

EXHIBITS B - D

RESTORATION OF THE HISTORIC LEGIONNAIRE STATUES AND VESTIBULES IN THE MAIN HALL AT WASHINGTON UNION STATION Washington, D.C.



Photos of Legionnaires watching over the Main Hall, by Colin Winterbottom for USRC, 2017

For:

**UNION STATION
REDEVELOPMENT CORPORATION**

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By:

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April 18, 2019

RFP Section 6.0 - Exhibits B through D Contents List

Exhibit B – Background Documents

- Copy of undated, uncaptioned photograph showing cleaning work underway
- Copy of *Conservation of Centurion Sculpture Treatment Report*, by Materials Conservation Company, L.L.C., (of Philadelphia, PA), dated February 6, 2014 (report inadvertently labeled 2013)
- Copies of photographs of small exploratory openings cut into the backs of several Legionnaires, by conservators from Aeon Preservation Services, L.L.C. (of Bladensburg, MD), dated March 2016
- Copy of *Plaster Analysis for Union Station, Washington, D.C.*, by Schnabel Conservation, L.L.C., (of Trenton, NJ), dated April 11, 2016
- Copy of *Conservation Treatment of the West Hall Legionnaires*, by Materials Conservation Company, L.L.C., (of Philadelphia, PA), dated December 22, 2017

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Worker cleaning on the Roman Legionnaire statue that stands on the colonnade between the Main Hall and West Hall, circa 1986-1988. *Photo credit: Carol Highsmith*



UNION STATION CENTURION

CONSERVATION OF CENTURION SCULPTURE TREATMENT REPORT

For:
Universal Builders Supply, Inc.
5720 Columbia Park Rd.
Cheverly, MD 20785

By:
MATERIALS CONSERVATION CO., LLC

1625 N. Howard Street
Philadelphia, PA 19122

215

763-8090 P
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www.mccollab.com

February 6, 2013

Mark Tsirigos, Vice President
Universal Builders Supply, Inc.
5720 Columbia Park Rd.
Cheverly, MD 20785

RE: Treatment Report
Conservation of Centurion head
Union Station, Washington DC

Report Date: February 6, 2014

Conservator: Marco Federico

INTRODUCTION

The following report details the documentation and treatments for the conservation of a sculpture by Louis Saint-Gaudens of one of the Roman Centurion sculptures at Union Station in Washington DC. During scaffolding erection, the head of this centurion was dislocated from the body, causing it to fall approximately 40 ft and shatter onto a stone floor. Materials Conservation Co., LLC was retained to conserve and reinstall the head.

EXISTING CONDITIONS

The head broke into approximately 20 large fragments and nearly 50 small fragments. During the initial site visit, Materials Conservation (MC) found that the larger fragments had been gathered and set aside in cardboard boxes. MC spent additional time recovering smaller fragments scattered among the construction debris and obscured by scaffolding footings.

After all the fragments were gathered, the larger 20 fragments were photographed, numbered and labeled, and then secured with bubble wrap and tape. The smaller fragments were also wrapped in plastic and sealed in plastic bags. All fragments were then transferred to clearly labeled cardboard boxes for storage and held by Union Station in a secure location.

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ANALYSIS AND OBSERVATION

Several months later, MC transported the fragments to the studio in Philadelphia. Each of the large fragments were laid out on a table and re-photographed using a Nikon DS-Fi1 camera. The smaller fragments were laid out on large metal trays and photographed as a group.

MC then sought out to determine the original composition of the plaster cast for the head. Each Centurion sculpture was cast in several units and those units were joined with plaster of Paris for assembly. For example, the head was cast separately and attached to the neck with three plaster of Paris "welds." The following is a description of the casting of the head. The individual sculpture components may differ in their composition and fabrication method, so the veracity of these assertions may not hold true for the compositions of other units of the sculpture i.e. the body or shields. Through visual inspection and microscopic analysis using a Leica MZ16 stereomicroscope, we determined that the casts are composed of 3 distinct layers.

- 1) A surface layer-packed into the mold consisting of plaster, aggregate and micaceous flecks to give the appearance of natural stone.
- 2) An intermediate layer-consisting of bits of coarse animal hair and burlap mixed with plaster of Paris to add tensile strength and rigidity while being able to flex.
- 3) An interior layer- likely applied at the end of the casting process as an additional layer of strength and to seal voids and imperfections of the rough intermediate layer. This consisted of plaster of Paris with no aggregate.

TREATMENT

With the larger fragments laid out, MC began to try to ascertain how the pieces fit together. To gain insight as to how the head looked as a whole, large color images of the Saint Gaudens Centurion were printed. Next the proper sequence for re-assembly was determined. This was done by isolating several large fragments and re-assembling them in small groups of 3 or 4 units. This was done to assure proper fitment as well as ensuring that complex break morphologies wouldn't prevent the next group from adhering.

While determining sequencing and fitment, testing of adhesives began. The use of pins and rods to join the fragments was undesirable as the plaster could have internal fissures and drilling into the plaster could cause more a damage. MC elected to join the pieces at the break lines but below the surface. This method prevented the epoxy from leeching to the surface and causing stains. The criteria for selecting an epoxy was as follows

- Medium strength but sculpt-able after cure;
- High viscosity for good control during initial set;
- Low to fine filler to adhesive ratio to allow tight fitment; and
- No hazing, flashing or surface discoloration.

Testing was completed with plaster fragments mixed and cast in the MC studio. Huntsman's Araldite epoxy adhesive met the criterion.

After several weeks, the head was completely re-assembled. In some small areas, the pieces were either never recovered or too badly damaged to be re-used. In these cases, MC reconstructed the missing elements using a custom blend formulated based on hardness, color, and texture. Additional aesthetic integration was completed using Keim paint systems.

After all aesthetic integration was complete, the centurion head was kept in a safe climate controlled environment for even curing time and monitoring to account for changes in color due to temperature or humidity. After no changes were observed, the plaster centurion head was carefully wrapped and crated for storage.

REINSTALLATION

Using a high reach provided by Union Station, the plaster centurion head was discretely bundled at the clients' request, and then unwrapped for test fit. Upon finding that the plaster head seated properly into the neck opening, MC used epoxy to secure the neck into place. All open joints at the neckline were filled with the same plaster mix used to for reconstruction.

All work was carefully documented and all images are available in the CD which accompanies this report. See appendix for representative photographs of the project before during and after conservation.

APPENDIX A: PHOTOGRAPHIC DOCUMENTATION
BEFORE TREATMENT



Figure 1. Detail of neck flange.



Figure 2. Detail of neck flange.



Figure 3. Centurion sans head.



Figure 4. Intact centurion head detail.



Figure 5. Intact centurion head detail.



Figure 6. Centurion sans head.

APPENDIX A: PHOTOGRAPHIC DOCUMENTATION
BEFORE TREATMENT



Figure 7. Overview of intact centurions.



Figure 8. Intact head detail.



Figure 9. Centurion head fragments.



Figure 10. Intact head detail.



Figure 11. Centurion head fragments.



Figure 12. Centurion head fragments.

APPENDIX A: PHOTOGRAPHIC DOCUMENTATION
BEFORE TREATMENT



Figure 13. Centurion head fragment.



Figure 14. Centurion head fragment.

APPENDIX A: PHOTOGRAPHIC DOCUMENTATION
DURING TREATMENT



Figure 15. Cataloging fragments in MC studio.



Figure 16. Conservator unwrapping fragment in MC studio.



Figure 17. Fragment #1, exterior surface.



Figure 18. Fragment #1, interior surface.



Figure 19. Fragment #2, exterior surface.

APPENDIX A: PHOTOGRAPHIC DOCUMENTATION
DURING TREATMENT



Figure 20. Fragment #3, exterior surface.

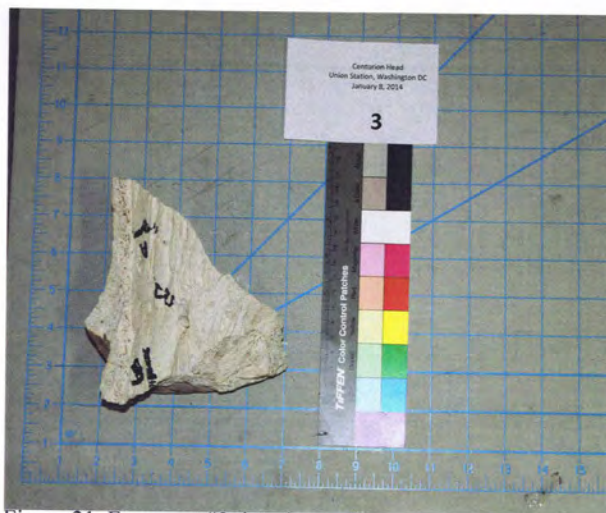


Figure 21. Fragment #3, interior surface.



Figure 22. Fragment #4, exterior surface.



Figure 23. Fragment #4, interior surface.

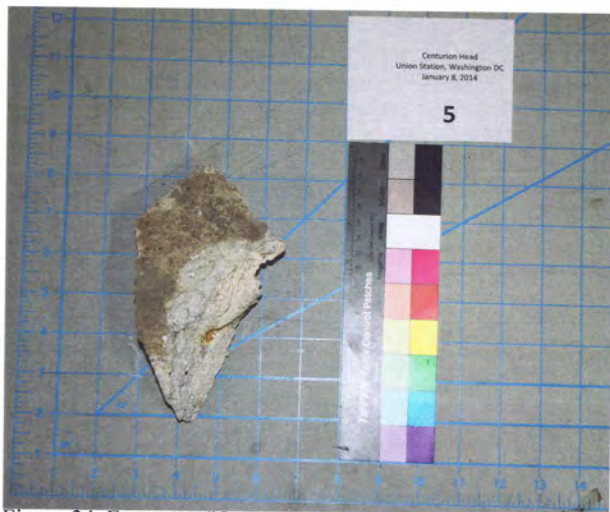


Figure 24. Fragment #5, exterior surface.



Figure 25. Fragment #5, interior surface.

APPENDIX A: PHOTOGRAPHIC DOCUMENTATION
DURING TREATMENT



Figure 26. Fragment #6, exterior surface.



Figure 27. Fragment #6, interior surface.

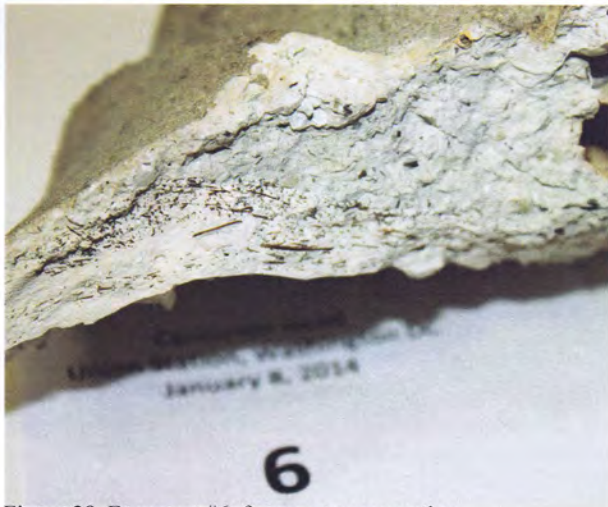


Figure 28. Fragment #6, fragment cross section.



Figure 29. Fragment #7, exterior surface.



Figure 30. Fragment #7, interior surface.

APPENDIX A: PHOTOGRAPHIC DOCUMENTATION
DURING TREATMENT



Figure 31. Fragment #8, exterior surface.

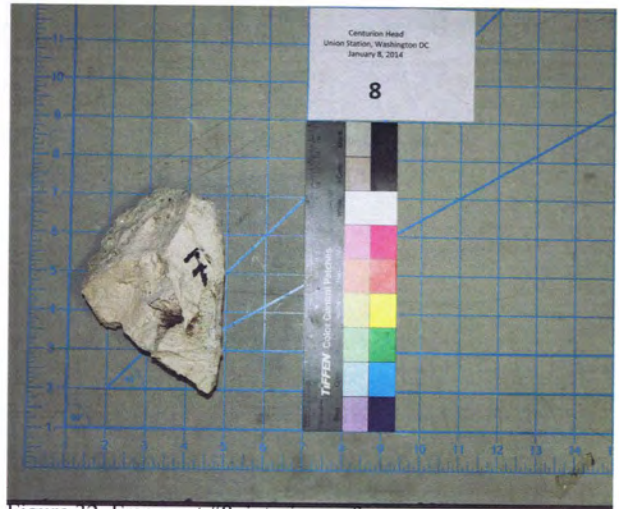


Figure 32. Fragment #8, interior surface.



Figure 33. Fragment #8, interior surface detail.



Figure 34. Fragment #8, interior surface detail.



Figure 35. Fragment #9, exterior surface.

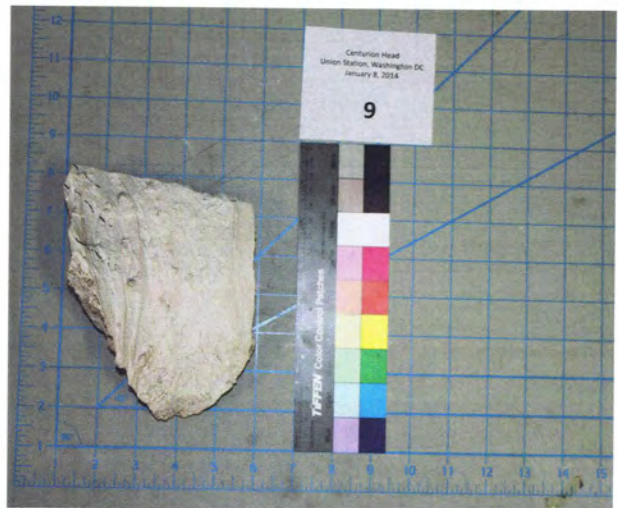


Figure 36. Fragment #9, interior surface.

APPENDIX A: PHOTOGRAPHIC DOCUMENTATION
DURING TREATMENT



Figure 37. Fragment #9, cross section.



Figure 38. Fragment #10, exterior surface.



Figure 39. Fragment #10, exterior surface, detail.



Figure 40. Fragment #10, proper right profile.



Figure 41. Fragment #10, interior surface.

APPENDIX A: PHOTOGRAPHIC DOCUMENTATION
DURING TREATMENT



Figure 42. Fragment #10, exterior surface.



Figure 43. Fragment #10, exterior surface.

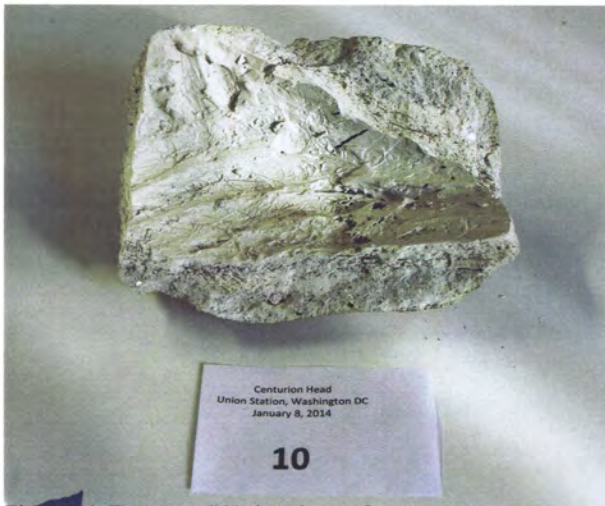


Figure 44. Fragment #10, interior surface.

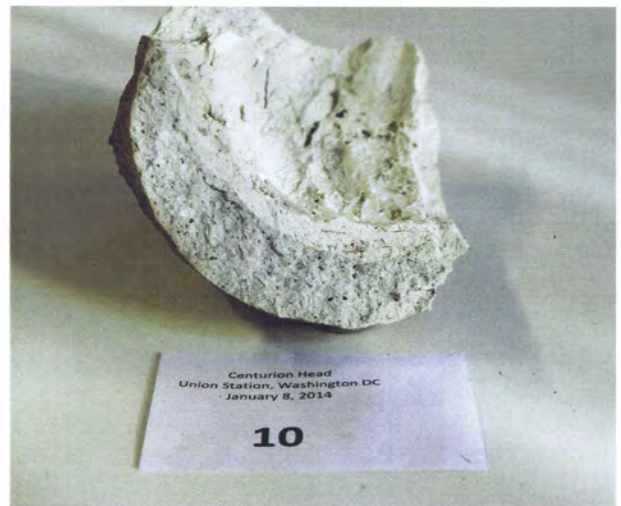


Figure 45. Fragment #10, interior surface.

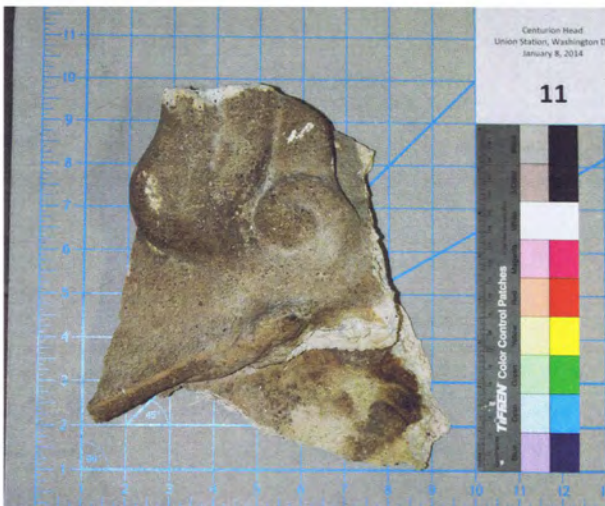


Figure 46. Fragment #11, exterior surface.



Figure 47. Fragment #11, interior surface.

APPENDIX A: PHOTOGRAPHIC DOCUMENTATION
DURING TREATMENT



Figure 48. Fragment #12, exterior surface.



Figure 49. Fragment #12, exterior surface.



Figure 50. Fragment #12, proper left.



Figure 51. Fragment #12, proper right.



Figure 52. Fragment #12, interior.



Figure 53. Fragment #12, proper left.

APPENDIX A: PHOTOGRAPHIC DOCUMENTATION
DURING TREATMENT



Figure 54. Fragment #12, proper right.



Figure 55. Fragment #12, proper right.



Figure 56. Fragment #13, exterior surface.



Figure 57. Fragment #13, interior surface.

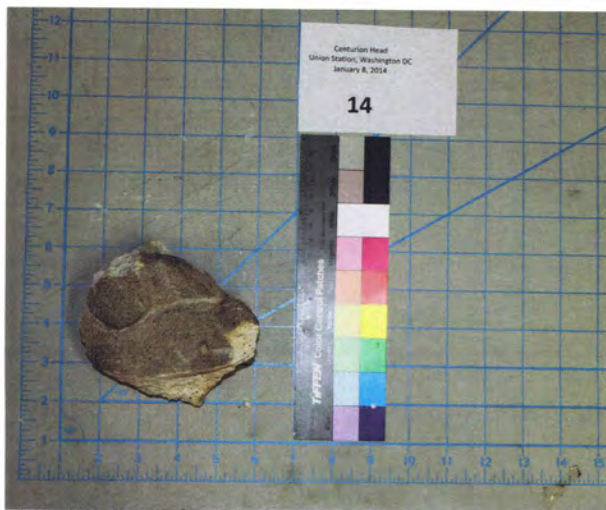


Figure 58. Fragment #14, exterior surface.



Figure 59. Fragment #14, profile.

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DURING TREATMENT



Figure 60. Fragment #15, exterior surface.



Figure 61. Fragment #15, interior surface.



Figure 62. Fragment #16, exterior surface.



Figure 63. Fragment #16, interior surface.



Figure 64. Fragment #17, exterior surface.



Figure 65. Fragment #17, interior surface.

APPENDIX A: PHOTOGRAPHIC DOCUMENTATION
DURING TREATMENT



Figure 66. Fragment #18.



Figure 67. Fragment #18.

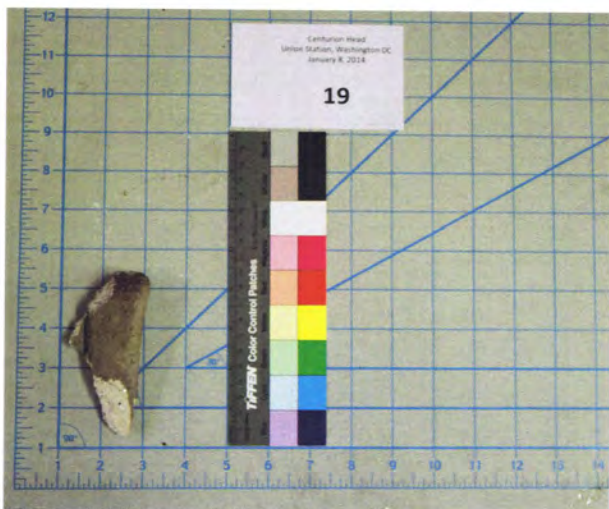


Figure 68. Fragment #19, exterior surface.

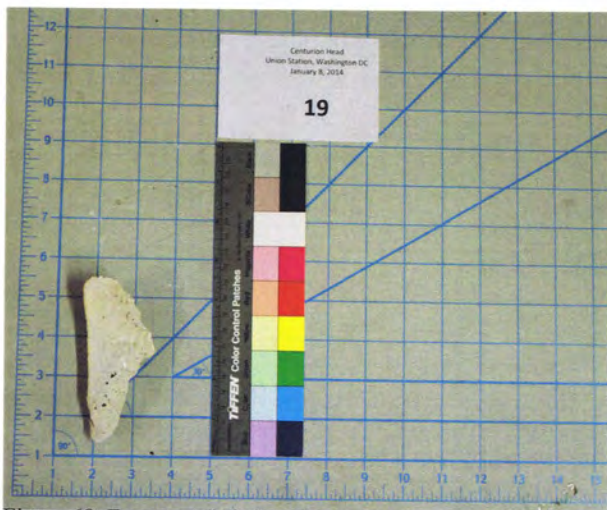


Figure 69. Fragment #19, interior surface.

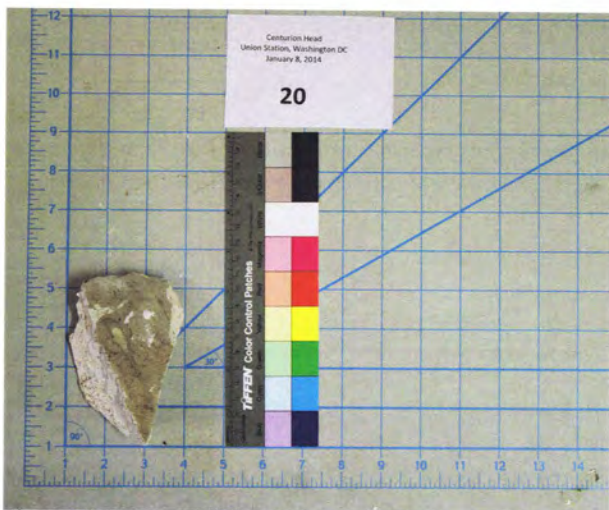


Figure 70. Fragment #20, exterior surface.

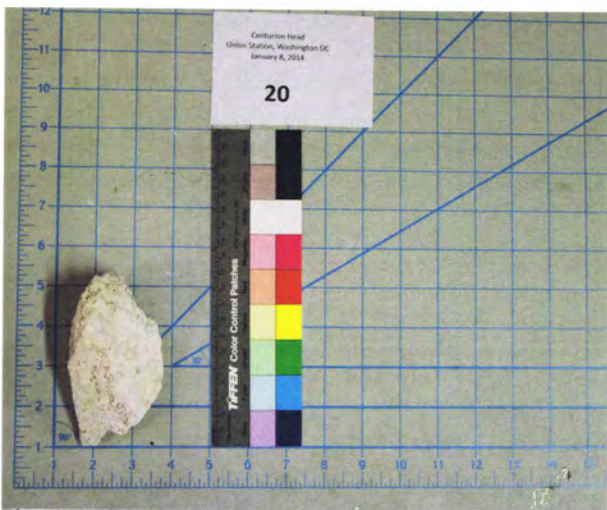


Figure 71. Fragment #20, interior surface.

APPENDIX A: PHOTOGRAPHIC DOCUMENTATION
DURING TREATMENT

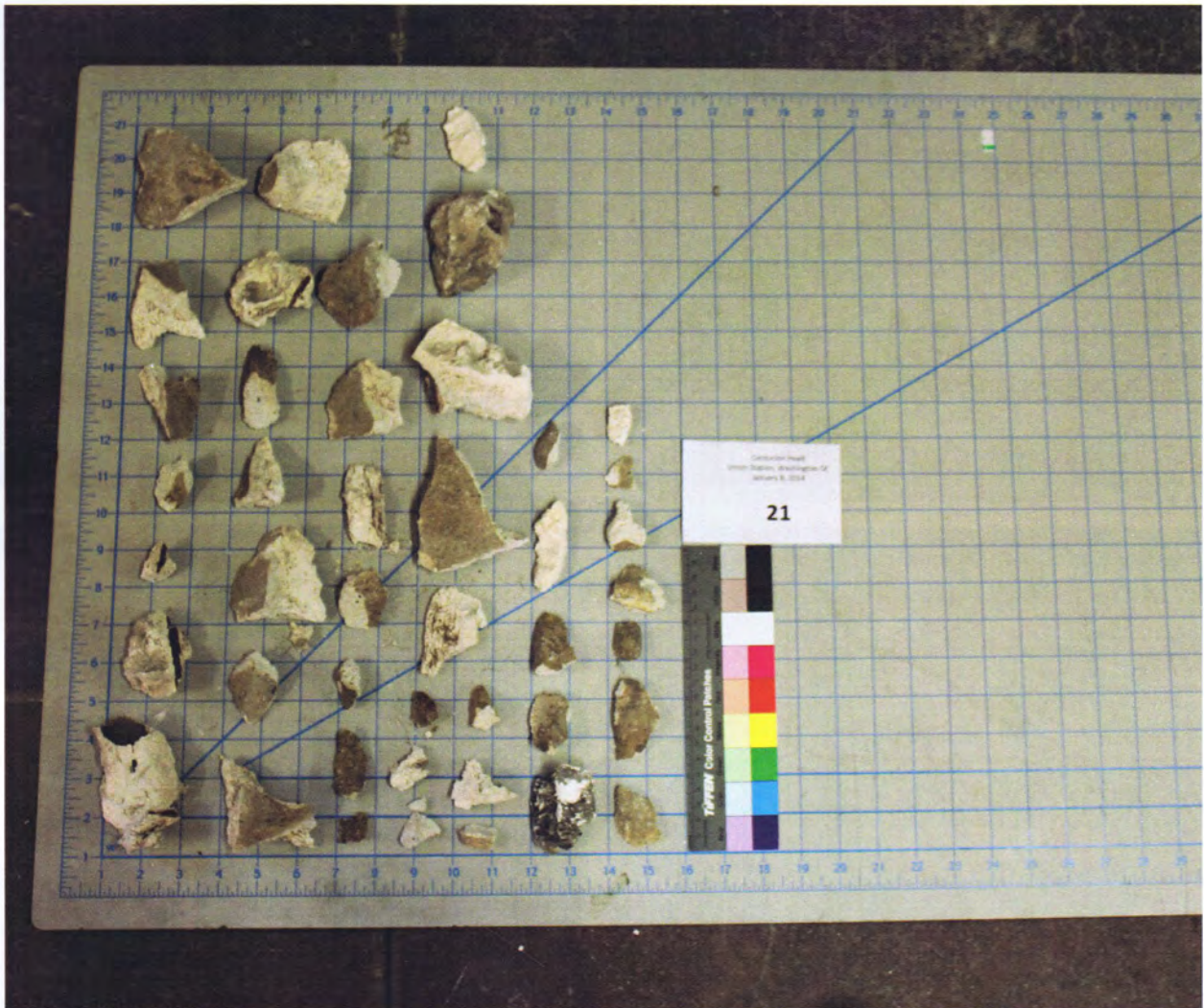


Figure 72. Fragments #20.



Figure 73. All fragments in MC studio.

APPENDIX A: PHOTOGRAPHIC DOCUMENTATION
DURING TREATMENT



Figure 74. Reattachment of fragments with epoxy.



Figure 75. Reattachment of fragments with epoxy.



Figure 76. Reattachment of fragments with epoxy.



Figure 77. Reattachment of fragments with epoxy.



Figure 78. Reattachment of fragments with epoxy.

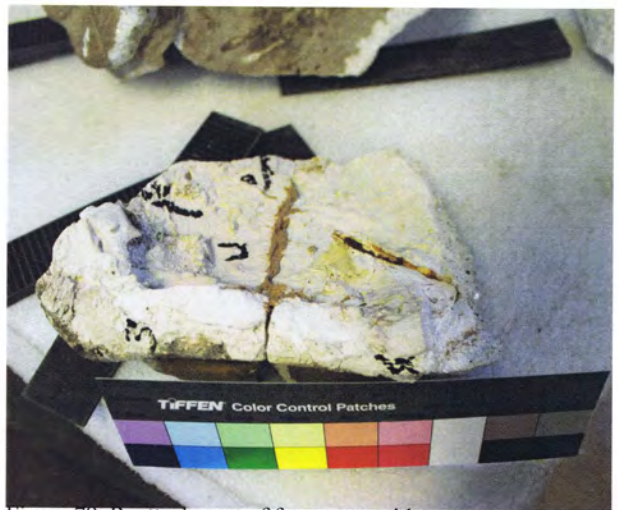


Figure 79. Reattachment of fragments with epoxy.

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DURING TREATMENT



Figure 80. Conservator reassembling fragments with epoxy.



Figure 81. Conservator reassembling fragments with epoxy.



Figure 82. Conservator reassembling fragments with epoxy.



Figure 83. Conservator dry-fitting fragments before epoxying.



Figure 84. Conservator dry-fitting fragments before epoxying.



Figure 85. Conservator reassembling fragments with epoxy.

APPENDIX A: PHOTOGRAPHIC DOCUMENTATION
DURING TREATMENT



Figure 86. Custom plaster mock-ups.



Figure 87. During treatment.



Figure 88. During treatment.



Figure 89. Conservator applying epoxy.



Figure 90. Conservator applying epoxy.



Figure 91. Conservator adhering fragment with epoxy.

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DURING TREATMENT



Figure 92. Conservator adhering fragment with epoxy.



Figure 93. Conservator adhering fragment with epoxy.



Figure 94. Conservator adhering fragment with epoxy.



Figure 95. Conservator adhering fragment with epoxy.



Figure 96. Conservator adhering fragment with epoxy.



Figure 97. Conservator adhering fragment with epoxy.

APPENDIX A: PHOTOGRAPHIC DOCUMENTATION
DURING TREATMENT



Figure 98. Conservator adhering fragment with epoxy.



Figure 99. Conservator adhering fragment with epoxy.



Figure 100. Conservator adhering fragment with epoxy.



Figure 101. Conservator adhering fragment with epoxy.



Figure 102. Conservator adhering fragment with epoxy.



Figure 103. Conservator adhering fragment with epoxy.

APPENDIX A: PHOTOGRAPHIC DOCUMENTATION
DURING TREATMENT



Figure 104. Stabilizing fragment during curing.



Figure 105. Conservator adhering fragment with epoxy.



Figure 106. Conservator adhering fragment with epoxy.



Figure 107. Conservator adhering fragment with epoxy.



Figure 108. Conservator adhering fragment with epoxy.



Figure 109. Conservator adhering fragment with epoxy.

APPENDIX A: PHOTOGRAPHIC DOCUMENTATION
DURING TREATMENT



Figure 110. Adhering fragment with epoxy.



Figure 111. Adhering fragment with epoxy.



Figure 112 & 113 Back of head after reassembly of fragments.



Figure 114 Detail of material loss after reassembly of fragments.



Figure 115. Reconstructing material losses with custom plaster mix.

APPENDIX A: PHOTOGRAPHIC DOCUMENTATION
DURING TREATMENT



Figure 116. Reconstructing material losses with custom plaster mix.



Figure 117. Plaster fills.



Figure 118. Plaster fills.



Figure 119. Interior of head after reconstruction.



Figure 120. Plaster fills.



Figure 121. After treatment.

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DURING TREATMENT



Figure 122. In-painting plaster fills.



Figure 123. In-painting plaster fills.



Figure 124. Plaster fills.



Figure 125. After treatment.

APPENDIX A: PHOTOGRAPHIC DOCUMENTATION
AFTER TREATMENT



Figure 126. Pre re-installation.



Figure 127. Pre re-installation.



Figure 128. Pre re-installation.

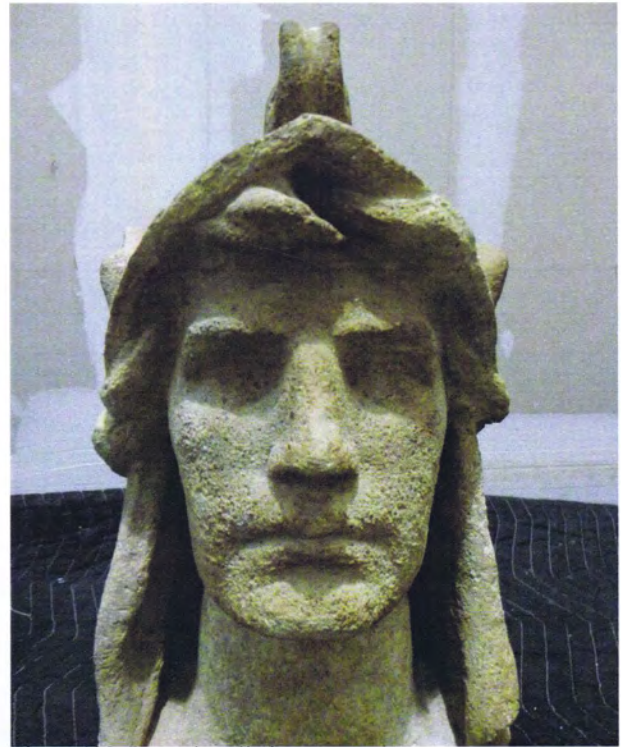


Figure 129. Pre re-installation.

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RE-INSTALLATION



Figure 130. During re-installation.



Figure 131. During re-installation.

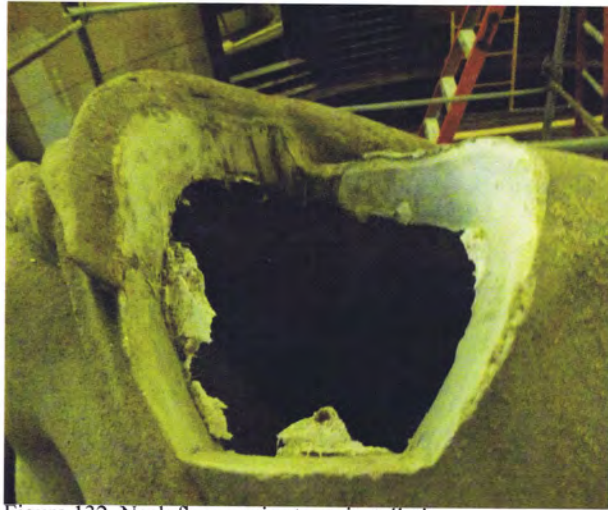


Figure 132. Neck flange prior to re-installation.



Figure 133. Neck flange prior to re-installation.



Figure 134. Detail of figure's interior cavity.



Worker carefully removing a section on the back of the statue as part of the 2016 plaster analysis.



Worker pulls out section for examination in 2016.



Examining the section that was sampled in 2016 for plaster analysis.



Perspective showing the thickness of the statue, 2016.



Perspective into the statue, 2016.



View of the interior, looking towards the head, 2016.

PLASTER ANALYSIS

For

UNION STATION Washington, DC

Prepared For

Aeon Preservation Services LLC
Hilleary-Magruder House
4703 Annapolis Road
Bladensburg, Maryland 20710

Prepared By

Schnabel Conservation L.L.C.
110 Kensington Avenue
Trenton, New Jersey 08618

REVISED

April 11, 2016

WASHINGTON, DC

INTRODUCTION

This report presents an analysis of samples Union Station in Washington, D.C. Samples of plaster from legionnaire sculptures were provided for examination and analysis.

Plaster analysis is an evaluation of the composition of historic plaster materials performed to aid in the specification of appropriate replacement materials. Generally, the combination of microscopic and acid digestion (gravimetric or weight-based) methods used for the analysis gives valuable, objective information about the sand, including composition and size distribution. Characterization of the binder is inherently more subjective due to the chemical changes that take place as the material cures.

Analysis of building materials from existing constructions presents unique problems. Most standard tests used to characterize building materials are intended for pre-construction materials evaluations. The test designs take material variability into consideration, typically requiring a large number of large-sized samples to assess a particular physical property such as absorption or strength. However, when sampling materials from historic structures, compromises must be made in the size and number of samples taken. There are also aesthetic and logistic physical limitations on sample locations. Care should be used when interpreting test results obtained by analysis of a small number of small-sized samples not to treat values obtained as representative. Final selection of materials to be used in the restoration work is the responsibility of the preservation professional in charge of the work.

SAMPLING

All samples were provided by Aeon Preservation Services LLC. Samples provided (with sample numbering and information from sample bags, samples, and sample transmittal letter) were as follows:

Plaster:

PA01: EBAY3S—approximately 6” square by 1” thick (+/-) sample that includes both finish plaster and backing plaster

PA02: “Legionnaire Statue Plaster Sample from Union Station Washington DC, 3/28/2016”—an approximately 6”x1”x1” sample that includes both backing plaster and finish plaster

ANALYSIS

The samples were first examined microscopically with a Nikon stereo-binocular microscope at magnifications from 10x to 63x. Multiple surfaces of each sample were examined, including the cut surfaces and the surface of a fresh break. This examination was for a preliminary assessment of binder color and characteristics, proportion and characteristics of voids, and relationship between aggregate and binder. Determination of analyses to be performed was made after this initial evaluation.

A

The goals for the analysis of the plaster material were to free the aggregate for matching, and to determine as much as possible about the plaster binder, which reportedly contained Keene’s cement. Keene’s cement is a particular type of gypsum plaster that is used where longer working times and a hard finish are required. The plaster is prepared by calcining gypsum at much higher temperature than that used to prepare ordinary plaster of Paris, soaking the product in a solution

WASHINGTON, DC

of alum (a double hydrate of aluminum potassium sulfate), and then calcining the material again before grinding. A method was sought by which plaster of Paris and Keene's cement could be distinguished in a finished product such as the legionnaire statues. Discussion with representatives from the technical department of US Gypsum revealed that both hardened plaster of Paris and Keene's cement have essentially the same chemical composition, and can only be distinguished by X-ray diffraction analysis. However, in the course of the discussion it was determined that Keene's cement can be repaired using the same methods used for plaster of Paris, so additional efforts to identify the binder were not performed.

To separate a sample of aggregate for matching, sample PA02 was prepared for digestion by removing the fiber-reinforced backing plaster from the facing plaster with a chisel and knife. The finish plaster was ground in a ceramic mortar to disaggregate the plaster without crushing the aggregate. The sample was then digested in dilute hydrochloric acid to free the acid-insoluble aggregate and fines for examination and weighing. The plaster could not ground finely enough to digest completely because this broke up the large mica flakes that form a significant portion of the aggregate, so the gravimetric analysis was not completed by re-grinding and redigestion. Because abundant undigested material remained in the coarse fraction after the initial digestion, the sample was not sieved to determine the size gradation of the aggregate.

Observations

The plaster is relatively soft and can be broken by hand. Both samples have two obvious layers: a back-up plaster layer reinforced with fibers, and a finish plaster layer containing aggregate. However, only the large, square sample contained the finished, exterior sculpture surface. This finished surface is pale brown in color, with texturing consisting of roughly parallel grooves of different depths (Photo 1). When the light is at certain angles to the surface, large plates of mica (3/16 to 1/4 inch on their longest dimension) are visible as highly reflective elements. The mica is predominantly colorless, but there is also brown mica (biotite). The original interior surface of the sample is also irregular, with the fibrous reinforcing visible (Photo 2). The two layers vary in thickness.

Viewed at low magnification in reflected light, the originally exposed surface is light brown in color. The surface has numerous minute voids that penetrate inward, and the mica plates noted previously are visible, as are other angular mineral grains. The surface appears to have been coated with a tan material that was suspended in liquid, as there are thick areas of this material that contain the remnants of bubbles (Photos 3, 4); the coating is also visible covering the mica grains (Photo 4). Immediately beneath the surface is a thin, poorly-defined cream-colored layer (Photo 4). This layer is visible at the cut edges of the sample as well. High points not only do not show this coating, they are almost glossy (Photo 5). A cross-section through one part of the surface reveals the brownish coating over a pronounced dirt layer with the lighter colored binder beneath (Photo 6).

In cross-section at low magnification, the finish plaster has a reflective appearance from finely crystalline material in the binder. The readily visible aggregate grains are large, and not terribly abundant; large aggregate is estimated at only about 10% of the volume of the sample (Photo 7). The majority of the large aggregate is mica, with white mica (probably muscovite) being the most abundant species. Biotite mica is secondary, along with subangular grains of quartz and equant, angular grains of feldspar. In addition to these very large aggregate grains there appears to be very fine grained white mica disseminated throughout the binder, based on the abundant thin, tabular-shaped impressions, though only a very few of these long, thin voids appear to contain

WASHINGTON, DC

anything (Photo 8). There are also abundant spherical voids; total void volume is fairly high, approximately 20% estimated visually.

Separated from the plaster, the aggregate is confirmed as containing predominantly white mica, with lesser amounts of biotite (brown) and chlorite (green) mica, as well as angular quartz and feldspar. The feldspar is translucent white in color. The aggregate has a definite “salt and pepper” appearance. The aggregate was sieved to attempt to separate it from the residual plaster, but both aggregate and plaster were observed in all the size fractions.

Examined at low magnification in reflected light the fines do contain a fair amount of white mica. However, the mica is coarse relative to the other fine material, and does not seem an intentional addition in this size fraction.

Discussion and Recommendations

The character of the plaster sample suggests that the finish plaster may originally have been formulated to emulate the character of the granite of the building. The large plates of mica have highly reflective surface; the blending of the two colors of mica might have been expected to appear similar to the the light-colored granite from which the building is constructed when viewed from a distance. Incorporation of quartz and feldspar into the aggregate mix is likely a nod to the composition of the granite itself, though the overwhelming abundance of the mica in the blend bears no relationship to the mineral composition of any actual granite.

It was not possible to definitively determine the aggregate size distribution by sieving due to the contamination with undigested plaster. However, sieving does reveal that the mica is present in all size fractions, though this may be relic from the grinding process.

There has been one obvious surface treatment in the form of the tan/brown coating that gives the existing finish its current color. The examination of the sample provided suggests that there may have been a previous coating of some type that left behind the glossy high points on the textured surfaces. There is ample evidence of accumulations of dirt on the originally exposed surface; it is also possible that the thin cream-colored layer immediately below the surface represents staining or discoloration rather than an actual historic surface color.



Photo 1: View of the original exposed surface of PA01.



Photo 2: Sample PA02, original interior surface.



Photo 3: View of the exposed surface of sample PA01 in reflected light, 10x.

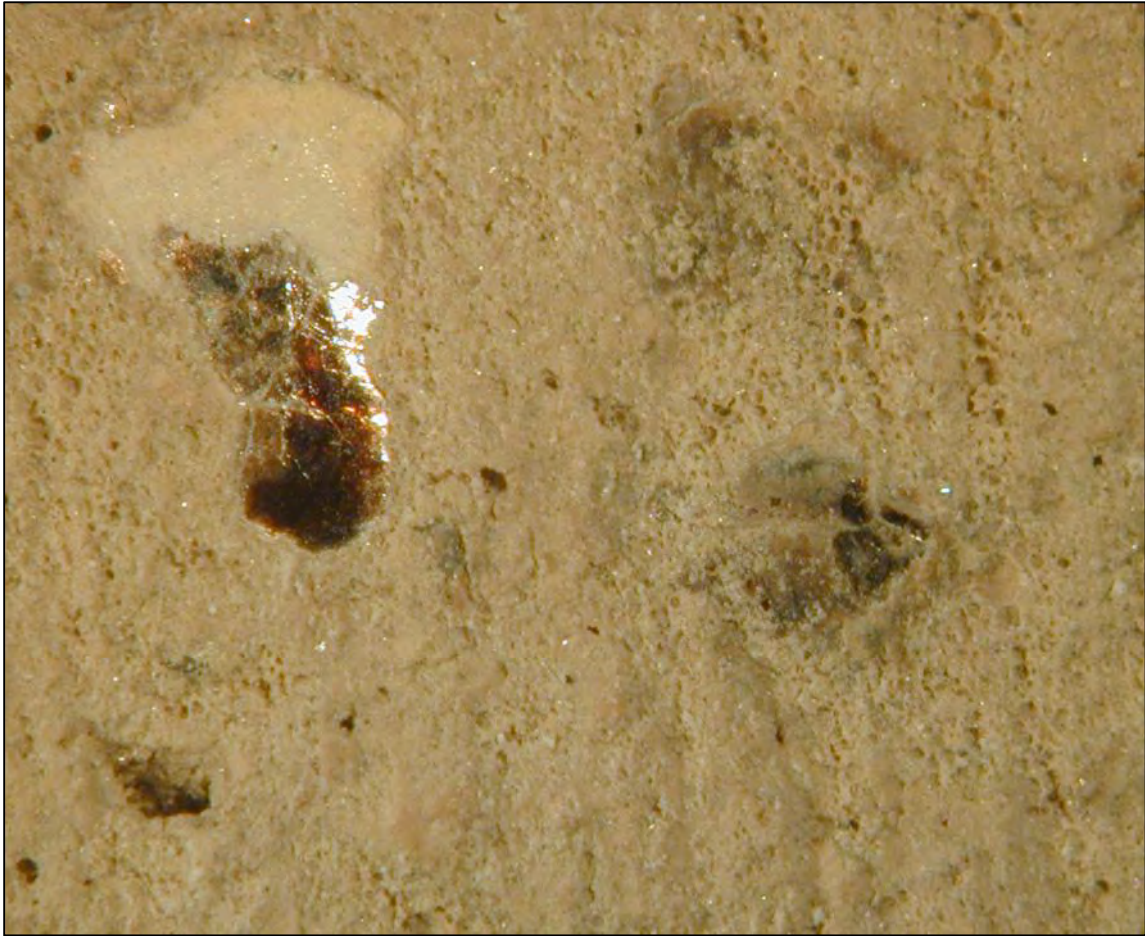


Photo 4: View of the original exposed surface of sample PA01 showing two biotite mica flakes. Part of the mica on the left has been lost, exposing the original binder color which is very white grading to a creamy color. The flake on the right is covered with the coating. Bubble remnants in the coating are visible above and below the coated flake. Reflected light, 10x.



Photo 5: Detail of a high point on the exposed surface of sample PA01 showing the localized surface gloss, 10x.



Photo 6: Cross-section view at the exposed surface of sample PA01, 63x. The tan material is the coating; the white is the binder. The thin black line between (red arrow) appears to be a dirt layer.

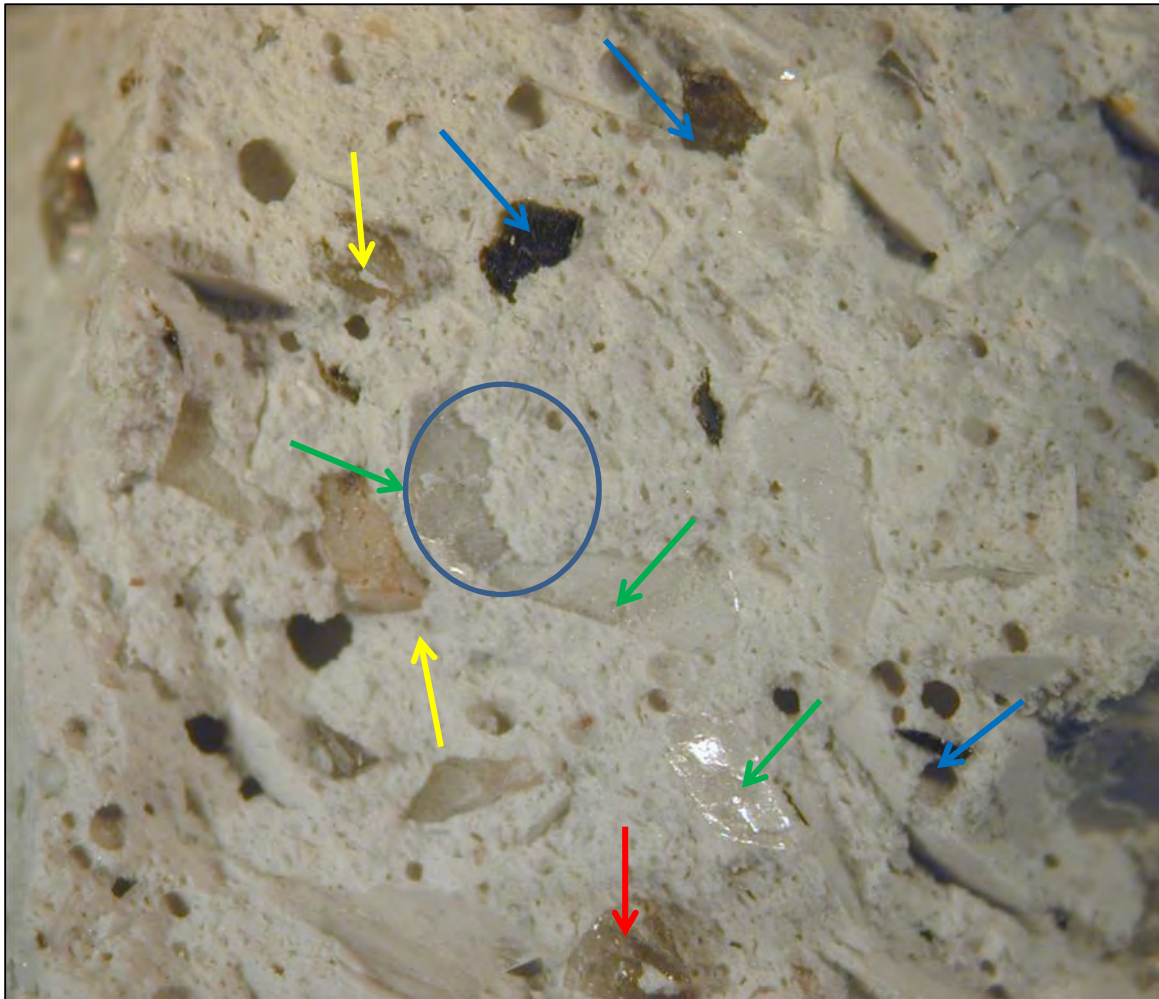


Photo 7: View of a fractured cross section of sample PA02 showing the range of aggregate types, and illustrating the overall volume of the aggregate. White mica (green arrows), brown mica (blue arrows), feldspar (yellow arrow), quartz (red arrow). 10x. Area of Photo 8 is circled.

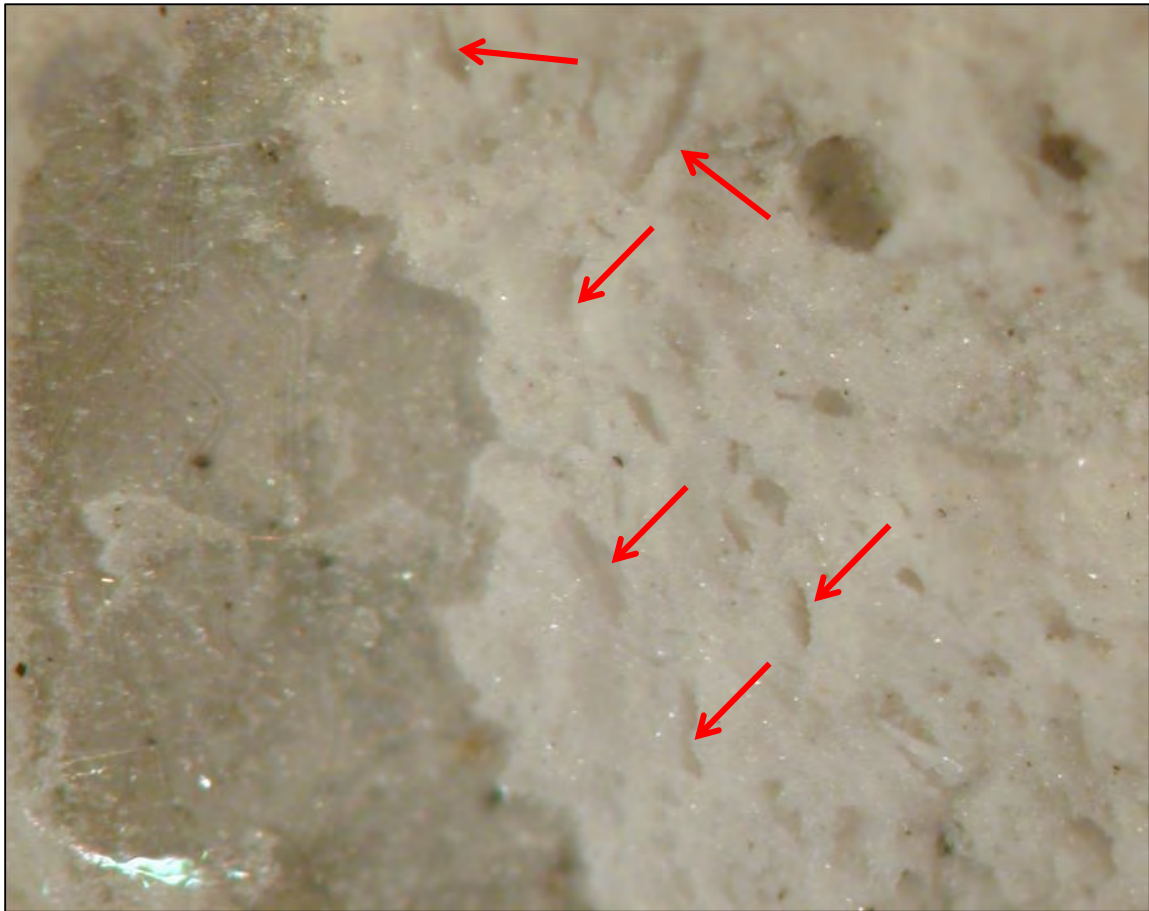


Photo 8: Detail view of Photo 7 showing the reflective character of the binder, and the tabular voids (red arrows).

APPENDIX A

PLASTER ANALYSIS SUMMARY SHEET

Project Name: Union Station Plaster

Location:

Date: 4/2016

Chemical Analysis

Weight Percent Sand	44.91
Weight Percent Acid Soluble	14.07
Weight Percent Fines	41.03

Mortar Characteristics

Plaster Color: White

	soft									hard
Relative Hardness:	<u>1</u>	2	3	4	5	6	7	8	9	10

Sand Characteristics

Color: White with dark grains-"salt and pepper"

Angularity: Angular

Composition: Predominantly white mica with biotite, chlorite (green mica), quartz, and feldspar

There is abundant undigested material as grinding was visibly causing breakage of the large mica plates. Aggregate forms approximately 20% of the coarse fraction. It is relatively uniform in size.

Fines Color: Greyish-white. The fines contain a small amount of mica that is appreciably coarser than the balance of the fine material. The quantity and size make it seem as though the mica is an accidental rather than intentional component of the fines fraction.

Notes: Visible but brief effervescence with the addition of acid.

December 22, 2017,

Sarah Mayersohn
10 G Street NE, Suite 504
Washington, DC 20002

Re: ***Conservation Treatment of the West Hall Legionnaires***

Dear Ms. Mayersohn:

The following is a brief summary of the conservation treatments performed on the Louis Saint-Gaudens Legionnaires sculptures and the granite wall at Union Station in Washington, DC completed by Materials Conservation Co, LLC (MC). MC performed the work from an aerial lift platform in October 2017. The goal of the conservation project was to remove heavy surface soiling, fill all losses, cracks and voids, and secure any loose elements or ornamentation on the sculptures as well as on the granite substrate. The sculptures are cast Plaster of Paris. Their surface is coated with thin layer of pigmented Keene's cement. The surface treatment also has aggregate of various dimensions and luster. From the ground, the figures are meant to give the appearance of carved stone. MC had previously conserved one of the sculptures in 2014 after being damaged during construction and was already familiar with the complex repairs needed and the ability to carefully recreate the surface treatments.

Methodology:

MC met with the project team and performed a series of small mockups. The testing was limited to low VOC waterless poultices. MC tested MasonRe, Dri-Klean, and dry soot sponge. MasonRe worked well and seemed to remove much of the surface grime but it retained moisture in the stone leaving darker areas on the substrate. It also had a strong ammonia smell. The Dri-Klean also removed the surface grime but did not leave any moisture staining. It did produce a faint ammonia smell, but significantly less than the MasonRe. The dry soot sponge had a minimal effect. (see figure 11), MC ultimately selected Dri-Klean, a latex poultice from Prosoco. The product was brush-applied in 10'x10' sections at a thickness of 40-60 mils. Edges were masked to facilitate ease of removal and to establish a clean leading edge. After 24 hours, the product was manually peeled off and with it the soiling, dust and guano. Once the substrate was clean, MC carefully assessed the sculptures, addressing cracks, losses and voids with a composite repair material. The shields of the northern-most and southern-most legionnaires were not securely fastened to the body of the sculpture and its base, and could easily be slightly shifted laterally. These shields were re-secured using shims and Plaster of Paris. Any composite repairs were in-painted following a 24 hour cure time to integrate them with the surrounding substrate.

Conclusion and Recommendations:

Given the lifespan of the sculptures and their indoor location, the Legionnaire sculptures are in fine condition. The cracks and voids which MC addressed seem to be an acceptable amount of cracking and loss considering they are more than a century in age. MC recommends monitoring the sculptures every 5 years or after a seismic event. Monitoring the levels of bird guano is also significant as it can accelerate material decay and obscure cracks.

The granite panels are also in fine condition. Dust, grime and guano were pulled up by the poultice from the granite and mortar joints. Given the robust material characteristics of the stone, keeping them free of guano is the most serious condition to monitor. All the mortar joints were in good condition with no loss or open joints. Both substrates appeared brighter after treatment.

Submitted by: Marco J. Federico- Senior Conservator, Materials Conservation.

Representative Images:



Figure 1. Prior to Restoration.



Figure 2. After Restoration.



Figure 3. Before Restoration.



Figure 4. After Restoration.



Figure 5. Poultice Removal.



Figure 6. From left to right, a cleaned sculpture, a poulticed sculpture, and an untreated sculpture.



Figure 7. After Restoration.



Figure 8. Cracks in Fingers.



Figure 9. Conserved Fingers.



Figure 10. Detail of Shield Stamped "Shield for Model No. 2".



Figure 11. Making a Composite Repair.



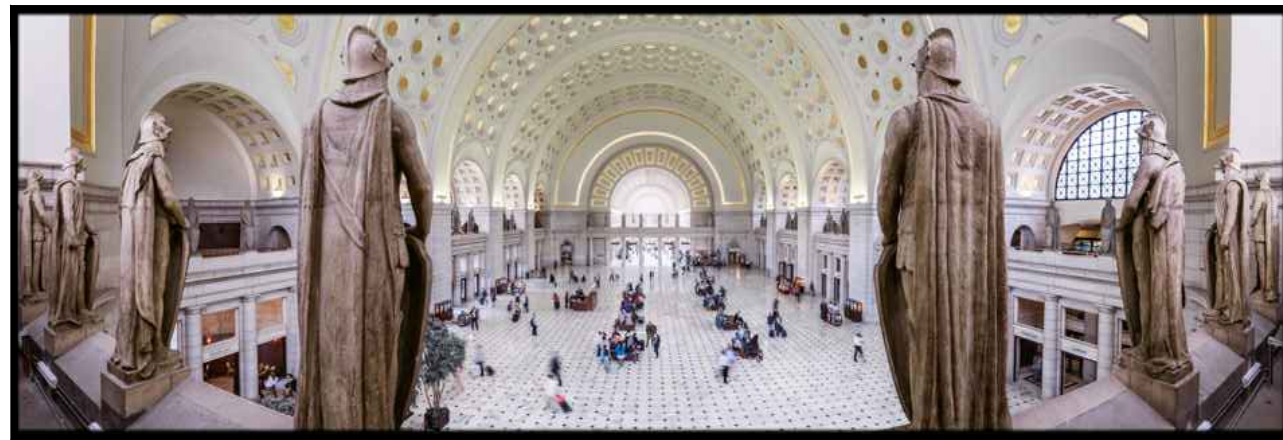
Figure 12. Applied mockups. L-R MasonRE, Dri-Klean, & dry soot sponge.



Figure 13. Mockups after poultice removal. L-R MasonRE, Dri-Klean, & dry soot sponge.

RESTORATION OF THE HISTORIC LEGIONNAIRE STATUES AND VESTIBULES IN THE MAIN HALL

AT
WASHINGTON UNION STATION
WASHINGTON, D.C.



*Photos of Legionnaires watching over the Main Hall
by Colin Winterbottom for USRC, 2017*

FOR:
UNION STATION REDEVELOPMENT CORPORATION

Beverly K. Swaim-Staley, President and Chief Executive Officer
750 FIRST STREET, N.E., SUITE 1010
WASHINGTON, D.C. 20002
(202) 222-0271

BY:
JOHN BOWIE ASSOCIATES, Historical Architects

John R. Bowie, F.A.I.A., Historical Architect
204 WEST ROSE VALLEY ROAD
WALLINGFORD, PENNSYLVANIA 19086
(610) 565-1268

LIST OF DRAWINGS:

- CS - Cover Sheet
- A1 - Main Hall Floor Plan
- A2 - Gallery Level Floor Plan
- A3 - Details - Type "A" Legionnaire
- A4 - Details - Type "B" Legionnaire
- A5 - Details - Type "C" Legionnaire
- A6 - Typical South Vestibule, Interior Elevation - Looking South
- A7 - Typical South Vestibule, Interior Elevation - Looking West
- A8 - Typical South Vestibule, Interior Elevation - Looking North
- A9 - Typical South Vestibule, Interior Elevation - Looking East
- A10 - Typical North Vestibule, Interior Elevation - Looking South
- A11 - Typical North Vestibule, Interior Elevation - Looking West
- A12 - Typical North Vestibule, Interior Elevation - Looking North
- A13 - Typical North Vestibule, Interior Elevation - Looking East
- A14 - South and North Vestibules, Typical Reflected Ceiling Plans

REVISIONS:

John Bowie Associates
204 West Rose Valley Road
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Phone: 610.565.1268

Architects and Consultants to Museums, Historic Sites and Cultural Properties

SCALE: AS NOTED

DATE: APRIL 18, 2019

DRAWN: JMD

APPROVED: JRB

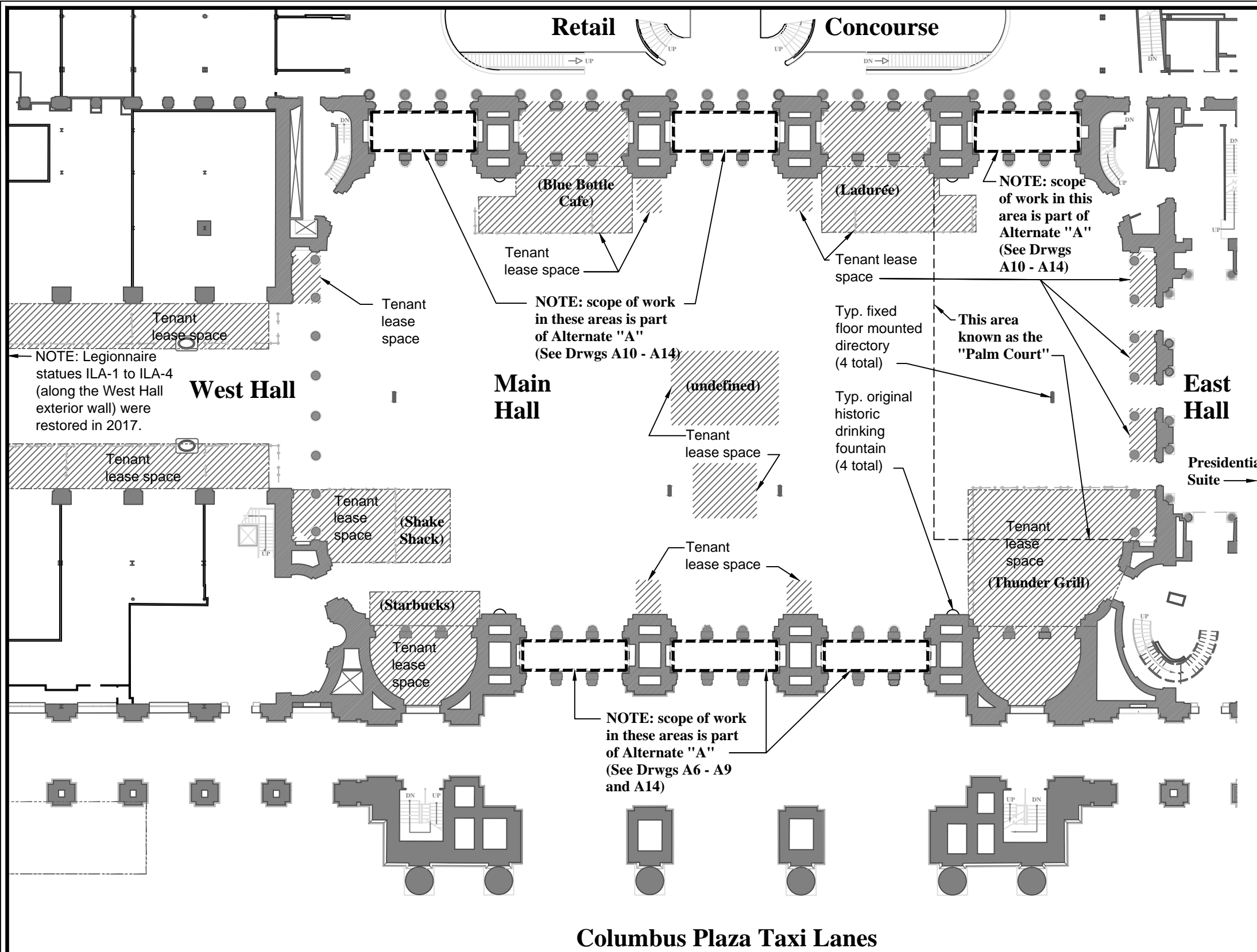
**RESTORATION OF HISTORIC LEGIONNAIRE
STATUES AND VESTIBULES IN THE MAIN HALL**
Washington Union Station
Washington, D. C.

SHEET TITLE: **COVER SHEET**

SHEET NO.

CS

SHEET OF



GENERAL NOTES:

- 1. BASE BID SCOPE:
 - a. PREPARE TREATMENT PLANS
 - b. CLEAN AND REPAIR 36 LEGIONNAIRE STATUES OVERLOOKING MAIN HALL
 - c. PREPARE COMPLETION REPORTS
- 2. ALTERNATE "A" SCOPE:
 - a. PREPARE TREATMENT PLANS
 - b. CLEAN AND REPAIR 6 LEGIONNAIRE STATUES ON SOUTH EXTERIOR ELEVATION OF BUILDING
 - c. PREPARE COMPLETION REPORTS
 - d. CLEAN AND REPAIR 3 VESTIBULES ON SOUTH SIDE OF MAIN HALL
 - e. CLEAN AND REPAIR 3 VESTIBULES ON NORTH SIDE OF MAIN HALL
- 3. DRAWING A1 SHOWS THE LIMITS OF THE WORK AREA IN THE MAIN HALL AND VESTIBULES, AND DEFINES PORTIONS OF THE MAIN HALL LEASED BY TENANTS
- 4. SEE DRAWING A2 FOR LOCATIONS AND DESCRIPTIONS OF THE LEGIONNAIRE STATUES
- 5. SEE SPECIFICATIONS FOR RESTRICTIONS ON DELIVERIES, ALLOWABLE HOURS/DATES FOR WORK, AND ALLOWABLE BLOCKAGES TO ENTRANCES (THE STATION IS OPEN 24/7 AND THE BUSINESSES LOCATED IN THE MAIN HALL HAVE DIFFERING ACCESS/PROTECTION REQUIREMENTS)
- 6. SEE SPECIFICATIONS FOR APPROVAL AND PROTECTION REQUIREMENTS WHEN USING SCAFFOLDING AND HIGH-REACH EQUIPMENT
- 7. SEE SPECIFICATIONS FOR REQUIREMENTS FOR TEMPORARY SERVICES AND FACILITIES

REVISIONS:

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 204 West Rose Valley Road
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 DRAWN: JMD
 APPROVED: JRB

RESTORATION OF HISTORIC LEGIONNAIRE STATUES AND VESTIBULES IN THE MAIN HALL
 Washington Union Station
 Washington, D. C.
 SHEET TITLE: **MAIN HALL FLOOR PLAN**

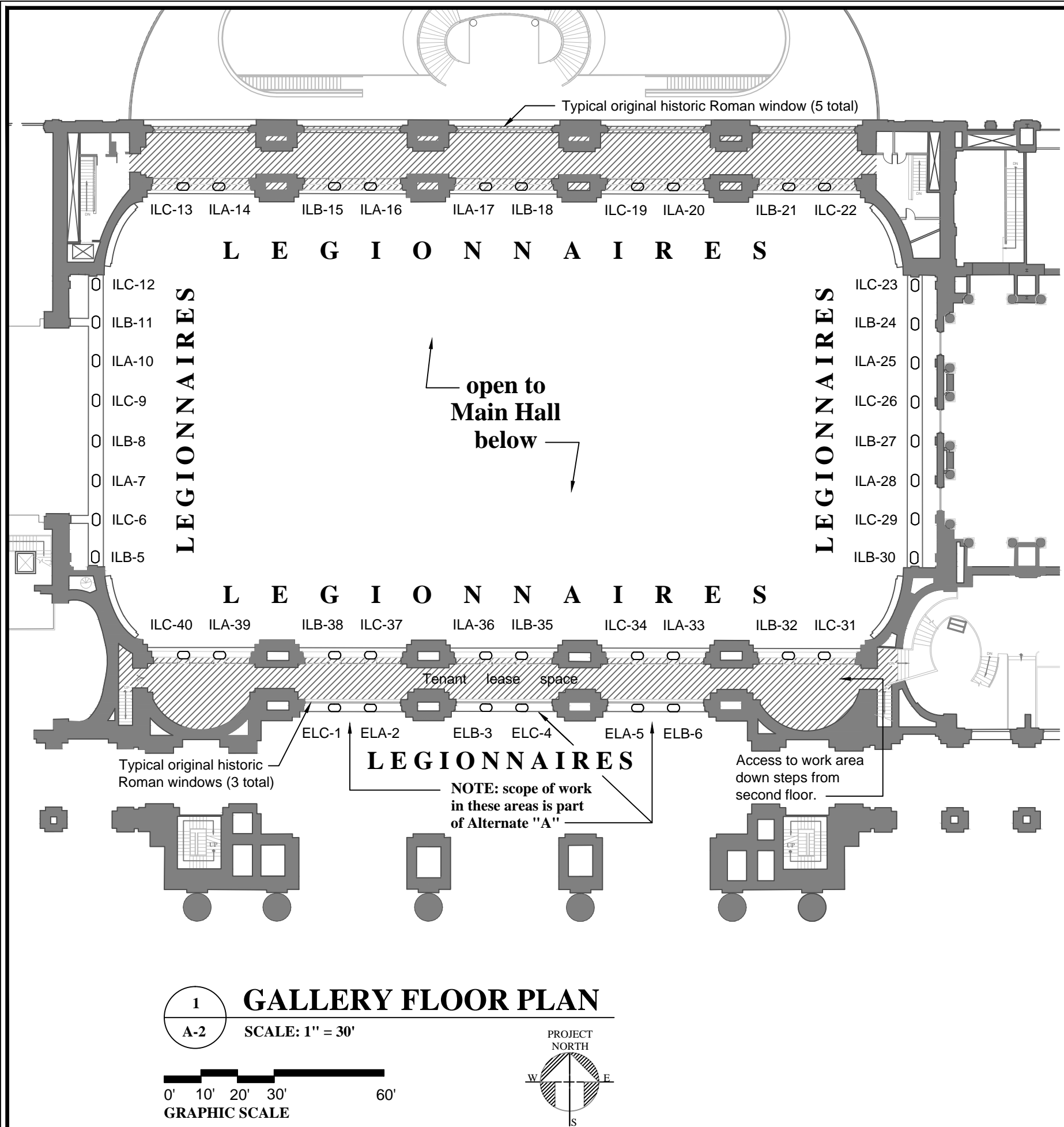
SHEET NO. **A1**
 SHEET OF

1 **MAIN HALL FLOOR PLAN**
 A-1 SCALE: 1" = 30'

0' 10' 20' 30' 60'
 GRAPHIC SCALE

PROJECT NORTH

Columbus Plaza Taxi Lanes



1
A-2
SCALE: 1" = 30'
GRAPHIC SCALE
PROJECT NORTH

GENERAL NOTES:

1. THE LABELING SYSTEM FOR IDENTIFYING THE LEGIONNAIRES DIFFERS SLIGHTLY FROM THE NUMBERING SHOWN IN APPENDIX F OF THE 2015 HISTORIC PRESERVATION PLAN.

Holding shield with both hands is designated "A"

Holding shield with right hand is designated "B"

Holding shield with left hand is designated "C"

For example:
ILC-19
 ↑ Legionnaire statue number 19
 ↑ Holding Shield with left hand
 ↑ Legionnaire
 I=Interior; E=Exterior

In addition, there is a numbering error in the 2015 Historic Preservation Plan (ILA-20 is noted twice).
 This drawing corrects both conditions.

2. BASE BID SCOPE:
 - a. PREPARE TREATMENT PLANS
 - b. CLEAN AND REPAIR 36 LEGIONNAIRE STATUES OVERLOOKING MAIN HALL
 - c. PREPARE COMPLETION REPORTS
3. ALTERNATE "A" SCOPE:
 - a. PREPARE TREATMENT PLANS
 - b. CLEAN AND REPAIR 6 LEGIONNAIRE STATUES ON SOUTH EXTERIOR ELEVATION OF BUILDING
 - c. PREPARE COMPLETION REPORTS
 - d. CLEAN AND REPAIR 3 VESTIBULES ON SOUTH SIDE OF MAIN HALL
 - e. CLEAN AND REPAIR 3 VESTIBULES ON NORTH SIDE OF MAIN HALL
4. DRAWING A1 SHOWS THE LIMITS OF THE WORK AREA IN THE MAIN HALL AND VESTIBULES, AND DEFINES PORTIONS OF THE MAIN HALL LEASED BY TENANTS
5. DRAWING A2 SHOWS THE LOCATIONS AND DESCRIPTIONS OF THE LEGIONNAIRE STATUES

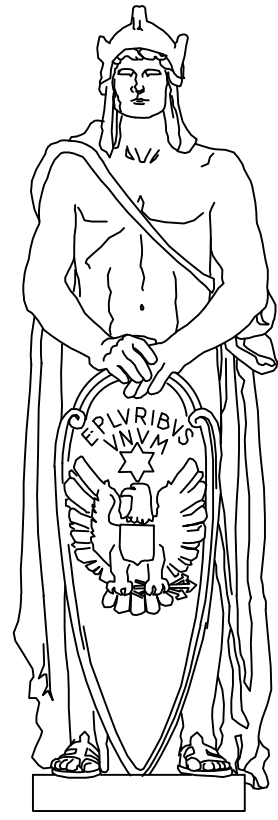
REVISIONS:

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 204 West Rose Valley Road
 Wallingford, Pennsylvania 19086
 Phone: 610.565.1268
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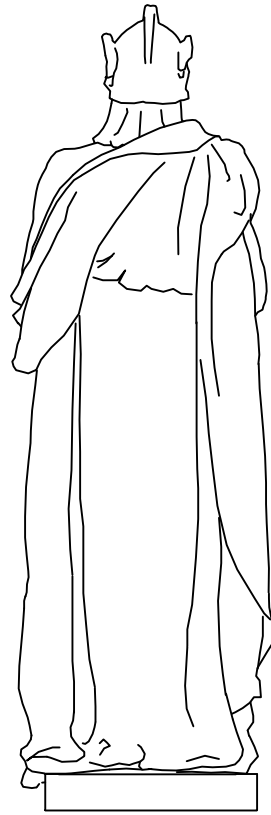
SCALE: AS NOTED
 DATE: APRIL 18, 2019
 DRAWN: JMD
 APPROVED: JRB

RESTORATION OF HISTORIC LEGIONNAIRE STATUES AND VESTIBULES IN THE MAIN HALL
 Washington Union Station
 Washington, D. C.
 SHEET TITLE: **GALLERY FLOOR PLAN**

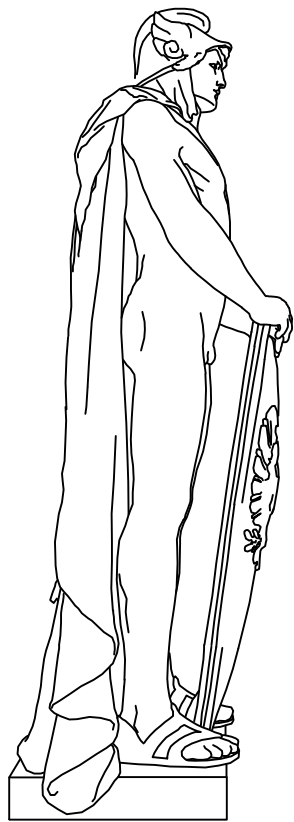
SHEET NO.
A2
 SHEET OF



FRONT



BACK



RIGHT SIDE



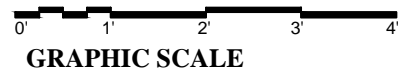
LEFT SIDE

LEGIONNAIRE STATUE TYPE "A" (Holding shield with both hands)

	Notes: re: "as found" condition	Notes: re: cleaning and repair
ILA-7		
ILA-10		
ILA-14		
ILA-16		
ILA-17		
ILA-20		
ILA-25		
ILA-28		
ILA-33		
ILA-36		
ILA-39		
ELA-2		
ELA-5		



Note: this drawing supplements the contractor's treatment plan and completion report and should be used for statue-specific notes as part of the As-Built drawing set.



REVISIONS:

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 Architects and Consultants to Museums, Historic Sites and Cultural Properties

SCALE: AS NOTED
 DATE: APRIL 18, 2019
 DRAWN: JMD
 APPROVED: JRB

**RESTORATION OF HISTORIC LEGIONNAIRE
 STATUES AND VESTIBULES IN THE MAIN HALL**
 Washington Union Station
 Washington, D. C.

SHEET TITLE: **DETAILS - TYPE "A" LEGIONNAIRE**

SHEET NO.

A3

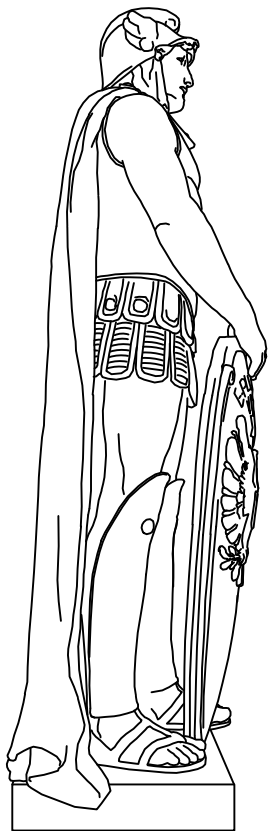
SHEET OF



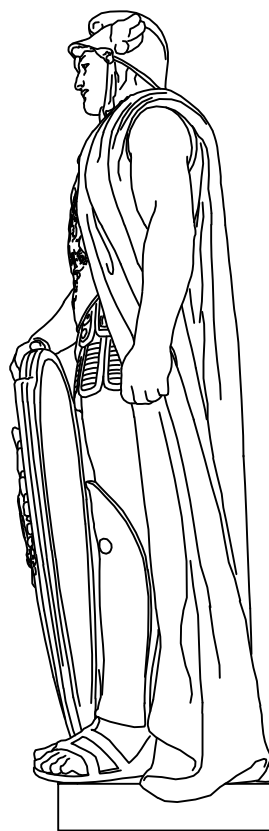
FRONT



BACK



RIGHT SIDE



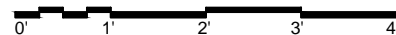
LEFT SIDE

LEGIONNAIRE STATUE TYPE "B" (Holding shield with right hand)

	Notes: re: "as found" condition	Notes: re: cleaning and repair
ILB-5		
ILB-8		
ILB-11		
ILB-15		
ILB-18		
ILB-21		
ILB-24		
ILB-27		
ILB-30		
ILB-32		
ILB-35		
ILB-38		
ELB-3		
ELB-6		

Part of Scope of Base Bid

Part of Scope of Alternate "A"



GRAPHIC SCALE

Note: this drawing supplements the contractor's treatment plan and completion report and should be used for statue-specific notes as part of the As-Built drawing set.

REVISIONS:

John Bowie Associates
 204 West Rose Valley Road
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 Architects and Consultants to Museums, Historic Sites and Cultural Properties

SCALE: AS NOTED
 DATE: 2019 02.25
 DRAWN: JMD
 APPROVED: JRB

RESTORATION OF HISTORIC LEGIONNAIRE STATUES AND VESTIBULES IN THE MAIN HALL
 Washington Union Station
 Washington, D. C.

SHEET TITLE: **DETAILS - TYPE "B" LEGIONNAIRE**

SHEET NO.

A4

SHEET OF



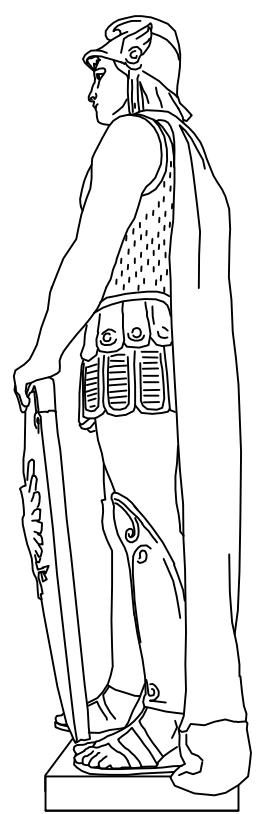
FRONT



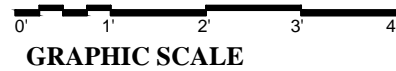
BACK



RIGHT SIDE



LEFT SIDE



Part of Scope of Base Bid

Part of Scope of Alternate "A"

LEGIONNAIRE STATUE TYPE "C" (Holding shield with left hand)

	Notes: re: "as found" condition	Notes: re: cleaning and repair
ILC-6		
ILC-9		
ILC-12		
ILC-13		
ILC-19		
ILC-22		
ILC-23		
ILC-26		
ILC-29		
ILC-31		
ILC-34		
ILC-37		
ILC-40		
ELC-1		
ELC-4		

Note: this drawing supplements the contractor's treatment plan and completion report and should be used for statue-specific notes as part of the As-Built drawing set.

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SCALE: AS NOTED
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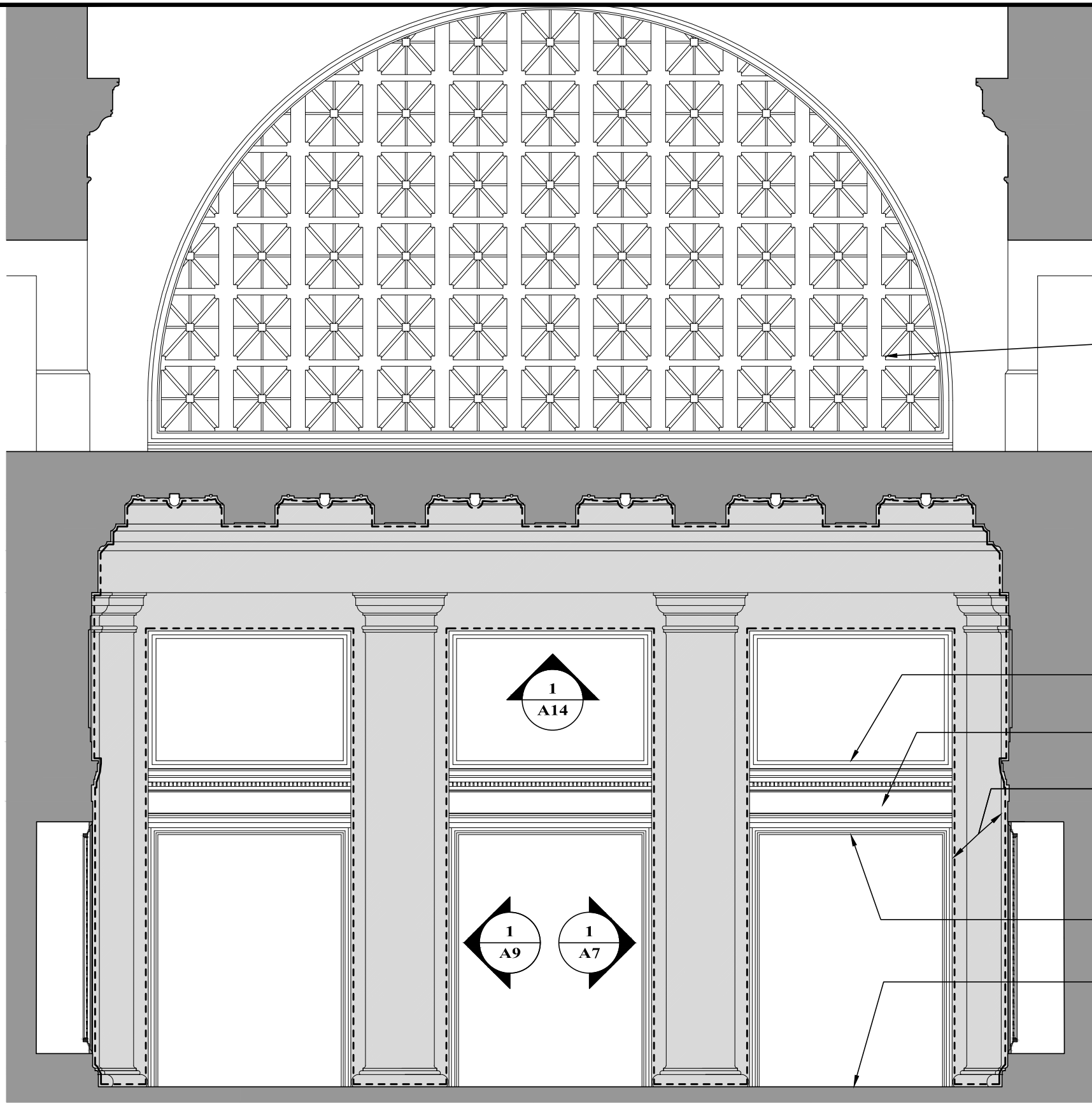
RESTORATION OF HISTORIC LEGIONNAIRE STATUES AND VESTIBULES IN THE MAIN HALL
 Washington Union Station
 Washington, D. C.

SHEET TITLE: **DETAILS - TYPE "C" LEGIONNAIRE**

SHEET NO.

A5

SHEET OF



GENERAL NOTES:

1. ALL OF THE WORK SHOWN ON THIS SHEET IS PART OF ALTERNATE "A" SCOPE.

EXG. ROMAN WINDOW - NO WORK

CLEAN AND PAINT TRANSOM WINDOW FRAME (TYP. OF 3)

CLEAN AND PAINT TRANSOM PANEL (TYP. OF 3)

CLEAN AND MINOR REPAIRS TO STONEMWORK IN AREAS MARKED [---]

NO WORK ON WOOD DOORS OR DOOR FRAMES (TYP. OF 3)

NO WORK ON FLOOR - TAKE CARE TO PROTECT IT DURING WORK

1 TYP. SOUTH VESTIBULE, INTERIOR ELEVATION - LOOKING SOUTH
 A-6 SCALE: 1/4" = 1'-0"



REVISIONS:

John Bowie Associates
 204 West Rose Valley Road
 Wallingford, Pennsylvania 19086
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 Architects and Consultants to Museums, Historic Sites and Cultural Properties

SCALE: AS NOTED
 DATE: April 18, 2019
 DRAWN: JMD
 APPROVED: JRB

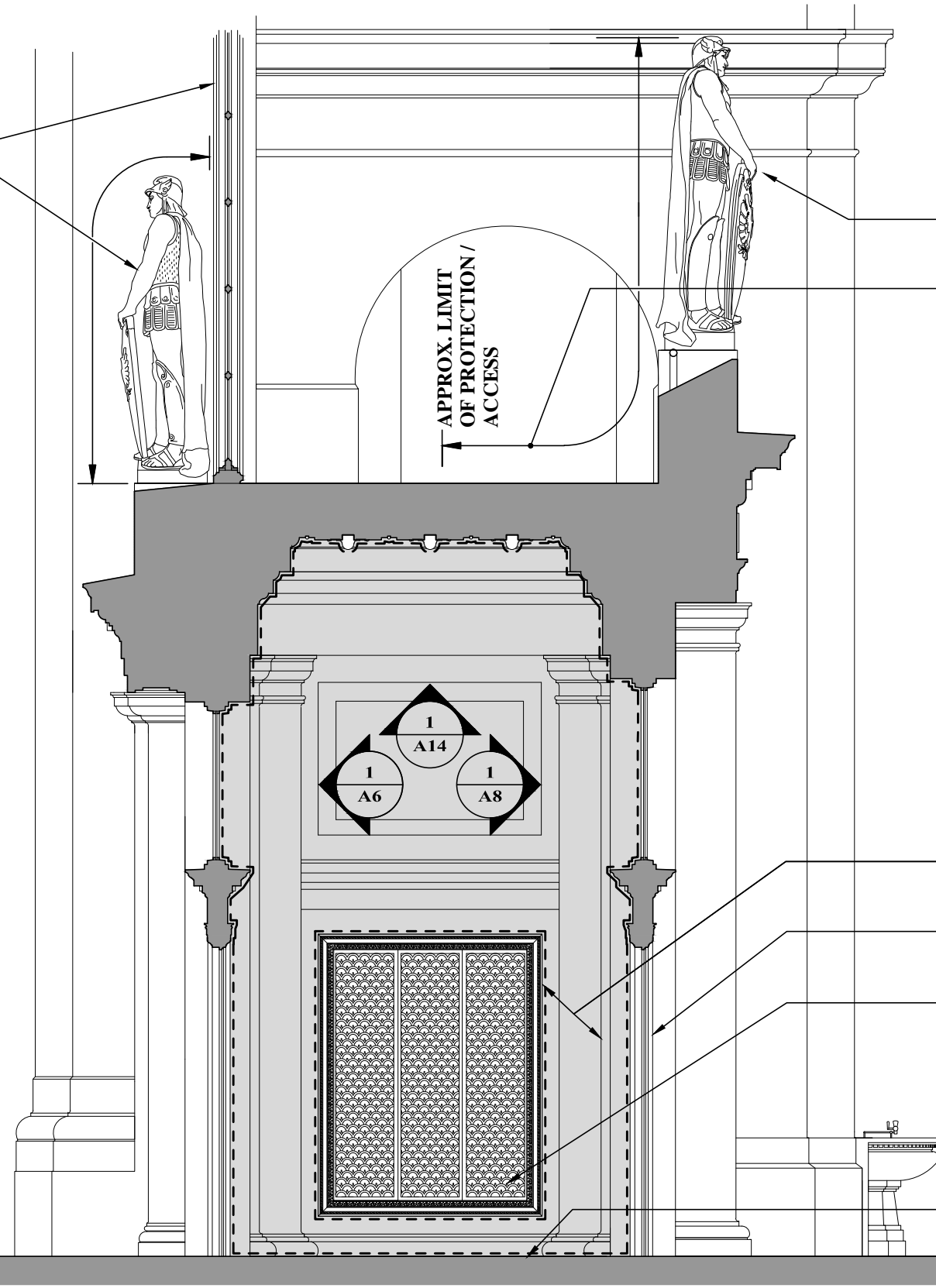
RESTORATION OF HISTORIC LEGIONNAIRE STATUES AND VESTIBULES IN THE MAIN HALL
 Washington Union Station
 Washington, D. C.
 SHEET TITLE: TYP. SOUTH VESTIBULE, INTERIOR ELEVATION - LOOKING SOUTH

SHEET NO.

A6

SHEET OF

TAKE GREAT CARE TO PROTECT HISTORIC ROMAN WINDOW FRAME AND GLASS DURING WORK ON EXTERIOR LEGIONNAIRE



GENERAL NOTES:

1. EXCEPT WHERE NOTED, ALL OF THE WORK SHOWN ON THIS SHEET IS PART OF ALTERNATE "A" SCOPE.

LEGIONNAIRES FACING TOWARD MAIN HALL ARE PART OF THE BASE BID SCOPE

SEE SPECIFICATIONS FOR RESTRICTIONS ON GAINING ACCESS FROM TENANT TO PERFORM WORK ON BACK AND SIDES OF LEGIONNAIRE

EXTERIOR OF BUILDING

MAIN HALL

CLEAN AND MINOR REPAIRS TO STONEMWORK IN AREAS MARKED [---]

NO WORK ON WOOD DOORS OR DOOR FRAMES (TYP. OF 3)

CLEAN AND MINOR REPAIR TO HISTORIC BRONZE HEATING SYSTEM GRILLE

PROTECT, BUT DO NOT OBSTRUCT EXISTING DRINKING FOUNTAIN DURING WORK

NO WORK ON FLOOR - TAKE CARE TO PROTECT IT DURING WORK

1 TYP. SOUTH VESTIBULE, INTERIOR ELEVATION - LOOKING WEST
 A-7 SCALE: 1/4" = 1'-0"



REVISIONS:

John Bowie Associates
 204 West Rose Valley Road
 Wallingford, Pennsylvania 19086
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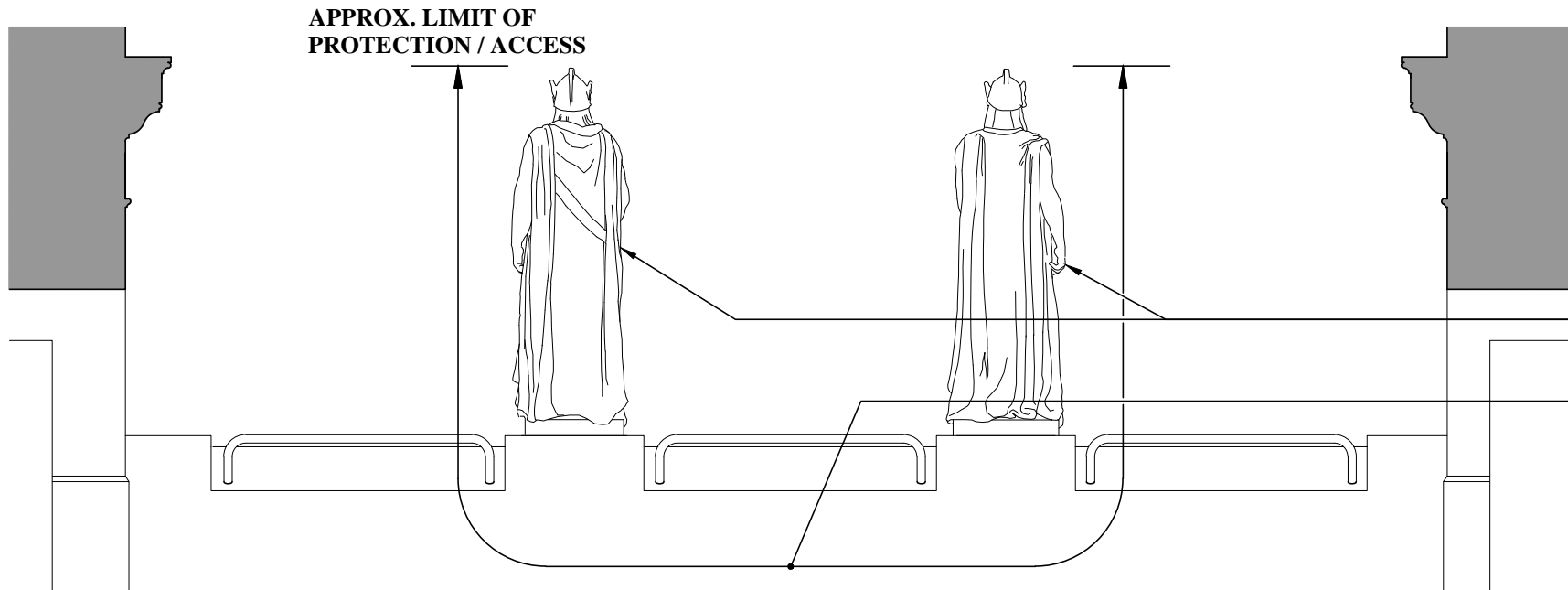
SCALE: AS NOTED
 DATE: April 98/2/99
 DRAWN: JMD
 APPROVED: JRB

RESTORATION OF HISTORIC LEGIONNAIRE STATUES AND VESTIBULES IN THE MAIN HALL
 Washington Union Station
 Washington, D. C.
 SHEET TITLE: TYP. SOUTH VESTIBULE, INTERIOR ELEVATION - LOOKING WEST

SHEET NO.

A7

SHEET OF

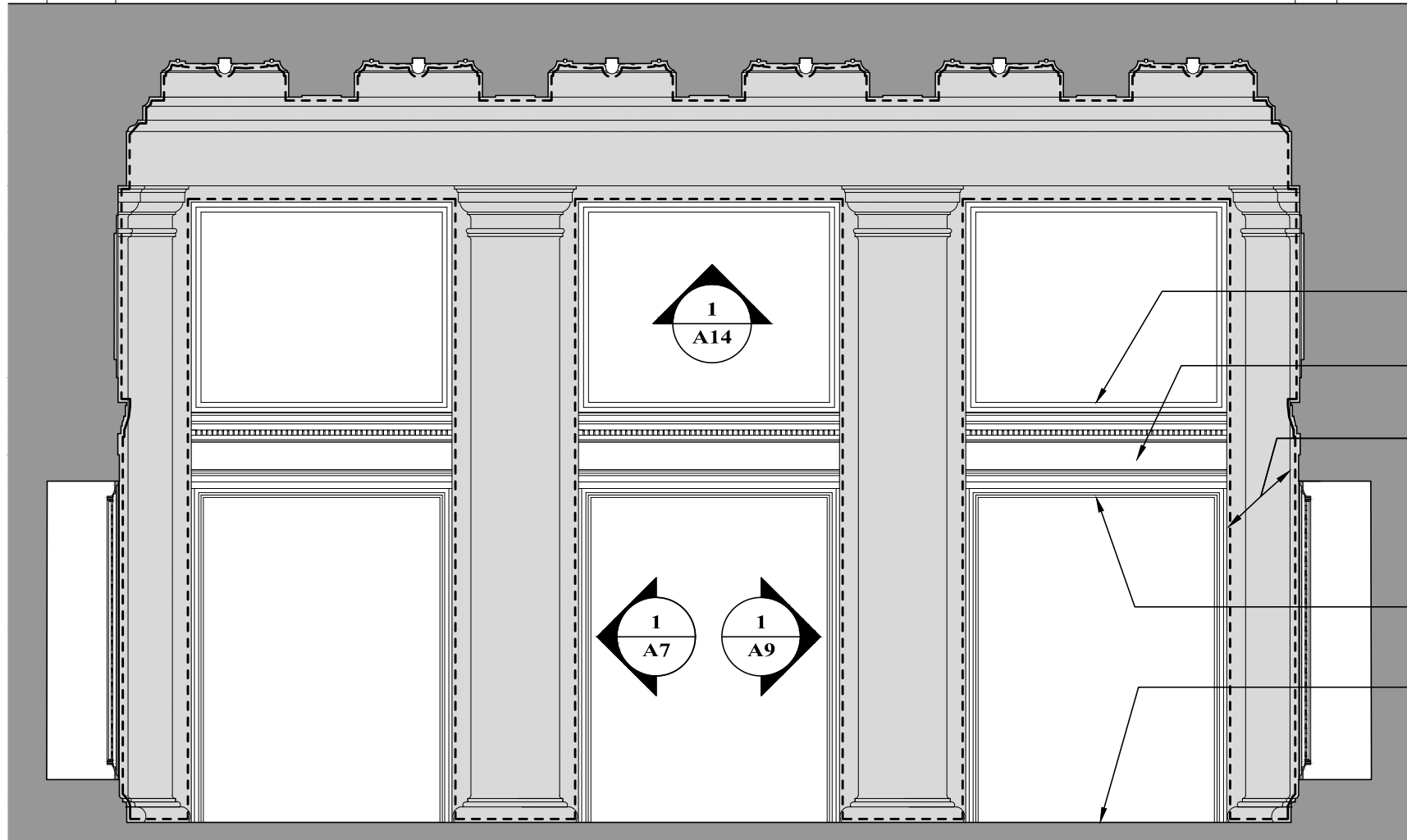


GENERAL NOTES:

1. EXCEPT WHERE NOTED, ALL OF THE WORK SHOWN ON THIS SHEET IS PART OF ALTERNATE "A" SCOPE.

LEGIONNAIRES FACING TOWARD MAIN HALL ARE PART OF THE BASE BID SCOPE

SEE SPECIFICATIONS FOR RESTRICTIONS ON GAINING ACCESS FROM TENANT TO PERFORM WORK ON BACK AND SIDES OF LEGIONNAIRE



CLEAN AND PAINT TRANSOM WINDOW FRAME (TYP. OF 3)

CLEAN AND PAINT TRANSOM PANEL (TYP. OF 3)

CLEAN AND MINOR REPAIRS TO STONEMWORK IN AREAS MARKED [---]

NO WORK ON WOOD DOORS OR DOOR FRAMES (TYP. OF 3)

NO WORK ON FLOOR - TAKE CARE TO PROTECT IT DURING WORK

1 TYP. SOUTH VESTIBULE, INTERIOR ELEVATION - LOOKING NORTH
A-8 SCALE: 1/4" = 1'-0"

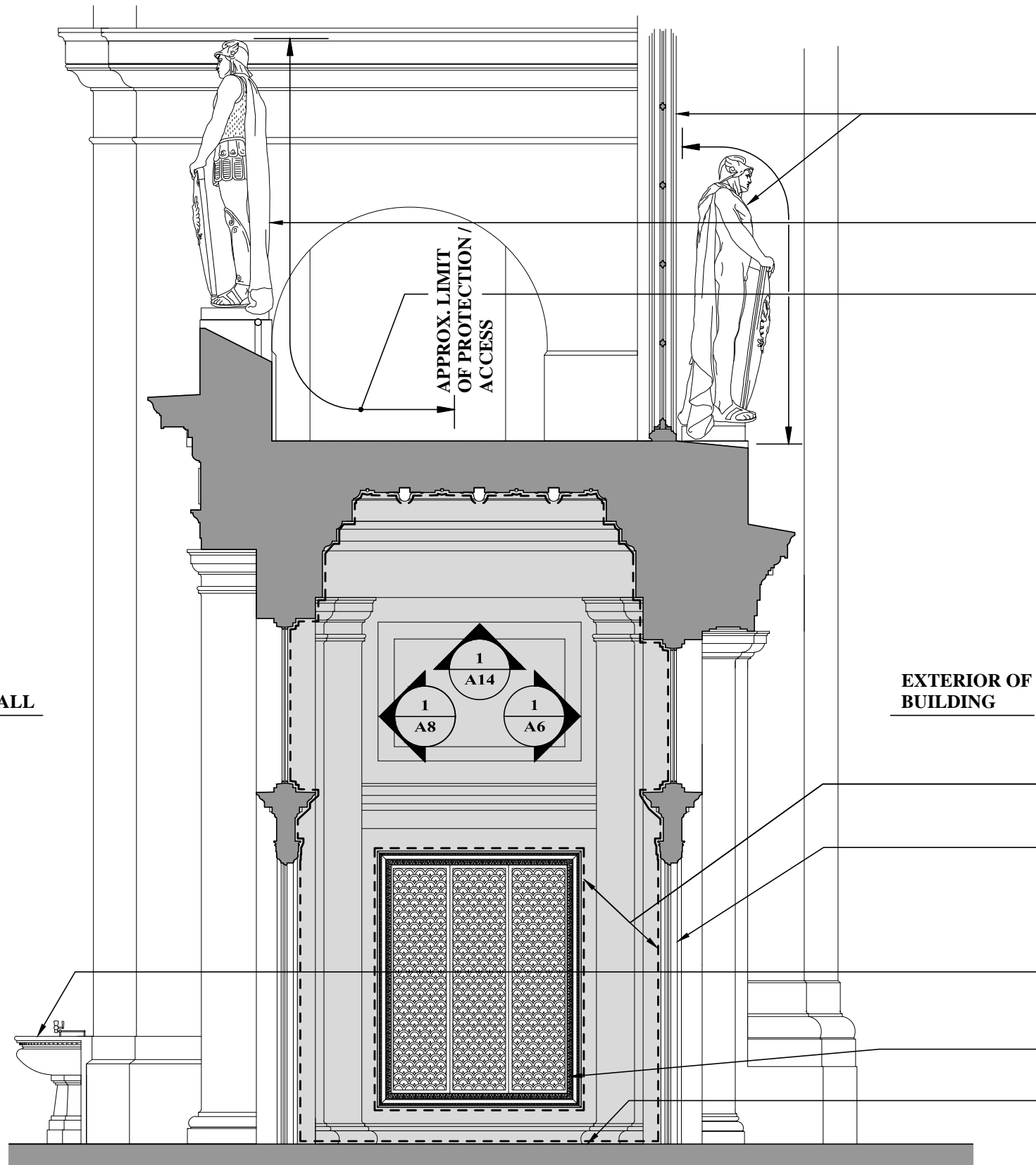


REVISIONS:
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SCALE: AS NOTED
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DRAWN: JMD
APPROVED: JRB

RESTORATION OF HISTORIC LEGIONNAIRE STATUES AND VESTIBULES IN THE MAIN HALL
Washington Union Station
Washington, D. C.
SHEET TITLE: TYP. SOUTH VESTIBULE, INTERIOR ELEVATION - LOOKING NORTH

SHEET NO.
A8
SHEET OF



GENERAL NOTES:

1. EXCEPT WHERE NOTED, ALL OF THE WORK SHOWN ON THIS SHEET IS PART OF ALTERNATE "A" SCOPE.

TAKE GREAT CARE TO PROTECT HISTORIC ROMAN WINDOW FRAME AND GLASS DURING WORK ON EXTERIOR LEGIONNAIRE

LEGIONNAIRES FACING TOWARD MAIN HALL ARE PART OF THE BASE BID SCOPE

SEE SPECIFICATIONS FOR RESTRICTIONS ON GAINING ACCESS FROM TENANT TO PERFORM WORK ON BACK AND SIDES OF LEGIONNAIRE

CLEAN AND MINOR REPAIRS TO STONEMWORK IN AREAS MARKED [---]

NO WORK ON WOOD DOORS OR DOOR FRAMES (TYP. OF 3)

PROTECT, BUT DO NOT OBSTRUCT EXISTING DRINKING FOUNTAIN DURING WORK

CLEAN AND MINOR REPAIR TO HISTORIC BRONZE HEATING SYSTEM GRILLE

NO WORK ON FLOOR - TAKE CARE TO PROTECT IT DURING WORK

1
A-9

TYP. SOUTH VESTIBULE, INTERIOR ELEVATION - LOOKING EAST

SCALE: 1/4" = 1'-0"



REVISIONS:

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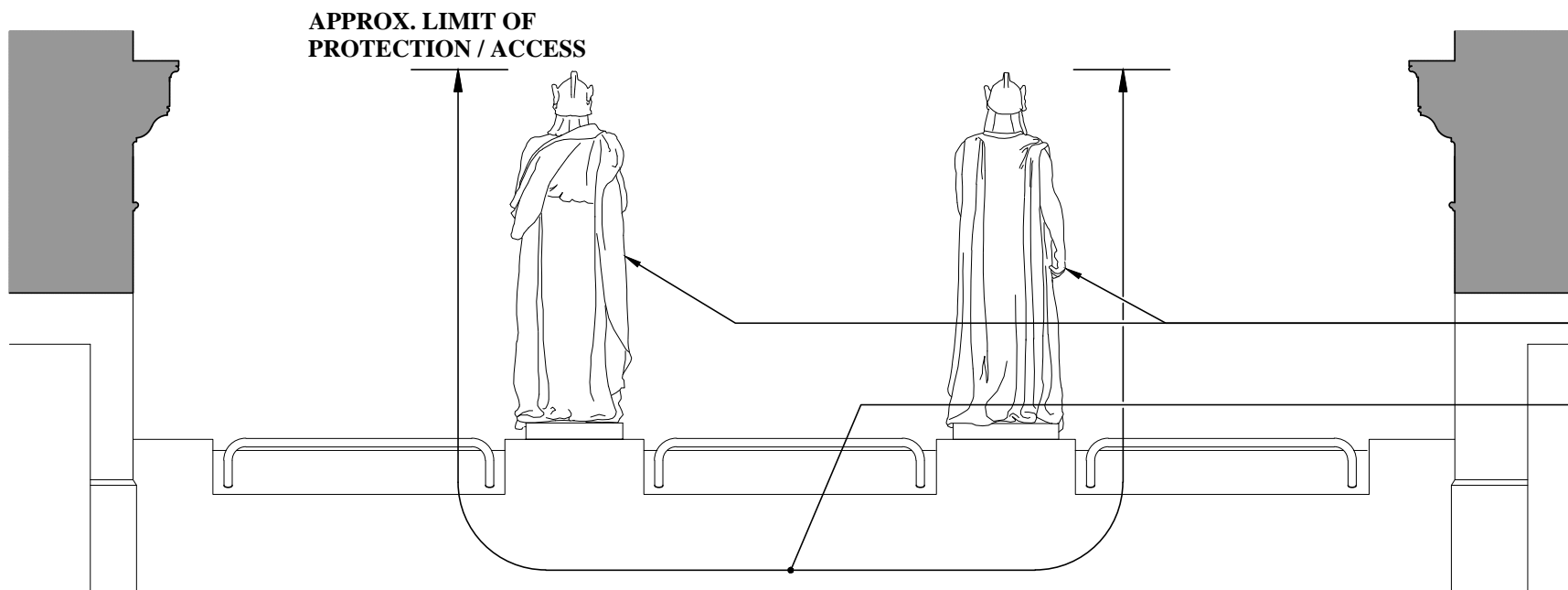
SCALE: AS NOTED
DATE: April 18, 2019
DRAWN: JMD
APPROVED: JRB

RESTORATION OF HISTORIC LEGIONNAIRE STATUES AND VESTIBULES IN THE MAIN HALL
Washington Union Station
Washington, D. C.
SHEET TITLE: TYP. SOUTH VESTIBULE, INTERIOR ELEVATION - LOOKING EAST

SHEET NO.

A9

SHEET OF

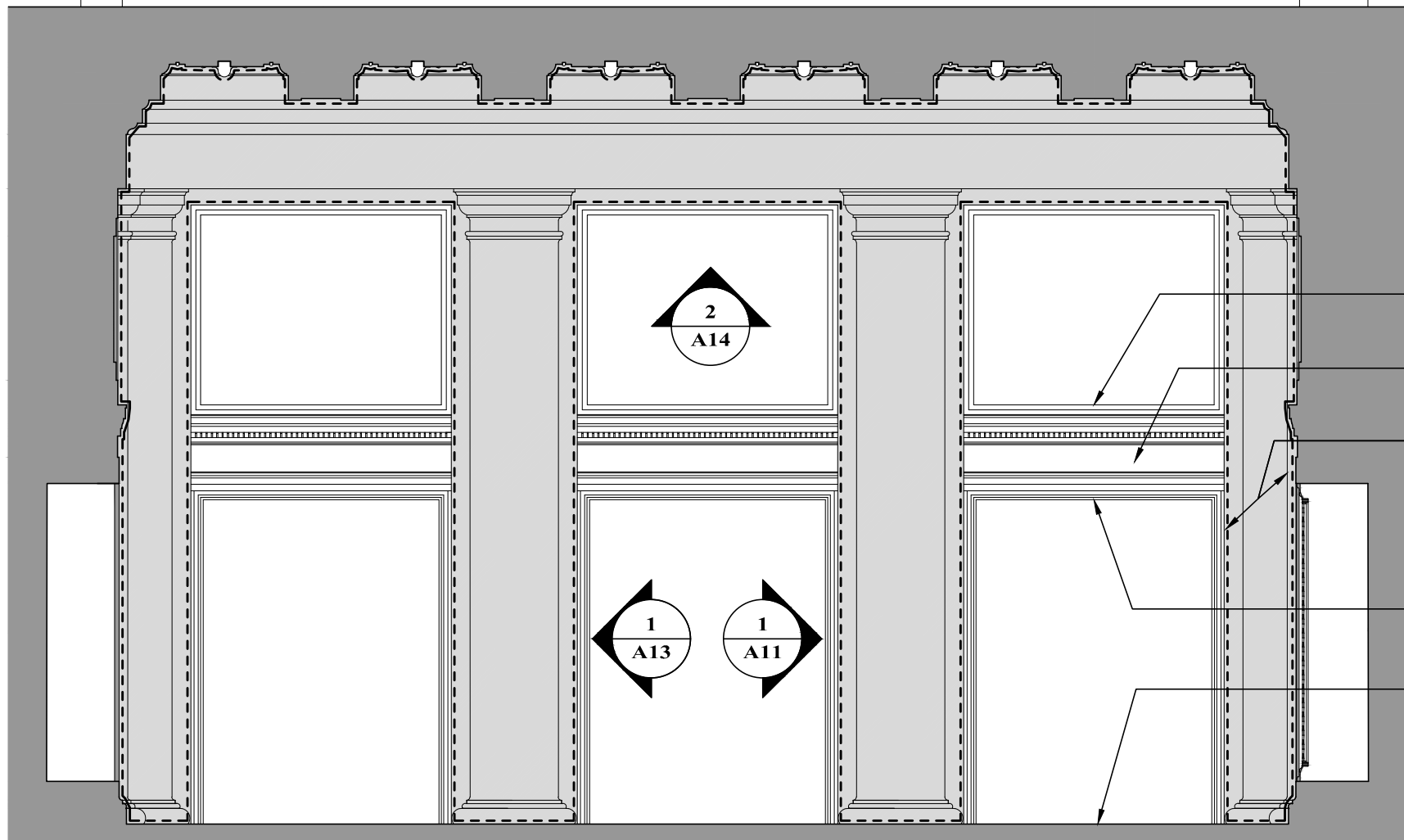


GENERAL NOTES:

1. EXCEPT WHERE NOTED, ALL OF THE WORK SHOWN ON THIS SHEET IS PART OF ALTERNATE "A" SCOPE.

LEGIONNAIRES FACING TOWARD MAIN HALL ARE PART OF THE BASE BID SCOPE

SEE SPECIFICATIONS FOR RESTRICTIONS ON GAINING ACCESS FROM TENANT TO PERFORM WORK ON BACK AND SIDES OF LEGIONNAIRE



CLEAN AND PAINT TRANSOM WINDOW FRAME (TYP. OF 3)

CLEAN AND PAINT TRANSOM PANEL (TYP. OF 3)

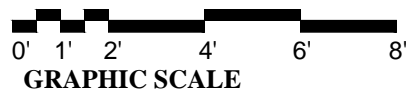
CLEAN AND MINOR REPAIRS TO STONEMWORK IN AREAS MARKED [---]

NO WORK ON WOOD DOORS OR DOOR FRAMES (TYP. OF 3)

NO WORK ON FLOOR - TAKE CARE TO PROTECT IT DURING WORK

1 TYP. NORTH VESTIBULE, INTERIOR ELEVATION - LOOKING SOUTH

A-10 SCALE: 1/4" = 1'-0"



REVISIONS:

John Bowie Associates
204 West Rose Valley Road
Wallingford, Pennsylvania 19086
Phone: 610.565.1268

Architects and Consultants to Museums, Historic Sites and Cultural Properties

SCALE: AS NOTED

DATE: April 18, 2019

DRAWN: JMD

APPROVED: JRB

RESTORATION OF HISTORIC LEGIONNAIRE STATUES AND VESTIBULES IN THE MAIN HALL

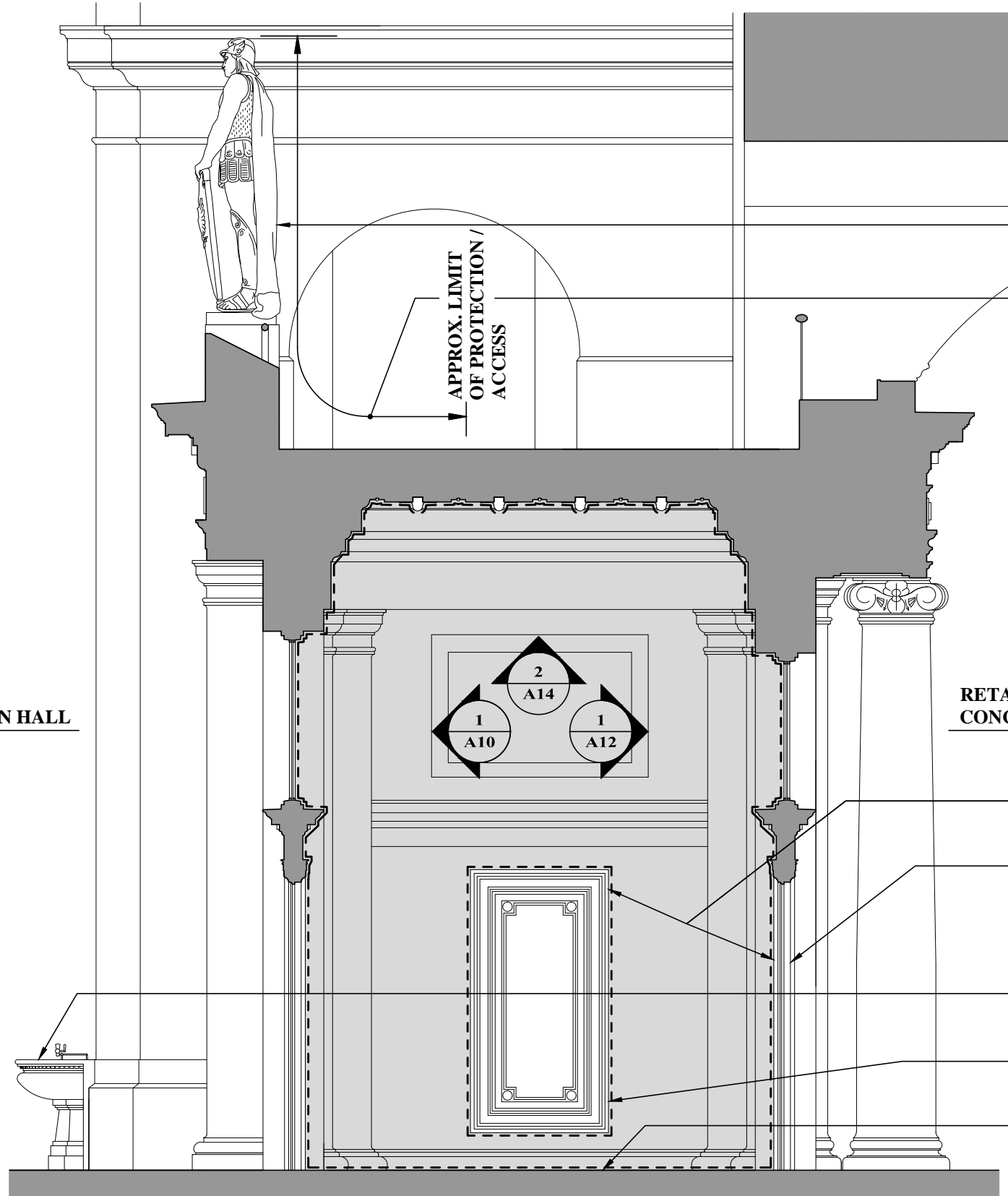
Washington Union Station
Washington, D. C.

SHEET TITLE: TYP. NORTH VESTIBULE, INTERIOR ELEVATION - LOOKING SOUTH

SHEET NO.

A10

SHEET OF



GENERAL NOTES:

1. EXCEPT WHERE NOTED, ALL OF THE WORK SHOWN ON THIS SHEET IS PART OF ALTERNATE "A" SCOPE.

LEGIONNAIRES FACING TOWARD MAIN HALL ARE PART OF THE BASE BID SCOPE

SEE SPECIFICATIONS FOR RESTRICTIONS ON GAINING ACCESS FROM TENANT TO PERFORM WORK ON BACK AND SIDES OF LEGIONNAIRE

CLEAN AND MINOR REPAIRS TO STONEMWORK IN AREAS MARKED []

NO WORK ON WOOD DOORS OR DOOR FRAMES

PROTECT, BUT DO NOT OBSTRUCT EXISTING DRINKING FOUNTAIN DURING WORK

CLEAN AND MINOR REPAIR TO HISTORIC BRONZE ACCESS DOOR

NO WORK ON FLOOR - TAKE CARE TO PROTECT IT DURING WORK

1
A-11

TYP. NORTH VESTIBULE, INTERIOR ELEVATION - LOOKING WEST

SCALE: 1/4" = 1'-0"



REVISIONS:

John Bowie Associates
204 West Rose Valley Road
Wallingford, Pennsylvania 19086
Phone: 610.565.1268
Architects and Consultants to Museums, Historic Sites and Cultural Properties

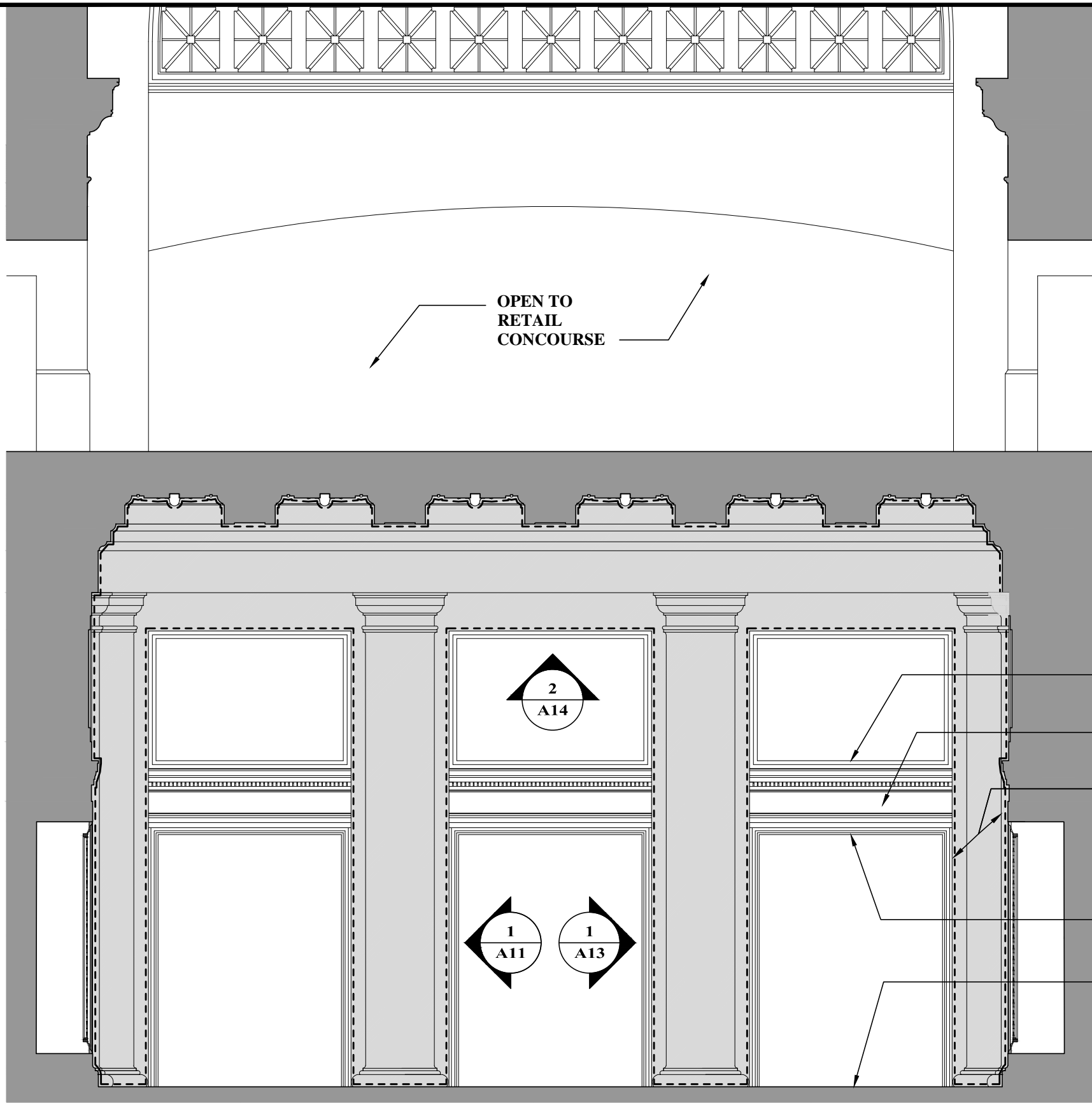
SCALE: AS NOTED
DATE: April 18, 2019
DRAWN: JMD
APPROVED: JRB

RESTORATION OF HISTORIC LEGIONNAIRE STATUES AND VESTIBULES IN THE MAIN HALL
Washington Union Station
Washington, D. C.
SHEET TITLE: TYP. NORTH VESTIBULE, INTERIOR ELEVATION - LOOKING WEST

SHEET NO.

A11

SHEET OF

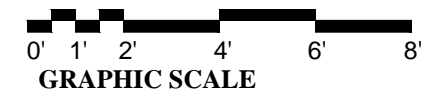


GENERAL NOTES:

1. ALL OF THE WORK SHOWN ON THIS SHEET IS PART OF ALTERNATE "A" SCOPE.

- CLEAN AND PAINT TRANSOM WINDOW FRAME (TYP. OF 3)
- CLEAN AND PAINT TRANSOM PANEL (TYP. OF 3)
- CLEAN AND MINOR REPAIRS TO STONWORK IN AREAS MARKED [---]
- NO WORK ON WOOD DOORS OR DOOR FRAMES (TYP. OF 3)
- NO WORK ON FLOOR - TAKE CARE TO PROTECT IT DURING WORK

1 TYP. NORTH VESTIBULE, INTERIOR ELEVATION - LOOKING NORTH
 A-12 SCALE: 1/4" = 1'-0"



REVISIONS:
John Bowie Associates
 204 West Rose Valley Road
 Wallingford, Pennsylvania 19086
 Phone: 610.565.1268
 Architects and Consultants to Museums, Historic Sites and Cultural Properties

SCALE: AS NOTED
 DATE: April 18, 2019
 DRAWN: JMD
 APPROVED: JRB

RESTORATION OF HISTORIC LEGIONNAIRE STATUES AND VESTIBULES IN THE MAIN HALL
 Washington Union Station
 Washington, D. C.
 SHEET TITLE: TYP. NORTH VESTIBULE, INTERIOR ELEVATION - LOOKING NORTH

SHEET NO.
A12
 SHEET OF

REVISIONS:

John Bowie Associates
204 West Rose Valley Road
Wallingford, Pennsylvania 19086
Phone: 610.565.1268

Architects and Consultants to Museums, Historic Sites and Cultural Properties

SCALE: AS NOTED

DATE: April 18, 2019

DRAWN: JMD

APPROVED: JRB

**RESTORATION OF HISTORIC LEGIONNAIRE
STATUES AND VESTIBULES IN THE MAIN HALL**
Washington Union Station
Washington, D. C.

SHEET TITLE: TYP. NORTH VESTIBULE, INTERIOR ELEVATION -
LOOKING EAST

SHEET NO.

A13

SHEET OF

GENERAL NOTES:

1. EXCEPT WHERE NOTED, ALL OF THE WORK SHOWN ON THIS SHEET IS PART OF ALTERNATE "A" SCOPE.

LEGIONNAIRES FACING TOWARD MAIN HALL ARE PART OF THE BASE BID SCOPE

SEE SPECIFICATIONS FOR RESTRICTIONS ON GAINING ACCESS FROM TENANT TO PERFORM WORK ON BACK AND SIDES OF LEGIONNAIRE

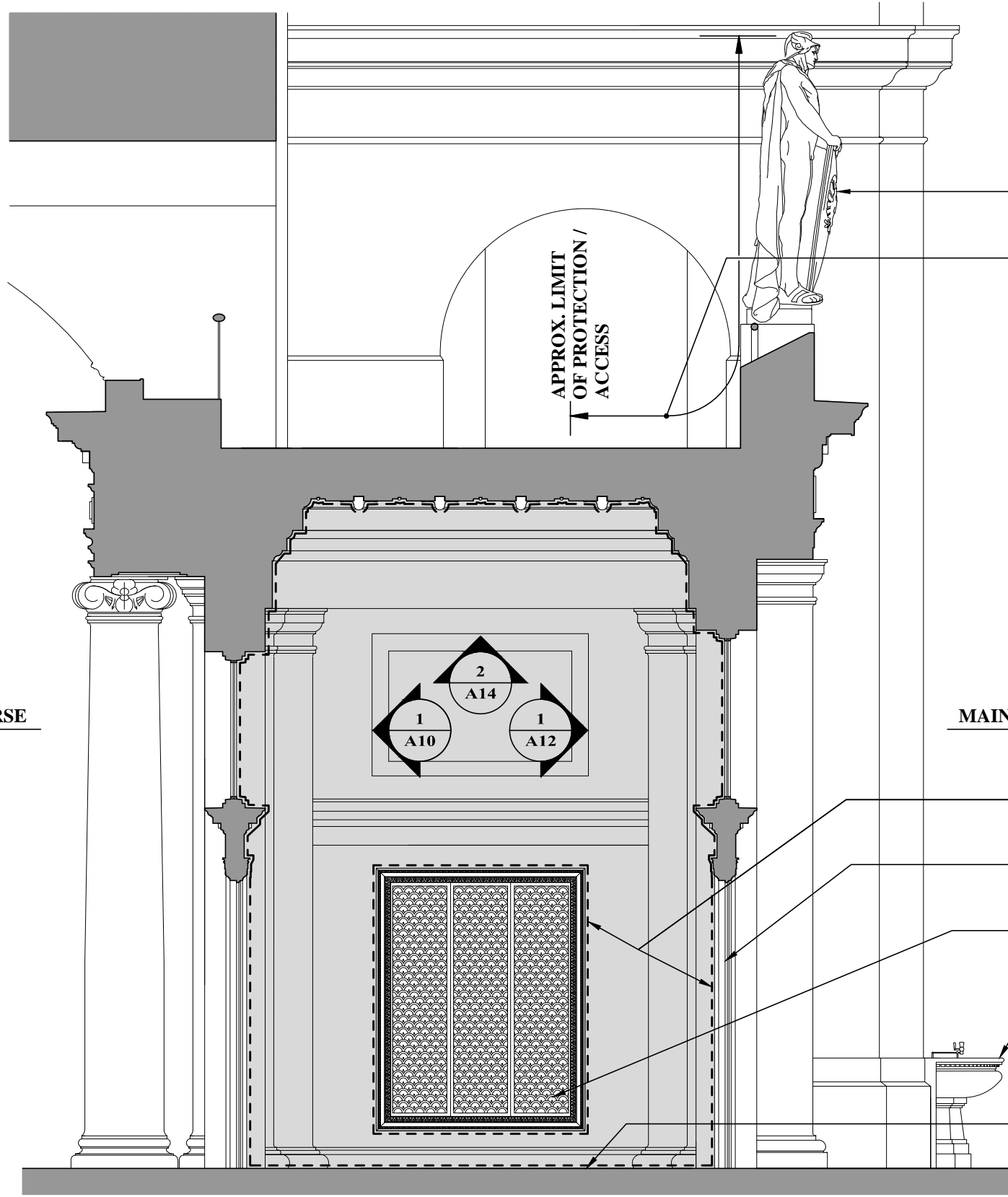
CLEAN AND MINOR REPAIRS TO STONework IN AREAS MARKED [---]

NO WORK ON WOOD DOORS OR DOOR FRAMES

CLEAN AND MINOR REPAIR TO HISTORIC BRONZE HEATING SYSTEM GRILLE

PROTECT, BUT DO NOT OBSTRUCT EXISTING DRINKING FOUNTAIN DURING WORK

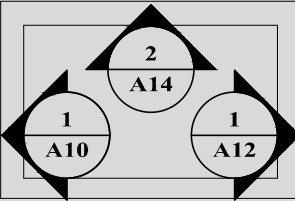
NO WORK ON FLOOR - TAKE CARE TO PROTECT IT DURING WORK



RETAIL CONCOURSE

MAIN HALL

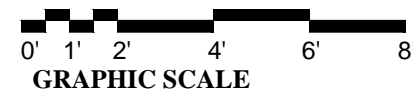
APPROX. LIMIT OF PROTECTION / ACCESS



1
A-13

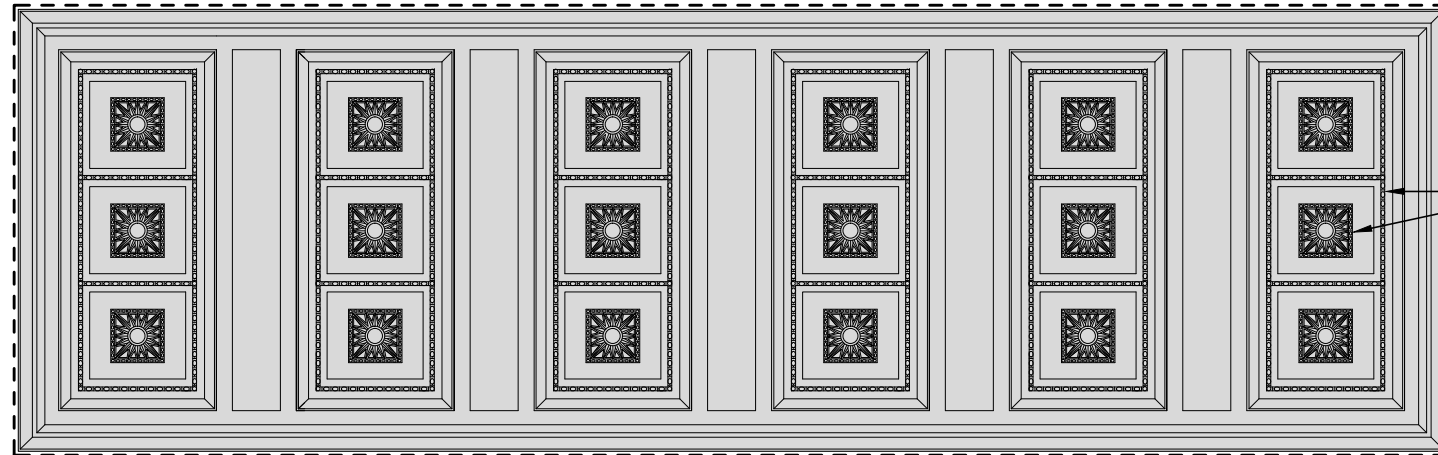
TYP. NORTH VESTIBULE, INTERIOR ELEVATION - LOOKING EAST

SCALE: 1/4" = 1'-0"



GENERAL NOTES:

1. ALL OF THE WORK SHOWN ON THIS SHEET IS PART OF ALTERNATE "A" SCOPE.

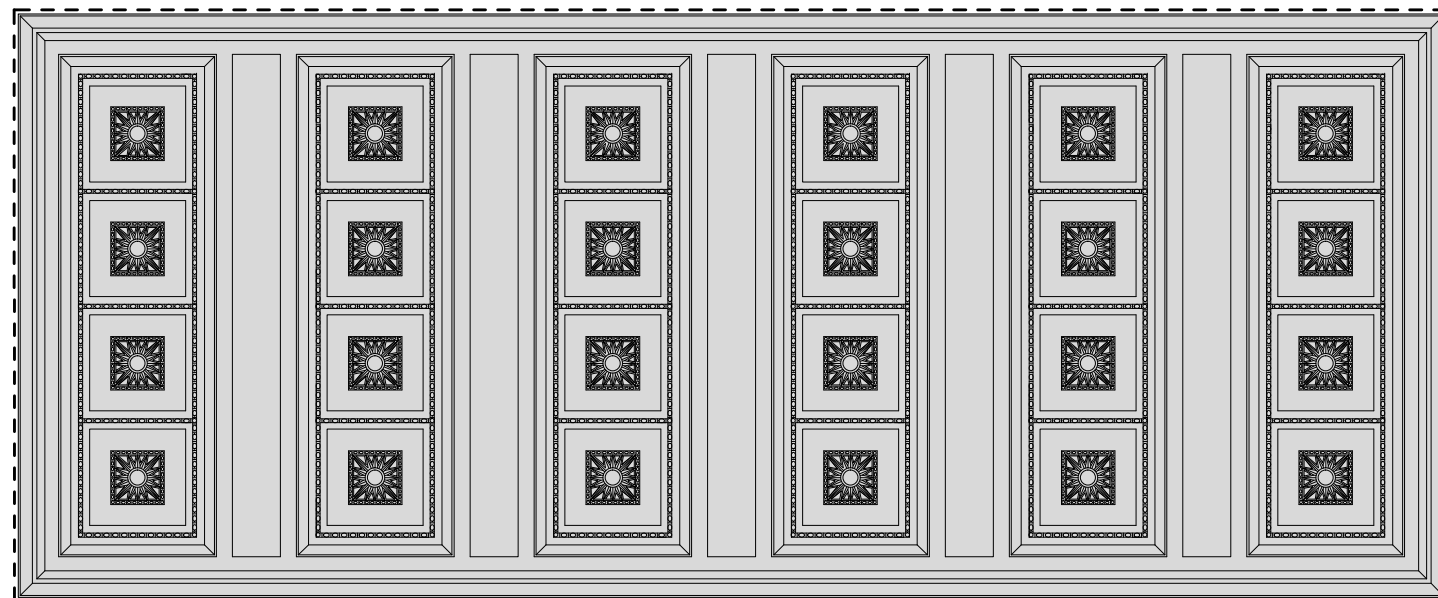


CLEAN AND MINOR REPAIRS TO STONEMWORK IN AREAS MARKED [---]

CLEAN AND MINOR REPAIRS TO ALL DECORATIVE BRASS ROPING AND ALL DECORATIVE SUNBURST CEILING LIGHT FIXTURES (NO ELECTRIC WORK NEEDED)

REFLECTED CEILING PLAN-TYPICAL SOUTH VESTIBULE

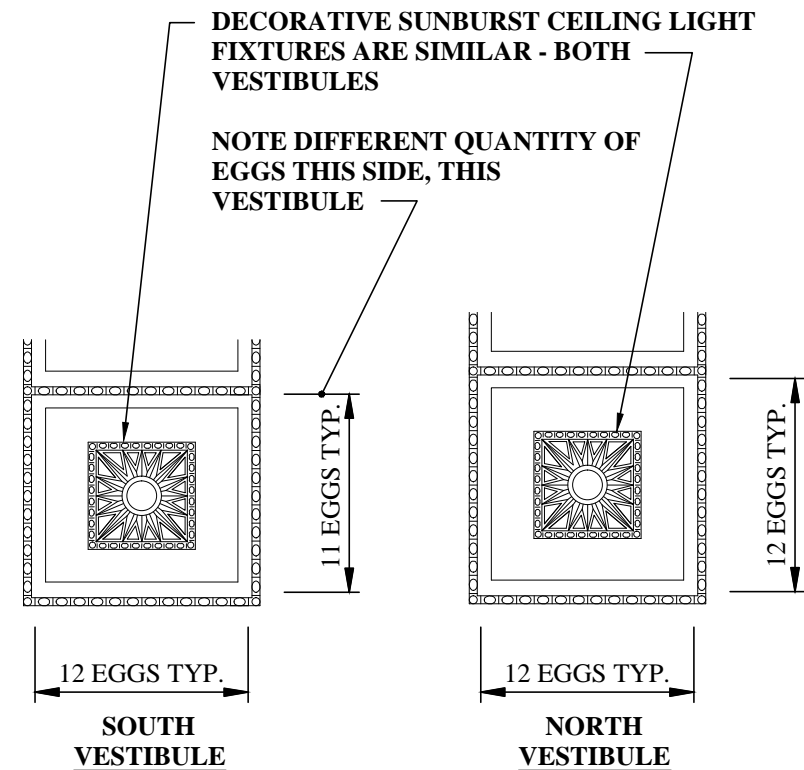
1
A-14 SCALE: 1/4" = 1'-0"



REFLECTED CEILING PLAN-TYPICAL NORTH VESTIBULE

2
A-14 SCALE: 1/4" = 1'-0"

NOTE: SCOPE OF WORK ON NORTH VESTIBULE SAME AS WORK ON SOUTH VESTIBULE



DETAIL OF DECORATIVE BRASS ROPING

3
A-14 SCALE: 1/2" = 1'-0"

REVISIONS:

John Bowie Associates
204 West Rose Valley Road
Wallingford, Pennsylvania 19086
Phone: 610.565.1268
Architects and Consultants to Museums, Historic Sites and Cultural Properties

SCALE: AS NOTED
DATE: April 18, 2019
DRAWN: JMD
APPROVED: JRB

RESTORATION OF HISTORIC LEGIONNAIRE STATUES AND VESTIBULES IN THE MAIN HALL
Washington Union Station
Washington, D. C.
SHEET TITLE: REFLECTED CEILING PLANS-TYP. NORTH AND TYP. SOUTH VESTIBULES

SHEET NO.

A14

SHEET OF

PROJECT SPECIFICATION

RESTORATION OF THE HISTORIC LEGIONNAIRE STATUES AND VESTIBULES IN THE MAIN HALL AT WASHINGTON UNION STATION Washington, D.C.



Photos of Legionnaires watching over the Main Hall, by Colin Winterbottom for USRC, 2017

For:

**UNION STATION
REDEVELOPMENT CORPORATION**

Beverly K. Swaim-Staley, President and Chief Executive Officer
750 First Street, N.E., Suite 1010
Washington, D.C. 20002
(202) 222-0271

By:

**JOHN BOWIE ASSOCIATES
Historical Architects**

John R. Bowie, F.A.I.A., Historical Architect
204 West Rose Valley Road
Wallingford, Pennsylvania 19086
(610) 565-1268

April 18, 2019

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DIVISION 00 – PROPOSAL REQUIREMENTS

SECTION 00850 – LIST OF DRAWINGS

The List of Drawings includes the following; they are dated the same as these Specifications:

- Drawing CS, Cover Sheet
- Drawing A1, Main Hall Floor Plan
- Drawing A2, Gallery Level Floor Plan
- Drawing A3, Details – Type “A” Legionnaire
- Drawing A4, Details – Type “B” Legionnaire
- Drawing A5, Details – Type “C” Legionnaire
- Drawing A6, Typical South Vestibule, Interior Elevation – Looking South
- Drawing A7, Typical South Vestibule, Interior Elevation – Looking West
- Drawing A8, Typical South Vestibule, Interior Elevation – Looking North
- Drawing A9, Typical South Vestibule, Interior Elevation – Looking East
- Drawing A10, Typical North Vestibule, Interior Elevation – Looking South
- Drawing A11, Typical North Vestibule, Interior Elevation – Looking West
- Drawing A12, Typical North Vestibule, Interior Elevation – Looking North
- Drawing A13, Typical North Vestibule, Interior Elevation – Looking East
- Drawing A14, South and North Vestibules, Typical Reflected Ceiling Plans

END OF SECTION 00850

SECTION 01001--ADDITIONAL CONDITIONS

PART 1 - GENERAL

- 1.01 The scope of the Project shall be the Restoration of the Historic Legionnaire Statues and Vestibules in the Main Hall at Washington Union Station (WUS), as shown on the Drawings and as defined in Section 01010 of these Specifications.
- 1.02 Applicable provisions of these Additional Conditions, plus the other contract documents govern this Specification as a whole. The work in this Project includes the furnishing of all labor, materials, equipment, appliances, cartage, and performing all operations necessary to complete this Project in its entirety in accordance with the drawings and specifications.
- 1.03 Labor, material and equipment not specified or shown, but properly inferable from the Contract Documents shall be performed and supplied in conformity with the standards established herein.
- 1.04 Historical Architect Contact:
- A. John R. Bowie, F.A.I.A., Historical Architect
John Bowie Associates
204 West Rose Valley Road
Wallingford, Pennsylvania 19086
Phone: (610) 565-1268
Email: john.bowie@johnbowieassociates.com
 - B. Throughout the documents of these Specifications, the term “Architect” and “Historical Architect” shall be used interchangeably and shall both refer to John Bowie Associates, Historical Architects.
- 1.05 Contractor Contact:
- A. Throughout the documents of these Specifications, the term “Contractor” and “Consultant” shall be used interchangeably and shall both refer to the Consultant identified in the Contract.
- 1.06 Owner Contact:
- A. Throughout the documents of these Specifications, the term “Owner” and “Union Station Redevelopment Corporation” (hereinafter “USRC”) shall be used interchangeably and shall refer to USRC.
- 1.07 Tenant Contact:

DIVISION 01 – GENERAL CONDITIONS
SECTION 01001 – ADDITIONAL CONDITIONS

- A. Throughout the documents of these Specifications, the term “Tenant” and “Union Station Investco” (hereinafter “USI”) shall be used interchangeably and shall refer to USI.
 - B. USI is a tenant to USRC; USI holds a 99-year lease for the entire historic portion of the Station. USI also subleases many of said spaces, especially in the Main Hall, West Hall and East Hall, to various commercial enterprises, including food service establishments and retail shops.
 - C. USI also holds a long-term sublease with Special Events at Union Station (hereinafter “SEUS”), a company that hosts receptions, parties, conferences, product exhibits, displays and miscellaneous entertainment activities in the Main Hall, East Hall, West Hall and other areas within WUS.
- 1.08 In addition to the indemnification stated in the Contract, the Contractor protects, defends, indemnifies, and holds completely harmless John Bowie Associates, its principals, officers, employees, and agents from and against any and all liens, claims, demands, suits, and judgments, and their associated legal and court costs, and interest of any kind or character incurred by the Contractor in defense of same arising in favor of taxes, claims, liens, debts, personal injuries (including people associated with the Contractor), death or damage to property (including property of the Contractor) and without limitation by enumeration all other claims or demands of every character occurring and caused in whole or in part by any negligent act or omission of the Contractor, or anyone for whose acts the Contractor may be liable.

PART 2 - WORK IN AND AROUND HISTORICALLY SENSITIVE ENVIRONMENTS

- 2.01 WUS is recognized as a highly visible, significant historic building. It is one of the most culturally and historically significant landmarks in the nation and it gains part of its cultural importance from the integrity of its architectural components, materials and surfaces, and from the character of its interior spaces throughout the building – particularly its most important space, the Main Hall. The Contractor shall be expected to exercise a special degree of care and skill and he/she must be sensitive to the problems associated with culturally and historically significant buildings. The Contractor is entrusted with an irreplaceable historic resource whose value is highly regarded by the entire nation. In addition, the building is also an active transportation hub and commercial resource that is open to the public 24 hours a day, seven days a week. The Contractor shall ensure that his/her operations and the conduct of his/her employees and subcontractors are appropriate to the type of work done in a culturally sensitive and unique environment.
- A. No audible, sound-emitting devices (i.e. radios, electronic music devices, etc.) shall be permitted during times while work is taking place.
 - B. Contractor’s employees and subcontractors shall conduct themselves in a respectable, decent manner, and shall refrain from any profanity.

DIVISION 01 – GENERAL CONDITIONS
SECTION 01001 – ADDITIONAL CONDITIONS

- C. Contractor’s employees and subcontractors shall be fully attired throughout the work day, and maintain a proper appearance, with no suggestive or profane writing on articles of clothing.
- D. Contractor’s employees shall at all times wear clothing that identifies their firm.
- E. Contractor’s personnel shall not engage in any conversations or interactions with Main Hall businesses or their customers or create any distractions that could adversely affect any business’s operation or business activity.
- F. No alcohol, drugs, or smoking at any time on the property.
- G. No firearms or weapons at any time on the property.

The Owner reserves the right to immediately and permanently bar from the Site any person or persons who, in the judgment of the Owner, violate any of these provisions. The Contractor shall be responsible to replace said individual(s) at Contractor’s own expense without change in the Contract Schedule.

- 2.02 The *Secretary of the Interior's Standards and Guidelines for Historic Preservation Projects* shall by reference be made a part of this Contract.
- 2.03 The *Code of Ethics and Guidelines for Practice of the American Institute of Conservation* shall by reference become part of this Contract.
- 2.04 No existing material shall be disposed of without the approval of the Owner or the Historical Architect. All new materials shall be stored in a safe place, as approved by the Owner or the Historical Architect.
- 2.05 Archaeological Investigation: Not applicable

PART 3 - CONTRACTOR USE OF PREMISES/ACCESS/WORKING HOURS

- 3.01 Coordinate access to the site, delivery and storage of materials, parking and working hours directly with the Owner.
 - A. Contractor may deliver materials and equipment to the East Loading Dock (accessed from the H Street overpass). Notify the Owner at least 24 hours in advance so Owner can advise security guards of vehicle license number, date and approximate time of arrival.
 - B. Contractor will receive a parking voucher for one (1) vehicle to be parked, without charge, in the Union Station Parking Garage each day for the duration of the Base Bid portion and each day of the Alternate “A” portion of the Project.

DIVISION 01 – GENERAL CONDITIONS
SECTION 01001 – ADDITIONAL CONDITIONS

- C. There is no place available for storage of materials and equipment in the building. However, the Contractor shall be permitted to bring his/her own gang box for overnight storage of tools at the job site. Provide protection to the flooring and wall surfaces beneath and adjacent to the gang box.
1. Do not store flammable or combustible materials or products anywhere on site while work is not taking place.
- 3.02 The station is open 24 hours a day, 7 days a week throughout the year. Consequently, there are no restrictions on the times and days of the week when work may take place, except as noted below. However, there are numerous coordination concerns that affect the Contractor's schedule throughout the year – these are mandated: 1) by USI's existing subleases with various food service establishments and retail shops, 2) by USI's existing sublease with SEUS and 3) by the fact that WUS is a federally-owned building located in a prominent location subject to occasional unanticipated high-security events and activities. During these times, all work by the Contractor shall cease and all Contractor personnel immediately vacate the premises. Also, during certain specific times (noted below), it will be necessary for the Contractor to remove all scaffolding, high reach devices, materials and equipment from the premises altogether.
- A. During the following SEUS events, no work may take place, although scaffolding, high reaches, equipment and materials may remain in place at the job site, provided they are outside the Palm Court boundary line. Sequencing of operations are part of the Contractor's means & methods. On these dates, all work shall cease by 5:30 p.m., and may resume the following morning 5:00 a.m. the following morning:
1. Thursday, June 13, 2019 – East Hall and Palm Court
 2. Wednesday, June 19, 2019 – East Hall and Palm Court
 3. Friday, June 21, 2019 – East Hall and Palm Court
 4. Wednesday, July 10, 2019 – East Hall and Palm Court
 5. Friday, July 19, 2019 – Main Hall, East Hall and West Hall
 6. Saturday, August 3, 2019 – East Hall and Palm Court
 7. Thursday, August 15, 2019 – East Hall and Palm Court
 8. Saturday, September 7, 2019 – East Hall and Palm Court
 9. Saturday, September 14, 2019 – East Hall and Palm Court
 10. Monday, September 16, 2019 – East Hall and Palm Court
 11. Tuesday, September 17, 2019 – East Hall and Palm Court
 12. Wednesday, September 18, 2019 – East Hall and Palm Court
 13. Thursday, September 19, 2019 – East Hall and Palm Court
 14. Friday, September 20, 2019 – East Hall and Palm Court
 15. Tuesday, September 24, 2019 – East Hall and Palm Court
 16. Wednesday, September 25, 2019 – East Hall and Palm Court
 17. Thursday, September 26, 2019 – East Hall and Palm Court
 18. Saturday, September 28, 2019 – East Hall and Palm Court
 19. Wednesday, October 2, 2019 – East Hall and Palm Court

DIVISION 01 – GENERAL CONDITIONS
SECTION 01001 – ADDITIONAL CONDITIONS

20. Thursday, October 3, 2019 – East Hall and Palm Court
21. Wednesday, October 16, 2019 – East Hall and Palm Court
22. Thursday, October 17, 2019 – East Hall and Palm Court
23. Friday, October 18, 2019 – East Hall and Palm Court
24. Wednesday, October 22, 2019 – East Hall, Presidential Suite and Palm Court
25. Wednesday, October 30, 2019 – Main Hall, West Hall and East Hall
26. Thursday, October 31, 2019 – East Hall
27. Saturday, November 2, 2019 – East Hall
28. Tuesday, November 5, 2019 – East Hall
29. Friday, November 8, 2019 – Main Hall, West Hall and East Hall
30. Tuesday, November 19, 2019 – East Hall
31. Wednesday, November 20, 2019 – East Hall
32. Tuesday, December 3, 2019 – East Hall
33. Wednesday, December 4, 2019 – East Hall and Palm Court
34. Friday, December 6, 2019 – East Hall and Presidential Suite
35. Wednesday, December 11, 2019 – East Hall and Palm Court
36. Thursday, December 12, 2019 – East Hall and Palm Court
37. Friday, December 13, 2019 – East Hall and Palm Court
38. Friday, January 31, 2020 – East Hall and Presidential Suite
39. Saturday, February 8, 2020 – East Hall and Palm Court
40. Saturday, February 22, 2020 – East Hall, Presidential Suite and Palm Court
41. Friday, April 17, 2020 – Main Hall, West Hall and East Hall
42. Friday, April 24, 2020 – Main Hall, West Hall and East Hall
43. Saturday, May 2, 2020 – Main Hall, West Hall and East Hall
44. Monday, May 4, 2020 – East Hall
45. Friday, May 15, 2020 – Main Hall, West Hall, East Hall and Food Court
46. Friday, May 29, 2020 – East Hall and Palm Court
47. Saturday, May 30, 2020 – East Hall and Palm Court
48. Tuesday, August 25, 2020 – East Hall
49. The Contractor shall also budget for one (1) unanticipated, unscheduled event of this type to take place during the course of the Base Bid portion of the Project.
50. The Contractor shall also budget for one (1) unanticipated, unscheduled event of this type to take place during the course of the Alternate “A” portion of the Project.

- B. During the following SEUS events, no work may take place, and all scaffolding, high reaches, equipment and materials shall be removed from the job site:
1. Thursday, November 14, 2019 – Main Hall, West Hall and East Hall – for this event, all scaffolding, equipment and materials shall be removed by 5:00 p.m. Monday, November 11, 2019. Scaffolding, equipment and materials may be returned to the site at 5:00 a.m. on Friday, November 15, 2019.
 2. Thursday, December 5, 2019 – Main Hall, West Hall and East Hall – for

DIVISION 01 – GENERAL CONDITIONS
SECTION 01001 – ADDITIONAL CONDITIONS

this event, all scaffolding, equipment and materials shall be removed by 5:00 p.m., Tuesday, December 3, 2019. Scaffolding, equipment and materials may be returned to the site at 5:00 a.m. on Friday, December 6, 2019.

3. The Contractor shall also budget for one (1) unanticipated, unscheduled event of this type to take place during the course of the Base Bid portion of the Project.
 4. The Contractor shall also budget for one (1) unanticipated, unscheduled event of this type to take place during the course of the Alternate “A” portion of the Project.
- C. All other unanticipated, unscheduled events that adversely affect the progress of the Work shall be considered beyond the scope of this Contract and shall be treated in accordance with the Change Order requirements noted in Article 4 of the Contract.
- D. The Drawings define locations throughout the Main Hall where the spaces are subleased by USI to various establishments. Their hours of operation are:
1. Blue Bottle Café: 7 days, 7:00 a.m. until 7:00 p.m.
 2. Ladurée: Mon-Sat, 7:00 a.m. until 7:00 p.m.; Sun. 8:00 a.m. until 7:00 p.m.
 3. Shake Shack, Mon-Fri, 10:00 a.m. until 9:00 p.m.; Sat. 10:00 a.m. until 9:00 p.m.; Sun. noon until 6:00 p.m.
 4. Starbucks Coffee: Mon-Fri, 6:00 a.m. until 8:00 p.m.; Sat-Sun, 8:00 a.m. until 8:00 p.m.
 5. Thunder Grill: 7 days, 11:30 a.m. until 10:00 p.m.

The Contractor may not block or impede access into or out of any of these establishments at any time they are open for business.

The Contractor may not block or impede the usage of the guest seating areas of any of these establishments at any time they are open for business.

The Contractor may not work in the Main Hall areas in front of these establishments while they are open for business.

The Contractor shall be permitted to install temporary scaffolding to bridge over top of any of these establishments to enable Contractor’s work to take place during hours said establishments are closed.

1. Any scaffolding to be utilized shall contain all necessary protection to prevent dust, dirt, debris or other contaminants from falling down onto the area where patrons will be seated when the establishments are open.
2. Any scaffolding to be utilized shall bear the seal of a professional engineer licensed to practice in the District of Columbia. The Contractor is welcome to engage the services of the structural engineer currently under contract with USI at WUS – McMullan Engineers (contact Douglas E. Bond, P.E.,

DIVISION 01 – GENERAL CONDITIONS
SECTION 01001 – ADDITIONAL CONDITIONS

Vice President at 703-556-0651). The Contractor may also engage the services of his/her own structural engineer. The purpose of engaging the structural engineer is to provide verification that the Contractor's scaffold will not overload the bearing capacity of the existing Main Hall first floor framing.

3. Due to the clay arch tile floor framing of the Main Hall, the following limitations apply to any temporary scaffolding:
 - a. All vehicles delivering materials shall be electrically powered
 - b. Delivery vehicle weight shall not exceed 6,000 pounds
 - c. Concentrated loads shall not exceed 2,000 pounds
 - d. Contractor shall be responsible for repairing any damage, cracking, scarring, nicking or discoloration of the Main Hall tile floor
 - e. Delivery vehicles must be capable of fitting into existing door openings

The Contractor shall be permitted to utilize high-reach equipment (such as Genie lifts or scissors lifts) for after-hours work in front of any of the establishments.

1. The Contractor shall be permitted to relocate furniture and partitions at said establishments to accommodate such equipment. Reinstall furniture and partitions to their precise locations prior to opening.
2. Provide a drawing showing floor protection and path of travel the equipment will take across the Main Hall floor from the point of entry to the establishment(s). Said drawing shall bear the seal of a professional engineer licensed to practice in the District of Columbia. The Contractor is welcome to engage the services of the structural engineer currently under contract with USI at WUS – McMullan Engineers (contact Douglas E. Bond, P.E., Vice President at 703-556-0651). The Contractor may also engage the services of his/her own structural engineer. The purpose of engaging the structural engineer is to provide verification that the Contractor's equipment will not overload the bearing capacity of the existing Main Hall first floor framing.
3. Due to the clay arch tile floor framing of the Main Hall, the following limitations apply to any high-reach equipment:
 - a. All high-reach equipment shall be electrically powered
 - b. High-reach equipment weight shall not exceed 6,000 pounds
 - c. Concentrated loads shall not exceed 2,000 pounds
 - d. Contractor shall be responsible for repairing any damage, cracking, scarring, nicking or discoloration of the Main Hall tile floor
 - e. High-

- E. The Drawings also define locations throughout the Main Hall where smaller, movable spaces are subleased by USI to various establishments which can be relocated elsewhere in the Main Hall by USI, provided minimum 14 calendar days advance notice is provided by the Contractor to the Owner.

1. Old Town Trolleys & Tours

DIVISION 01 – GENERAL CONDITIONS
SECTION 01001 – ADDITIONAL CONDITIONS

2. Alamo Flags
3. City Sights, Tour Operator
4. Big Bus Tours
5. Presidential Cigars
6. Unique Treasures

- F. The Gallery spaces on the north side and south side of the Main Hall are subleased by USI to various tenants. Their hours of operation are:
1. Pizzeria Uno (on north side): Mon-Sat, 11:00 a.m. until 12:00 a.m.; Sun. noon until 12:00 a.m.
 2. Thunder Grill (on south side): 7 days, 11:30 a.m. until 10:00 p.m.

Any scaffolding placement by the Contractor within the footprint of either of these spaces shall be:

1. As minimal in size as possible, so as not to interfere with business activities of the establishments;
2. Fully secured at all times to prevent unauthorized access onto said scaffolding.

No work may take place in these Gallery spaces during the times they are open for business.

- G. There are no restrictions to work hours or work days in the area at the east colonnade or the west colonnade.

3.03 Obstruction to entrances into and out of the Main Hall:

- A. In the area of the south vestibules, Contractor shall not obstruct more than one of the vestibules at a time (i.e. while working on the Legionnaires or while working in the vestibule at Bay 2, Contractor shall not block or obstruct pedestrian flow into or out of the vestibules at Bays 3 or 4 – likewise, while working at Bay 3, Contractor shall not block or obstruct Bays 2 or 4, and so on).
1. In this area, the Contractor shall be permitted to utilize scaffolding or a high-reach, or a combination of both, to provide access. It shall be subject to the same requirements stipulated above.
 2. In this area, Contractor shall also be permitted to work during normal business hours using either (or both) forms of access to the extent such work does not impede the business operations of the establishments noted above.
- B. In the area of the north vestibules, Contractor shall not obstruct more than one of the vestibules at a time (i.e. while working on the Legionnaires or while working in the vestibule at Bay 1, Contractor shall not block or obstruct pedestrian flow into or out of the vestibules at Bays 3 or 5 – likewise, while working at Bay 3, Contractor shall not block or obstruct Bays 1 or 5, and so on).
1. In this area, the Contractor shall be permitted to utilize scaffolding or a high-

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- reach, or a combination of both, to provide access. It shall be subject to the same requirements stipulated above.
2. In this area, Contractor shall also be permitted to work during normal business hours using either (or both) forms of access to the extent such work does not impede the business operations of the establishment noted above.
- C. In the area adjacent to the east colonnade that separates the Main Hall from the East Hall, Contractor shall not block or obstruct more than one of the three openings at a time.
1. In this area, the Contractor shall be permitted to utilize scaffolding or a high-reach, or a combination of both, to provide access. It shall be subject to the same requirements stipulated above.
 2. In this area, Contractor shall also be permitted to work during normal business hours using either (or both) forms of access.
- D. In the area adjacent to the west colonnade that separates the Main Hall from the West Hall, Contractor shall not block or obstruct more than two (2) adjacent openings between columns at a time.
1. In this area, the Contractor shall be permitted to utilize scaffolding or a high-reach, or a combination of both, to provide access. It shall be subject to the same requirements stipulated above.
 2. In this area, Contractor shall also be permitted to work during normal business hours using either (or both) forms of access.
- 3.04 The areas noted on the Drawings shall be considered the Work Area. Contractor shall take care to protect WUS staff, tenants, visitors to the station and the general public while working in the vicinity of these areas.

PART 4 - WORKER AND COMMUNITY RIGHT TO KNOW

- 4.01 Contractor shall make available to employees, subcontractors, suppliers (as appropriate), and the general public (as appropriate) written information regarding hazardous substances introduced into the workplace and the general environment. Inform workers of said written information. Supply the Owner with a list of all hazardous substances to be used in the course of the contract. Erect and maintain physical barriers, signs, or other devices as required by Federal, State, or Local laws and ordinances, and/or as directed by the Historical Architect or the Owner.

PART 5 - PROTECTION OF THE ENVIRONMENT

- 5.01 Contractor shall provide for the prevention, control and abatement of land, water and air pollution, which shall include but not be limited to:
- A. No refuse may be burned.

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- B. Remove all refuse from site of work for disposal in accordance with rules and regulations of authority having jurisdiction over the disposal area.
- C. Dispose of all lead-based painted materials, if any are found, in accordance with the regulations of OSHA, and the United States Environmental Protection Agency.
- D. In the event materials that resemble asbestos or asbestos-containing materials are discovered, stop work in that area and notify the Owner.
 - 1. Abatement of any asbestos-containing materials is not part of this Contract. If any are discovered during the Work, it shall be treated separately.

PART 6 - PROJECT SIGN

- 6.01 No project sign shall be required by the Owner.
- 6.02 Except as noted below, post no other signs (including advertisement signs for contractors, subcontractors and suppliers), unless approved by the Owner.
 - A. Construct and install a sign at least 4' x 4' in size in a prominent location (agreed to by the Owner) for the Contractor to post such documents as may be required by the granting agency (the District Department of Transportation, hereinafter “DDOT”) relating to wages, nondiscrimination and other important topics. Include a fixed acrylic cover to protect the displayed documents from damage or vandalism, and provide hinges for the cover in order for updates to periodically be installed onto the sign. The base of said sign shall be 24" above the grade/floor, and the top of said sign shall be 72" above grade/floor. Remove said sign upon completion of the project.

PART 7 - PERMITS, LICENSES AND CERTIFICATES

- 7.01 No building permits are required for the Project.
 - A. The Historical Architect and Owner will be responsible for obtaining approvals to conduct the Project from the District of Columbia State Historic Preservation Office (hereinafter “DCSHPO”).
 - 1. The Contractor shall be responsible for adjusting and/or correcting any portions of the Project Approach determined by the DCSHPO to be unacceptable at no additional cost to the Owner.
 - B. The Owner will be responsible for obtaining approvals to conduct the Project from the Authority Having Jurisdiction (hereinafter “AHJ”) – the Federal Railroad Administration (hereinafter “FRA”).

PART 8 - COORDINATION AND SCHEDULING

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- 8.01 Contractor shall coordinate scheduling, submittals and work of the drawings and specifications for efficient and orderly sequence of installation of all construction materials.

PART 9 - FIELD ENGINEERING

- 9.01 Contractor shall verify all dimensions and conditions in the field.
- A. No additional compensation will be provided for inaccuracies in the dimensions or conditions shown on the drawings.
- 9.02 Contractor shall verify all existing conditions, dimensions, clearances, and other considerations which may affect the proper execution of the work. Notify the Historical Architect of any deviations in actual conditions and dimensions from those shown on the drawings. Be responsible for the correct fit and proper connection of all work with respect to actual conditions.
- 9.03 Drawings are diagrammatic in nature and require field verification for actual field conditions and dimensional discrepancies found after project start-up shall not be justification to a claim for additional costs.
- 9.04 Location and protection of utilities – not applicable.

PART 10 - CUTTING AND PATCHING – not applicable.

PART 11 - CONFERENCES

- 11.01 The Historical Architect will convene an Initial Job Conference at project start-up; all people associated with the Project shall attend.
- 11.02 The Historical Architect will convene weekly progress meetings during the course of the work as required with all necessary people.
- 11.03 The Historical Architect will convene a Substantial Completion Job Conference for each portion of the Project when the work of said portion is roughly 97% complete, and ready for a punch list to be developed.
- 11.04 The Historical Architect will convene a Final Completion Job Conference for each portion of the Project when the work of said portion is complete.

PART 12 - SUBMITTAL PROCEDURES

- 12.01 Contractor shall submit the items listed in each of the technical sections before beginning any work.

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- 12.02 Provide three copies of all shop drawings, data sheets, certifications, and other materials. Submit only one sample.

PART 13 - SUBSTITUTIONS

- 13.01 At the Initial Job Conference, Contractor shall submit to the Historical Architect a complete Listing of Anticipated Substitutions:
- A. The Historical Architect and Owner will judge the equivalency of any proposed substitutions.
 - B. Any proposed substitutions shall be listed in writing, with appropriate samples, manufacturers' literature, and technical performance data attached. The burden of proof that a proposed substitution is indeed acceptable will be on the Contractor.
 - C. Acceptance of a substitution will not be grounds for relief from the responsibility for compliance with all the requirements of the Contract Documents. If changes in other parts of the work, including work being done by other contractors for the Owner, are required because of a substitution, be responsible for any such changes, including the cost of any additional design services borne by the Historical Architect and/or other consultants to the Owner.
 - D. Verify in writing, that any proposed substitution meets or exceeds the requirements of the Specification. Submit supporting reference information and certifications as appropriate.

PART 14 - CONSTRUCTION PHOTOGRAPHS

- 14.01 No construction photographs required, except as specifically noted in individual sections of this Specification.

PART 15 - CONSTRUCTION DRAWINGS

- 15.01 Contractor shall maintain one clean xerox set of construction drawings and specifications on site at all times during the project. Changes made and conditions found that are different than those shown shall be marked and dated in red ink. These shall become the project “as-built” documents.
- 15.02 Contractor shall submit the clean set of the “as-built” documents to the Owner at project completion.

PART 16 - QUALITY ASSURANCE/CONTROL OF INSTALLATION

- 16.01 Contractor shall monitor quality of products, services, site conditions, and workmanship,

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to produce work of specified quality.

- 16.02 Contractor shall comply fully with manufacturers' instructions. If manufacturers' instructions do not agree with drawings and specifications, ask direction from the Historical Architect before proceeding.
- 16.03 Contractor shall comply with specified standards as a minimum quality for the work except when tolerances, codes, or specifications require higher standards or more quality workmanship.
- 16.04 Contractor shall meet specified standards, current as of project start date. Should specified standard conflict with drawings and specifications, ask direction from the Historical Architect before proceeding.
- 16.05 Contractor shall use only craftsmen who are highly skilled in their respective trade. Execute all work with the highest quality to meet or exceed the description and/or standard as specified for the work. The Owner retains the right to remove from the project any employee of the Contractor or subcontractor that does not show conformance to the standard of the work.

PART 17 - TEMPORARY SANITARY FACILITIES

17.01 The Contractor's employees may use the existing public toilet facilities: 1) in the Amtrak Concourse (first floor), 2) in the Food Court (Lower level), or 3) in the parking garage (bus deck level).

A. It is not necessary to bring portable toilets to the job site.

PART 18 - TEMPORARY SERVICES DURING CONSTRUCTION

18.01 Water usage by Contractor:

- A. For small amounts, it shall be acceptable to draw water from any of the four (4) historic drinking fountains in the Main Hall.
- B. For larger amounts, USI will provide access to the janitor's sink in one of the utility closets adjoining the Main Hall. Provide 24 hours' notice to the Owner in advance of needing the water.
- C. Hoses may not be used anywhere in the Main Hall.

18.02 It shall be acceptable for Contractor to use USI's electric outlets found throughout the Main Hall and Gallery levels of the building. Take care to conserve electricity. Leave nothing plugged in when not working.

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- A. Do not place any extension cords in the path of egress travel near exits.
 - B. Provide protection to all extension cords placed anywhere on the floor.
- 18.03 Bring all necessary telephones to the Site for the duration of the project. Use of Contractor's cell phones shall be acceptable.
- 18.04 Job trailers are not required for the Project.
- 18.05 It is not necessary to provide the Owner with any temporary office facilities or temporary office equipment.

PART 19 - PROTECTION

- 19.01 Contractor shall erect barriers, barricades, signs, red plastic construction fencing and other protective devices to prevent unauthorized entry to construction areas and to protect existing facilities, historic building materials, and all persons in or at the building from damage or injury.
- A. Provide protection for all persons who may be entering/exiting the site during all hours of the day and night. Erect such barricades and covered walkways as are necessary to fully protect people using the building.
 - B. Be solely responsible for the safety of all persons in the Work Area (Job Site), whether they are there legally or illegally.
 - C. Do not drive any equipment or vehicles onto the exterior sidewalks and paved areas of the site.
- 19.02 Contractor shall repair, at no cost to the Owner, any areas of existing buildings, contents, landscaping, paving or other site features damaged during the work to the satisfaction of the Historical Architect and the Owner. If damage occurs to these finishes as a result of the work, hire a Conservator, from a list supplied by the Owner, to perform an assessment of the damage and recommend conservation measures required, at no expense to the Owner. Upon acceptance by the Owner of the Conservator's Assessment Report, arrange for and have the Conservator perform those conservation measures on the damaged objects and/or finishes at no cost to the Owner.
- 19.03 Provide a UL listed fire extinguisher at all areas of work during the work, suitable for all types of fires.

PART 20 - PROGRESS CLEANING

- 20.01 Contractor shall keep Job Site clean and orderly, free of waste materials, construction-related debris, and rubbish. Provide thorough cleaning of the Job Site daily. Remove all

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nails and sharp objects from the floor daily.

- 20.02 Use of chutes and dumpsters are not permitted. Contractor shall haul away all trash, construction debris, and other unrequired materials as they accumulate, and do not permit them to clutter the site or create a fire hazard or safety threat.

PART 21 - PRODUCTS AND MATERIALS

- 21.01 Contractor shall not use materials removed from Job Site, except as specifically identified or allowed by the drawings and specifications, or as directed by the Owner. Store any materials designated by the Owner for salvage by the Owner at a protected location on site or off-site, as designated by the Owner.
- 21.02 No existing material shall be disposed of without the approval of the Owner. All new materials shall be stored in a safe place, as approved by the Owner.
- 21.03 Use only those products that meet specified standards or description.
- 21.04 In all cases where a device or part of the products or equipment is herein referred, it shall apply to as many such items as are required to complete the installation.

PART 22 - TRANSPORTATION, HANDLING, STORAGE AND PROTECTION

- 22.01 Contractor shall transport, handle, store and protect products in accordance with manufacturer's instructions.
- 22.02 Deliver products to the Job Site in unbroken rolls, bundles, sealed containers or bags, fully identified with the manufacturer's name, brand, type and grade.

PART 23 - CONTRACT INVOICING PROCEDURE – defined in Article 5 of the Contract.

PART 24 - PROJECT CLOSE-OUT

- 24.01 Contractor shall submit the following at Final Inspection:
- A. As-Built drawings and specifications, two sets of full-size xeroxes, marked in red, and signed by the Contractor with a written certification stipulating that the conditions found and the work performed by the Contractor are correctly shown on the drawings.
 - B. Final Invoice, in accordance with Article 5 of the Contract.
 - C. Warranty and Guaranty Statement, in accordance with Article 5 of the Contract.
 - D. Lien Release, in accordance with Article 5 of the Contract.

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24.02 Final Cleaning – Contractor shall:

- A. Perform a final cleaning prior to the Final Inspection.
- B. Clean debris from the site, and any areas affected by the work.
- C. Remove all work-related waste, surplus and demolished materials, rubbish, and construction facilities from the site.
- D. Thoroughly broom sweep all areas affected by the work.
- E. Thoroughly wipe (with a dry, clean cloth) all horizontal surfaces in areas affected by the work.
- F. Clean special items, such as glass, hardware, mortar stains, and other items affected by the work.

24.03 Spare Parts and Maintenance Materials: - not applicable.

24.04 Testing/Operation of Equipment: - not applicable.

END OF SECTION 01001

SECTION 01010 – SCOPE OF WORK

The Scope of the Work includes, but is not limited to the following:

FY 2018 PORTION OF THE PROJECT (BASE BID):

1. Prepare a treatment plan at project start-up for each Legionnaire statue, including captioned “as found” photographs and an outline of proposed cleaning, repair and restoration procedures;
2. Examine, clean, perform minor repairs and restore thirty-six (36) historic Legionnaire statues positioned at the Gallery level throughout the Main Hall at WUS;
3. Prepare a completion report for each of the Legionnaires, including manufacturer’s data for all products utilized, captioned “in progress” and “completion” photographs of all conditions observed and treated, descriptions of all repairs, and recommendations for future ongoing preservation and maintenance;
4. Provide all access, protection and logistical arrangements (discussed in greater detail throughout this document) as may be required to execute the Project.

FY 2019 PORTION OF THE PROJECT (ALTERNATE “A”):

5. Prepare a treatment plan at project start-up for each Legionnaire statue, including captioned “as found” photographs and an outline of proposed cleaning, repair and restoration procedures;
6. Examine, clean, perform minor repairs and restore six (6) historic Legionnaire statues positioned at the Gallery window sill level on the south exterior elevation of the building;
7. Prepare a completion report for each of the Legionnaires, including manufacturer’s data for all products utilized, captioned “in progress” and completion” photographs of all conditions observed and treated, descriptions of all repairs, and recommendations for future ongoing preservation and maintenance;
8. Clean, perform minor repairs and restore all stone wall surfaces, decorative architectural elements (i.e. pilasters, plinths, capitals, etc.), stone ceiling coffers, decorative brass roping, decorative sunburst ceiling light fixtures (no electrical work needed), and decorative bronze heating grilles and doors in three (3) of the five (5) existing Vestibules on the south side of the Main Hall and in three (3) of the five (5) existing Vestibules on the north side of the Main Hall;

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9. Clean, perform minor repairs, restore and paint the cast metal transom panels and transom window frames (no work on wood doors or wood door frames) in three (3) of the five (5) existing Vestibules on the south side of the Main Hall and in three (3) of the five (5) existing Vestibules on the north side of the Main Hall;
10. Provide all access, protection and logistical arrangements (discussed in greater detail throughout this document) as may be required to execute the Project.

END OF SECTION 01010

SECTION 04501 – MASONRY CLEANING AND RESTORATION

PART 1 – GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract Documents, including General and Supplementary Conditions and other Division 00 and 01 Specifications sections of the Project Manual, apply to Work of this Section.

1.02 DESCRIPTION OF WORK

- A. All the work described in this Section is part of the Alternate “A” portion of the project.
- B. The Contractor shall supply all material, labor, tools and miscellaneous ladders, scaffolding and other equipment necessary to complete the cleaning and polishing of marble work in the areas shown on the drawings and/or listed in schedules. Remove all dirt, grime, stains, paint and build-up of any foreign substance not in the original stone work, as shown on the Drawings.
- C. Repair of all voids, damaged chips, loose pieces and defects in existing stone surfaces.
- D. Repair, repointing and resurfacing cracked, damaged or deteriorated joints in the stone.

1.03 QUALITY ASSURANCE

- A. Qualifications of Stone Restoration and Cleaning Specialist:
 - 1. Selection of the Stone Restoration and Cleaning Specialist to complete this Work is subject to the following provisions. The Stone Restoration and Cleaning Specialist who will perform the Work specified in this section shall first demonstrate to the satisfaction of the Historical Architect and Owner that said person is qualified to perform the required Work. The Stone Restoration and Cleaning Specialist shall submit to the Historical Architect and Owner evidence that, within the last three (3) years, he/she has successfully completed in a timely fashion at least three (3) projects similar in scope and type to the required Work, and involving facilities determined by the Owner to be of landmark quality or historically significant.
- B. Stone:

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1. Comply with applicable requirements of governing codes and authorities, and the following:
 - a. “Restoration and Maintenance,” excerpted from the *Dimension Stone Design Manual*, (May 2016), published by the Natural Stone Institute (formerly the Marble Institute of America)

C. Stone cleaning products and accessories:

1. Include on label of containers:
 - a. Manufacturer's name.
 - b. Type of cleaner.
 - c. Manufacturer's stock number.
2. Sampling of materials:
 - a. When requested by the Owner or Historical Architect, obtain test samples from materials stored at project site or source of supply.
 - i. Furnish from materials, 1 quart (.0946 liters) from batches of 50 gallons (37.84 liters) or less, 2 quarts (1.892 liters) from batches over 50 gallons (37.84 liters).
 - ii. Select samples at random from sealed containers.
 - iii. Employ the services of a certified testing laboratory to verify the composition of the sample material by written report.

1.04 DEFINITIONS FOR THE WORK OF THIS SPECIFICATION SECTION

- A. "Conservation" or "Conserved," as used herein, shall mean the reestablishment of the original finish by means of an approved or specified treatment to correct defects, improve appearance, return the surface to the original color, hue and texture and, where appropriate, provide a protective coating that is both serviceable and durable.
- B. “Restoration” or “Restored” as used herein shall mean the renewal, by approved or specified means, of an original (*or otherwise desired*) finish which has been damaged or lost. Restored finishes shall always be made to match the color and appearance of the approved finish sample whether clear, chemically induced, colored, stained or opaque.

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1.05 SUBMITTALS

A. Samples:

1. The stone cleaning Contractor for the Work of this Section shall visit the site with the Historical Architect and Owner to determine wall, pilaster, panel, base and coffered ceiling areas that are representative of those to be cleaned and restored. Contractor shall then prepare one (1) sample of the wall/pilaster surface, one (1) coffered ceiling sample and one (1) sample of the stone base for at the Bay One North Vestibule (facing toward the Retail Concourse). Each of the cleaning sample panels shall be a minimum of one (1) foot in length by one (1) foot in width. The Contractor, in collaboration with the manufacturer's representative, shall confirm any adjustment for the application processes for the cleaning agents to be used and the length of dwell time required to properly clean each surface. The Contractor shall record length of dwell time of each process and notify the Historical Architect and the Owner when each material is to be removed, so that Historical Architect and Owner can be present for removal and inspection of cleaned surface. Repeat test panels, if required by Historical Architect and/or the Owner, until the cleaning process has been established to the satisfaction of Historical Architect and Owner to properly clean each surface. This approved process shall then be used to perform the cleaning operations for the remainder of the Work for each surface to be cleaned. Obtain approval of the Historical Architect and the Owner after each area and each material is cleaned; repeat cleaning operations in each area or on each material if required by Historical Architect and Owner to properly clean the surfaces.

B. Samples of repair stone (*granite*), where appropriate.

1. Provide two (2) samples – size for each: 12” x 12”, sufficient to show color, veining and other surface attributes.
1. Owner and Historical Architect reserve the right to reject samples provided and require new samples until an appropriate match is obtained.

PART 2 – PRODUCTS

2.01 STONE PRODUCTS FOR REPAIRS

- A. Except as specified herein, it is the intent of this specification, that any stone (*granite*) used for repair applications for this Project shall match the existing host stone as to type, color, pattern, texture and finish.

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- B. If the stone required to match the existing host stone is not obtainable in the quantity required, submit choice of substitute stone samples for selection by the Historical Architect and Owner. The design intent is to produce the most harmonious effect possible with respect to color, veining and overall appearance.
- C. All exposed surfaces of stone to match existing host stone shall be finished to match the finish on the equivalent stone in the adjacent work.
- D. All replacement stone shall be selected from available stocks in this country, or, if imported, the stone shall be delivered in this country in rough form. All finishing, including selection and jointing to size, polishing, cutting and carving, shall be executed in the United States.

2.02 CLEANING MATERIALS

A. Stone Cleaning:

- 1. DriKlean, next generation cleaner by Enviro Klean.
Manufactured by: ProSoCo, Inc.
P. O. Box 1578
Kansas City, KS 66117
www.prosoco.com
- 2. Marble Poultrice, cleaning and protective treatment by Sure Klean.
Manufactured by: ProSoCo, Inc.
P. O. Box 1578
Kansas City, KS 66117
www.prosoco.com
- 3. MasonRE, CSP latex-based waterless poultrice cleaner
Manufactured by Cathedral Stone Products, Inc.
7266 Park Circle Drive
Hanover, MD 21076
www.cathedralstone.com
- 4. Other waterless, odorless, poultrice or gel-type cleaners of different manufacturers that do not require rinsing or scrubbing will also be considered by the Owner and Historical Architect. Submit substitution request in accordance with the requirements noted elsewhere in this Specification.

B. Small Repair Medium and Patch Filler Products:

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1. Jahn M-160, Granite Repair Mortar
Manufactured by Cathedral Stone Products, Inc.
7266 Park Circle Drive
Hanover, MD 21076
www.cathedralstone.com
 - a. Custom colored mix to match adjacent (cleaned) surface exactly.
 - b. NOTE: this product is only provided to installers who are actively certified by Cathedral Stone Products.

2. Akemi Knife Grade Stone Repair System
Manufactured by Akemi and distributed in the US by Innochem, L.L.C.
4030 Pleasantdale Road, Suite F
Doraville, Georgia 30340
www.innochemllc.com
 - a. Use custom tinted material to match knife grade polyester for use on colored stone and as required to develop matching veining, where appropriate.

3. Other synthetic and natural material consolidants and repair products containing comparable color-matching and bonding capabilities will also be considered by the Owner and Historical Architect. Submit substitution request in accordance with the requirements noted elsewhere in this Specification.

PART 3 - EXECUTION

3.01 INSPECTION

- A. Examine areas, surfaces or items scheduled or shown to be cleaned and/or repaired for conditions that will adversely affect execution, permanence or quality of work and which cannot be put into an acceptable condition through preparatory work by the Contractor.

- B. Do not proceed with cleaning and/or repair operations until conditions are suitable.

- C. Notify the Historical Architect in writing upon discovery of such conditions along with the Contractor's recommendation for remedy and correction.

3.02 PROTECTION

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- A. Properly protect adjacent areas, surfaces and item from all damage by cleaners, strippers, water, poultice cleaning or repair operations. The Contractor shall be held responsible for any damage caused by his cleaning, refinishing and/or repair operations, and shall restore any and all damaged areas, surfaces and items to original conditions acceptable to the Historical Architect and Owner.
- B. Comply with health, fire and construction regulations.
- C. If adjacent surfaces, not scheduled for cleaning are "cleaned" or in any way affected in appearance due to the spilling, leaking or migration of the cleaning agents used by the Contractor; the Contractor shall repair, repaint, renew, clean or in some way redo the area so that it matches the original condition and the adjacent surface. The Owner and Historical Architect shall make the final decision and will be the sole judge in terms of performance, appearance and its compatibility of the remedial work.

3.03 FABRICATION AND INSTALLATION OF REPAIR PIECES (DUTCHMEN)

- A. All work repair shall only be executed by skilled craftsmen. All joints shall be cut true, plane surfaces shall be true and flat. Repair pieces shall be carefully formed and fitted. All shall be of the best workmanship.
- B. Repair pieces shall be selected and set to obtain the most harmonious composition to adjacent existing pieces and surfaces. Match operation, graining and figuring as close as possible. Finished repair shall blend with the surround field surface and/or profile and appear non-conspicuous. Review prepared dutchmen with the Owner and obtain approval before final incorporation into the Work.
- C. Remove only enough of the host material at the site of damage, to facilitate mating of the new repair piece. The mating surfaces shall be dressed to produce full contact and maximum chemical bond. Where dutchman pieces are required that exceed 6"x6"x6", drilled in 1/8 inch or smaller diameter threaded 316 stainless-steel dowel pins are to be used in conjunction with epoxy adhesive for attachment. Mask surrounding surfaces (*both host and dutchman*) to protect surfaces from excess adhesive. Strike resulting joints slightly below finish marble plane and allow to set. Fill resulting hairline crevice with filler compound flush with the adjacent surfaces and blend for final aesthetic match.

3.04 FILLING SURFACE IMPERFECTIONS

- A. Prior to undertaking any filling repairs, provide sample mock-up in location approved by Historical Architect to confirm exactness of color match, texture

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match and profile match. Remove any mock-ups rejected by the Historical Architect. Do not proceed with repair work until mock-ups are approved.

- B. Small holes, chips and spalls are to be prepared and filled using filler compound. Where filling is required in profiled pieces, the filler is to be formed to match and follow the detail surface exactly. Repairs in flat surfaces are to be filled and finished flush with the surrounding surface.

3.05 CLEANING OF STONE WALL AREAS, BASES, PANELS, PILASTERS, CEILING COFFERS AND ALL MISCELLANEOUS SURFACES

- A. Vacuum all surfaces aided with a stiff natural bristle brush to remove all surface dust and dirt as a preliminary operation to cleaning.
- B. Wipe surfaces with a cloth to remove any residual dirt. Discard cloths frequently to avoid redepositing surface dirt.
- C. Carefully wipe the surface with clean filtered water.
- D. Prior to undertaking any cleaning work, provide sample mock-ups in locations noted herein (see above) to confirm the adequacy of cleaning effort and results. Do not proceed with any cleaning work until mock-ups are approved.
- E. Apply the stone cleaner (*diluted per the manufacturer's recommendations and as confirmed in mock-up*) in accordance with manufacturer's instructions.
 - 1. Follow manufacturer's instructions for mixing and formulating poultices to develop the desired plasticity and troweling consistency.
 - 2. Apply the prepared poultice mix to surfaces using plastic or wooden trowels to create a uniform coating – thickness in accordance with manufacturer's instruction.
 - 3. Apply light polyethene film to cover treated surfaces and prevent rapid and/or excessive drying of the poultice application. Seal edges of poly film for duration of poultice operation.
 - 4. In accordance with the predetermined soil lifting period (*12-24 hours or as specified by manufacturer*) established by the approved sample, remove protective film and scrape off poultice using soft plastic or wood scrapers.
 - 5. Thoroughly rinse surface with clean water using sponges and/or soft cloths. Test surface of stone with PH strip to ensure that all cleaning chemicals have been removed from the surface.

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6. Repeat poulticing procedures where necessary (especially in water stained areas) to obtain complete cleaning and stain removal as required to obtain uniformity from work area to work. Use spot application of poultice where removal of localized soiling is necessary.
 7. Perform random “ph” test to ensure that the surface of the cleaned stone is equal to or less than the surface of the stone prior to the start of the cleaning operation.
- F. Upon completion of cleaning process, review all surfaces for existence of stubborn stains. Prepare all such discrete surfaces for second poultice application.

3.06 FINAL CLEAN UP

- A. Clean up area and leave areas dry and totally free of debris.
- B. No visible traces of cleaning materials, water or debris are to be left.

END OF SECTION 04501

SECTION 05701 – ARCHITECTURAL METAL RESTORATION AND FINISHES

PART 1 – GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract Documents, including General and Supplementary Conditions and other Division 00 and 01 Specifications sections of the Project Manual, apply to Work of this Section.

1.02 DESCRIPTION OF WORK

- A. All the work described in this Section is part of the Alternate “A” portion of the project.
- B. This section includes:
 - 1. Minor repair and cleaning of HVAC enclosure grilles and frames in the Vestibules.
 - 2. Minor repair and cleaning of access doors and frames in the Vestibules.
 - 3. Minor repair and cleaning of the decorative bronze roping in the ceiling coffers in the Vestibules.
 - 4. Minor repair and cleaning of the decorative brass sunburst lighting fixture surrounds in the ceiling coffers in the Vestibules. NOTE: no electrical work is envisioned as part of this scope.

1.03 DEFINITIONS FOR THE WORK OF THIS SPECIFICATION SECTION

- A. "Conservation" or "Conserved," as used herein, shall mean the reestablishment of the original finish by means of an approved or specified treatment to correct defects, improve appearance, return the surface to the original color, hue and texture and, where appropriate, provide a protective coating that is both serviceable and durable.
- B. “Restoration" or "Restored," as used herein shall mean the renewal, by approved or specified means, of an original (*or otherwise desired*) finish which has been damaged or lost. Restored finishes shall always be made to match the color and appearance of the approved finish sample whether clear, chemically induced, colored, stained or opaque.

1.04 SUBMITTALS

SECTION 05701 – ARCHITECTURAL METAL RESTORATION AND FINISHES

- A. Schedules: The Contractor shall submit a schedule to the Historical Architect for approval prior to beginning the Work. The schedule shall include all items and objects requiring cleaning, architectural metal restoration and refinishing as specified herein.
- B. The schedule shall include: name of object, item, quantities, locations, discovered conditions, original finish type (*including patina, chemical conversion coatings, applied coating type, plating*), and base metal. Schedule shall indicate treatment, including but not limited to, procedure for restoration, attachments, and type of protection. Identify original finishes using nomenclature specified in NAAMM "Metal Finishes Manual".
- C. The Contractor shall indicate on the schedule whether the item must be moved off site to be restored/refinished.
- D. Submit with the schedule color photographs of each type of object in the scope of work, labeled with descriptive information used to identify the object in the schedule. Photographs may be in PDF format as part of the submittal. Submit photographs for each object. Photographs shall be in focus and clearly show the entire item in full frame.
 - 1. Key Plans: Key object locations to plan drawings. Each object shall be noted and keyed to schedules.
 - 2. Samples: Prepare representative mock-up finish samples for each component and finish type required. Samples shall be fully documented by photographs and submitted for the record. Samples thus approved will form the standards for completion of subsequent Work. The Historical Architect and the Owner will inspect, compare and approve all samples, and the Contractor shall resubmit samples until approved by the Historical Architect and Owner before beginning Work. The sample mock-up shall remain as the approved standard for the project.
 - 3. The Mock-up sample shall include any repair, realignment, flattening or other process needed to restore the object back to original form and function.

1.05 QUALITY ASSURANCE

- A. Materials and Work shall conform to the latest edition of reference specifications listed below, specified herein and to all applicable code and requirements of local authorities having jurisdiction, whichever is more stringent, including:
 - 1. "Metal Finishes Manual," The National Association of Architectural Metal Manufacturers (NAAMM), latest edition.

DIVISION 05 – METALS

SECTION 05701 – ARCHITECTURAL METAL RESTORATION AND FINISHES

B. Qualifications of Metals Restoration Specialist:

1. Metal Restoration Specialist: Selection of the Metal Restoration Specialist to complete this Work is subject to the following provisions. The Metal Restoration Specialist who will perform the Work specified in this section shall first demonstrate to the satisfaction of the Historical Architect and Owner that the Metal Restoration Specialist is qualified to perform the required Work. The Metal Restoration Specialist shall submit to the Historical Architect and Owner evidence that, within the last three (3) years, he/she has successfully completed in a timely fashion at least three (3) projects similar in scope and type to the required Work, and involving facilities determined by the Owner to be of landmark quality or historically significant.

1.06 DELIVERY, STORAGE AND HANDLING

- A. Exercise proper care and protection in the delivery and handling of all Work so as not to injure the finished surfaces, and take proper precautions to protect the Work from damage after it is in place.
- B. Store materials in locations approved by the Owner.
- C. Any materials and objects to be temporarily removed shall be clearly numbered and labeled, and recorded on drawings. Materials to be transported shall be securely boxed and padded for removal and transportation to and from the site.
- D. Use all means necessary to protect the installed Work and materials from the Work of all other trades until final acceptance by the Owner.

1.07 JOB CONDITIONS

- A. Protect Work from stains, deterioration and damage of all kinds, until completion of the Project. Sprayed-on, strippable coating shall not be used. Absorptive wrappings shall not be in contact with finished architectural metal.
- B. Refinish damaged or unsatisfactory Work at no additional cost to the Owner.
- C. Coordinate, schedule and interface the Work of this Section with all other finish and repair Work of the Project so as not to delay job progress.

1.08 COORDINATION

- A. Refinishing and reinstallation of metal objects shall be coordinating with Work by others, including but not limited to stone repair/refinishing.

DIVISION 05 – METALS

SECTION 05701 – ARCHITECTURAL METAL RESTORATION AND FINISHES

PART 2 – PRODUCTS

2.01 MATERIALS

- A. In locations requiring lacquer or paint removal:
1. Citristrip® Gel
W.M. Barr Co.,
P.O. Box 1879
Memphis, TN 38101
www.citristrip.com
 2. Other products that do not etch, scar or discolor the metals or finishes will also be considered by the Owner and Historical Architect. Submit substitution request in accordance with the requirements noted elsewhere in this Specification.
- B. In locations requiring cleaning:
1. Any commercial product employing EDTA (ethylenediaminetetraacetic acid) as a chelating agent.
- C. In locations requiring relacquering:
1. Nikolas Protective Lacquers
G. J. Nikolas & Co., Inc.
2800 Washington Boulevard
Bellwood, IL 60104
www.finish1.com
 2. Other products that do not scar or discolor the metals or finishes will also be considered by the Owner and Historical Architect. Submit substitution request in accordance with the requirements noted elsewhere in this Specification
- D. Surfactant for cleaning metals:
1. Dow Chemical “Triton” XL80N or equal
www.dow.com
 2. Other products that do not etch, scar or discolor the metals or finishes will also be considered by the Owner and Historical Architect. Submit

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substitution request in accordance with the requirements noted elsewhere in
this Specification

- E. Cleaning towels:
 - 1. “Viva” brand paper towel by Kimberley Clark Worldwide, or equal.

PART 3 – EXECUTION

3.01 COORDINATION OF THE WORK

- A. Coordinate all protection of removals and reinstallations, where appropriate, with the Work of other trades and Contracts. The Contractor shall provide a schedule for the removals, transportation, storage, reinstallation and methods of protection to the Historical Architect and Owner, for review prior to beginning of any Work.
- B. Items to be removed to shop site: Protect materials to be removed, taking care not to damage adjacent materials and finishes during the course of removal. Any materials or finishes or fixtures to remain that are damaged during the removal process shall be repaired to the complete satisfaction of the Historical Architect and Owner at no additional cost to the Owner. Identify each piece with a metal tag (*or container for fasteners*) before removal and keyed to location drawings.

3.02 BRONZE GRILLES

- A. In locations where required, apply stripper over all surfaces and allow to dwell in accordance with manufacturer’s instructions.
 - 1. Agitate surfaces of the grills with soft bristle brushes to loosen all surface coatings.
 - 2. Reapply subsequent applications as required to ensure that all coatings are completely removed down to bare metal.
 - 3. Rinse all treated surface with mineral spirits and thoroughly dry all surfaces with paper towels.
- B. Treat grille surfaces with EDTA
 - 1. Prepare treatment by saturating paper towels with a 10% solution of EDTA in distilled water.

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2. Apply the solution such that there is a small amount of standing agent in the paper towel covered openings in the grill. Allow this solution to dwell 15 – 20 minutes until the oxidation can be removed.
 3. Wipe all surfaces with clean paper towels to remove remaining solutions and oxidations.
- C. Final clean-up
1. Wipe all surfaces with 3M Scotch-Brite pads and water.
 2. Supplement the final cleaning with nylon bristle brushes as required to remove and remaining oxidation from interior edges of grill openings.
 3. Repeat process as necessary to insure completely clean metal surfaces.
 4. Repeat the process to remove any remaining residual tarnishing and corrosion.
- D. Finish Application
1. Prior to lacquer application, rub each grill surface length wise with clean dry (new) 3M Scotch-Brite pads to remove any bloom of new oxidation.
 2. Spray apply two (2) clear lacquer coats all grille surfaces in accordance with manufacturer's directions.
 3. Apply lacquer coatings only when relative humidity and temperature are between 60 and 90 degrees F and 50% relative humidity +/- 10% to avoid finish blushing.
 4. Apply finish coats making sure to avoid runs, drips and sags and allow sufficient time to dry between coats.
 5. Ensure that grills are completely dry before handling and / or transport for reinstallation.

3.03 MISCELLANEOUS HARDWARE

- A. Refinish all existing and new screws and fasteners to match the finish of the refinished grilles.
1. Provide replacement screws for all missing locations and for those fasteners that are stripped or damaged.

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2. Provide fasteners of material and head style to match existing fasteners that are used for similar applications.
3. Install plugs to replace the damaged area of the original screws and set flush with the original surface.
4. Drill pilot holes in all repaired holes to reattach the grilles where necessary.

3.04 DECORATIVE BRONZE ROPING AND SUNBURST LIGHTING FIXTURE SURROUNDS

- A. It shall be acceptable to temporarily remove decorative elements for cleaning and reinstallation. Take care to not damage screws, screw threads or components.
- B. Clean all exposed decorative bronze surfaces.
- C. Perform initial cleaning with HEPA vacuum to remove loose dirt and debris before wet cleaning is started.
- D. Protect adjacent stone surfaces during all cleaning operations.
- E. Prepare and formulate Triton XL80N in strict accordance with manufacturer's instructions.
 1. Use diluted strength formulation only as concentrated as necessary to remove all surface dirt and debris.
- F. Apply to all decorative elements in accordance with manufacturer's instructions.
 1. Agitate the cleaning medium with natural bristle brushes to insure removal of all adhered dirt and discolorants.
 2. Rinse all treated and cleaned surfaces to completely remove all remaining cleaning agent and to render all surfaces Ph neutral.
- G. Reinstall and adjust/align all decorative elements to their proper position.

3.05 FINAL CLEAN-UP

- A. Clean up area and leave areas dry and totally free of debris.
- B. No visible traces of cleaning materials, water or debris are to be left.

END OF SECTION 05701

SECTION 09201 – CLEANING AND REPAIR OF HISTORIC LEGIONNAIRES

PART 1 – GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract Documents, including General and Supplementary Conditions and other Division 00 and 01 Specifications sections of the Project Manual, apply to Work of this Section.

1.02 DESCRIPTION OF WORK

- A. The work described in this Section is divided as follows:
 - 1. Base Bid portion of the Project: clean and repair thirty-six (36) Legionnaire statues that overlook the Main Hall and are positioned at the Gallery level – 10 at the south Gallery, 10 at the north Gallery, 8 at the east Gallery, and 8 at the west Gallery.
 - a. Prior to the start of any work, prepare a treatment plan for each Legionnaire statue, including captioned “as found” photographs and an outline of proposed cleaning, repair and restoration procedures.
 - b. Prepare a completion report for each of the Legionnaires, including manufacturer’s data for all products utilized, captioned “in progress” and “completion” photographs of all conditions observed and treated, descriptions of all repairs, and recommendations for future ongoing preservation and maintenance.
 - 2. Alternate “A” portion of the Project: clean and repair six (6) Legionnaire statues at the Gallery window sill level on the south exterior elevation of the building.
 - a. Prior to the start of any work, prepare a treatment plan for each Legionnaire statue, including captioned “as found” photographs and an outline of proposed cleaning, repair and restoration procedures.
 - b. Prepare a completion report for each of the Legionnaires, including manufacturer’s data for all products utilized, captioned “in progress” and “completion” photographs of all conditions observed and treated, descriptions of all repairs, and

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recommendations for future ongoing preservation and maintenance.

- B. The Contractor shall supply all material, labor, tools and miscellaneous ladders, scaffolding, high-reaches and other equipment necessary to complete the cleaning and repair of the historic Legionnaire statues in the areas shown on the Drawings and/or listed in these Specifications.

1.03 QUALITY ASSURANCE

- A. Qualifications of Legionnaire (plaster) Repair and Cleaning Specialist:
 - 1. Selection of the Legionnaire Repair and Cleaning Specialist to complete this Work is subject to the following provisions. The Legionnaire Repair and Cleaning Specialist who will perform the Work specified in this section shall first demonstrate to the satisfaction of the Historical Architect and Owner that said person is qualified to perform the required Work. The Legionnaire Repair and Cleaning Specialist shall submit to the Historical Architect and Owner evidence that, within the last three (3) years, he/she has successfully completed in a timely fashion at least three (3) projects similar in scope and type to the required Work, and involving facilities determined by the Owner to be of landmark quality or historically significant.

1.04 DEFINITIONS FOR THE WORK OF THIS SPECIFICATION SECTION

- A. "Conservation" or "Conserved," as used herein, shall mean the reestablishment of the original finish by means of an approved or specified treatment to correct defects, improve appearance, return the surface to the original color, hue and texture and, where appropriate, provide a protective coating that is both serviceable and durable.
- B. "Restoration" or "Restored" as used herein shall mean the renewal, by approved or specified means, of an original (*or otherwise desired*) finish which has been damaged or lost. Restored finishes shall always be made to match the color and appearance of the approved finish sample whether clear, chemically induced, colored, stained or opaque.

1.05 SUBMITTALS

- A. Samples of Cleaning Materials:
 - 1. The historic Legionnaire Cleaning and Repair Specialist for the Work of this Section shall visit the site with the Historical Architect and Owner to

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examine and evaluate the general condition of the Legionnaires, including the logistical requirements for the work. Contractor shall then prepare one (1) sample of the cleaning products for on a Legionnaire – Owner to select the specific Legionnaire for sample testing. The cleaning sample panel shall be a minimum of six (6) inches in length by six (6) inches in width. The Contractor, in collaboration with the manufacturer's representative (if appropriate), shall confirm any adjustment for the application processes for the cleaning agents to be used and the length of dwell time required to properly clean the surface. The Contractor shall record length of dwell time of each process and notify the Historical Architect and the Owner when each material is to be removed, so that Historical Architect and Owner can be present for removal and inspection of cleaned surface. Repeat test panels, if required by Historical Architect and/or the Owner, until the cleaning process has been established to the satisfaction of Historical Architect and Owner to properly clean each surface. This approved process shall then be used to perform the cleaning operations for the remainder of the Work for each Legionnaire to be cleaned. Obtain approval of the Historical Architect and the Owner after the sample is cleaned; repeat cleaning operations if required by Historical Architect and Owner to properly clean the surfaces.

PART 2 – PRODUCTS

2.01 PLASTER PRODUCTS FOR REPAIRS

- A. Plaster:
 - 1. Gypsum Plaster, meeting ASTM C28
 - 2. Keene's Gypsum Plaster (if appropriate), meeting ASTM C61
 - 3. Quickset Gauging Plaster (if appropriate)
 - 4. Lime, normal hydrated for finishing (Type N), meeting ASTM C6
- B. Aggregate:
 - 1. Sand, meeting ASTM C144
- C. Water – potable and clean
- D. Bonding Agents (if appropriate):

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1. Provide a colorless bonding material that produces a permanent bond not affected by freezing, heat, acid, alkali, or dampness, and producing no discoloration to finished surfaces.
2. Acceptable bonding agents:
 - c. “Link,” as manufactured by the Sta-Dri Company, 1572 Annapolis Road, P.O. Box 40, Odenton, Maryland 21113, phone 800.638.8085 or visit www.goliath.ecnext.com to find the nearest product distributor.
 - d. “Acryl 60,” an acrylic polymer emulsion, as manufactured by Thoro Building Products Corporation (a division of BASF Construction Chemicals International), 1850A Delmar Drive, Folcroft, Pennsylvania 19032-1414, phone 610.583.5502 or visit www.thorosystems.com to find the nearest product distributor.

2.02 CLEANING MATERIALS

A. Stone Cleaning:

1. DriKlean, next generation cleaner by Enviro Klean.
Manufactured by: ProSoCo, Inc.
P. O. Box 1578
Kansas City, KS 66117
www.prosoco.com
2. Marble Poultice, cleaning and protective treatment by Sure Klean.
Manufactured by: ProSoCo, Inc.
P. O. Box 1578
Kansas City, KS 66117
www.prosoco.com
3. MasonRE, CSP latex-based waterless poultice cleaner
Manufactured by Cathedral Stone Products, Inc.
7266 Park Circle Drive
Hanover, MD 21076
www.cathedralstone.com
4. Other waterless, odorless, poultice or gel-type cleaners of different manufacturers that do not require rinsing or scrubbing will also be considered by the Owner and Historical Architect. Submit substitution request in accordance with the requirements noted elsewhere in this Specification.

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PART 3 - EXECUTION

3.01 INSPECTION

- A. Examine areas, surfaces or items scheduled or shown to be cleaned and/or repaired for conditions that will adversely affect execution, permanence or quality of work and which cannot be put into an acceptable condition through preparatory work by the Contractor.
- B. Do not proceed with cleaning and/or repair operations until conditions are suitable.
- C. Notify the Historical Architect in writing upon discovery of such conditions along with the Contractor's recommendation for remedy and correction.
- D. Submit treatment plan for each Legionnaire prior its start-of-work.

3.02 PROTECTION

- A. Properly protect adjacent areas, surfaces and item from all damage by cleaners, strippers, water, poultice cleaning or repair operations. The Contractor shall be held responsible for any damage caused by his cleaning and/or repair operations, and shall restore any and all damaged areas, surfaces and items to original conditions acceptable to the Historical Architect and Owner.
- B. Comply with health, fire and construction regulations.
- C. If adjacent surfaces, not scheduled for cleaning are "cleaned" or in any way affected in appearance due to the spilling, leaking or migration of the cleaning agents used by the Contractor; the Contractor shall repair, repaint, renew, clean or in some way redo the area so that it matches the original condition and the adjacent surface. The Owner and Historical Architect shall make the final decision and will be the sole judge in terms of performance, appearance and its compatibility of the remedial work.

3.03 FILLING SURFACE IMPERFECTIONS AND MINOR REPAIRS

- A. Prior to undertaking any filling repairs, provide sample mock-up in location approved by Historical Architect to confirm exactness of color match, texture match, and profile match of the plaster. Remove any mock-ups rejected by the Historical Architect. Do not proceed with repair work until mock-up is approved.

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- B. In locations where cracks or damage are discovered that necessitate the use of a pin to support the components, utilize Type 304 stainless steel pins – diameter and depth of imbedment to be field-determined based on the condition.
- C. Infilling with new plaster:
 - 1. Mixing:
 - a. Proportion and measure the materials for each batch carefully and consistently.
 - b. Prepare batches in quantity for complete use within one hour after mixing, and to set up within a maximum of four hours.
 - c. Do not retemper or use partially set plaster.
 - d. Do not use frozen, or caked, or lumpy material; remove such materials from the job site immediately.
 - e. Use sand which is moist and loose.
 - f. Withhold about 10% of the required water until the mixing cycle is nearly complete; then add water as needed to achieve the required consistency.
 - g. Due to the small amounts to be used, it shall be acceptable to mix by hand.
 - h. Clean mixer thoroughly between batches, removing hard and set materials prior to loading.
 - 2. Surface conditions:
 - a. Examine the areas where plaster is to be installed; ascertain that they are capable of properly accepting the new finish plaster. Remove all loose or inappropriate materials. Make the necessary corrections to provide for an adequate application.
 - b. Install supplemental support firmly and soundly to ensure a smooth, even finish for the plaster and a smooth transition from the existing surfaces to the new surfaces
 - 3. Application:

SECTION 09201 – CLEANING AND RESTORATION OF HISTORIC LEGIONNAIRES

- a. Install plaster of sufficient thickness to bond properly and completely, but thin enough to minimize the amount of feathering necessary.
- b. Feather all places where new plaster meets existing surfaces, taking care to feather into existing profiles and contours to achieve a uniform, consistent appearance that is imperceptible.
- c. Distress the surface of new plaster to achieve uniformity of appearance with all adjacent surfaces.
- d. In-paint new plaster areas to achieve uniformity of appearance with all adjacent surfaces (after they have been cleaned).

3.04 CLEANING OF HISTORIC LEGIONNAIRE STATUES

- A. Vacuum all surfaces aided with a stiff natural bristle brush to remove all surface dust and dirt as a preliminary operation to cleaning.
- B. Wipe surfaces with a cloth to remove any residual dirt. Discard cloths frequently to avoid redepositing surface dirt.
- C. Carefully wipe the surface with clean filtered water.
- D. Prior to undertaking any cleaning work, provide sample mock-ups in locations noted herein (see above) to confirm the adequacy of cleaning effort and results. Do not proceed with any cleaning work until mock-ups are approved.
 1. NOTE: it is important to perform tests using all of the specified products (as well as such products as may be recommended by the Contractor). Each of the specified products has been tested on the Legionnaires and each has its own advantages and its own drawbacks – depending on the location.
- E. Apply the cleaning product in accordance with manufacturer's instructions.
 1. Follow manufacturer's instructions for mixing and formulating poultices to develop the desired plasticity and troweling consistency.
 2. Apply the prepared poultice mix to surfaces using plastic or wooden trowels to create a uniform coating – thickness in accordance with manufacturer's instruction.

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3. Apply light polyethene film to cover treated surfaces and prevent rapid and/or excessive drying of the poultice application. Seal edges of poly film for duration of poultice operation.
 4. In accordance with the predetermined soil lifting period (*12-24 hours or as specified by manufacturer*) established by the approved sample, remove protective film and scrape off poultice using soft plastic or wood scrapers.
 5. Thoroughly rinse surface with clean water using sponges and/or soft cloths. Test surface of stone with PH strip to ensure that all cleaning chemicals have been removed from the surface.
 6. Repeat poulticing procedures where necessary (especially in water stained areas) to obtain complete cleaning and stain removal as required to obtain uniformity from work area to work. Use spot application of poultice where removal of localized soiling is necessary.
 7. Perform random “ph” test to ensure that the surface of the cleaned stone is equal to or less that the surface of the stone prior to the start of the cleaning operation.
- F. Upon completion of cleaning process, review all surfaces for existence of stubborn stains. Prepare all such discrete surfaces for second poultice application.
- G. Prepare and submit the completion report for each Legionnaires as it is completed. Do not wait until all the Legionnaires are finished to submit the completion reports.

3.05 FINAL CLEAN UP

- A. Clean up area and leave areas dry and totally free of debris.
- B. No visible traces of cleaning materials, water or debris are to be left.

END OF SECTION 09201

SECTION 09900 - PAINTING

PART 1 -- GENERAL

1.01 – RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract Documents, including General and Supplementary Conditions and other Division 00 and 01 Specifications sections of the Project Manual, apply to Work of this Section

1.02 – DESCRIPTION OF WORK

- A. All the work described in this Section is part of the Alternate “A” portion of the project.
- B. This section generally includes the following, as well as those work items not specifically listed herein that are reasonably necessary to accomplish the scope of work:

1. Complete cleaning, preparation and finish painting of all previously painted exterior surfaces in the project area, including the transom panels and transom window frames for all the Vestibules.
 - a. The scope does not include any painting work on the wood stained doors or door frames.
 - b. The scope does not include any painting work on the interior surfaces of the openings that face into the Main Hall.
 - c. The scope does not include any painting work on the exterior surfaces of the openings that face the exterior of the building or that face into the Retail Concourse.
2. Scraping, sanding and preparation of all loose, alligatored, cracked or incompletely-adhered previously painted surfaces listed above.
3. Spot-priming, where appropriate, of all areas listed above.
4. Finish painting (one coat) on all areas listed above.
5. Color shall match existing exactly (one custom-mixed color).

- C. Do not paint any previously unpainted masonry, marble, glass, brass or

miscellaneous surfaces.

1.03 -- CODES AND STANDARDS

- A. All use and handling of paints, painting-related substances, and preservatives shall conform with all Federal, State, and Local laws and Ordinances.
- B. International Building Code (IBC), 2015 edition.
- C. Comply with all Federal, State, and Local Codes
- D. Relevant Regulatory Statutes:
 - 1. The occupational exposure to lead is regulated in the Code of Federal Regulations, 29 CFR Part 1910.1025. The regulations for general respiratory protection are covered in 29 CFR Part 1910.132 through 134. As standard industrial hygiene practice, the construction industry incorporates these regulations when work impacts lead containing material. For materials that contain lead in a concentration of 1% or greater, the demolition or removal of such material shall be conducted under controlled conditions.
 - 2. The concentration of lead in paint has been evaluated by the United States Department of Housing and Urban Development. This federal department has established guidelines for testing paint for lead content and issued interim guidelines for hazard identification (publication September 1990).
 - a. For bidding purposes, it shall be assumed all paint contains lead. Take all precautions to protect employees, visitors, volunteers, contractor employees, persons associated with this contract, and the general public from any exposure to lead-based paint products. Strictly adhere to the 2010 Lead-based Paint laws of the Federal Government for handling, working with, cleaning and disposing of lead-based paint products.

1.05 -- PROTECTION

- A. Keep the space used for storage of equipment and materials in a clean and orderly condition. Keep all waste and paint rags in metal containers, tightly covered, and safely dispose of them at the end of each working day. Take precautions to avoid fire. Provide an approved type of fire extinguisher immediately outside each paint storage area.

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1. Waste, paint rags and all flammable cleaning products shall not be stored inside the building.
- B. Remove or protect all finish hardware, accessories, fixtures, and similar items prior to starting work.
- C. Furnish and lay drop cloths in all areas where painter's work is being done, to protect adjacent work and materials from defacement. Under no conditions shall any materials be allowed on any new or existing masonry work or historic floor or wall finishes. Remove all temporary protection and coverings from any part of the work or finish. Any damage resulting from neglect of these requirements shall be repaired at the Contractor's expense to the complete satisfaction of the Owner and the Historical Architect.
- D. Maintain the work area in a neat and orderly condition, promptly removing empty containers, wrappings, waste, rubbish, and like matter from the site.
- E. Provide protection from exposure to lead for all individuals who work or travel in areas where work is being conducted, in a manner consistent with the Standards listed above.

PART 2 - PRODUCTS

2.01 -- MATERIALS

- A. Paints shall be the finest quality exterior grade oil products of the manufacturers listed below.
- B. All painting materials, except specified specialty items, shall be the products of one manufacturer for each, providing all materials necessary to produce a complete painting job as shown on schedules and specified.
- C. Paint remover for use on wood (if necessary) shall be equal to Paint Zip #1 manufactured by Turco Solvents Company of Philadelphia.
- D. Turco "Seal-Solv" or equal is to be used after rinse for clean-up.

2.02 -- MANUFACTURERS

- A. Conventional paints shall be one of the following:
 - M. A. Bruder & Sons
 - Benjamin Moore
 - Sherwin-Williams

2.03 -- SUBMITTALS

A. Samples:

1. Prepare a sample, 12 inches in length, of the finish color on the cleaned substrate for review by Owner and Historical Architect.

B. Data:

1. Submit a written summary of all safety and health procedures to be utilized (including ventilation, work practices, and respiratory protection), before commencing the Work. The Contractor's summary shall be certified to be in full compliance with the specified standards and shall bear the signature and title of a responsible official of the firm.

C. Products at Project Completion:

1. At project completion, submit one (1) gallon, unopened, of the finish paint used for this Work. Said gallon shall clearly contain the name and number of the paint, as well as the pigment/base proportions and the date mixed. Indicate also the locations where that paint was applied on the building.

PART 3 - EXECUTION

3.01 -- INSTALLATION

A. Preparation

1. Cooperate with all trades whose work comes in contact with work to be done under this section, providing such information or applications as may be required by other trades to assure proper project continuity.
2. Examine all surfaces scheduled or specified to be finished under this section, and if any defects or discrepancies are discovered, notify the Historical Architect in writing of the specific conditions. Verify that all such defects have been corrected.
3. Starting work shall imply that everything is ready and suitable to receive the finish. Contractor will be held responsible for any finish or any improperly prepared surface, and shall make good any defective work at Contractor's own expense, to the satisfaction of the Owner and Historical Architect.

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4. Remove all loose paint from flat surfaces by scraping and sanding. Sand edges of remaining paint. Using an environmentally safe detergent and water, wash all surfaces where paint has been removed. Remove all excessively built-up paint from exposed faces of ornamented, carved, or drilled materials.
 - a. It shall not be necessary to remove all built-up paint from surfaces - - nor shall it be necessary to have all previously painted surfaces be perfectly smooth. However, thoroughly sand all scraped edges and verify that they are absolutely sound and thoroughly feathered before spot priming or painting.
 - b. Thoroughly scrape and feather all alligatored areas; after scraping and feathering, verify that adjacent paint is absolutely sound before spot priming and painting.
 - c. Wherever possible, scrape and sand by hand. However, in large areas, machine sanding shall be permitted. Do not use orbital or circular sanding machines. Reciprocating sanders are permitted.
7. Concentrations of lead have not been determined; be responsible for testing the lead concentration in affected areas.
 - a. Areas where the concentration of lead exceeds 0.5% are in excess of HUD's action level. Take measures necessary to protect all individuals who may become exposed to the lead or airborne lead-laden dust. Follow the 2010 federal lead-based paint regulations in the handling and disposal of lead paint products and materials.
8. Make sure that all surfaces to receive paint are clean and completely in conformance with paint manufacturer's instructions.

B. Cleaning

1. Thoroughly clean the exterior of the building using dilute detergent mix and water, combined with commercial-grade mildewcidal compound, such as Sherwin-Williams' "Mildew Additive."
2. Thoroughly rinse and neutralize all cleaning products from the building surfaces.

C. Application

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1. Employ only experienced and competent mechanics. Assume all responsibility for the work, and repair all damage caused to the work and adjacent areas by whomsoever caused.
2. Use all material in accordance with the directions of the approved manufacturer, subject to review of the Historical Architect. Use of thinners at any time must have the approval of the Historical Architect.
3. Apply all paints with brushes and rollers only; do not use spray.

D. Mixing

1. Mix only in designated space at the site. Provide galvanized steel pans in which all mixing pails or barrels shall be kept. No mixing will be permitted outside the pans.

E. Undercoats

1. Primer, where required, shall be of approximate shade of final coat, but each shall be of slightly different tint. Each coat shall be inspected and approved before application of the succeeding coats, otherwise no credit for coat applied will be given and the work in question shall be re-coated.

F. Finish

1. Finished surfaces shall be uniform in finish and color and free of brush marks, sagging, corduroy and other imperfections. Should any coat be judged unsatisfactory, sandpaper or otherwise clean off this coat and apply another. If undercoating is disturbed, complete refinishing will be required.
2. Edges of paint or finish adjoining other materials or colors shall be sharp and clean without overlapping. Should workmanship be found defective, proper preparatory work shall be done and additional costs applied as necessary to give a finish in accordance with specified requirements.
3. Finish to match adjacent work all returns, edges, and recesses which will be exposed in the finished work and which will be seen from any angle.

G. Painting Schedule

1. Existing metal elements:
First (spot prime) coat: highest-quality paint suitable for metallic applications
Second (finish) coat: highest-quality paint suitable for metallic

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applications

H. Environmental Conditions

1. Apply material only when temperatures in Vestibules are between 55 degrees (F.) and 90 degrees (F.).
2. Apply material under adequate illumination and ventilation.

I. Product Handling

1. Deliver all products in manufacturer's original unbroken containers, package or wrappings, bearing the manufacturer's brand and name and a description of the contents.
2. Do not bring to the work or site any container bearing the label of any material that has not been approved by the Historical Architect.

3.02 -- CLEANUP

- A. Dispose of all empty containers and left over paints, solvents and cleaning solutions.
- B. Keep the Work Area clean and free of debris, dust, and trash at all times.
- C. Clean the Work Area thoroughly at the end of each week.

END OF SECTION 09900