SECTION 01 20 00 - PRICE AND PAYMENT PROCEDURES – REVISED 11/17/2025

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 UNIT PRICES

A. A unit price is an amount proposed by bidders and stated on the Bid Form for certain work that is paid for per unit of measure for materials, equipment, or services, or a portion of the Work, added to or deducted from the Contract Sum by Change Order if the scope of Work or estimated quantities of Work required by the Contract Documents are increased or decreased.

B. Unit prices include all necessary material, plus cost for delivery, installation, insurance, overhead, and profit.

C. If the required quantities of the work listed below, as properly documented by the Contractor, are different than that called for on the Drawings or in the Specifications then the contract amount shall be increased or decreased by change order using the unit prices set forth on the Bid Form for the difference in quantities for the items of work listed below. Bidders shall indicate on the Bid Form the unit prices for the following items of work:

1. Unit Price No. 1 – Wood Roof Deck Replacement
    a. Description: Replacement of existing deteriorated wood roof decking with 1-inch thick boards of the same size and type as the original.as called for in Section 06 15 00, Wood Decking.
    b. Unit of Measurement: Square foot of board decking removed and replaced.
2. Unit Price No. 2 – Replace Deteriorated Sill Plates at Roof
    a. Description: Replace deteriorated sill plates as shown on Drawings and as called for in Section 06 10 00, Rough Carpentry.
    b. Unit of Measurement: Linear foot of sill plate replaced.
3. Unit Price No. 3 – Repair Deteriorated Rafter Tails at Roof
    a. Description: Repair deteriorated wood roof rafter tails as shown on the Drawings and as called for in Section 06 10 00, Rough Carpentry,
    b. Unit of Measurement: One wood rafter tail repaired.
4. Unit Price No. 4 – Stucco Crack Repair
    a. Description: Repair cracks in stucco pilasters, columns and the Portico ceiling as called for in Section 09 24 00, Cement Plastering.
    b. Unit of Measurement: Linear foot of crack.
5. Unit Price No. 5 – Stucco Patching
    a. Description: Patch deteriorated or delaminated ares of stucco at the pilasters, columns, and Portico ceiling as called for in Section 09 24 00, Cement Plastering

b. Unit of Measurement: Square foot of patch.

6. Unit Price No. 6 – Brick Masonry Repointing

a. Description: Repoint brick masony on the building exterior as called for in Section 04 03 21 Historic Brick Masonry Restoration and Cleaning.
b. Unit of Measurement: Square foot of repointing.

1.3 ALTERNATES

A. An amount proposed by bidders and stated on the Bid Form for certain work defined in the bidding requirements that may be deducted from the base bid amount if the Owner decides to accept a corresponding change either in the amount of construction to be completed or in the products, materials, equipment, systems, or installation methods described in the Contract Documents.

1. Alternates described in this Section are part of the Work only if enumerated in the Agreement.
2. The credit for each alternate is the net deduction from the Contract Sum to incorporate alternates into the Work. No other adjustments are made to the Contract Sum.

B. Coordination: Revise or adjust affected adjacent work as necessary to completely integrate work of the alternate into Project.

1. Incude as part of each alternate, miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation whether or not indicated as part of alternate.

C. Execute accepted alternates under the same conditions as other work of the Contract.

D. Bidders shall indicate on the Price Proposal the cost for each of the following Alternates:

1. Alternate No. 1. Light Fixtures

a. Base Bid: New light fixtures and lighting controls including new exit lights, all as shown on the Drawings.

b. Alternate: Omit this work except for minor repairs and relamping all existing lights with LED retrofit lamps.

2. Alternate No. 2. Receptacles and Power

a. Base Bid: Replacement receptacles and associated power indicated on the Drawings and including all new power for new/replaced mechanical and architectural equipment,

b. Alternate: Omit this Work except for minor repairs and the new power for new/replaced mechanical and architectural work.

1.4 ALLOWANCES

A. Include the following allowance in the Contract Sum:

1. Allowance No. 1: Include the sum of $ 4,000 for the purchase of new shutter hardware and the cost of repairing and reconditioning existing shutter hardware ready for use as described in Section 08 71 00, Hardware.

B. Advise Architect of the date when selection and purchase of each product or systemn described by an allowance must be completed to avoid delaying the Work.

C. Submit invoices to show cost of products furnished under each allowance. Reconciliation of Allowance amounts with actual costs will be by Change Order.

1. The amount of the change order resulting from final selection of products covered by each allowance shall be the difference between the purchase order amount and the allowance, and shall not include Contractor's mark-up or subcontractor's mark-up except to the extent clearly demonstrated by the Contractor that either the scope of the installation or the nature of the work required of him was changed from that which could have been foreseen from the description of the allowance and other information in the contract documents. No mark-up is permitted for selection of higher or lower priced material or systems of the same scope and nature as originally indicated.

1.5 CONTRACT MODIFICATION PROCEDURES

A. On Owner's approval of a change order proposal from Contractor, Architect will issue a Change Order for all changes to Contract Sum or Contract Time.

B. When Owner and Contractor disagree on the terms of a proposal, Architect may issue a Construction Change Directive instructing Contractor to proceed with the change. Construction Change Directive will contain a description of the change and designate the method to be followed to determine changes to Contract Sum or Contract Time.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 01 20 00

SECTION 02 41 13 - SITE DEMOLITION & CLEARING – REVISED 11/17/2025

PART 1 - GENERAL

1.1 WORK INCLUDED

A. Identify and mark utilities to remain.

B. Remove designated trees, shrubs, other plants, stumps, and lawn.

C. Protecting existing vegetation to remain.

D. Remove materials from site.

E. Remove surface debris.

1.2 DEFINITIONS

A. Tree and Plant-Protection Zones: Area surrounding individual trees, groups of trees, shrubs, or other vegetation to be protected during construction as indicated on Drawings, and according to requirements in Section 01 56 39, Temporary Tree and Plant Protection.

B. Vegetation: Trees, shrubs, groundcovers, grass, and other plants.

C. Remove: Detach items from existing construction and legally dispose of them off-site, unless indicated to be removed and salvaged or removed and reinstalled.

D. Remove and Salvage: Detach items from existing construction, in a manner to prevent damage, and deliver them to Owner's designated storage area.

E. Remove and Reinstall (often referred to as "Remove and Reuse"): Detach items from existing construction, prepare them for reuse, and reinstall them where indicated.

1.3 RELATED WORK

A. Section 01 50 00 - Construction Facilities and Temporary Controls: Barricades, fences, and landscape protection.

1.4 SUBMITTALS

A. Submit demolition and removal procedures and schedule.

B. Submit record documents.

1.5 ARCHEOLOGICAL PROTECTION

A. All areas of ground disturbance on the site are considered potentially sensitive archeological areas.

B. During work that involves ground disturbing activities, an archaeologist from Rivanna Archaeological Services will be on site to identify and document cultural resources. They will coordinate the required monitoring with the Contractor's work schedule.

1. At least seven (7) calendar days prior to commencing ground disturbing activities, including tree removal, provide a schedule of these activities to the representative of Rivanna Archaeological Services.

2. Scheduling of ground disturbing activities shall be scheduled so that work is undertaken at as many sites as possible at one time so as to limit the number of times that an archaeologist is required on-site.

C. The monitoring may require periodic pauses in construction activities to allow time for proper examination and documentation. There may also be a situation where the archaeologists encounter a potentially significant archaeological resource that requires more than basic documentation. In this case, both the Architect and the Owner will be notified and a meeting that includes the Contractor will occur at which a path forward will be agreed upon. This may involve several options including avoidance of the resource, additional archaeological investigations, etc.

D. Cooperate fully with members of Rivanna Archaeological Services so that their work may be carried out smoothly, without interfering with or delaying work under this Contract.

1.6 FIELD CONDITIONS

A. Conduct demolition to minimize interference with adjacent structures and improvements.

B. Provide, erect, and maintain temporary barriers and security devices.

C. Conduct operations with minimum interference to public or private thoroughfares. Maintain protected egress and access at all times.

D. Do not close or obstruct roadways without permits.

E. Tree- and Plant-Protection Zones: Protect according to requirements in Section 01 56 39, Temporary Tree and Plant Protection.

PART 2 - PRODUCTS

2.1 MULCH

A. Mulch shall be fresh ground hardwood mulch, natural color, as produced by Mulch Monkeys, Palmyra, VA www.mulchmonkeys.com, Monticello Mulch, Palmyra, VA, www.monticellmulch.com, or similar approved supplier.

PART 3 - EXECUTION

3.1 PREPARATION

A. Verify that trees, shrubs, and other vegetation to remain or to be relocated have been flagged and that protection zones have been identified and enclosed according to requirements in Section 01 56 39, Temporary Tree and Plant Protection

B. Protect existing site improvements to remain free from damage during construction.

1. Restore damaged improvements to their original condition, as acceptable to Owner.

3.2 TREE AND PLANT PROTECTION

A. Protect trees and plants remaining on-site according to requirements in Section 01 56 39, Temporary Tree and Plant Protection.

B. Repair or replace trees, shrubs, and other vegetation indicated to remain or be relocated that are damaged by construction operations according to requirements in Section 01 56 39, Temporary Tree and Plant Protection.

3.3 CLEARING AND GRUBBING

A. Remove obstructions, trees, shrubs, and other vegetation to permit installation of new construction or to provide access to work areas.

1. Do not remove trees, shrubs, and other vegetation indicated to remain or to be relocated.
2. Grind down stumps and remove roots larger than 2 inches in diameter, obstructions, and debris to a depth of 18 inches below exposed subgrade.
3. Use only hand methods or air spade for grubbing within protection zones.
4. Chip removed tree branches and dispose of off-site.
5. Fill depressions caused by clearing and grubbing operations with satisfactory soil material. Place fill material in layers not exceeding a loose depth of 8 inches and compact each layer.

3.4 SITE IMPROVEMENTS

A. Remove existing above- and below-grade items to suit Project.

B. Remove slabs, steps, paving, curbs, gutters, and other concrete items as indicated.

C. Remove brick paving at west entry as shown on the Drawings. Remove brick pavers at the east ramp landing and reinstall as specified in Section 32 14 00, Unit Paving.

D. Remove ramp to building at the southeast of site as necessary to accomplish site work in that area, store during construction, and then reinstall the ramp upon completion of the work. That building will remain in operation during the project.

E. Remove steel guardrail at east entry as shown on the Drawings.

F. Backfill areas excavated, open pits and holes caused as a result of demolition.

G. Rough grade and compact areas affected by demolition to maintain site grades and contours.

H. Remove demolished materials from site as work progresses. Leave site in clean condition.

3.5 DISPOSE OF SURPLUS AND WASTE MATERIALS

A. Except where noted otherwise, immediately remove and legally discard off-site all demolished material, cuttings, dead tree limbs, removed trees and their cuttings, removed stumps, and other debris remaining after work done under this Section from the site. Discard construction waste as specified in Section 01 74 19, Construction Waste Management and Disposal

1. Do not burn or bury materials on site.

B. Relics, antiques, and similar objects remain the property of the Owner. Notify Owner's Representative prior to removal and obtain acceptance regarding method of removal.

C. Clear undergrowth and deadwood, without disturbing subsoil.

END OF SECTION 02 41 13

SECTION 04 03 22 – HISTORIC BRICK UNIT MASONRY REPAIR
REVISED 11/17/2025

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Description of Work: Section includes, but is not necessarily limited to, the following:

1. Removal of the northeast brick chimney down to attic level and reconstruction utilizing new replacement brick.
2. Removal of 20 existing stretcher bricks total from the interior face of the north tympanum for use in replacing damaged face brick where needed. Contractor to identify and review with architect prior to removals.
3. Repointing and repair of the interior face of the north tympanum, using brick salvaged from northeast brick chimney to replace those removed.
4. Removal of existing face bricks that are cracked, spalled, or otherwise broken, and replacement in kind with salvaged bricks.
5. Remove and resetting of existing undamaged face bricks which are loose or displaced.
6. Patching holes in bricks.
7. Re-pointing of existing brick joints which are missing, loose, or otherwise deteriorated.

B. Related Sections include the following:

1. Section 04 03 10, Historic Masonry Cleaning
2. Section 04 03 42, Historic Stone Masonry Repair.
3. Section 07 62 00, Sheet Metal Flashing and Trim
4. Section 09 24 00, Cement Plastering.
5. Section 32 14 00, Brick Unit Paving.

1.3 HISTORICAL BUILDING

A. Project work involves the rehabilitation of a historically significant building. The building shall be treated respectfully. Existing conditions are to be carefully treated and no material or element shall be removed or disfigured unless specifically indicated on Drawings, specified herein, or directed by the Architect.

1.4 UNIT PRICES

A. Work of this Section is affected by unit prices as specified in Section 01 20 00, Price and Payment Procedures.

1. Unit prices apply to authorized work covered by estimated quantities.
2. Unit prices apply to deletions or additions to the Work as authorized by Change Orders.
3. Umit Price No.6 – Brick Repointing

Repoint brick masonry joints on the building's exterior walls as called for in Section 04 03 21, Historic Brick Unit Masonry Repair. For bidding purposes assume the total repointing is to be 400 square feet. At completion of the work, the Contract Sum will be adjusted on account of the actual amount of joints repointed using Unit Price No. 6.

1.5 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project Site.

1. Review methods and procedures related to repairing historic brick masonry, including, but not limited to, the following:

a. Historic treatment specialist's personnel, equipment, and facilities needed to make progress and avoid delays.
b. Materials, material application, sequencing, tolerances, and required clearances.
c. Unit masonry historic treatment and quality-control program.

1.6 ACTION SUBMITTALS

A. Product Data: For each type of product specified.

B. Samples for Initial Selection: For the following:

1. Pointing Mortar: Submit sets of mortar that will be left exposed in the form of sample mortar strips, 6 inches (150 mm) long by 1/4 inch (6 mm)] wide, set in the wall.

a. Have each set contain a close color range of at least three samples of different mixes of colored sands and cements that produce a mortar matching existing, cleaned mortar when cured and dry.
b. Submit with precise measurements on ingredients, proportions, gradations, and sources of colored sands from which each sample was made.

2. Patching Compound: Submit sets of patching compound samples in the form of mortar biscuits set in plastic discs at minimum 2 inches in diameter representative of the brick colors on the building.

a. Have each set contain a close color range of at least three samples of different mixes that produce a patching mortar matching the cleaned brick when cured and dry.

1.7 INFORMATIONAL SUBMITTALS

A. Qualification Data: For historic brick masonry repair firm, including field supervisors and masons.

B. Unit masonry historic treatment program, including quality control program.

1.8 QUALITY ASSURANCE

A. Qualification Data:

1. A qualified historic brick masonry repair specialist. Experience installing standard unit masonry is insufficient experience for masonry historic treatment work. Work shall be performed by a firm having not less than 10 years successful experience in comparable masonry restoration projects and employing personnel skilled in the restoration processes and operations required. Employed field supervisors and masons must have 10 years successful experience in comparable masonry restoration projects.

B. Unit Masonry Historic Treatment Program: Prepare a written, detailed description of materials, methods, equipment, and sequence of operations to be used for each phase of historic treatment work, including protection of surrounding materials and project site.

1. Include methods for keeping exposed mortar damp during curing period.
2. Prepare a written quality-control program for this project to systematically demonstrate the ability of personnel to properly follow methods and use materials and tools without damaging masonry. Include provisions for supervising worker performance and preventing damage.
3. If materials and methods other than those indicated are proposed for any phase of historic treatment work, add to the quality-control program a written description of such materials and methods, including evidence of successful use on comparable projects, and demonstrations to show their effectiveness for this Project.

C. Mockups: Prepare mockups of historic treatment to demonstrate aesthetic effects and to set quality standards for materials and execution and for fabrication and installation. Use materials and methods proposed for completed Work and prepare samples under same weather conditions to be expected during remainder of Work. Prior to commencing Work and preceding pre-installation conference, provide sample installations for the following:

1. Masonry Installation: Construct sample area in location in existing walls where directed by Architect unless otherwise indicated. Demonstrate quality of materials, workmanship, and blending with existing work. Include the following as a minimum:

a. Replacement: 4 broken brick units replaced in kind with salvaged bricks.

2. Masonry Repair: Prepare sample areas for each type of masonry material indicated to have repair work performed. Construct sample areas in locations in existing walls where directed by Architect unless otherwise indicated. Demonstrate quality of materials, workmanship, and blending with existing work. Include the following as a minimum:

a. Removal of existing mortar at joints to be re-pointed: Minimum: 9 square feet (0.83 square meters).
b. Re-pointing Sample Selection: Each type, color, and texture of pointing mortar in the form of sample mortar strips, 6 inches (150mm) long by ¼ inch wide set in the wall.
c. Re-pointing: Minimum 9 square feet (0.83 square meters) using selected mortar from the re-pointing sample selection.
d. Patching Compound: Brick holes or spalls minimum 2 each at 1 in. diameter in the wall. Document each sample with manufacturer and stock number or other information necessary to order additional material.

3. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
4. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

D. Prior to start of Work, meet at site, under Contractor's direction, to review mock ups, sequencing and installation procedures and coordination with other Work.

1.9 DELIVERY, STORAGE, AND HANDLING

A. Deliver bricks to Project site strapped together in suitable packs or pallets or in heavy-duty cartons and protected against impact and chipping.

B. Deliver packaged materials to Project site in manufacturer's original and unopened containers, labeled with manufacturer's name and type of products.

C. Store cementitious materials on elevated platforms, under cover, and in a dry location. Do not use cementitious materials that have become damp.

D. Store hydrated lime in manufacturer's original and unopened containers. Discard lime if containers have been damaged or have been opened for more than two days.

E. Store lime putty covered with water in sealed containers.

F. Store sand where grading and other required characteristics can be maintained and contamination avoided.

G. Handle bricks to prevent overstressing, chipping, defacement, and other damage.

1.10 FIELD CONDITIONS

A. Environmental Requirements: Proceed with installation only when existing and forecasted weather conditions permit repair work to be performed according to product manufacturers' written instructions and specified requirements.

1. Clean masonry surfaces only when air temperatures are 40 deg F and above and will remain so until masonry has dried out, but for not less than 7 days after completion of cleaning.
2. Do not re-point mortar joints or repair masonry unless air temperatures are between 40 deg F and 80 deg F and will remain so for at least 48 hours after completion of Work.
3. Do not build upon frozen Work.
4. Do not set units which are at temperatures of less than 32 deg F or which have film of frozen water or frost.
5. Remove and replace, as directed, work which is observed to be damaged in any way by freezing or frost.
6. Provide temporary heat and enclosure for Work which has been completed less than 24 hours when ambient temperature is less than 40 deg F and falling.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Source Limitations: Obtain each type of material for repairing historic masonry (cement, sand, etc.) from single source with resources to provide materials of consistent quality in appearance and physical properties.

B. Any salvaged historic face brick that is not reused on the building shall be delivered to the Owner.

2.2 MASONRY MATERIALS

A. Salvaged Face Brick: Salvage and reuse existing face brick from locations on the exterior of the building and the interior side of the north tympanum wall in the attic to greatest extent possible.

1. Obtain salvaged brick from areas indicated by Architect. Clean off residual mortar, dirt, and other residue.
2. Use salvaged brick from the knee wall in the attic to replace broken or missing face brick in exposed areas approved by Architect, until no salvaged brick remains.

B. Replacement Face Brick: Hand molded brick as manufactured by Old Carolina Brick Company, 475 Majolica Road, Salisbury, NC 28147 (800-536-8850), or approved equal,

1. Texture and color as selected by the Architect from the manufacturer's standard lines.
2. Replacement face brick is intended for use in reconstructing the northeast chimney from attic level up.

2.3 MORTAR MATERIALS

A. General: Materials for re-pointing and re-setting Work shall match existing mortar and grout materials and shall conform to the following standards

B. Portland Cement: ASTM C150/C150M, Type I or Type II; white where required for color matching of mortar.

C. Hydrated Lime: ASTM C207, Type S.

D. Mortar Sand: ASTM C144 unless otherwise indicated.

1. Match size, texture, and gradation of existing mortar sand as closely as possible. Blend several sands if necessary to achieve suitable match.

E. Colored Mortar: Produce mortar of color required by using specified ingredients. Do not alter specified proportions without Architect's approval.

1. Mortar Pigments: ASTM C979/C979M, compounded for use in mortar mixes, and having a record of satisfactory performance in masonry mortars. As required for pointing mortar to match color of existing mortar.

F. Water: Clean, clear, non-alkaline and free of salts and other harmful elements which would impair Work; potable.

G. Antifreeze Additives: Do not lower freezing point of setting or pointing mortars by use of antifreeze agents, including calcium chloride.

2.4 MANUFACTURED REPAIR MATERIALS

A. Brick Patching Compound: Factory-mixed cementitious compound that is custom manufactured for patching brick, is mineral-based, vapor and water permeable, exhibits low shrinkage, and develops high bond strength.

1. Formulate in colors and textures to match brick being patched.
2. Basis of Design is Jahn M100 Mortar as distributed by Cathedral Stone Products, Inc.

2.5 MORTAR MIXES

A. Measurement and Mixing: Measure cementitious materials and sand in a dry condition by volume or equivalent weight. Do not measure by shovel; use known measure. Mix dry materials thoroughly in a clean, mechanical batch mixer. Mix again, using only enough water to make a damp, workable mix which will retain its form when pressed into a ball. Keep mortar in this dampened condition for one to two hours, then add water to bring it to proper consistency.

1. Use mortar within 60 minutes of final mixing. Re-tempering is not permitted.

B. Admixtures: Do not use admixtures in mortar.

C. Mixes: Mix mortar materials in the following proportions:

1. Natural Hydraulic Lime (NHL) 3.5 in a ratio of 1 hydrated lime: 2.5 ASTM C144 sand.

2.6. CLEANING MATERIALS AND EQUIPMENT

A. Water for Cleaning:

1. Clean, potable, free of oils, acids, alkalis, salts and organic matter. Warm water between 140-180 deg F (60-82 deg C).

B. Brushes: Fiber bristle, except where otherwise recommended by manufacturer of chemical cleaners.

C. Spray Equipment:

1. Provide spray equipment that provides controlled application of water at rates indicated for pressure measured at spray tip, and for volume. Adjust pressure and volume as required to ensure that cleaning methods do not damage masonry. Equip units with pressure gages.
2. Spray application of chemical cleaners is not permitted.
3. For water spray application, provide fan-shaped spray tip that disperses water at an angle of 25 to 50 degrees.

PART 3 - EXECUTION

3.1 PROTECTION

A. Prevent mortar from staining face of surrounding masonry and other surfaces.

1. Cover sills, ledges, and other projecting items to protect them from mortar droppings.
2. Keep wall area wet below rebuilding and repair work to discourage mortar from adhering.
3. Immediately remove mortar splatters in contact with exposed masonry and other surfaces.
4. Provide temporary rain drainage during work to direct water away from building.

3.2 MASONRY REPAIR, GENERAL

A. Have repair work performed only by qualified historic treatment specialist.

B. Repair Appearance Standard: Repaired surfaces are to have a uniform appearance as viewed from 10 feet away by Architect.

C. Perform masonry historic treatment work in the following sequence:

1. Inspect masonry for open mortar joints. Where repairs are required, temporarily fill joints with removable material to prevent the intrusion of water and other cleaning materials into the wall.
2. Remove paint and overpainting from bricks.
3. Clean brick and surrounding masonry units.
4. Rake out mortar from joints to be removed and replaced and from joints adjacent to masonry repairs along joints.
5. Disassemble northeast chimney bricks. Provide temporary protection for roof opening.
6. Salvage bricks at attic knee wall, clean salvaged bricks.

7. Remove cracked, broken, or spalled bricks with damage over 1” in diameter. Install salvaged brick in areas indicated and prepare joints for pointing.
8. Salvage brick units from north tympanum for installation elsewhere on the building exterior.
9. Patch holes or spalls in brick under 1” with color-matched patching mortar.
10. Remove and reset displaced bricks as applicable.
11. Reconstruct disassembled brick chimneys with reusable existing brick units and new matching brick units.
12. Rake out mortar from joints to be repointed.
13. Re-point brick as indicated including salvaged, reset, replaced, and reconstructed brick masonry. Provide sealant joints at chimneys and repoint remaining brick chimneys 100%.
14. After repairs and repointing have been completed and cured, perform a final cleaning to remove residues from this work.

3.3 BRICK REMOVAL AND REPLACEMENT

A. General: Provide new Work, re-install and repair and patch existing Work as required to match accepted sample installations.

B. Erect Work plumb and true with joints uniform in width and accurately aligned. Do not install units which are chipped, cracked, discolored or not properly finished.

C. At locations indicated, remove bricks that are damaged, spalled, or deteriorated or are to be reused. Carefully remove entire units from joint to joint, without damaging surrounding masonry, in a manner that permits replacement with full-size units.

D. When removing single bricks, remove material from center of brick and work toward outside edges.

E. Support and protect remaining masonry that surrounds removal area. Maintain flashing, reinforcement, lintels, and adjoining construction in an undamaged condition. Coordinate with work specified in other sections.

F. Notify Architect of unforeseen detrimental conditions, including voids, cracks, bulges, loose masonry units in existing backup, rotted wood, rusted metal, and other deteriorated items.

3.4 LAYING SALVAGED BRICK

A. Preparation: Clean salvaged brick of existing mortar, dirt and other foreign matter.

B. Installation:

1. Fit brick masonry units into bonding and coursing pattern of existing surrounding masonry.
2. If cutting is required, use motor driven saw designed to cut masonry with clean, sharp, unchipped edges.
3. Lay brick with completely filled bed, head and collar joints.
4. Butter ends with sufficient mortar to fill head joints and shove into place.

5. Use wetting methods which ensure that units are nearly saturated but surface dry when laid.
6. Maintain joint width to match existing.

3.5 BRICK MASONRY PATCHING

A. Install new brick patching mortar to repair small holes or imperfections related to the removal of fasteners from signage, utility connections, or related to small penetrations from abandoned systems. Patches may be performed if holes and imperfections total less than 25% of brick. If holes and imperfections are greater than 25% of the brick, replace the brick as directed instead of patching.

B. Thoroughly clean all surfaces to receive patching material as required to provide sound base per manufacturer's instructions. Rinse thoroughly with clean water and bristle brush to remove all dust, dirt, grease, oil, or any other debris.

C. Remove deteriorated material and remove adjacent materials that have begun to deteriorate. Carefully remove additional material so patch will not have feathered edges but will have square or slightly undercut beveled edges with minimum 1/2 in. depth.

D. After cleaning area to receive patch, soak area to be patched with water. Surface shall be damp, but no standing water. Install slurry coat of patching compound into hole.

E. Mix according to manufacturer's instructions.

F. Apply patching to wet surface, with no pooling water; if surface is allowed to dry out before mortar is applied, repeat wetting.

G. Build out patching material further than surface of original substrate; after patching material achieves initial set, scrape away excess mortar until desired profile is attained. Do not feather edges. Maintain all true mortar joints and do not patch into joint.

H. Keep patching moist by water-misting several times a day for 72-hour period.

I. Where access to patches is not possible, cover patches temporarily with plastic sheeting; application of plastic sheeting does not alter requirements for normal curing techniques.

J. Remove and replace patches that have hairline cracks, those that are separated from stone at perimeter, and those that do not match adjoining stone in color or texture.

3.6 REPOINTING

A. Types and widths: As indicated and as required to match existing.

B. Joint preparation and materials installation: Follow procedures specified for re-pointing and re-sealing Work.

C. Tool exposed mortar joints in repaired areas to match joints of surrounding existing brickwork.

D. Rake out mortar used for laying brick before mortar sets oint at same time as repointing of surrounding area.

E. When mortar is hard enough to support units, remove shims and other devices interfering with pointing of joints.

F. Curing: Cure mortar by maintaining in thoroughly damp condition for at least 72 consecutive hours, including weekends and holidays.

G. Hairline cracking within the mortar or mortar separation at edge of a joint is unacceptable. Completely remove such mortar and repoint.

3.7 FINAL CLEANING

A. After mortar has fully hardened, thoroughly clean exposed masonry surfaces of excess mortar and foreign matter; use wood scrapers, stiff-nylon or -fiber brushes, and clean water, applied by low-pressure spray. Do not use metal scrapers or brushes.

B. Proceed with cleaning in an orderly manner; work from top to bottom and from one end of each elevation to the other. Ensure that dirty residues and rinse water will not wash over cleaned, dry surfaces. Clean adjacent non-masonry surfaces. Use detergent and soft brushes.

C. Clean mortar and debris from roof; remove debris from gutters at grade. Rinse off roof and flush gutters at grade.

D. Use the gentlest materials and methods possible to clean masonry. If these should not prove adequate for cleaning, other methods may be used after consultation and acceptance of Architect.

E. Architect's selection of cleaning materials and methods will be based on results of cleaning sample installation test patches.

F. Remove masking materials, leaving no residues that could trap dirt.

G. Sweep and rake adjacent pavement and grounds to remove mortar and debris. Where necessary, pressure-wash pavement surfaces to remove mortar, dust, dirt, and stains.

H. Perform each cleaning method indicated in a manner that results in uniform coverage of all surfaces, including corners, moldings, and interstices, and that produces an even effect without streaking or damaging masonry surfaces.

3.8 FIELD QUALITY CONTROL

A. Architect's Project Representatives: Architect will assign Project representatives to help carry out Architect's responsibilities at the site, including observing progress and quality of portion of the Work completed. Allow Architect's Project representatives use of lift devices and scaffolding, as needed, to observe progress and quality of portion of the Work completed.

3.9 MASONRY-WASTE DISPOSAL

A. Except where noted otherwise, immediately remove and legally discard off-site all demolished material, and other debris remaining after work done under this Section from the site. Discard

construction waste as specified in Section 01 74 19, Construction Waste Management and Disposal

END OF SECTION 04 03 22

SECTION 09 24 00 – CEMENT PLASTERING – REVISED 11/17/2025

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes:

1. Repair and replacement of existing exterior stucco.

B. Related Requirements:

1. Section 01 35 91, Historic Treatment Procedures, for general historic treatment requirements.
2. Section 09 90 00, Painting, for surface preparation for refinishing of stucco surfaces.

1.3 UNIT PRICES

A. Work of this Section is affected by unit prices as specified in Section 01 20 00, Price and Payment Procedures.

1. Unit prices apply to authorized work covered by estimated quantities.
2. Unit prices apply to deletions or additions to the Work as authorized by Change Orders.
3. Umit Price No.4 – Stucco Crack Repair

   Repair cracks in stucco pilasters, columns, and the Portico ceiling as called for in Section 09 24 00, Cement Plastering. For bidding purposes assume the total repair is to be 150 linear feet. At completion of the work, the Contract Sum will be adjusted on account of the actual amount repaired using Unit Price No. 4.
4. Unit Price No. 5 – Stucco Patching
5. Patch deteriorated or delaminated areas of stucco at the pilasters, columns, and the Portico ceiling as called for in Section 09 24 00, Cement Plastering. For bidding purposes assume the total patching is to be 150 square feet. At completion of the work, the Contract Sum will be adjusted on account of the actual amount patched using Unit Price No. 5.

1.4 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project Site.

1. Review methods and procedures related to repairing existing stucco, including, but not limited to, the following:

a. Plastering Subcontractor's personnel, equipment, and facilities needed to make progress and avoid delays.
b. Materials, material application, sequencing, tolerances, and required clearances.
c. Historic treatment and quality-control program.

1.5 SEQUENCING AND SCHEDULING

A. Perform treatment of plaster in the following sequence, which includes work specified in this and other Sections:

1. Remove finish layer of stucco on exterior columns and pilasters.
2. Sound all stucco to identify areas of delamination and cracking.
3. Repair delamination greater than 1 SF at columns with a three-coat crack repair.
4. Repair delamination at pilasters 1 SF across a plane, or at corners, with a three-coat patch repair.
5. At the columns and pilasters, repair cracks in the brown coat using brown coat materials
6. Paint columns and pilasters using a sanded paint.
7. Sound portico ceiling, remove delaminated stucco and repair using stucco 3-coat patch repairs to match existing.
8. Paint portico ceiling using a plain exterior paint as specified.
9. Remove all stucco from the exterior north basement stair and install new stucco.
10. Paint stucco at the exterior north stair using a plain exterior paint as specified.

1.6 REGULATORY/SAFETY REQUIREMENTS

A. Existing surfaces have been tested for the presence of lead-based paint. Of the items tested, the exterior columns and pilasters were found to be painted with lead-based paint. Removal of paint from these items, as called for, shall be done as specified in Section 02 83 19.13, Lead-Based Paint Abatement.

B. Existing materials have been tested for the presence of asbestos containing materials. Of the items tested, the stucco on the wall of the north exterior stair to the basement contained asbestos. Removal of this material, as called for, shall be done as specified in Section 02 82 13, Asbestos Abatement.

C. Conform to local and federal codes and regulations for the protection of workers and the handling and disposing of the lead containing paint residue and materials containing asbestos.

1.7 ACTION SUBMITTALS

A. Product Data: For each type of product.

1.8 INFORMATIONAL SUBMITTALS

A. Qualification Data: For restoration plaster firm, including field supervisors and plasterers

B. Stucco treatment program, including quality control program.

1.9 QUALITY ASSURANCE

A. Restoration Plaster Subcontractor Qualifications: A qualified historic restoration plaster contractor with competency in stucco repair. Experience installing new plasterwork or veneer plaster is insufficient experience for historic treatment work.

1. Firm or company which has specialized for not less than 10 years in successful installation of repair work similar to Work indicated and required for this Project.
2. Employs only experienced tradesmen with minimum of 5 years successful experience in fabrication and installation of Work.
3. Field Supervision: Maintain an experienced full-time supervisor on the Project site during times that stucco repair work is in progress.

B. Stucco Treatment Program: Prepare a written, detailed description of materials, methods, equipment, and sequence of operations to be used for historic treatment work and protection of surrounding materials and Project site.

1. If materials and methods other than those indicated are proposed for any phase of historic treatment work, add a written description of such materials and methods, including evidence of successful use on comparable projects, and demonstrations to show their effectiveness for this Project.

C. Mockups: Prepare mockups of treatment processes for each type of stucco repair and reconstruction work to demonstrate aesthetic effects and to set quality standards for materials and execution and for fabrication and installation.

1. Locate mockups where directed by Architect for each substrate and finish texture indicated for stucco restoration, including accessories. Mockups can be combined.

    a. Size: 2 sq. ft in surface area.
    b. Stucco patch preparation.
    c. Stucco finish preparation.

2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
3. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.10 DELIVERY, STORAGE AND HANDLING

A. Store materials inside under cover, and keep them dry and protected against damage from weather, moisture, direct sunlight, surface contamination, corrosion, construction traffic, and other causes.

1.11 FIELD CONDITIONS

A. Comply with ASTM C926 requirements.

B. Weather Limitations: Proceed with stucco work only when existing and forecasted weather conditions are within the environmental limits set by each manufacturer's written instructions and specified requirements.

C. Exterior Stuccowork:

1. Apply and cure stucco to prevent stucco drying out during curing period. Use procedures required by climatic conditions, including moist curing, providing coverings, and providing barriers to deflect sunlight and wind.
2. Apply stucco when ambient temperature is greater than 40 deg F (4.4 deg C).
3. Protect stucco coats from freezing for not less than 48 hours after set of stucco coat has occurred.
4. Finish Coats: Comply with manufacturer's written instructions for environmental conditions for applying finish coats.

PART 2 - PRODUCTS

A. STUCCO MATERIALS

1. Portland Cement: ASTM C 150/C 150M, Type I or Type II.
2. Colorants for Job-Mixed Finish Coats: Use sand to color finish coats.
3. Lime: ASTM C 206, Type S; or ASTM C 207, Type S.
4. Sand Aggregate: ASTM C897.

B. MISCELLANEOUS MATERIALS

1. Water for Mixing and Finishing Stucco: Potable and free of substances capable of affecting stucco set or of damaging stucco, lath, or accessories.
2. Bonding Compound: ASTM C932.

C. ACCESSORIES

1. General: Comply with requirements in ASTM C1063, and coordinate depth of trim and accessories with thicknesses and number of stucco coats required.
2. External- (Outside-) Corner Reinforcement: Fabricated from metal lath, hot-dip galvanized with ASTM A653/A653M G60 zinc coating.

2.2 BASE-COAT STUCCO

A. General: Comply with requirements in ASTM C926, Type CL.

a. Aggregate: Sand.

1. Base-Coat Mixes for Use over Metal Lath (Portico Ceiling): Scratch and brown coats for three-coat plasterwork as follows:

a. Scratch Coat: For cementitious material, mix 1 part Portland cement and 3/**4 to 1-1/2** parts lime. Use 2-1/2 to 4 parts aggregate per part of cementitious material.
b. Brown Coat: For cementitious material, mix 1 part Portland cement and 3/4 to 1-1/2 parts lime. Use 3 to 5 parts aggregate, per part of cementitious material. but not less than volume of aggregate used in scratch coat.

2. High-Absorption Unit Masonry (Pilasters, Columns, and North Exterior Stairway):

a. Scratch Coat: For cementitious material, mix 1 part Portland cement and 3/4 to 1-1/2 parts lime. Use 2-1/2 to 4 parts aggregate per part of cementitious material.
b. Brown Coat: For cementitious material, mix 1 part Portland cement and 3/4 to 1-1/2 parts lime. Use 3 to 5 parts aggregate, per part of cementitious material, but not less than volume of aggregate used in scratch coat.

2.3 STUCCO FINISH COATS

A. Job-Mixed Finish-Coat Mix: Comply with requirements in ASTM C926, Type FL.

1. Aggregates: Sand:
2. Portland Cement Mix: For cementitious material, mix 1 part Portland cement and 1-1/2 to 2 parts lime. Use 1-1/2 to 3 parts aggregate per sum of separate volumes of cementitious materials.
3. Color: Match color of existing stucco using sand to achieve the color. A petrographic analysis of the existing stucco was carried out and will be made available to the successful Contractor.

PART 3 - EXECUTION

3.1 SEQUENCING AND SCHEDULING

A. Perform cement stucco treatment work in the following sequence:

1. Columns and Pilasters:

a. Remove 100% of finish stucco layer from columns and pilasters.
b. Sound columns and pilasters noting areas of delamination and cracks (see Paragraph 3.2 A).
c. Remove delaminated and damaged stucco that is no longer bonded to the substrate.
d. Patch delaminated stucco with a three-coat repair.

e. Repair cracks using the same materials as the outermost layer (i.e. cracks in the brown coat are to be repaired with brown coat materials).
f. Apply sanded paint finish (see Section 09 90 00).

2. Portico Ceiling:

a. Strip paint from the portico ceiling.
b. Sound ceiling. Remove delaminated and damaged stucco.
c. Provide crack and patch repairs.
d. Apply plain exterior paint finish (see Section 09 90 00),

3. North Exterior Basement Stair:

a. Remove all existing plaster.
b. Apply three-coat stucco over existing CMU wall.
c. Apply plain exterior paint finish (see Section 09 90 00).

3.2 EXAMINATION

A. Sound stucco surfaces of columns, pilasters, and portico ceiling with an acrylic hammer to identify areas of loose stucco for repair.

1. Mark areas of repair on elevation with reversible method, like tape or chalk, and document proposed extent of repairs.
2. Submit documentation for Architect approval prior to beginning work.

B. Reject plaster materials that are wet or moisture damaged.

C. Examine conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.3 PREPARATION

A. Protect adjacent work from soiling, spattering, moisture deterioration, and other harmful effects caused by stuccoing.

3.4 INSTALLATION OF ACCESSORIES

A. Install in accordance with ASTM C1063 and at locations indicated on Drawings.

B. Reinforcement for External (Outside) Corners:

1. Install cornerite at exterior locations.

3.5 STUCCO REMOVAL AND REPLACEMENT, GENERAL

A. Dismantle stucco that is damaged or deteriorated, severely cracked and hollow when sounded, or loose. Carefully dismantle areas along straight edges that lie over supports, without damaging surrounding stuccowork. Do not remove cracked stucco if bond is sound.

B. Notify Architect of undocumented detrimental conditions including cracks, bulges, loose backup, rotted wood, rusted metal, and other deteriorated items.

C. Clean substrate surfaces to remove grease, waxes, oils, waterborne staining, debris, and other foreign matter and deposits that could impair bond with repair material.

D. Wet remaining stucco abutting the replacement stucco before installing new stuccowork.

3.6 STUCCO REMOVAL AND PATCHING AT COLUMNS AND PILASTERS

A. Remove finish coat in its entirety,

B. Dismantle delaminated areas of brown coat of stucco to existing sound plaster. If delamination or damage goes deeper than the brown coat in some areas remove sufficient scratch coat to reach sound material.

C. Prepare surface of remaining stucco ready to receive patching.

1. Sand bonding surfaces of repair area, and clean the surface with a nonmetallic bristle brush.
2. Rake perimeter of delaminated or damaged area to sound plaster, and slightly undercut existing plaster to enable replacement stucco to tuck behind existing stucco.
3. Wet substrate to damp condition, but without visible water droplets, then install new stucco to original profiles.

D. Install patching material.

1. Apply scratch coat (if needed) and cross-hatch with comb. Let cure for 24-48 hours.
2. Apply brown coat, smooth. Let cure for 24-48 hours.

3.7 STUCCO REMOVAL AND PATCHING AT PORTICO CEILING

A. Dismantle delaminated areas of brown coat of stucco to existing sound plaster. If delamination or damage goes deeper than the brown coat in some areas remove sufficient scratch coat to reach sound material.

B. Prepare surface of remaining stucco ready to receive patching.

1. Sand bonding surfaces of repair area, and clean the surface with a nonmetallic bristle brush.
2. Rake perimeter of delaminated or damaged area to sound plaster, and slightly undercut existing plaster to enable replacement stucco to tuck behind existing stucco.

3. Wet substrate to damp condition, but without visible water droplets, then install new stucco to original profiles.

C. Install patching material.

1. Apply scratch coat (if needed) and cross-hatch with comb. Let cure for 24-48 hours.
2. Apply brown coat, smooth. Let cure for 24-48 hours.
3. Apply finish coat, smooth. Let cure for 24-48 hours.

3.8 REPAIR OF CRACKS AT COLUMNS, PILASTERS, AND PORTICO CEILING

A. General: Repair cracks 1/8 inch in width or narrower in otherwise sound plaster..

1. Notify Architect of undocumented detrimental conditions including cracks, bulges, loose backup, rotted wood, rusted metal, and other deteriorated items.
2. Maintain adjacent plasterwork in an undamaged condition so far as practicable.

B. Existing Topcoat (Portico ceiling): Open crack in existing topcoat to at least 3/16 inch in width.

C. Existing Base Coats (Columns and Pilasters): Do not open crack wider in existing base coats.

D. Clean out crack to remove loose materials and other foreign matter and deposits that could impair bond with repair material. Where grease, waxes, oils, waterborne staining, or other foreign matter and deposits that could impair bond with repair material have penetrated into the topcoat plaster, widen the crack and sand surface of the exposed basecoat to remove these deposits.

E. Wet substrate to damp condition, but without visible water droplets.

F. For columns and pilasters force brown coat plaster into crack filling crack to original plaster profile. For the portico ceiling, force finish coat plaster into the crack filling the crack to the original profile.

G. Finishing:

1. Columns and Pilasters: Finish flat surfaces flush with the brown coat with same texture as adjacent existing plaster.
2. Portico Ceiling: Finish flat surfaces flush with the final coat with the same texture as the adjacent existing plaster.

3.9 LARGE CRACK REPAIR

A. General: Repair cracks over 1/8 inch in width in otherwise sound plaster.

1. Notify Architect of undocumented detrimental conditions including cracks, bulges, loose backup, rotted wood, rusted metal, and other deteriorated items.
2. Maintain adjacent plasterwork in an undamaged condition so far as practicable.

B. Open crack to at least 1/4 inch in width and full depth with V-groove tool, and check for bond separation.

C. Abrade side surfaces of crack and remove inner crack debris by gouging (keying) the inside area of the crack.

D. Clean out crack to remove loose materials and other foreign matter and deposits that could impair bond with repair material. Where grease, waxes, oils, waterborne staining, or other foreign matter and deposits that could impair bond with repair material have penetrated into the plaster, widen the crack to remove these deposits.

E. Wet substrate to damp condition, but without visible water droplets.

F. For columns and pilasters force brown coat plaster into crack filling crack to original plaster profile. For the portico ceiling, force finish coat plaster into the crack filling the crack to the original profile.

G. Finishing:

1. Columns and Pilasters: Finish flat surfaces flush with the brown coat with same texture as adjacent existing plaster.
2. Portico Ceiling: Finish flat surfaces flush with the final coat with the same texture as the adjacent existing plaster.

H. Offset Cracks: If the crack is offset in surface plane by more than1/8 inch, dismantle the plaster on each side of the crack, a minimum width of 6 inches and down to the lath or other substrate. Then, repair as specified for flat-plaster removal and replacement.

3.10 APPLICATION OF CEMENT STUCCO FINISH COAT AT COLUMNS AND PILASTERS

A. General: Comply with ASTM C926, FL.

1. Do not deviate more than plus or minus 1/4 inch in 10 ft. (6 mm in 3 m) from a true plane in finished stucco surfaces when measured by a 10-ft. (3-m) straightedge placed on surface.
2. Provide stucco surfaces that are ready to receive field-applied finishes indicated.

B. Stucco Finish Coats: Apply to provide finish to match the mock-up.

3.11 APPLICATION OF BASE-COAT STUCCO AT NORTH EXTERIOR STAIR

A. General: Comply with ASTM C926, Type CL.

1. Install so that finished plaster surfaces will not deviate more than plus or minus 1/4 inch in 10 ft. from a true plane when measured by a 10-ft. straightedge placed on surface.

B. Bonding Compound: Apply on cement unit masonry (CMU) substrates for direct application of plaster.

C. Wall/Vertical Base Coats:

1. Two-Coat Stucco Over CMU Base: Install base-coat mix for use over solid plaster bases in 3/8-inch thickness on masonry.

3.12 APPLICATION OF STUCCO FINISH COATS AT NORTH EXTERIOR STAIR

A. General: Comply with ASTM C926, Type FL.

1. Do not deviate more than plus or minus 1/4 inch in 10 ft. from a true plane in finished plaster surfaces when measured by a 10-ft. straightedge placed on surface.
2. Provide plaster surfaces that are ready to receive field-applied finishes indicated.

B. Stucco Finish Coats: Apply to provide float finish to match the mock-up.

3.13 STUCCO COATING

A. See Section 09 90 00, Exterior Painting, for coating products.

B. Prepare the stucco surface with cleaning to remove soils, dirt, release agents, algae, grease, oils and salts that would prevent bonding from the surface.

C. Surface must be clean and dry and absorbent.

3.14 REPAIR

A. Repair or replace work to eliminate cracks, dents, blisters, buckles, crazing and check cracking, dry outs, efflorescence, sweat outs, and similar defects and where bond to substrate has failed.

3.15 CLEANING

A. Remove temporary protection and enclosure of other work after stuccoing is complete.

B. Promptly remove stucco from door frames, windows, and other surfaces not indicated to receive stucco.

END OF SECTION 09 24 00

SECTION 32 14 00 - UNIT PAVING – REVISED 11/17/2025

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes the following:

1. Brick pavers set in a mortar setting bed on concrete substrate at the west entry.

2. A curb of brick pavers constructed parallel to the ramp on the east side.

3. At the ramp and landing for ~~the ramp at~~ the east entry, level the concrete slab supporting the brick paving of both the landing and ramp, repair existing brick paving, including regrouting the brick and replacing units in conjunction with metal guardrail.

4. Replacement of damaged brick at handrails to be replaced at entry and ramp at the east side.

5. Remove existing brick site paving, leveling the substrate, and reinstalling the brick including regrouting of the brick.

B. Related Sections include the following:

1. Section 03 30 00, Cast-In-Place Concrete, for concrete base under unit pavers and metal railings.

1.3 SUBMITTALS

A. Product Data: For the following:

1. Brick pavers.

2. Mortar and grout materials.

3. Slab leveling materials.

B. Samples for Initial Selection: For the following:

1. Brick pavers, not less than 5 full-size samples.

2. Pointing Mortar: Submit sets of mortar for pointing in the form of sample mortar strips, 6 inches long by ½ inch wide, set in aluminum or plastic channels.

   a. Have each set contain a close color range of at least three samples of different mixes of colored sands and cements (and pigments if necessary) that produce a mortar matching the mortar in the existing sidewalks.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Deliver unit pavers to the site in steel banded, plastic banded, or plastic wrapped cubes or on pallets capable of transfer by forklift or clamp lift. Unload pavers at job site in such a manner that no damage occurs to the product.

B. Store unit pavers on elevated platforms in a dry location. If units are not stored in an enclosed location, cover tops and sides of stacks with waterproof sheeting, securely tied.

C. Store cementitious materials on elevated platforms, under cover, and in a dry location. Do not use cementitious materials that have become damp.

D. Store aggregates where grading and other required characteristics can be maintained and contamination avoided.

E. Store liquids in tightly closed containers protected from freezing.

1.5 PROJECT CONDITIONS

A. Cold-Weather Protection: Do not use frozen materials or materials mixed or coated with ice or frost. Do not build on frozen subgrade or setting beds. Remove and replace unit paver work damaged by frost or freezing.

B. Weather Limitations for Mortar and Grout:

   1. Cold-Weather Requirements: Comply with cold-weather construction requirements contained in TMS 602/ACI 530.1/ASCE 6.

   2. Hot-Weather Requirements: Comply with hot-weather construction requirements contained in TMS 602/ACI 530.1/ASCE 6. Provide artificial shade and windbreaks and use cooled materials as required. Do not apply mortar to substrates with temperatures of 100 deg F and higher.

      a. When ambient temperature exceeds 100 deg F, or when wind velocity exceeds 8 mph and ambient temperature exceeds 90 deg F, set pavers within 1 minute of spreading setting-bed mortar.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Source Limitations: Obtain each type of unit paver, joint material, and setting material from single source with resources to provide materials and products of consistent quality in appearance and physical properties.

2.2 BRICK PAVERS

A. Brick Pavers: Light-traffic, square-edge paving brick; ASTM C902, Class SX, Type I, Application PX, 8,000 psi minimum compressive strength and below 8% cold water absorption. Provide brick without frogs or cores in surfaces.

1. Thickness: 2-1/4-inches.
2. Face Size: 3-5/8 inches by 7-5/8 inches for laying with 3/8-inch mortar joints.
3. Color and Blend: to match existing walkway pavers.

2.3 MORTAR SETTING-BED MATERIALS

A. Portland Cement: ASTM C150/C150M, Type I or Type II.

B. Hydrated Lime: ASTM C207, Type S.

C. Sand: ASTM C144.

D. Latex Additive: Manufacturer's standard acrylic resin water emulsion, serving as replacement for part or all of gaging water, of type specifically recommended by latex-additive manufacturer for use with field-mixed Portland cement and aggregate mortar bed, and not containing a retarder.

E. Water: Potable.

2.4 GROUT MATERIALS

A. Sand-Portland Cement Grout: ANSI A108.10, made of white or gray cement and white or colored aggregate as required to produce color to match that in the existing walkways.

1. Colored Mortar Pigments for Grout: Natural and synthetic iron and chromium oxides, compounded for use in mortar and grout mixes and conforming to ASTM C 979. Pigment shall not exceed 10% of the weight of Portland Cement. Carbon black pigment shall not exceed 2% of the weight of Portland Cement. Provide standard product of Solomon Grind-Chem Services, Inc., Springfield, Illinois, Riverton Corporation. Riverton, Virginia, or approved equal.

2.5 MORTAR AND GROUT MIXES

A. General: Comply with referenced standards and with manufacturers' written instructions for mix proportions, mixing equipment, mixer speeds, mixing containers, mixing times, and other procedures needed to produce setting-bed and joint materials of uniform quality and with optimal performance characteristics. Discard mortars and grout if they have reached their initial set before being used.

B. Mortar-Bed Bond Coat: Mix neat cement and water to a creamy consistency.

C. Portland Cement-Lime Setting-Bed Mortar: Type M complying with ASTM C270, Proportion Specification.

D. Job-Mixed Portland Cement Grout: Proportion and mix job-mixed Portland cement and aggregate grout to match setting-bed mortar except omit hydrated lime and use enough water to produce a pourable mixture.

1. Pigmented Grout: Select and proportion pigments with other ingredients to produce color required. Do not exceed pigment-to-cement ratio of 1 to 10, by weight.

2.6 SLAB LEVELING MATERIALS

A. Resilient Concrete Slab Jacking Foam: AP Lift 430. A two-component, high strength. High-density, hydro-insensitive structural polyurethan foam as manufactured by Alchatek, 4500 Bibbs Boulevard, Tucker, GA, or approved equal.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas indicated to receive unit paving, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance.

1. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Remove substances from concrete substrates that could impair mortar bond, including curing and sealing compounds, form oil, and laitance.

B. Sweep concrete substrates to remove dirt, dust, debris, and loose particles.

3.3 INSTALLATION, GENERAL

A. Do not use unit pavers with chips, cracks, voids, discolorations, or other defects that might be visible or cause staining in finished work.

B. Mix pavers from several pallets or cubes, as they are placed, to produce uniform blend of colors and textures.

C. Cut unit pavers with motor-driven masonry saw equipment to provide clean, sharp, unchipped edges. Cut units to provide pattern indicated and to fit adjoining work neatly. Use full units without cutting where possible. Hammer cutting is not acceptable.

D. Joint Pattern:

1. New Sidewalk: To match the detail shown on the Drawings.

E. Tolerances: Do not exceed 1/16-inch unit-to-unit offset from flush (lippage) nor 1/8 inch in 24 inches and 1/4 inch in 10 feet from level, or indicated slope, for finished surface of paving.

F. Expansion Joints: Provide for sealant-filled joints at locations indicated. Provide compressible foam filler as backing for sealant-filled joints. Install joint filler before setting pavers. Sealant materials and installation are specified in Section 07 92 00, Joint Sealants.

3.4 LEVELING EXISTING CONCRETE SUBSTRATE, EAST RAMP

A. Determine the spacing of the grid to be used for injection of the leveling material using the manufacturer's recommendations. Remove existing pavers at the east ramp landing where holes will be drilled in the concrete slab below to inject the leveling material which will raise the slab.

B. Take care not to break or chip the existing unit pavers when removing. Store as specified in Paragraph 1.4.

C. Drill holes through the concrete slab at each injection point and insert an injector or packer port into each drilled hole.

D. Inject foam using a specialized mixing gun, like the Mixmaster Pro-gun. The foam mixes and expands, filling voids under the slab that lifts the slab to the desired level. It may be necessary to do the injections incrementally, with levels continuously monitored to ensure even lifting.

E. Remove injection ports from the concrete and seal the injection holes. Then reinstall unit pavers in the locations from which removed following the installation requirements set forth herein.

3.5 RESETTING EXISTING PAVERS

A. Where shown on Drawings remove existing unit pavers and reinstall when subsurface work is completed.

B. Take care not to break or chip the existing unit pavers when removing. Store as specified in Paragraph 1.4.

C. Relevel substrate by filling settled areas and compacting.

D. When subsurface work has been completed reinstall unit pavers in the area from which removed following the installation requirements set forth herein.

3.6 MORTAR SETTING-BED APPLICATIONS

A. Saturate concrete subbase with clean water several hours before placing setting bed. Remove surface water about one hour before placing setting bed.

B. Apply mortar-bed bond coat over surface of concrete subbase about 15 minutes before placing mortar bed. Do not exceed 1/16-inch thickness for bond coat. Limit area of bond coat to avoid its drying out before placing setting bed.

C. Apply mortar bed over bond coat; spread and screed mortar bed to uniform thickness at subgrade elevations required for accurate setting of pavers to finished grades indicated.

D. Mix and place only that amount of mortar bed that can be covered with pavers before initial set. Before placing pavers, cut back, bevel edge, and remove and discard setting-bed material that has reached initial set.

E. Wet brick pavers before laying if the initial rate of absorption exceeds 30 g/30 sq. in. per minute when tested according to ASTM C67. Allow units to absorb water so they are damp but not wet at time of laying.

F. Place pavers before initial set of cement occurs. Immediately before placing pavers on mortar bed, apply uniform 1/16-inch-thick bond coat to mortar bed or to back of each paver with a flat trowel.

G. Tamp or beat pavers with a wooden block or rubber mallet to obtain full contact with setting bed and to bring finished surfaces within indicated tolerances. Set each paver in a single operation before initial set of mortar; do not return to areas already set or disturb pavers for purposes of realigning finished surfaces or adjusting joints.

H. Spaced Joint Widths: Provide joint width to match those in existing pavers with variations not exceeding plus or minus 1/16 inch.

I. Grouted Joints: Grout paver joints complying with ANSI A108.10.

J. Grout joints as soon as possible after initial set of setting bed.

1. Force grout into joints, taking care not to smear grout on adjoining surfaces.
2. Clean pavers as grouting progresses by dry brushing or rubbing with dry burlap to remove smears before tooling joints.
3. Tool exposed joints to match profile of existing pavers when thumbprint hard, using a jointer larger than joint thickness unless otherwise indicated.
4. If tooling squeezes grout from joints, remove excess grout and smears by dry brushing or rubbing with dry burlap and tool joints again to produce a uniform appearance.

K. Cure grout by maintaining in a damp condition for seven days unless otherwise recommended by grout or liquid-latex manufacturer.

3.7 REPAIRING, POINTING, AND CLEANING

A. Remove and replace unit pavers that are loose, chipped, broken, stained, or otherwise damaged or that do not match adjoining units. Provide new units to match adjoining units and install in same manner as original units, with same joint treatment and with no evidence of replacement.

B. Remove and replace pavers at the east side ramp that have been damaged by the installation of the existing handrail at the ramp and landing. Replace using pavers that have been removed at the existing walkway outside the west entry.

C. Pointing: During tooling of joints, enlarge voids or holes and completely fill with grout. Point joints at sealant joints to provide a neat, uniform appearance, properly prepared for sealant application.

D. Cleaning: Remove excess grout from exposed paver surfaces; wash and scrub clean.

END OF SECTION 32 14 00