Contract Documents.**

(d) **The Authority, the Engineer and their representatives shall at all times have access to the Work. In addition, authorized representatives and agents of any participating federal, state or local agency shall be permitted to inspect all work, materials, payrolls, records of personnel, invoices of materials, and other relevant data and records. All such records shall remain available and accessible during performance of the Contract and until three years from the date of Final Payment, or, in case of dispute, for a period of three years after resolution of the dispute, whichever is later. The Contractor shall provide proper facilities for such access and observation of the Work and also for any inspection or testing thereof.**

(e) **If any work is covered without the approval of the Engineer contrary to requirements of the Contract Documents, it must, if requested by the Engineer or the Authority, be uncovered for its observation and then recovered at the Contractor's expense.**

(f) **If the Engineer or the Authority considers it necessary or advisable that approved covered work be inspected or tested by others, the Contractor, at the Engineer's or the Authority's request, shall uncover, expose or otherwise make that portion of the Work available for observation, inspection or testing as the Engineer or the Authority may require. If it is found that such work is defective, the Contractor will bear all the expenses of such uncovering, exposure, and observation as well as all expenses for the inspection, testing, and satisfactory reconstruction of that portion of the Work. If, however, such work is not found to be defective, the Contractor will be allowed an increase in the Contract Price or an extension of the Contract Time or both, directly attributable to such uncovering, exposure, observation, inspection, testing, and reconstruction, and an appropriate Change Order will be issued.**

Article 19: SUBSTITUTIONS

(a) **After the Contract has been executed, the Authority and the Engineer will consider a written request for the substitution of products or materials specified by the Contract Documents. The Authority is not obligated to consider substitutions and such consideration is the Authority's sole discretion. By making requests for substitutions, the Contractor represents and certifies:**

(1) **that the Contractor has personally investigated the proposed substitute product or material and determined that it is equal or superior in all respects to that specified by the Contract Documents.**

(2) **that the Contractor will provide the Authority with a warranty of the substituted product equal or superior to the warranty furnished in connection with the product or material originally specified by the Contract Documents.**

(3) **that the cost data presented is complete and includes all related costs under this Contract and Contractor waives all claims for any additional costs related to the substitution; and**

(4) **that the Contractor will coordinate the installation of the substituted product or material and that the Contractor will make all changes necessitated by the use of the substituted product without any additional cost to the Authority.**

Article 20: PATENTS

The Contractor shall pay all applicable royalties and license fees. It shall defend all suits or claims for infringement of any patent rights and save the Authority harmless from loss on account thereof, except that the Authority will be responsible for any such loss when a particular process, design or the product of a particular manufacturer or manufacturers as specified is an infringement of a patent. However, if the Contractor has reason to believe that such particular process, design or product is an infringement, he shall be responsible for such loss unless he gives written notice to the Authority and the Engineer of the possible infringement.

Article 21: SURVEYS, PERMITS, REGULATIONS

(a) **The Authority will furnish all boundary surveys and establish all baselines for locating the principal component parts of the Work together with suitable number of benchmarks adjacent to the Work as shown in the Contract Documents.**

(b) **Permits and licenses of a temporary nature necessary for the prosecution of the work, such as building, plumbing, and electrical permits, shall be secured and paid for by the Contractor unless otherwise stated in the Contract Documents. Permits, licenses, and easements for permanent use of structures or permanent changes in existing facilities shall be secured and paid for by the Authority unless otherwise specified.**

(c) **The Contractor shall give all notices and comply with all permits and the Legal Requirements in the performance of the Work. The Contractor shall promptly notify the Engineer in writing if it comes to its attention that the Contract Documents are at variance with any such requirement.**

(d) **If any permit, license or certificate expire, be revoked, terminated or suspended because of any act or omission of the Contractor, it shall not be entitled to any additional compensation for direct costs or to an extension of the Contract Time.**

(e) **Permits obtained by the Authority for this Project are available for inspection in the Authority's offices.**

Article 22: PROTECTION OF WORK, PROPERTY AND PERSONS

(a) **The Contractor shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the Work, in compliance with industry standards and the Legal requirements. Contractor shall take all necessary precautions for the safety of and shall provide the necessary protection to prevent damage, injury or loss to all employees on the work and other persons who may be affected thereby, all the work and all materials or equipment to be incorporated therein, whether in storage on or off the site, and other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, and utilities not designated for removal, relocation or replacement in the course of construction. In case of suspension of work for any cause whatever, the contractor shall be responsible for the Project and shall take such precautions as may be necessary to prevent damage to the Work, provide for proper drainage and shall erect any necessary temporary structures, signs, or other facilities at its expense. During such period or suspension of work, the Contractor shall properly and continuously maintain in acceptable growing condition all living material in newly established plantings, seedings, and sodding furnished under this Contract, and shall take adequate precautions to protect new growth and other important growth against injury. Contractor shall also notify owners of adjacent utilities when prosecution of the Work may affect them.**

(b) **In emergencies affecting the safety of persons or the Work or property at the site or adjacent thereto, the Contractor shall act, at its discretion, to prevent threatened damage, injury or loss. Any additional compensation or extension of time claimed by the Contractor on account of emergency work shall be determined as provided in the Contract Documents.**

Article 23: SUPERVISION BY CONTRACTOR

(a) **The Contractor shall supervise and direct the work. It shall be solely responsible for the means, methods, techniques, sequencers and procedures of construction. The Contractor shall employ and maintain on the work a qualified supervisor or superintendent ("Supervisor") and provide a resume of its experience. This Supervisor shall have been designated in writing as the Contractor's representative at the site and shall not thereafter be changed unless such change is approved by or directed by the Authority. The Authority shall have the right to approve this Supervisor or order its removal from the job site, which right shall not be unreasonably exercised. This Supervisor shall have full authority to act on behalf of the Contractor and all communications given to the Supervisor shall be as binding as if given to the Contractor. This Supervisor shall be present on the site at all times as required to perform adequate supervision, control and coordination of the Work as determined by the Engineer or the Authority.**

(b) **The Contractor shall be responsible to the Authority for the acts and omissions of its employees, Subcontractors and their agents and employees, and other persons performing any of the Work under a contract with the Contractor.**

(c) **The Contractor shall not be relieved from its obligations to perform the Work in accordance with the Contract Documents either by the activities or duties of the Engineer and the Authority in their administration of the Contract or by inspections, tests, or approvals required or performed by persons other than the Contractor.**

(d) **Prior to commencing work, the Contractor shall check all work performed by others that is necessary for the execution of the Contractor's work and shall promptly report to the Engineer in writing any deficiencies in such work which render it unacceptable or unsuitable for the Contractor's Work or which will increase the cost of the Work. Failure to give such written notice shall relieve the Authority of any responsibility therefore. The Contractor shall be responsible for all elevations, grades, and proper fitting of its Work.**

Article 24: CHANGES IN THE WORK

(a) **The Authority, without invalidating the Contract, may order changes in the Work within the general scope of the Contract consisting of additions, deletions or other revisions, with the Contract Sum and the Contract Time being adjusted accordingly. All such changes in Work shall be authorized by written Change Order signed by the Authority and the Engineer, and shall be performed under the applicable conditions of the Contract Documents.**

(b) **The cost or credit to the Authority resulting from a change in the Work shall be determined in one or more of the following ways:**

(1) **by mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;**

(2) **by unit prices stated in the Contract Documents or subsequently agreed upon;**

(3) **by cost to be determined in a manner agreed upon by the parties and a combined overhead and profit of 15% of such costs if the Contractor performs the work with its own forces, or 15% for the combined overhead and profit of a Subcontractor performing the work with its own forces and 5% for the Contractor; in no event shall the total mark-up for overhead and profit exceed 20% of the cost; or**

(4) **by the method provided in Article 25(c).**

(c) **If none of the methods set forth above is agreed upon, the Contractor, provided it receives a Construction Change Directive signed by the Authority, shall promptly proceed with the Work involved. The cost of such Work shall then be determined by the Engineer on the basis of the reasonable expenditures and savings of those performing the Work attributable to the change, including, in the case of an increase in the Contract Sum, a reasonable allowance for overhead and profit. In such case, and also under Article 25(b(3) above, the Contractor shall keep and present, in such form as the Engineer may prescribe, an itemized accounting together with appropriate supporting data of the costs for inclusion in a Change Order. Unless otherwise provided in the Contract Documents, costs shall be limited to the following: cost of materials, including sales tax and cost of delivery,, cost of labor, including social security, unemployment insurance, and fringe benefits required by agreement or custom; workers' or workmen's compensation insurance; bond premiums; and rental value of equipment and machinery. The amount of credit to be allowed by the Contractor to the Authority for any deletion or change that results in a net decrease in the Contract Sum will be the amount of the actual net cost as confirmed by the Engineer. When both additions and credits covering related Work or substitutions are involved in any one change, the allowance for overhead and profit shall be figured on the basis of the net increase, if any, with respect to that change.**

(d) **The Engineer or the Authority also may at any time by issuing a Field Order, make changes in the details of the Work. The Contractor shall proceed with the performance of any changes in the work so ordered and should the Contractor believe that such Field Order entitles it to a change in Contract Price or Time, or both, it shall give the Engineer and the Authority Written Notice thereof within ten days after the receipt of the Field Order. Failure to provide such written notice shall be deemed a waiver of any claims arising from or relating to the Field Order. Failure to proceed with work changed by a Field Order or a Change Order shall constitute a breach of contract and shall be cause for the termination of the Contract. All requests for a Change Order arising out of a Field Order must have a copy of the referenced Field Order attached.**

(e) **Where the Work is contracted for on a unit price basis and the actual quantity of work for any pay item exceeds the estimated quantity by more than 25% of that amount stated in the Contract Documents, a Change Order will be issued for any increase or decrease in unit cost, which results from the increased work. If the quantity variation is such as to cause an increase in the time necessary for completion, the Authority shall, upon receipt of a written request for an extension of time, make an appropriate adjustment for extending the completion date in accordance with Article 26.**

Article 25: CHANGES IN THE CONTRACT SUM OR OTHER RELIEF

(a) **If the Contractor wants to make a claim for an increase in the Contract Sum, or for any other relief under the Contract, it shall give the Engineer and the Authority written notice of the claim within ten (10) days after the occurrence of the event giving rise to such claim. This notice shall be given by the Contractor before proceeding to execute any additional Work, except in an emergency endangering life or property. The notice shall set forth the basis for the claim and the relief or increase in the Contract Sum requested by the Contractor. After providing notice of its claim, Contractor shall provide the Authority and the Engineer with any information and/or documents requested by them to evaluate the claim. No such claim shall be valid unless so made. If the Authority and the Contractor cannot agree on the amount of the adjustment in the Contract Sum, it shall be determined by the Engineer in accordance with Article 40(e). Any change in the Contract Sum resulting from such claim shall be authorized by Change Order.**

(b) **If the Contractor claims that additional cost is required because of, but not limited to,**

(1) **any written interpretation of the Contract Documents;**

(2) **any order by the Authority to stop the Work where the Contractor was not at fault; or**

(3) **any Field Order directed change in the Work; the Contractor shall make such claim as provided in Article 25(a).**

Article 26: TIME FOR COMPLETION AND LIQUIDATED DAMAGES

(a) **All time limits stated in the Contract Documents are of the essence of the Contract.**

(b) **The Contractor shall proceed with the Work with the diligence necessary to insure Substantial Completion within the Contract Time. It is expressly understood and agreed by and between the Contractor and the Authority that the Contract Time for the completion of the Work described herein is a reasonable and adequate time, taking into consideration the average climate and economic conditions and other factors prevailing in the locality of the Work.**

(c) **If the Contractor shall fail to Substantially Complete the Work within the Contract Time, or extension of time granted by the Authority, then the Contractor shall pay to the Authority liquidated damages as specified in the Contract Documents for each calendar day after the date of Substantial Completion until the Work achieves Substantial Completion. Contractor agrees that the amount of liquidated damages is reasonable and waives any right it may have to contest the amount of liquidated damages as being unreasonable or a penalty. If liquidated damages are not set forth in the Contract Documents, Contractor shall be liable to Owner for any loss or damage arising from the Contractor's failure to complete the Work by the date of Substantial Completion.**

(d) **If the Contractor is delayed at any time in the progress of the Work by any act or neglect of the Authority or the Engineer, or by any employee of either, or by any separate contractor employed by the Authority, or by changes ordered in the Work, or by labor disputes, fire, unusual delay in transportation, unusual and adverse weather conditions that could not be reasonably anticipated, unavoidable casualties, or any causes beyond the Contractor's control, or by delay authorized by the Authority, then the Contract Time shall be extended by Change Order for such reasonable time as the Engineer may determine.**

(e) **Any claim for extension of time shall be made in writing to the Engineer and the Authority within (10) days after the commencement of the event giving rise to or causing the claimed delay; otherwise it shall be waived. The notice shall set forth the basis for the extension of time and any other relief requested by the Contractor. After providing notice of its claim, Contractor shall provide the Authority and the Engineer with any information and/or documents requested by them to evaluate the claim. In the case of a continuing delay only one notice of claim is necessary. The Contractor shall precisely identify the delay and its cause, and provide an estimate of the probable effect of such delay on the progress of the Work.**

(f) **Contractor hereby expressly waives any claims against the Authority and the Engineer for any indirect or direct damages, costs or expenses which the Contractor or its Subcontractors may incur as a result of any delay in the performance of the Contract, except and then only to the extent that**

the delay is caused by any act or omission of the Authority or the Engineer, or their agents or employees, and is due to causes within their control. In such event, Contractor may seek direct costs arising solely from the delay but shall not be entitled to any indirect costs including, without limitation, home office overhead costs. It is understood and agreed that the Contractor's sole and exclusive remedy in case of any noncompensable delay shall be an extension of the Contract Time, but only as determined in accordance with the provisions of the Contract Documents.

(g) In the event that Contractor has incurred a delay for which it believes it is entitled to compensation under this Contract, it shall give the Authority written notice of that claim within ten (10) days of the commencement of the delay, and shall identify what it considers to be the cause of and expected duration of the delay.

Article 27: CORRECTION OF WORK

(a) The Contractor shall promptly remove from the premises all work rejected by the Engineer or the Authority for failure to comply with the Contract Documents whether incorporated in the construction or not, and the Contractor shall promptly replace and re-execute the work in accordance with the Contract Documents and without expense to the Authority and shall bear the expense of making good all work of other Contractors destroyed or damaged by such removal or replacement.

(b) Unauthorized work shall be any work done or materials ordered by the Contractor prior to receipt of the Notice to Proceed, previously rejected work incorporated into the Project, work done contrary to or regardless of the instructions of the Engineer, extra work performed without proper written authority, work done beyond the limits shown on the Plans, except as herein specified, any extra work done without written authority from the Engineer or the Authority, or any work done after discovery of a discrepancy, ambiguity, or inconsistency and before the Engineer provides any necessary instructions to the Contractor. The Authority shall not pay for unauthorized work. Unauthorized work may, at the Authority's sole discretion, be ordered removed or replaced at the Contractor's expense.

Article 28: SUSPENSION OF WORK; THE AUTHORITY'S RIGHT TO STOP AND CARRY OUT THE WORK

(a) The Authority may order the Contractor in writing to suspend, delay, or interrupt all or any part of the Work for such period of time as it may determine to be appropriate for the convenience of the Authority.

(b) <u>The Authority's Right to Stop the Work</u>

If the Contractor fails to correct defective Work as required, fails to carry out the Work in accordance with the Contract Documents, or if an emergency situation exists that threatens the safety of persons or property, the Authority, in addition to any other remedies it may have, by a written notice direct the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated. Contractor shall be liable to the Authority for any loss of damages arising from the stoppage of the Work including, without limitation, any loss or damage arising from a delay in the completion of the Work.

(c) <u>Authority's Right to Carry Out the Work</u>

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within two (2) days after receipt of written notice from the Authority to commence and continue correction for such default or neglect with diligence and promptness, the Authority may, after two (2) days following receipt by the Contractor of an additional written notice of its decision to do so, make good such deficiencies without prejudice to any other remedy it may have. In such case an appropriate Change Order shall be issued deducting from the payments then or thereafter due the Contractor the cost of correcting such deficiencies, including compensation for the Engineer's additional services or other services as may be required and made necessary by such default, neglect or failure. If the payments then or thereafter due the Contractor are not sufficient to cover such amount, the Contractor shall pay the difference to the Authority. All charges and back charges made against monies otherwise owed to or due to the Contractor shall be deemed accepted

unless the Contractor rejects them in writing to the Authority within ten (10) days of receipt and states fully its reasons for rejecting them.

Article 29: TERMINATION

(a) **If the Contractor is adjudged a bankrupt or insolvent, or if it makes a general assignment for the benefit of its creditors, or if a trustee or receiver is appointed for the Contractor or for any of its property, or if it files a petition to take advantage of any debtor's act, or to reorganize under the bankruptcy or applicable laws, or if it fails to supply sufficient skilled workmen or suitable materials or equipment, or if it fails to make prompt payments to subcontractors or for labor, materials or equipment, or if it refuses or fails to prosecute the Work or any separable part thereof, with such diligence as will insure its completion within the Contract Time, or if it fails to complete the Work within the Contract Time required, or if it disregards laws, ordinances, rules, regulations, directions or orders of any public body having jurisdiction over the Work, or if it disregards the authority of the Engineer, or if it otherwise violates any provision of the Contract Documents, then the Authority may, without prejudice to any other right or remedy, seven (7) days after delivery of a written notice to the Contractor and its surety, terminate the services of the Contractor and take possession of the Project and of all materials, equipment, tools, construction equipment and machinery thereon owned by the Contractor, and finish the Work by whatever method it may deem expedient. In such case, the Contractor will not be entitled to receive any future payment until the Work is finished. If the unpaid balance of the Contract Price exceeds the direct and indirect costs of completing the Project, including compensation for additional professional services, such excess will be paid to the Contractor. If such costs exceed such unpaid balance, the Contractor shall pay the difference to the Authority. Such cost incurred by the Authority will be determined by the Engineer and incorporated in a Change Order.**

(b) **If termination for cause by the Authority is deemed to be improper, it shall be deemed a termination for convenience.**

(c) **Where the Contractor's services have been so terminated by the Authority, the termination shall not affect any rights the Authority then has or that may thereafter accrue against the Contractor. Any retention or payment of monies by the Authority due the Contractor will not release the contractor from compliance with the Contract Documents.**

(d) **<u>Termination for Convenience</u>**

The Authority may, effective not less than after seven (7) days from delivery of a written notice to the Contractor, without cause and without prejudice to any other rights or remedies it may have, terminate this Construction Contract for its own convenience for any reason. When this Construction Contract has been terminated for convenience, the Contractor shall be paid only for Work performed through the date of termination The Contractor shall not be entitled to anticipated profits on unperformed portions of the Work.

Article 30: USE OF THE PREMISES

(a) **The Authority will have the right to enter the premises for the purpose of doing work not covered by the Contract Documents. This provision shall not be construed as relieving the Contractor of the sole responsibility for the care and protection of the Work or the restoration of any damaged work, except such as may be caused by agents or employees of the Authority.**

(b) **Prior to Substantial Completion, the Authority, with the concurrence of the Contractor, may use any completed or substantially completed portion of the Work. Such use shall not constitute a final acceptance of such portions of the Work unless otherwise stated so in writing.**

Article 31: PAYMENTS TO THE CONTRACTOR

(a) **Prior to submitting its first application for payment, the Contractor shall submit to the Authority and the Engineer a schedule of values allocating the costs of the various portions of the Work, prepared in such form and supported by such data to substantiate its accuracy as may be required by the Authority and the Engineer. This schedule, as approved, shall be used as a basis for**

Contractor's applications for payment, which shall be submitted on the current edition of the AIA Application and Certification for Payment ("Application for Payment"), AIA Document G702.

(b) **At least twenty days before each progress payment falls due (but not more than once a month), the Contractor, the Engineer, and the Authority shall meet at the Project to determine the percentage of completion of the individual items in the schedule of values. If no agreement is reached, the Contractor shall prepare its Application for Payment using percentages it considers correct. Thereafter, the Contractor shall submit to the Engineer three (3) copies of its completed and signed Applications for Payment covering the work performed during the period of the Application for Payment and supported by such data as the Engineer may reasonably require. If payment is requested on the basis of materials and equipment not incorporated in the Work, the Application for Payment shall also be accompanied by such supporting data, satisfactory to the Engineer, as will protect the Authority's interests therein, including applicable insurance. See Article 32(c). The Engineer will, within fifteen days after receipt of each Application for Payment, either certify in writing its approval of payment for an amount based either on the agreed percentages of completion or the percentages the Engineer considers correct and present the Application for Payment to the Authority, or return the Application for Payment to the contractor stating in writing its reasons for refusing to approve payment. If payment has been refuse, the Contractor may make the necessary corrections and resubmit the Application for Payment to the Engineer. The Authority will, within thirty days of its receipt of an approved Application for Payment, pay the Contractor a progress payment in the amount certified by the engineer, unless the Authority has reason to refuse payment of that amount in whole or in part, in which event it shall state its reasons in writing to the Contractor. The Authority will retain five (5) percent of the amount of each payment due until final completion and acceptance of all work. However, the Authority may, in its sole discretion, reduce the amount retained to 150% of the value of work remaining when the work is substantially complete. The decision to reduce retainage and the amount of such reduction shall be solely that of the Authority. On completion and acceptance of a part of the Work on which the price is stated separately in the Contract Documents, payment may be made in full, including retained percentages less authorized deductions. Prior to receiving each payment, and as part of its Applications for Payment, the Contractor shall certify in writing that it has made payment from the proceeds of prior payments and that it will make timely payments form the proceeds of progress and final payment then due it, to its subcontractors and suppliers in accordance with its contractual arrangement with them. If requested by the Authority, the Contractor shall provide evidence of such payments, including affidavits by subcontractors and suppliers.**

(c) **The Application for Payment may also include an allowance for the cost of major materials and equipment not yet incorporated in the Work. When requested in writing by the Contractor and approved in writing by the Authority, payment will be made for nonperishable major material and equipment delivered and properly stored at the Work site or other approved site. Material for which payment has been made, wholly or partially, shall not be removed from the Work site or other approved site unless authorized by the Authority in writing.**

(d) **The Contractor shall indemnify and save the Authority and its agents harmless from all losses, damages, liabilities, including attorney's fees, arising out of the demands of Subcontractors, laborers, workmen, mechanics, materialmen and furnishers of machinery parts thereof, equipment, tools, and all supplies incurred in the furtherance of the performance of the Work. The Contractor shall, at the Engineer's request, furnish satisfactory evidence that all obligations of the nature designated above have been paid, discharged, or waived. If the Contractor fails to do so, the Authority may, after having notified the Contractor, either pay unpaid bills or withhold from the Contractor's unpaid compensation a sum of money deemed reasonably sufficient to pay any and all such lawful claims until satisfactory evidence is furnished that all liabilities have been fully discharged whereupon payment to the Contractor will be resumed in accordance with the terms of the Contract Documents. In no event, however, shall the provisions of the foregoing sentence be construed to impose any obligations upon the Authority to either the Contractor, its Surety, or any third party. In paying any unpaid bills of the Contractor, any payment so made by the Authority will be considered as a payment made under the Contract Documents by the Authority to the Contractor and the Authority will not be liable to the Contractor for any such payments in good faith.**

(e) **If the Authority fails to make a payment when due under the terms of this Contract, interest shall accrue on monies due and owing at the rate of 3% per annum commencing sixty (60) days after the date the payment was due.**

(f) The Authority may reduce in whole or in part any approved Application for Payment, whether or not it has been paid, to the extent necessary to protect the Authority from loss because of:

(1) defective Work not remedied;

(2) failure to timely or properly pay Subcontractors;

(3) evidence that the Work cannot be completed for the amount remaining to be paid; or

(4) damage to the Authority;

(5) a persistent failure to carry out the Work in accordance with the Contract Documents.

Article 32: SUBSTANTIAL COMPLETION OF THE WORK

(a) When the Contractor considers that the Work or, if agreed to by the Authority, a designated portion thereof is Substantially Complete as defined in Article 1, the Contractor shall prepare for submission to the Engineer a list of items to be completed or corrected. The failure to include any items on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents. When the Engineer on the basis of its inspection determines that the Work or designated portion thereof is Substantially Complete, it will then prepare a Certificate of Substantial Completion which shall establish the Date of Substantial Completion, shall state the responsibilities of the Authority and the Contractor for security, maintenance, heat, utilities, damage to the Work, and insurance, and shall fix the time within which the Contractor shall complete the items listed therein. Warranties required by the Contract Documents shall commence on the Date of Substantial Completion of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion. The Certificate of Substantial Completion shall be submitted to the Authority and the Contractor for their written acceptance of the responsibilities assigned to them in such Certificate.

(b) Upon Substantial Completion of the Work or designated portion thereof and upon application by the Contractor and certification by the Engineer, the Authority shall make payment, reflecting adjustment in retainage, if any, for such Work or portion thereof, as provided in the Contract Documents.

Article 33: FINAL COMPLETION AND FINAL PAYMENT

(a) Upon receipt of written notice that the Work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, the Engineer will promptly make such inspection and, when it finds the Work acceptable under the Contract Documents and the Contract fully performed, it will promptly issue a final Certificate for Payment stating that to the best of its knowledge, information, and belief, and on the basis of its observations and inspections, the Work has been completed in accordance with the terms and conditions of the Contract Documents and that the entire balance stated therein is due and payable to the Contractor. If the Contractor has completed all of the requirements and conditions, Final Payment shall be made within 30 days of receipt of the Contractor's Application. The Engineer's Final Certificate for Payment will constitute a further representation that the conditions precedent to the Contractor's being entitled to final payment as set forth in Article 32(b) have been fulfilled.

(b) Neither the final payment nor the remaining retained percentage shall become due until the Contractor submits to the Engineer (1) an affidavit that all payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Authority or its property might in any way be responsible, have been paid or otherwise satisfied, (2) consent of surety, if any, to final payment, (3) if required by the Authority, other data establishing payment or satisfaction of all such obligations, such as receipts, release and waivers of liens arising out of the Contract, to the extent and in such form as may be designated by the Authority, (4) two (2) binders containing all product and equipment manuals, warranties and guarantees, and (5) as-built drawings. If any Subcontractor refuses to furnish a release or waiver required by the Authority, the Contractor may furnish a bond satisfactory to the Authority to indemnify it against any such lien. If any such lien remains unsatisfied after all payments are made, the Contractor shall refund to the Authority all

monies that the latter may be compelled to pay in discharging such lien, including all costs and reasonable attorneys' fees.

(c) If, after Substantial Completion of the Work, final completion thereof is materially delayed through no fault of the Contractor or by the issuance of Change Orders affecting final completion, and the Engineer so confirms, the Authority shall, upon application by the Contractor and certification by the Engineer, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance of the Contract Sum is less than the retainage stipulated in the Contract Documents, the written consent of the surety to the payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by the Contractor to the Engineer prior to certification of such payment. Such payment shall then be made under the terms and conditions governing final payment. However, that payment shall not constitute a waiver of any claims the Authority may then or thereafter have.

(d) The acceptance of final payment shall constitute a waiver of all claims by the Contractor except those previously made in writing, properly reserved pursuant to these General Conditions, and identified by the Contractor as unsettled at the time of the final Application for Payment. Such contractual claims, whether form money or other relief, shall be submitted in writing not later than 60 days after final payment. The Authority's Capital Programs Director shall review such contractual claims and issue a final decision in writing within 90 days after receipt.

Article 34: INSURANCE

(a) <u>Contractor's Liability Insurance</u>

The Contractor shall purchase and maintain such insurance as will protect it from claims set forth below which may arise out of or result from the Contractor's operations under the Contract, whether such operations be by itself or by any Subcontractor or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable:

(1) claims under workers' or workmen's compensation, disability benefit and other similar employee benefit acts;

(2) claims for damages because of bodily injury, occupational sickness or disease, or death of its employees;

(3) claims for damages because of bodily injury, sickness or disease, or death of any person other than its employees;

(4) claims for damages insured by usual personal injury liability coverage, which are sustained (1) by any person as a result of an offense directly or indirectly related to the employment of such person by the Contractor, or (2) by any other person;

(5) claims for damages, other than to the Work itself, because of injury to or destruction of tangible property, including loss of use resulting there from; and

(6) claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance or use of any motor vehicle.

Liability insurance shall include all major divisions of coverage and be on a comprehensive basis including:

(1) Premises Operations (including X, C and U coverage);

(2) Independent Contractor's Protective;

(3) Products and Completed Operations;

(4) Personal Injury Liability with Employment Exclusions deleted;

(5) Contractual, including provisions for indemnity obligations under this Agreement;

(6) Owned, non-owned and hired motor vehicles;

(7) Broad Form Property Damage including Completed Operation

Contractor shall have and maintain the following insurance in the amounts set forth below unless otherwise agreed to by the Owner in writing:

(1) Workers' Compensation Insurance in an amount as required by state law. Workers' Compensation per statutory limits and employer's liability in the following minimum amounts: EL Each Accident - $500,000, EL Disease Policy Limit - $500,000, EL Disease Each Employee - $500,000.

(2) Commercial General Liability Insurance including coverage for bodily injury, property damage, contractual liability and products/completed operations with a minimum coverage of $1,000,000 per occurrence and $2,000,000 in the aggregate. Property damage coverage shall include coverage for explosion, collapse and underground hazards. Coverage for products/completed operations shall extend for a period of three (3) years after the date of substantial completion. Property damage in the amount of not less than $1,000,000 for any one accident. Additional limits may be required.

(3) Comprehensive Automobile Liability Insurance for bodily injury and property damage with a minimum coverage of $1,000,000 per occurrence and $1,000,000 in the aggregate.

(4) Excess or Umbrella insurance supplementing coverage under the Commercial General Liability, Comprehensive Automobile Liability Insurance and Employer's Liability Insurance policies with a minimum coverage of $1,000,000 per occurrence and $1,000,000 in the aggregate

The Contractor shall endorse the Authority on its insurance policy as an additional insured to protect the interests of the public. Certificates of Insurance and Additional Insured Endorsements acceptable to the Authority shall be filed with the Authority prior to commencement of the Work. These Certificates and Endorsements shall contain a provision that coverages afforded under the policies will not be cancelled until at least thirty days prior written notice has been given to the Authority. Insurance certificates must include an additional insured endorsement naming the following as an additional insured: "The Northern Virginia Regional Park Authority, its officers, directors, agents, employees, and volunteers." The endorsement must be completed on endorsement form CG 20 10 11 85 or CG 20 10 07 04 or such other form acceptable to the Authority.

(b) <u>The Authority's Liability Insurance</u>

The Authority shall be responsible for purchasing and maintaining its own liability insurance and, at its option, may purchase and maintain such insurance as will protect it against claims that may arise from operations under the Contract.

(c) <u>Property Insurance</u>

Unless otherwise provided, the Authority shall purchase and maintain property insurance upon the entire Work at the site to the full insurable value thereof. This insurance shall include the interests of the Authority, the Contractor, Subcontractors, and Sub-subcontractors in the Work and shall insure against the perils of fire and extended coverage and shall include "all risk" insurance for physical loss or damage including, without duplication of coverage, theft, vandalism and malicious mischief. If the Authority does not intend to purchase such insurance for the full insurable value of the entire Work, it shall inform the Contractor in writing prior to commencement of the Work. The Contractor may then affect insurance that will protect the interests of itself, its Subcontractors and Sub-subcontractors in the Work, and by appropriate Change Order the cost thereof shall be charged to the Authority. If not covered under the all risk insurance or otherwise provided in the Contract Documents, the Contractor shall effect and maintain similar property insurance on portions of the

Work stored off the site or in transit when such portions of the Work are to be included in an Application for Payment.

(d) **The Authority shall purchase and maintain such boiler and machinery insurance as may be required by the Contract Documents or by law. This insurance shall include the interests of the Authority, the Contractor, Subcontractor and Sub-subcontractors in the Work**

(e) **Any loss insured under Article 34(c) is to be adjusted with the Authority and made payable to the Authority as trustee for the insured's, as their interests may appear. The Contractor shall pay each Subcontractor a just share of any insurance monies received by the Contractor, and by appropriate agreement, written where legally required for validity, shall require each Subcontractor to make payments to its Sub-subcontractors in similar manner.**

(f) **If the Contractor requests in writing that insurance for risks other than those described in Article 34(c) or (d) or other special hazards be included in the property insurance policy, the Authority may, if possible and in its sole discretion, include such insurance, and the cost thereof shall the charged to the Contractor by appropriate Change Order.**

(g) **The Authority and the Contractor waive all rights against (1) each other and the Subcontractors, Sub-subcontractors, agents and employees each of the other, and (2) the Engineer and separate contractors, if any, and their subcontractors, sub-contractors, agents and employees, for damages caused by fire or other perils to the extent covered by insurance obtained pursuant to Article 34(c) or (d) or any other property insurance applicable to the Work, except such rights as they may have to the proceeds of such insurance held by the Engineer as trustee. The foregoing waiver afforded the Engineer, its agents and employees shall not extend to the liability imposed by Article 36(a). The Authority or the Contractor, as appropriate, shall require of the Engineer, separate contractors, Subcontractors and Sub-subcontractors by appropriate agreements, written where legally required for validity, similar waivers each in favor of all other parities enumerated in this Article 34(g).**

(h) **If required in writing by the Contractor, the Authority as trustee shall, upon the occurrence of an insured loss, deposit in a separate account any money so received, and shall distribute it in accordance with the interests of the parties. If after such loss no other special agreement is made, replacement of damaged work shall be covered by an appropriate Change Order.**

(i) **The Authority as trustee shall have power to adjust and settle any loss with the insurers.**

(j) **If the Authority finds it necessary to occupy or use a portion or portions of the Work prior to Substantial Completion thereof, such occupancy or use shall not commence prior to a time mutually agreed to by the Authority and the Contractor and to which the insurance company or companies providing the property insurance have consented by endorsement to the policy or policies. This insurance shall not be cancelled or lapsed on account of such partial occupancy or use. Consent of the Contractor and of the insurance company or companies to such occupancy or use shall not be unreasonably withheld.**

Article 35: ASSIGNMENTS

Neither the Contractor nor the Authority shall sell, transfer, assign, or otherwise dispose of the Contract or any portion thereof, or of its rights, title, or interest therein, or its obligations thereunder, without written consent of both parties.

Article 36: INDEMNIFICATION

(a) To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the Authority, the Engineer and their agents, officers, directors and employees from and against all claims, damages, losses and expense, including but not limited to attorney's fees, arising out of or resulting from the performance of the Work, provided that any such claim, damage, loss or expense (1) is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself) including the loss of use resulting therefrom and (2) is caused in whole or in part by any negligent act or omission of the Contractor, any Subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, regardless of whether or not it is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or otherwise reduce any other right or obligation of indemnity that would otherwise exist as to any party or person described in this Article.

(b) In any and all claims against the Authority or the Engineer or any of their agents or employees by any employee of the Contractor, any Subcontractor, anyone directly or indirectly employed by any of them or anyone whose acts any of them may be liable, the indemnification obligation under this Article shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for the Contractor or any Subcontractor under workers' or workmen's compensation acts, disability benefit acts or other employee benefit act.

(c) The Authority shall retain such monies due or to become due the Contractor under the Contract as considered necessary by the Authority until such suits, claims for damages costs or losses have been settled or otherwise disposed of or satisfactory evidence to that effect has been furnished to the Authority.

Article 37: CONTRACTOR LIABILITY

The Contractor shall be liable to Authority for all costs the Authority incurs as a result of the Contractor's failure to perform this Contract in accordance with its terms. The Contractor's failure to perform shall include the failure of its suppliers and or Subcontractors of any tier to perform. Contractor's liability shall include, but not be limited to, (1) damages, liquidated damages, and other delay costs payable to the Authority; (2) the Authority's increased costs of performance, such as extended overhead and increased performance costs resulting from Contractor-caused delays, improper Contractor work, or termination of the Contractor; (3) warranty and rework costs; (4) liability to third parties; (5) excess costs; and (6) attorney's fees and related costs.

Article 38: SEPARATE CONTRACTS

(a) The Authority reserves the right to let other contracts in connection with this Project. The Contractor shall afford other contractors reasonable opportunity for the introduction and storage of their materials and the execution of their work and shall properly connect and coordinate its work with theirs. If the proper execution or results of any part of the Contractor's work depends upon the work of any other contractor, the Contractor shall inspect and promptly report to the Engineer any defects in such work that render it unsuitable for such proper execution and results. The commencement of work by the Contractor shall indicate an acceptance of the previous contractor's work.

(b) The Authority may perform additional work related to the Project by itself, or it may let other contracts containing provisions similar to these. The Contractor shall afford the other contractors who are parties to such contracts, the Authority, if it is performing the additional work itself, reasonable opportunity for the introduction and storage of materials and equipment and the execution of work and shall properly connect and coordinate it Work with theirs.

(c) **If the performance of additional work by other contractors or the Authority is not specified in the Contract Documents prior to the execution of the Contract, Written Notice thereof shall be given to the Contractor prior to starting any such additional work. If the Contractor believes that the performance of such additional work by the Authority or others will result in additional expense to the Contractor or entitle it to an extension of the Contract Time, it may make a claim therefore as provided in Articles 25, 26 and 27.**

Article 39: SUBCONTRACTING

(a) **The Contractor may utilize the services of Subcontractors – which will have been approved by the Authority prior to commencement of the work – on those parts of the Work that, under normal contracting practices are performed by Subcontractors. The Contractor shall submit a list of proposed Subcontractors prior to commencement of the Work for the Authority's review and approval. The Contractor shall not employ a Subcontractor to which the Authority may object. The Authority shall not withhold its approval unreasonably.**

(b) **The Contractor shall not award work to a single Subcontractors in excess of 50 percent of the Contract Price without prior written approval of the Authority.**

(c) **The Contractor shall be fully responsible to the Authority for the acts and omissions of its Subcontractors and of persons either directly or indirectly employed by them, as it is for the acts and omissions of person directly employed by it. The Contractor shall be fully responsible for the coordination of the work of the trades, Subcontractors and suppliers, and their officers, agents and employees.**

(d) **By an appropriate written agreement, the Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by the terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities that the Contractor, by the Contract Documents, assumes toward the Authority and the Engineer. The agreement shall preserve and protect the rights of the Authority and the Engineer under the Contract Documents with respect to the Work to be performed by the Subcontractor so that the subcontracting thereof will not prejudice such rights, and shall allow the Subcontractor, unless specifically provided otherwise in the Contractor-Subcontractor agreement, the benefit of all rights, remedies, and redress against the Contractor that the Contractor, by these Documents, has against the Authority. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with its Sub-subcontractors. The Contractor shall make available to each proposed Subcontractor, prior to the execution of the Subcontract, copies of the Contract Documents to which the Subcontractor will be bound by this Paragraph and identify to the Subcontractor any terms and conditions of the proposed Subcontract that may be at variance with the Contract Documents. Each Subcontractor shall similarly make copies of such Documents available to its Sub-subcontractors.**

(e) **Nothing contained in the Contract Documents shall create any contractual arrangement between any Subcontractor and the Authority.**

(f) **Within seven (7) days after receipt of amounts paid to it, contractor shall either:**

(1) **Pay its subcontractors for the proportionate share of the total payment received attributable to the work performed by the subcontractor under the contract; or**

(2) **Notify the Authority and subcontractor in writing of his intentions to withhold all or part of the subcontractor's payment with the reasons for the nonpayment.**

(g) **Contractor shall include in each of its subcontracts a provision requiring each subcontractor to include or otherwise be subject to the same payment and interest requirements with respect to each lower-tier subcontractor that the contractor is subject to in subparagraph (f) and Article 32(e).**

Article 40: ENGINEER

(a) **The Engineer will act as the Authority's representative during the construction period and until final payment.**

(b) **The Engineer will visit the site at intervals appropriate to the stage of construction to familiarize itself and determine in general if the work is proceeding in accordance with the Contract Documents. However, the Engineer will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. On the basis of its on-site observations, it will keep the Authority informed of the progress of the Work, and will endeavor to guard the Authority against defects and deficiencies in the Work of the Contractor.**

(c) **The Engineer will not be responsible for and will not have control or charge of construction means, methods, techniques, sequences or procedures, or for safety precautions and programs in connection with the Work, and it will not be responsible for the Contractor's failure to carry out the Work in accordance with the Contract Documents. The Engineer will not be responsible for or have control or charge over the acts or omissions of the Contractor, Subcontractors, or any of their agents or employees, or any other persons performing any of the Work. This Article shall in no way change the Engineer's responsibilities or liability to Authority.**

(d) **The Engineer will render interpretations necessary for the proper execution or progress of the Work, with reasonable promptness and in accordance with any time limit agreed upon. Either party to the Contract may make a written request to the Engineer for such interpretations.**

(e) **Claims, disputes, and other matters in question between the Contractor and the Authority relating to the execution or progress of the Work or the interpretation of the Contract Documents shall be referred initially to the Engineer for decision, which it will render in writing within a reasonable time. Unless the Contractor provides written notice to the Authority and the Engineer of any objection to the Engineer's decision, the Engineer's decision shall be final and binding.**

(f) **All interpretations and decisions of the Engineer shall be consistent with the intent of and reasonably inferable from the Contract Documents and will be in writing or in the form of drawings. The Engineer will endeavor to secure faithful performance by both the Authority and The Contractor, will not show partiality to either, and will not be liable for the result of any interpretation or decision rendered in good faith in such capacity.**

(g) **The Engineer's decisions in matters relating to artistic effect will be final if consistent with the intent of the Contract Documents and agreed to by the Authority.**

(h) **The parties agree to perform the Work, accept the interpretation or otherwise follow the decision of the Engineer so as to not delay the progress of the Work. Notwithstanding this provision, the Authority may stop the Work pending a judicial review of the Engineer's decision.**

(i) **The Engineer will have authority to reject Work, which does not conform to the Contract Documents.**

(j) **The Engineer will review and approve or take other appropriate action upon the Contractor's submittals such as Shop Drawings, Product Data and Samples, but only for conformance with the design concept of the Work and with the information given in the Contract Documents. Such action shall be taken with reasonable promptness so as to cause no delay. The Engineer's approval of a specific item shall not indicate approval of an assembly of which the item is a component.**

(k) **The Engineer will conduct inspections to determine the dates of Substantial Completion and final completion, will receive and forward to the Authority for the Authority's review written warranties and related documents required by the Contract and assembled by the Contractor, and will issue a final Certificate for Payment upon compliance with the requirements of Article 34.**

(l) **Notwithstanding any other provision to the contrary, Article 40(e) to (h) shall <u>not</u> apply to this project if there IS no Project Engineer.**

Article 41: WARRANTY

(a) **The Contractor warrants to the Authority and the Engineer that all materials and equipment furnished under this Contract will be new unless otherwise specified and that all Work will be performed in a good and workmanlike manner and will be of good quality, free from faults and defects and in conformance with the Contract Documents and the Legal Requirements. All Work not conforming to these requirements, including substitutions not properly approved and authorized, may be considered defective. If required by the Engineer, the Contractor shall furnish satisfactory evidence of the kind and quality of materials and equipment.**

(b) **The Contractor shall promptly correct all Work rejected by the Engineer as defective or as failing to conform to the Contract Documents whether observed before or after substantial Completion and whether or not fabricated, installed, or completed. The Contractor shall bar all costs of correcting such rejected Work, including compensation for the Engineer's additional services made necessary thereby.**

(c) **If, within one year after the Date of Substantial Completion of the Work or designated portion thereof or within one year after acceptance by the Authority of designated equipment or within such longer period of time as may be prescribed by law or by the terms of any applicable special warranty required by the Contract Documents, any of the Work is found to be defective or not in accordance with the Contract Documents, the Contractor shall correct it promptly after receipt of a written notice from the Authority to do so unless the Authority has previously given the Contractor a written acceptance of such condition. This obligation shall survive termination of the Contract. The Authority shall give such notice promptly after discovery of the condition.**

Article 42: CONTRACTUAL DISPUTES

Contractual claims, whether for money or for other relief, shall be submitted in writing not later than (60) sixty days after final payment; however, written notice of the Contractor's intention to file such claim must be given at the time of the occurrence or beginning of the work upon which the claim is based. A written decision upon any such claims will be made by the Authority within thirty (30) days after submittal. The Contractor may not institute legal action prior to receipt of the Authority's decision on the claim unless it fails to render such decision within 120 days. The decision of the Capital Programs Director or other signatory on the Contract shall be final and conclusive unless the Contractor within six (6) months of the date of the final decision on a claim, initiates legal action as provided in § 2.2-4364 of the Code of Virginia. Failure of the Authority to render a decision within 120 days shall not result in the Contractor being awarded the relief claimed nor shall it result in any other relief or penalty. The sole result of the Authority's failure to render a decision within the time allotted shall be the Contractor's right to immediately institute legal action. No administrative appeals procedure pursuant to § 2.2-4365 of the Code of Virginia has established for contractual claims under this Contract.

Revised 1/10/18

Section 7

Form of Contract

CONSTRUCTION CONTRACT

This Construction Contract is made this ____ day of _____, 2026 by and between NOVA Parks, 5400 Ox Road, Fairfax Station, Virginia 22039 ("Authority"), and _____, (Contractor) for the project known as _____.

Article 1.

1.1 The Contract Documents consist of this Construction Contract, the Conditions of the Contract (General Supplementary, Special, and other Conditions), the Drawings, the Specifications, all standard details that apply to any portion of the Work, and all addenda issued prior to, and Change Orders issued after execution of this Construction Contract. The Contract Documents are more specifically listed in Exhibit A. Minimum contractor's liability insurance amounts are listed in Exhibit B.

Article 2. The Work

2.1 The Contractor shall furnish all labor, materials, and equipment necessary to perform _____ as shown, indicated or reasonably implied by the Contract Documents. The Work shall be done in strict accordance with the Contract Documents and all applicable federal, state, and local governmental specifications and requirements.

Article 3. Time of Commencement and Completion

3.1 The Contract Time will begin to run on the date indicated in the Authority's written Notice to Proceed. The Contractor shall start the Work within five (5) days of the date of the Notice to Proceed. The Contractor shall prosecute the work in such a manner as to achieve Substantial Completion of the base portion of the work within the time limits indicated in the Supplemental General Conditions.

3.2 If the Work is not Substantially Completed within the time required, as that time may be adjusted by Change Orders, there shall be imposed on the Contractor Liquidated Damages of $ per calendar day for each day beyond the Contract Time it takes to substantially complete the Work. Contractor is specifically referred to the General Conditions regarding its duties to notify the Authority in writing of any delays caused to it during the Work. The Liquidated Damages amount shall, in no event, be considered a penalty or other than the liquidated and adjusted damages to the Authority because of the delay. The Contractor and its surety agree that the stated sum per day shall be deducted and retained out of the monies which may become due hereunder and if not so deducted, the Contractor and its surety shall be liable therefore.

Article 4. Contract Sum

4.1 Authority agrees to pay Contractor _____(Dollars) ($00.00) for the Work.

4.2 The Authority shall make monthly progress payments on account of the Contract Sum to the Contractor as provided in the Contract Documents for the period ending the last day of each month. Not later than fifteen (15) days after the end of the period covered by the Application for Payment, Contractor will submit to the Architect a Request for Payment based on the payment schedule of values agreed to by the Architect. The Contractor's submission of its Application for Payment, the Authority's and Architect's review, and the Authority's payment of progress and final payments shall all be in accordance with the General Conditions.

Article 5. Miscellaneous Provisions

5.1 This Contract shall be construed and enforced in accordance with the laws of the Commonwealth of Virginia.

5.2 During the performance of this Contract, the Contractor agrees as follows:

A. The Contractor will not discriminate against any employee or applicant for employment because of race, religion, color, sex, or national origin, except where religion, sex, or national origin is a bona fide occupation qualification reasonably necessary to the normal operation of the Contractor. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the provisions of this nondiscrimination clause.

B. The Contractor, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, will state that such Contractor is an equal opportunity employer.

C. Notices, advertisements, and solicitations placed in accordance with federal law, rule, or regulation shall be deemed sufficient for the purpose of meeting the requirements of this section.

The Contractor will include the provisions of subparagraphs A, B, and C above, in every subcontract or purchase order of over $10,000 so that the provisions will be binding upon each subcontractor or vendor.

5.3 These terms and provisions supersede all previous communications, representations, or agreements, either oral or written, between the parties with respect to the subject matter of this Contract. This Agreement is entered into as of the day and year first written above.

NOVA Parks	**CONTRACTOR**
	Company: _____
By: _____	By: _____
Title: _____	Title: _____
Date: _____	Date: _____

Exhibit A - Contract Documents

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Exhibit B - Contractor's Liability Insurance

- General liability in the amount of not less than $1,000,000 per occurrence and $2,000,000 aggregate.
- Property damage in the amount of not less than $1,000,000 for any one accident. Additional limits may be required.
- Umbrella policy for not less than $1,000,000.
- Auto liability insurance for not less than $1,000,000 combined single limits.
- Workers' Compensation per statutory limits and employer's liability in the following minimum amounts: EL Each Accident - $500,000, EL Disease Policy Limit - $500,000, EL Disease Each Employee $500,000.
- Contractor shall endorse the Authority on its insurance policy as an additional insured using form CG 20 10 11 85 or CG 20 10 07 04.

Section 8

Existing Conditions Photos

EXISTING CONDITIONS PHOTOS



















*******END OF EXISTING CONDITIONS PHOTOS*******